



TFU

Promoting the
conservation and
sustainable development
of tropical forests

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Council appoints new Executive Director

In this edition of the TFU we report on the outcomes of the most recent session of the International Tropical Timber Council, which concluded in early December 2021 (page 3). Most crucially at the session, Ms Sheam Satkuru, a Malaysian national and the first woman to win the position, was appointed by consensus as ITTO's next Executive Director. Ms Satkuru is a lawyer by training and has considerable experience in international negotiations and the tropical timber trade.

The Council made several other decisions at the session, including on a new strategic action plan that will guide policy and project work for the next five years.

The 2021 Annual Market Discussion, which was held during the Council session, addressed the impacts of the COVID-19 pandemic on the international

tropical timber trade and its stakeholders (page 26). The pandemic has caused considerable disruption to timber supply chains, and most experts expect this to continue for some time yet. Nevertheless, the sector should ultimately recover, with demand for timber likely to rise in coming years as consumers look for renewable, sustainable materials.

In part, increasing wood demand could be met by a corresponding surge in forest restoration while also restoring lost ecosystem services and increasing land productivity. Indeed, much has been said in recent years about the need for such restoration to repair the damage done to forests, landscapes and communities by a multitude of forces, such as low-quality logging, poorly conceived agriculture, fire, cattle-grazing, invasive species and mining. In many communities in many countries, the talk is being matched by action—as indicated in stories in this edition of the TFU.

Inside: Council session · Restoration in West Africa · Guatemala · timber tracking · teak · more

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Cover image: Sheam Satkuru, ITTO's newly appointed Executive Director. Photo: CTWPPA

An outcome of the 26th Conference of the Parties to the United Nations Framework Convention on Climate Change, held in Glasgow, Scotland, in November 2021, suggests that a further scaling up of such action might be imminent. The Glasgow Leaders' Declaration on Forests and Land Use, endorsed by more than 140 countries, commits to strengthening "shared efforts" to, among other things, "[c]onserve forests and other terrestrial ecosystems and accelerate their restoration". The Glasgow Declaration reinforces the United Nations resolution (made in 2019) proclaiming 2021–2030 as the United Nations Decade for Ecosystem Restoration with the aim of supporting and scaling up efforts to prevent, halt and reverse the degradation of ecosystems worldwide.

Coinciding with the Glasgow Declaration were various announcements of new funds totalling about USD 19 billion to help protect and restore forests globally (more details of these funds are on page 30 of this edition). This seems a decent start (if the promised funds materialize)—but *only* a start. According to one estimate, USD 1 trillion or more might be needed to restore 350 million hectares of degraded forest landscapes by 2030.¹

ITTO has been promoting forest restoration for at least two decades, and its recently published *Guidelines for Forest Landscape Restoration in the Tropics* provide advice on how to establish effective forest landscape restoration (FLR) projects and programmes. The work continues, as illustrated in this edition.

Mélanie Feurer and co-authors (page 7) report on the challenges facing smallholders in West Africa in participating in and implementing FLR. The study is based on analyses by six national experts and a regional workshop attended by participants from 16 countries. The authors conclude that, in all the studied countries, improving land titling and tree rights for smallholders, especially women, is an essential first step in scaling up FLR, and incentives and financial and technical support are other important needs. The article provides eight recommendations—generated by workshop participants—for engaging smallholders in national FLR efforts.

¹ NYDF Assessment Partners 2019. *Protecting and restoring forests – A story of large commitments yet limited progress*. New York Declaration on Forests (NYDF) Five-year Assessment Report. Climate Focus (coordinator and editor). Available at forestdeclaration.org

Silvia Anaité López-Alquijay and César Joaquín Zacarias-Coxic (page 10) describe the efforts of a coastal community in Guatemala to restore degraded mangrove forests, with assistance from an ITTO project. The key to this work is the establishment of local governance platforms designed to promote sustainable mangrove management. Although the forests are state-owned, communities are able to lease them; they have restored forests and are monitoring and surveilling them, and they are now eligible for a governmental incentives scheme and to sustainably use the resource.

Elsewhere in this edition, Raul Briz (page 14) reports on an ITTO project that helped create a fully functional timber-tracking system in the Philippines and trial it in three provinces. The system is improving forest governance in the country and is expected to boost investor confidence in the sector. It could now be adopted nationally.

Chumnun Piananurak and Somporn Khumchompoo (page 18) discuss the outcomes of a workshop for the Mekong Subregion that equipped foresters and smallholders with skills for training farmers in the propagation and management of high-quality teak trees, which in turn will boost local livelihoods. Raman Nautiyal and Promode Kant (page 20) present the outcomes of modelling on wood supply and demand in India that suggests India's wood-supply deficit will escalate in coming years. Mahtuf Ikhsan (page 23) introduces ITTO's free online course on legal and sustainable timber supply chains, and ITTO Fellow Angelica Barrero (page 24) relates her experience in gaining a master's degree in development and conservation practice.

We take this opportunity to wish all readers Happy New Year, and we look forward to sharing more stories in 2022 about ITTO's work to support the sustainable and legal trade of tropical timber and the sustainable management of tropical forests.

Editor's note: Due to budgetary limitations caused by tardy payments to ITTO's administrative budget in 2021, the TFU suffered interruptions to its production schedule in the second half of the year. Therefore, this is the final issue produced for TFU volume 30. The TFU will return to its regular production schedule of 4 issues per year with volume 31 in 2022.



Sheam Satkuru appointed as ITTO's new Executive Director

The International Tropical Timber Council also discussed the Organization's policy and project portfolio and made a range of decisions



New leader: Sheam Satkuru, ITTO's newly appointed Executive Director. *Photo: IISD Earth Negotiations Bulletin*

ITTO's governing body, the International Tropical Timber Council, appointed Ms Sheam Satkuru as ITTO's new Executive Director at its 57th session, which was held virtually from 29 November to 3 December 2021. She won the position from among nearly 50 applicants and was one of three shortlisted candidates.

The Council meets annually to discuss a wide-ranging agenda aimed at promoting sustainable tropical forest management and the trade of sustainably produced tropical timber, and it made several significant decisions at its most recent session, including the appointment of the new Executive Director.

Ms Satkuru, a citizen of Malaysia, was the Malaysian Timber Council's Regional Director for Europe between 2007 and 2017, and she has been Director of Operations at ITTO since 2017.

Ms Satkuru is a specialist in international trade, with strong skills and experience in legal and policy analysis related to international affairs, the timber and forest industries, communications, public affairs and outreach. She is also a skilled and experienced international negotiator; she holds a master's degree in law from Kings College at the University of London and was called to the English Bar in 1993.

In accepting the appointment, Ms Satkuru referred to the principle of consensus as one of ITTO's strongest features. "ITTO begins yet another new chapter in its long journey of adventures," she said. "As the first woman to be appointed as the Organization's Executive Director, I applaud all members of the International Tropical Timber Council for the consultative and collaborative spirit they have shown. I pledge to take ITTO's interests forward in a fair, balanced and equitable manner for all its members."

The Council Chair, Mr Kheiruddin Rani, and other delegates offered their warm congratulations to Ms Satkuru for her appointment. She will take up her new position in early 2022.

USD 3.8 million pledged for ITTO work

The Council announced new financing in 2021 (including those made intersessionally) totalling USD 3.77 million to support the Organization's work. Of this, the Republic of Korea contributed USD 1.11 million, Japan USD 848 000, the United States of America USD 555 000, China USD 100 000, the CITES Secretariat USD 376 000, Bruno Manser Fonds USD 200 000, the City of Basel USD 200 000, FAO USD 167 000, Soka Gakkai USD 89 600, the Precious Forests Foundation USD 11 000 and Kiso-an USD 1720; USD 116 000 was also made available from existing funds (including the Bali Partnership Fund) within the Organization.¹

Among other things, these funds will support: efforts to increase the competitiveness of commercial reforestation in Costa Rica; women's groups in two prefectures in Togo to restore degraded forest landscapes; ITTO's role in the CITES Tree Species Programme; the three-year secondment of an officer from the Korea Forest Service to the ITTO Secretariat; and the promotion of sustainable domestic wood consumption in Viet Nam (the first project developed from a concept note submitted under ITTO's new financial architecture/pilot programme lines). Some projects and activities received partial funding and will commence should the balance of funding be forthcoming.²

In addition to the decision approving funding for the above (and other) projects and activities, the Council adopted seven other decisions by consensus. These were: to extend the International Tropical Timber Agreement, 2006 for five years until 6 December 2026; to adopt the ITTO Strategic Action

¹ Amounts may be rounded.

² The full list of projects and activities receiving voluntary contributions is contained in Decision 1 of the session, available at www.itto.int/council_committees/decisions.



Cooperation in the Amazon: These women participated in a community information exchange in the Verde para Sempre Extractive Reserve, Brazil, as part of work conducted by ITTO Fellow Ana Luiza Violato Espada.
Photo: Ana Luiza Violato Espada

Plan for 2022–2026; on cooperation and coordination with other international organizations; on matters related to the administrative budget (two decisions); to adopt terms of reference for the advisory board on ITTO's pilot programmatic approach; and to appoint the Executive Director. The Council adopted the reports of its four associated committees, which all met electronically before and during the session.

Civil Society Advisory Group proposes paper on how ITTO can address climate change

In a statement during the Council session, delivered on behalf of the Civil Society Advisory Group (CSAG) by its chair, Mr Chen Hin Keong, CSAG recommended that ITTO commission a paper to outline how ITTO members, as well as the Secretariat, the private sector, the Trade Advisory Group, civil society and CSAG can contribute to the mitigation of and adaptation to climate change in concrete ways.

"Forests were and are still being poorly managed, their resources over-exploited and are being lost," according to the statement. "How can ITTO members work towards actions to implement the many relevant guidelines, policies, and reports produced over the years? The paper can outline how each stakeholder can do this. Currently, member countries do not seem to be using ITTO resources in any concrete way where these resources can contribute."

The CSAG statement also said that the sustainable and responsible use of forest resources and tackling illegal and unsustainable use must be an integral part of COVID-19 recovery strategies if the world is to "build back better" towards a more sustainable and resilient future.

"Jobs, revenue, livelihood, cultural integrity and sustainability of the resource and supply should not be looked at in isolation," according to the statement. "The critical challenge should not only be focused on technical forestry aspects; we cannot leave the problems of SFM to the foresters and technicians at the forest level."



"We cannot leave the problems of SFM to the foresters and technicians at the forest level", according to the CSAG statement at the 57th Council session delivered by CSAG chair Chen Hin Keong (pictured here in 2019). *Photo: ITTO/R. Carrillo*

CSAG also reiterated its call for the Annual Market Discussion to be a joint session between the Trade Advisory Group and CSAG. Currently, according to the statement, Discussion panellists tend to be business oriented, "while we know business and markets do not work in isolation from health, conservation, sustainability, livelihood, IPLCs [Indigenous Peoples and local communities], etc. CSAG brings our expertise and knowledge that can enhance the knowledge sharing and recommendations from such a platform to Council."

The full text of the CSAG statement is available at www.itto.int/itc-57/presentations (see 3 December 2021).

Council awards 18 new Fellowships

The Council awarded 18 new ITTO Fellowships at its 57th session. Of this latest group of Fellows, seven are from Africa, six are from the Asia-Pacific region and five are from Latin America and the Caribbean. Seven of the 18 candidates are women. The total value of the 18 Fellowships is about USD 127 000.

ITTO's long-running Fellowship Programme has enabled more than 1400 awardees to improve their professional knowledge and career prospects while developing a network of forestry professionals working to advance SFM and a legal and sustainable tropical timber trade (see page 24 for an example that illustrates the value and impacts of this programme).

New Strategic Action Plan

ITTO's Strategic Action Plan for the period 2022–2026, approved during the session, will guide ITTO's policy and project work for the next five years with the aim of making progress towards the twin objectives of promoting the sustainable management of tropical timber-producing forests and the expansion and diversification of international trade in tropical timber from sustainably managed and legally harvested forests. The plan features four strategic priorities, four crosscutting strategies and 38 associated targets to be accomplished by 2026. It is being finalized for posting on ITTO's website and wider dissemination in early 2022.

ITTO projects have catalytic effect

The relatively small-budget projects funded by ITTO can help catalyze funding from other donors, thereby offering countries a potential bridge for scaling up impacts. A paper presented



Needing help: A teak plantation in Panama. An ITTO project will support efforts to increase the competitiveness of commercial reforestation in neighbouring Costa Rica. *Photo: ITTO/J. Blaser*

to the Council on cooperation and coordination with other organizations examined this catalytic effect using four examples of ITTO projects from around the tropics.

A project with an ITTO contribution of about USD 437 000 has helped strengthen capacity for sustainable forestry in tropical dry forests in northern Peru. Among other things, the project, which was implemented by the Partnership for Integrated Research and Development (AIDER), enabled local professionals to formulate a larger project proposal that was submitted to the Global Environment Facility (GEF). This larger project has attracted funding of USD 7.6 million from the GEF and co-financing from the Government of Peru of USD 53.5 million.

The same ITTO project in Peru also helped establish a strategic alliance between AIDER and the nature-based-solutions division of a French energy company. This alliance, in turn, has led to the development of a long-term project to promote REDD+ in a biosphere reserve in northwestern Peru and to establish planted forests using native species. That project, which is expected to start in 2022 and will also involve Peru's National Forest and Wildlife Service (SERFOR) and a local community organization, is expected to be funded to the amount of USD 50 million over 20 years.

Another project, in Côte d'Ivoire, with an ITTO contribution of about USD 150 000, helped MALEBI, a women's association, to restore degraded land in the Ahua Forest Reserve and put their charcoal business on a sustainable footing. The success of the project enabled the women's group to attract funding through the World Bank's Forest Investment Program for an expanded activity with a budget of about USD 400 000, under which the group is scaling up its forest landscape restoration work.

In Papua New Guinea, a project with an ITTO contribution of USD 739 000 helped improve forest governance and develop a first draft of the country's timber legality standard (TLS). After project completion, the Australian Government, the European Union and the Food and Agriculture Organization of the United Nations provided substantial additional financial assistance to continue the development of the TLS, which is now poised to enter into force.

In the Amazon, an ITTO project implemented by the Amazon Cooperation Treaty Organization (ACTO) with an ITTO budget of USD 1.12 million benefited eight countries in the region—Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela. In 2013, Brazil's National Bank for Economic and Social Development approved an amount of USD 12 million to ACTO for a follow-up five-year project to expand the work initiated under the ITTO project and make use of the infrastructure it established.

The Council requested that these and other examples of successful collaboration and scaling-up of the Organization's impacts be made more widely known.

Committees review policy and project work

The Committee on Forest Management convened during the session to review project and policy work. Activities discussed included the promotion of smallholder forest landscape restoration in West-Africa; the development of training curricula for Central African countries on legal and sustainable supply chains; the dissemination of ITTO's *Guidelines for Forest Landscape Restoration in the Tropics*; the joint ITTO–Convention



Catalytic: With support from an ITTO project, a group of rural women in Côte d'Ivoire has improved their standard of living by producing charcoal using ecofriendly techniques. The venture has attracted further support from the World Bank's Forest Investment Program. *Photo: MALEBI*

on Biological Diversity Collaborative Initiative for Tropical Forest Biodiversity; and adapting ITTO's criteria and indicators for sustainable forest management to the African context.

Three projects and one pre-project were declared completed by the committee, including one on the conservation and sustainable use of cempaka (*Elmerrillia* spp.) in the Indonesian province of North Sulawesi. Cempaka wood has long been used in the construction of traditional houses and demand is rising, bringing concerns for the long-term future of these species. The project worked with local communities to establish cempaka plantations with the aim of decreasing pressure on natural forests; contributing to the sustainable management and conservation of the species; ensuring future supplies of cempaka wood; and improving local livelihoods. The project provided training on cempaka seed collection, storage and germination and set up tree nurseries in three villages. A total of 18 hectares of cempaka plantations was established to demonstrate the potential of plantations for generating income and assisting village development.

The Committee on Economics, Statistics and Markets and the Committee on Forest Industry met jointly to review field and policy work during the session. Activities under discussion included market access for tropical timber and tropical timber products; forest and timber certification; and market analysis under the FLEGT Independent Market Monitor. The presentations made to the joint sitting are available at www.itto.int/ittc-57/presentations.

The Annual Market Discussion and a statement made by the Trade Advisory Group are summarized in an article on page 26 of this edition.

The Council will convene its 58th session on 7–12 November 2022 in Yokohama, Japan. It elected Mr Jesse Mahoney (Australia) and Mr Nurudeen Iddrisu (Ghana) as its next Chair and Vice-chair, respectively.

Read more about the 57th Session of the International Tropical Timber Council at www.itto.int/ittc-57.

Daily coverage of the session by IISD reporting services is available at <https://enb.iisd.org/ITTC57-International-Tropical-Timber-Council>

Integrating smallholders into forest landscape restoration

ITTO is promoting the participation of smallholders in six West African countries in efforts to restore 20 million hectares of degraded land by 2030

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Teak peek: A smallholder farmer stands in his young teak plantation in Togo. Photo: J. Blaser

The combined effects of natural-resource overexploitation, forest conversion for agriculture, unsustainable land-use practices (e.g. slash-and-burn), wildfire and mining have taken their toll on West African forests, which declined in area by nearly 2 million hectares between 1990 and 2020 (FAO 2020) and suffered extensive degradation. Insecure land and tree tenure are underlying drivers of this loss and degradation, with negative consequences for biodiversity, ecosystem services and local livelihoods. In an effort to arrest forest decline, many countries in Africa have pledged to restore forest landscapes in the framework of the Bonn Challenge¹ and the African Forest Landscape Restoration Initiative (AFR100), the latter of which is a “country-led effort to bring 100 million hectares of land in Africa into restoration by 2030” (AFR100 2021a).

Forest landscape restoration (FLR) is an integrated approach to the rehabilitation of degraded forests and forest lands with the capacity to enable the sustainable management of landscapes over time. In 2018, the Global Partnership on Forest Landscape Restoration (GPFLR) agreed on the following six principles of FLR:

- 1) Focus on landscapes
- 2) Engage stakeholders and support participatory governance
- 3) Restore multiple functions for multiple benefits
- 4) Maintain and enhance natural forest ecosystems within landscapes
- 5) Tailor to the local context using a variety of approaches
- 6) Manage adaptively for long-term resilience.

These principles are the backbone of the ITTO publication, *Guidelines for Forest Landscape Restoration in the Tropics*, which was released in 2020.²

ITTO seeks to support its West African member countries in their efforts to achieve FLR commitments based on the new guidelines; this includes encouraging the involvement of smallholders through, for example, the planting of trees in woodlots and agroforestry systems. As part of the ITTO Programme on Legal and Sustainable Supply Chains,³ the authors led an analysis of the challenges and opportunities that smallholders in six countries (Benin, Côte d’Ivoire, Ghana, Liberia, Mali and Togo) face in participating in FLR. The initial analysis was carried out by six national experts and consolidated at a regional workshop in November 2019, at which participants from 16 countries exchanged views and discussed the way forward.

FLR and smallholders in six countries

Together, Benin, Côte d’Ivoire, Ghana, Liberia and Togo have pledged to restore nearly 10 million hectares by 2030. Along with Mali’s pledge made in 2019, this means a total commitment of almost 20 million hectares of FLR in the six countries (Table 1). Most of the substantial FLR pledges have been made as part of AFR100.

“Smallholders” are defined differently in different countries. In Ghana, for example, a smallholder is someone who manages 2–5 hectares of land; in Togo, it is someone who owns a plantation of fewer than 10 hectares. Smallholders in Côte d’Ivoire manage modest areas of land.

Forest smallholders in West Africa generally face constraints such as the use of rudimentary tools and basic production techniques and limited access to land and other resources; they are also highly vulnerable to economic and environmental shocks.

¹ www.bonnchallenge.org.

² The guidelines are available at www.itto.int/policy_papers. See also TFU 29/3, pp. 4–7.

³ ITTO activity PP-A/55-334 “Building legal and sustainable forest product supply chains”, subcomponent 3: Promotion of Smallholders’ Forest Landscape Restoration in West Africa.

Table 1: Forest data for six West African countries, including commitments on forest landscape restoration

Parameter	Benin	Côte d'Ivoire	Ghana	Liberia	Mali	Togo
Forest (ha) (FAO 2020)	3 135 150	2 836 710	7 985 710	7 617 440	13 296 000	1 209 270
Total land area (ha) (FAO 2020)	11 276 000	31 800 000	22 754 000	9 632 000	122 019 000	5 439 000
Population in 2020 (million) (World Bank 2021)	12.1	26.4	31.1	5.1	20.3	8.3
Population density (2018) (people per km ²) (World Bank 2021)	102	79	131	50	16	145
Forest change, 1990–2020 (FAO 2020)	– 1 700 000 ha	– 5 014 150 ha	– 1 938 550 ha	– 907 800 ha	0 ha	– 152 390 ha
Annual forest change, 2015–2020 (FAO 2020)	– 50 000 ha	– 112 890 ha	21 050 ha	– 30 260 ha	0 ha	– 2 960 ha
Restoration commitment by 2030 (AFR100 2021b)	0.5 million ha	5 million ha	2 million ha	1 million ha	10 million ha	1.4 million ha
Main value chains	Timber, shea nuts, cashew, African locust bean	Timber, shea nuts, woodfuel, medicinal plants	Timber, woodfuel, shea nuts, cashew	Rubber, coffee, cocoa, oil palm, cashew	Fuelwood, shea nuts, arabic gum, medicinal plants	Timber, cashew, oil palm

The degree of community organization varies between countries: in some cases, local communities create associations in forest areas so they can establish agreements with forestry administrations. In Côte d'Ivoire, associations of farmers (e.g. teak planters and cocoa farmers) are well-structured formal organizations that provide smallholders with better access to technical support and inputs as well as more bargaining power.

Plantations in West Africa may be state- or privately owned. Teak (*Tectona grandis*) is a common plantation species, and the modified *taungya* system is a typical practice, in which farmers tend young trees and in turn can plant food crops among the trees in the first few years. In Benin, forestry models include state-owned forest plantations, municipal plantations, private plantations, and agroforestry. In Côte d'Ivoire, the state owns 90% of teak plantations and smallholders the remaining 10%; shade-grown cocoa is the most widespread agroforestry system. Private plantations are a new trend in Togo, with the larger plantation owners employing permanent qualified staff. In Ghana, plantations are either private or part of the national forest plantation development programme. Smallholder agroforestry systems in Liberia are common for fruit trees and kola (a native tree species that produces edible nuts), while cash crops are often planted in monocultures. There is no known smallholder teak plantation in Liberia, however—all teak plantations there are state-owned.

In Mali, reforestation is done mainly with exotic species. Historically, plantations were used to reforest, restore classified forests, and create windbreaks around Bamako and other big cities. But these plantations have had only mixed success, due at least partly to the cost of management and a consequent lack of follow-up.

Most current FLR activity in West Africa, including forest plantations, is state-driven. Apart from issues of scale, smallholders are motivated predominantly by daily livelihood

needs and have limited capacity to invest in plantations if these yield only long-term financial benefits. The role of smallholders in FLR lies essentially in agroforestry (in which “restoration” is not a primary objective). Nevertheless, initiatives exist at the local level, for example in community forests and sacred forests and in the creation of individual income-generating activities such as agroforestry and woodlot planting. Agroforestry practices include scattered trees on farms, tree plantations (e.g. cocoa, coffee, rubber, cashew and oil palm) and various tree–crop combinations. In many of the six countries, governments support such practices through, for example, the supply of seedlings of native and exotic timber trees and fruit trees.

Challenges and opportunities for West African smallholders

Information on smallholders in West Africa is still fragmented, particularly regarding land holdings and production systems. Nevertheless, our analysis of the six countries has contributed to an improved general understanding of their situation. We found that smallholders face specific challenges when it comes to FLR.

Secure land and tree tenure is key if any smallholder is to invest time and resources in restoration practices and particularly tree-planting, whether for woodlots or agroforestry. Even though several countries have written laws on ownership rights to land (and, more rarely, to trees), implementation on the ground is weak. Improving land titling and tree rights for smallholders, especially women, is thus the first essential step in better integrating smallholders into FLR initiatives.

In general, existing policies and laws in West Africa do not account for smallholder needs and fail to provide enabling conditions for their involvement in FLR. Incentive schemes (e.g. direct subsidies or tax reductions) could be developed

to support smallholders in investing in tree plantations and other restoration efforts. Currently, there is no clear incentive scheme in any of the six countries.

Accessing financial and technical support is a major challenge, with national governments controlling both multilateral and (in most cases) bilateral development assistance funds for FLR. Moreover, few opportunities exist for smallholders in West Africa to obtain funds via private investors or blended finance. Smallholders thus lack direct access to any existing substantial FLR financing scheme and must use their own generally insufficient resources for investment and to meet operational costs. Facilitating access to funds, particularly through microfinancing with affordable conditions, is another key factor for enabling smallholder FLR. Organizing into associations or other types of producer group is an opportunity for smallholders to gain access to advisory services and technical support and strengthen their bargaining power. Outgrower schemes⁴ can benefit both parties and achieve good restoration outcomes.

Smallholders are often not part of formal markets, and their position in value chains is usually weak because of their high dependence on middlemen and limited access to information on market prices. Wood quality is generally lower in smallholder woodlots than in the holdings of large producers, due partly to the lower quality of seedlings and generally less-favourable growing conditions. In addition, experience in, and technologies for, wood processing (e.g. small-diameter logs) and other value adding are lacking. In most countries, facilities for processing smallholder timber products are insufficient. Generally, smallholders can only gain access to certification schemes for timber and tree crops if they are organized into associations or similar structures.

Moving forward

The ITTO Regional Stakeholder Workshop, held on 27–29 November 2019 in Lomé, Togo, produced a joint statement on how to move forward in actively engaging smallholders in national FLR efforts. It made the following eight recommendations:

- 1) Establish or improve national databases on smallholders in West African countries.
- 2) Amend legal baselines to enable smallholders to secure land and tree tenure.
- 3) Create incentive schemes to enable smallholders to invest in trees and tree crops.
- 4) Develop management support schemes for smallholders and associations.
- 5) Develop structured finance products for smallholders to provide access to investment funds.
- 6) Enable financing mechanisms for smallholders with affordable conditions.



FLR proponents: Participants of the ITTO Regional Stakeholder Workshop on Smallholder FLR in West Africa, held in November 2019 in Lomé, Togo. Photo: M. Feurer

- 7) Create capacities for smallholders to apply silvicultural methods and technologies.
- 8) Include smallholders actively in value chains, such as through adequate ingrower, outgrower and other types of investment and benefit-sharing schemes and the further processing of products.

All stakeholders—governments, the private sector, international cooperation agencies, scientists, and smallholders themselves—need to work together towards more inclusive FLR processes that actively engage smallholders. After all, in addition to large-scale restoration initiatives, the more diverse smallholder systems are fundamental for building back better after the COVID-19 pandemic.

The study reported here was part of an ongoing activity in ITTO's Biennial Work Programme, with funding from the Government of Germany.

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⁴ Outgrowers schemes are partnerships between timber or processing companies and smallholder farmers in which companies assist producers with (for example) seeds, technical advice and credit in return for access to their tree resources.

Guatemala's new approach to coastal restoration

The Blanca Cecilia community has restored a degraded area of mangroves in a process that could work in other coastal communities

by **Silvia Anaité López-Alquijay¹** and **César Joaquín Zacarías-Coxic²**

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Wet feet: Community members plant an open area in a coastal wetland, Cayo Quemado, Izabal, Guatemala. Photo: Angela López

Guatemala has a great wealth of ecosystems and is considered one of the world's 19 megadiverse countries (CONAP 2014). About one-third of the national territory is forested (INAB et.al. 2019), and about 3.4% of the forest area comprises mangroves. Guatemala's mangroves occur on both its coastlines, with almost 85% on the Pacific side and the remainder on the Atlantic (Figure 1).

With assistance from an ITTO project implemented between August 2013 and December 2019,¹ Guatemala's National Forest Institute (INAB) is promoting the establishment of local governance platforms, known as local mangrove committees (*mesas locales de mangle*—MLMs) in coastal communities, the main objective of which is to promote and carry out actions for the sustainable management of mangrove forests. Given the diversity of stakeholders and situations, the MLMs also encourage the conservation of other ecosystems, such as riparian forests, gallery forests, dry forests and tropical rainforests. Nine MLMs were established under the project—eight on the Pacific coast and one on the Atlantic coast. Three MLMs— Iztapa, Tecojate and Tiquisate—were established in Escuintla, the largest department on the Pacific coast, each corresponding to a municipality.

In addition to the establishment of the MLMs, the project developed four community forest management plans, which together encompass more than 500 hectares of mangrove forests. Project actions also included:

- training and awareness-raising for more than 1000 people on mangrove management, conservation and restoration;

- the development of an institutional strategy for the conservation and management of mangrove ecosystems; and
- formulation of the Regulations for the Sustainable Management of Mangrove Ecosystem Resources and follow-up to ensure their approval (the government ultimately issued the regulations in January 2019).

Combined, these actions constitute a major step forward—socially, technically and legally—in promoting the sustainable management of mangrove forests in Guatemala. The country's mangrove resource generates ecosystem services, including biodiversity conservation and climate-change mitigation and adaptation, that are locally, nationally and globally important; it requires adaptive management to ensure sustainability.

Restoring Blanca Cecilia forests

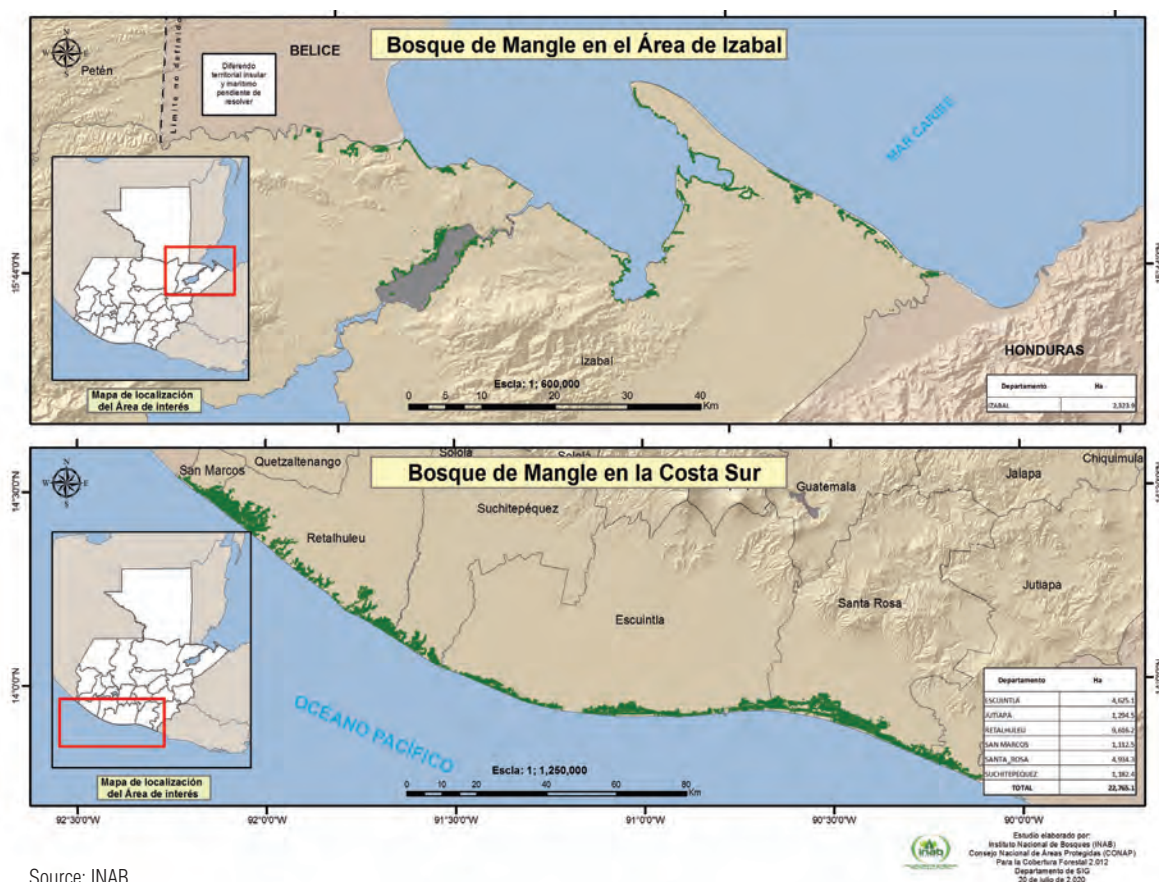
Iztapa's MLM, established in 2013, comprises leaders from various communities; these are proactive people who love their municipality and work tirelessly to carry out actions for the sustainable management of the mangrove resource. Specifically, the MLM is involved in:

- forest monitoring and control, with the aim of reducing illegal mangrove logging;
- environmental education and awareness-raising aimed at primary and secondary schools and communities;
- research activities carried out by various agencies operating in the area; and
- actions to restore forest cover in Iztapa municipality.

Iztapa has both broadleaved and mangrove forests, with the latter covering about 10% of the municipal area (Segeplan

¹ ITTO project RED-SPD 079/12 Rev. 1 (F): "Strengthening the governance and sustainable management of mangrove ecosystems in Guatemala as a climate change adaptation measure".

Figure 1: Map of mangrove forest distribution in Guatemala



Source: INAB.

2010). Mangroves are under considerable pressure, mainly from woodfuel harvesting and land-use change for housing and shrimp farming.

In 2014, the Iztapa MLM prioritized the restoration of 10.6 hectares of logged-over red mangrove (*Rhizophora racemosa*) forests in the Blanca Cecilia community. This area was selected because it is one of the largest areas to have been logged, and the aim was to avoid a change in land use to cattle ranching, shrimp farming and housing. The land is a state-owned land reserve administered by the State Reserve Areas Monitoring Office (*Oficina de Control de las Áreas de Reserva del Estado*—OCRET).

Blanca Cecilia's mangrove forests provide important ecosystem services, including protection from storm surges; regulation of flooding and the microclimate; the prevention of saline intrusion; and the sustainable production of wood for housing construction and woodfuel. Neighbouring communities log the forest for woodfuel without authorization, however, severely degrading the forest.

According to Gustavo Cetino, Chair of the Blanca Cecilia community development council (COCODE) and a member of the Iztapa MLM, "The restoration of mangrove forests is important because it is a source of livelihood for the community, offers protection against rising tides and hurricane winds, and serves as a breeding ground for fish, birds and iguanas".

Iztapa MLM members coordinated with several communities interested in helping Blanca Cecilia restore its mangroves. As a first step, community members implemented all the

necessary procedures to gain access to the area and thus ensure their involvement in its care and restoration.

To carry out the restoration effort, the Iztapa MLM, in coordination with INAB, assessed site conditions and created a restoration plan. This plan involved:

- cleaning the area;
- the direct planting of red-mangrove propagules;
- the management of natural regeneration already on the site; and
- the identification of stakeholders who would ensure the plan's implementation—because neither the Iztapa MLM nor the Blanca Cecilia community had the funding required for restoring the area.

One of the main challenges was protecting the area during the various phases of restoration because unscrupulous people wanting to use the land for other purposes would continuously destroy the work done. Monitoring and surveillance operations were essential.

The restoration process, which began in 2015 as part of the project, comprised several stages. The Iztapa MLM and INAB led the management and coordination of restoration activities. Other stakeholders involved in the work included the communities of Iztapa, the Pacific Naval Base, the Institute for Research on Climate Change, the University of San Carlos of Guatemala based at Puerto Quetzal, the Puerto Iztapa Aeroclub, the Guatemalan Coordination Office for the Protection of Mangroves and Life (*Coordinadora Guatemalteca para la Defensa de los Manglares y la Vida*),



Mangrove minds: The Iztapa local mangrove committee meets in Iztapa, Guatemala. Photo: Angela López

the Global Environment Facility, the Project for the Conservation and Sustainable Use of Biodiversity in Marine and Coastal Protected Areas, and the United Nations Development Programme. The effort won an INAB National Forestry Award in 2017 in recognition of its success in restoring the area and the successful coordination and management of the Iztapa MLM.

Secretary of the Iztapa MLM, Teresa Zacarías, said: “Having received a national forestry award fills us with pride and motivates us to continue working for the good of our communities and mangroves”.

In addition to restoring the area, members of the Blanca Cecilia community and the Iztapa MLM recognized the need for other ongoing activities. Monitoring and surveillance are crucial for safeguarding the restoration effort because logging remains one of the main threats to the forest. Community awareness-raising is also needed on the importance of mangrove forests and the ecosystem services they provide. The Blanca Cecilia community, the Iztapa MLM and INAB have been working together since 2017 to develop complementary actions aimed at restoring the forest. For example, they schedule and implement monitoring and surveillance patrols and convene awareness-raising meetings in neighbouring communities.

Another initiative under development is the inclusion of the restored mangrove forest in the PROBOSQUE incentives programme (operated by INAB). This is a financial mechanism designed to provide economic incentives to citizens who carry out actions towards sustainable forest management. The restored mangrove forest of the Blanca Cecilia community is on state-owned land that has been granted to the community under a lease contract. In September 2020, the community received the endorsement of OCRET to apply for admission to PROBOSQUE. COCODE members are understandably interested in receiving economic benefits to cover the cost of the annual land lease fees and to enable the implementation of the actions necessary to maintain the restored area.



Fuel load: The mangrove forest at Manchón Guamuchal, Guatemala, is harvested for woodfuel. Photo: Angela López

Still at an early stage, the restoration of the 10.6 hectares of mangrove forests is yet to bear fruit financially for the Blanca Cecilia community. Nevertheless, community members plan to use the mangroves sustainably because they view them as a future source of materials for home construction and as a means to support their subsistence fishing.

Regulating the sustainable management of mangrove forests

The “Regulations for the Sustainable Management of Mangrove Ecosystem Resources” were gazetted in 2019 in Government Agreement No. 8-2019. This policy instrument was developed jointly by INAB and the National Council for Protected Areas (CONAP), the institutions in charge of forest resources at the national level.

It took about eight years from the initial formulation of the regulations to their gazetting due to differences in technical criteria, personnel turnovers, changes in government authorities, and a lack of political will. The process was validated by technicians from various government institutions, non-governmental organizations (NGOs), the private sector and municipalities after a broad-based dissemination process. It was made possible by the tireless efforts and follow-up of technical and legal staff at INAB and CONAP and support from both the ITTO project and a project funded by the Global Environment Facility.

Technical guidelines were developed for the field implementation of the regulations, specifying the activities that may be undertaken in mangrove forests to ensure their sustainable management. These two instruments—the regulations and guidelines—open up a number of opportunities for neighbouring communities in the vicinity of mangrove forests, allowing them to use mangroves based on sound practices and to seek incentives for sustainable management through PROBOSQUE.

The two instruments have both preventative and remedial functions, regulating and identifying the deployment of appropriate measures for the sustainable management of mangrove forests and outlining offences and penalties for detrimental actions.



Mangrove comeback: Researchers gather data on a degraded mudflat subject to a restoration effort under the ITTO project. *Photo: Oscar Morales/INAB*

We believe that Guatemala is now on the right track. We see many opportunities at the national level for the use, conservation and restoration of mangrove forests, but it requires the participation of local communities as a key factor in ensuring mangrove sustainability because they are the primary users of the multiple services provided by these ecosystems.

The initiative of the Blanca Cecilia community and the Iztapa MLM needs to be replicated. INAB has joined efforts to disseminate this successful initiative with a view to motivating other communities on the country's Pacific coast to engage in sustainable mangrove management.

INAB also continues to implement actions to promote the sustainable management of mangrove forests through, for example, PROBOSQUE; awareness-raising; technical assistance; training for the staff of governments and NGOs on mangrove ecosystem management and restoration; research through the permanent sample plot network; and the training of personnel in the Nature Protection Division (*División de Protección a la Naturaleza*) of the National

Civil Police (*Policía Nacional Civil*) and justice bodies for the implementation of specific mangrove forest regulations.

Fully aware of the importance of interinstitutional and cross-sectoral work, INAB continues to make efforts, in cooperation with public agencies and private-sector organizations, NGOs, municipalities, academia and society in general, for the restoration, conservation and sustainable management of mangrove ecosystems.

Project outputs can be found by inserting the project code RED-SPD079/12 Rev. 1 (F) into the ITTO project search function at www.itto.int/project_search

Donors to ITTO's thematic programmes are the governments of Australia, Finland, Germany, Japan, the Netherlands, New Zealand, Norway, the Republic of Korea, Sweden, Switzerland, the UK and the USA, the European Union through the ITTO–CITES programme) and the Japan Lumber Importers Association.

Introducing the National Forest Stocks and Monitoring System

An ITTO project has helped develop a timber-tracking system as a means for improving forest governance in the Philippines and increasing investor confidence in the timber sector

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Logged: Under the NFSMS, each piece of lumber produced from a given log must be identified with a QR code. *Photo: FMB*

More than ten years ago, the Forest Management Bureau (FMB) undertook a series of discussions with various local stakeholders in the Philippines' forest industry, with inputs from international institutions such as ITTO and the Food and Agriculture Organization of the United Nations. This consultation ultimately led to the convening of a national forum in August 2009, which, among other things, called for the strengthening of policies to improve forest governance and thereby generate more opportunities for forest investment in the Philippines. Illegal logging and the associated timber trade have been major challenges in forest management in the country since the heyday of its timber industries and one of the main obstacles to sustainable forest management.

Typical illegality scenarios associated with the timber sector include illegally cut timber finding its way into registered wood-processing plants under the cover of darkness; illegal timber products of first-class hardwood species being trucked to large urban centres or specific high-end clients; the forging or recycling of transportation documents (e.g. certificates of timber origin—CTOs, and also certificates of lumber origin) to repeatedly introduce illegal timber into supply chains; the falsification or misdeclaration of the timber species being transported; and harvesting by permit-holders in excess of allowable cuts through underdeclaration.

To control such practices, a new system was needed focused on chain-of-custody management, timber-tracking and the verification of legal origin for timber and associated products. The Philippines' first timber-tracking system, developed in the mid-1990s, was the Log Control Monitoring System, but it had significant shortcomings and restrictions. For example, the encoding of data was very time-consuming; reporting capabilities were very limited; and the functionality of timber-tracking and chain-of-custody was low. These key

issues were addressed by an ITTO project to help create a new system,¹ which started in May 2013 and was completed officially in November 2020.

Outcomes, benefits and impacts of the new system

The project has created a fully functional timber-tracking system—the National Forest Stocks and Monitoring System (NFSMS). This is a milestone accomplishment for forestry in the Philippines: although it still requires additional functionalities, its implementation will overhaul, reshape and change the landscape of forest management, operations and timber trade in the country. The system has been piloted in three provinces (Figure 1).

Ultimately, all Department of Environment and Natural Resources (DENR) field offices, comprising 16 regional offices, 77 provincial offices and 160 Community Environment and Natural Resources (CENRO) offices, will have online access to the system. This will increase their efficiency as they shift from paper-based documentation to online processing and the minimal use of paper. It will also increase the capability of DENR law enforcement and monitoring because document checking and verification can be done using mobile phones and other handheld devices. This will help improve forest governance and increase transparency and accountability.

The national adoption of the NFSMS will ensure that all timber and lumber products subjected to the system are certified as legally sourced; all forest charges for naturally grown trees are collected and recorded accurately; and

¹ ITTO project PD 599/11 Rev.1 (M): "Development and testing of national forest stock monitoring system (FSMS) with improved governance capabilities at all levels of the forest administration".



Lumber code: A machine in a lumber yard in Bukidnon prints out lumber QR code labels, which must be attached to each piece of lumber at the sawmill. Photo: FMB

forest officers are fully accountable. The NFSMS will satisfy the requirement for legality of timber and lumber anchored by the Association of South East Asian Nations (ASEAN) Criteria for Timber Legality. The issuance of certificates of timber legality is embedded in the NFSMS, developed and to be implemented by the Government of the Philippines as a second level of verification. The greater access to field data offered by the system will increase the efficiency and effectiveness of law enforcement in the Philippines, thus substantially enhancing forest governance in general.

The system at a glance

The overall goal of the NFSMS is to improve forest governance and law enforcement and communication with stakeholders, increase forest-sector competitiveness and substantially reduce illegal logging, thereby promoting the trade of legally harvested roundwood and lumber. The system was developed in accordance with the country's existing laws and regulations on timber production, together with international forestry principles and timber legality standards. Stored inside the NFSMS is a library of timber trees in the Philippines and a database of locations for all villages, towns, cities and provinces and their corresponding local codes based on the Philippine Standard Geographic Code. The NFSMS also contains all timber species listed under the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES) (which may require additional authorization).

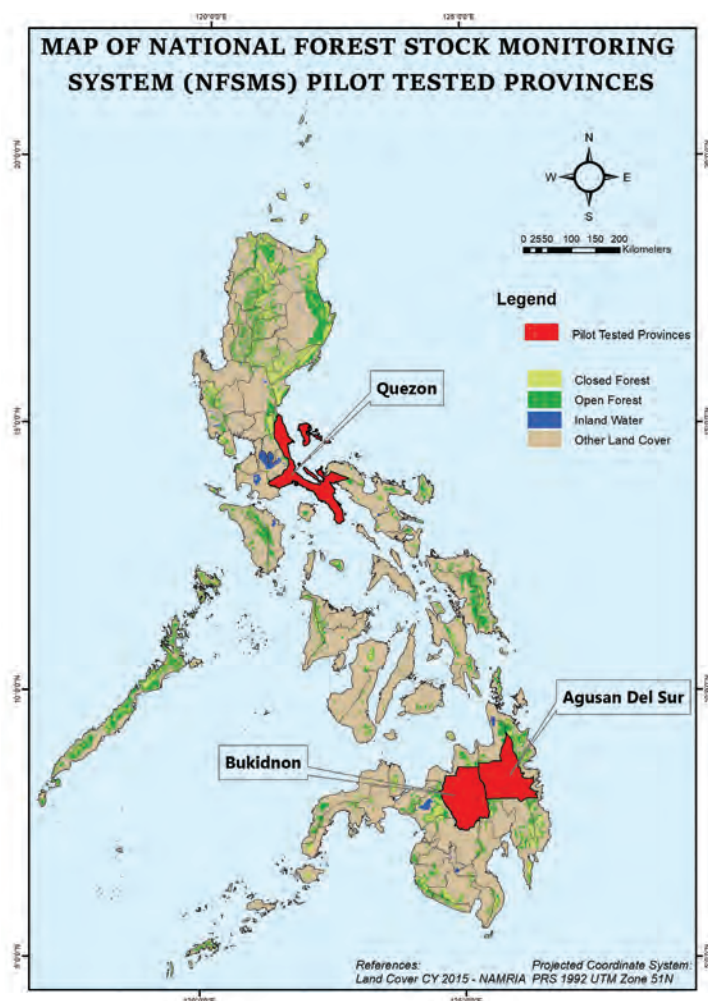
Under the country's constitution, all natural resources in the Philippines are owned by the state. For forest resources, the harvesting of all naturally growing trees requires authorization by the government (i.e. DENR) and payment of the corresponding tax called "forest charges". No cutting permit is required for planted trees in private and titled lands if they are registered with DENR, but valid documentation (called a "self-monitoring form") issued by a DENR field office is required for transporting any logs or lumber from a harvesting area to sawmills and downstream industries.

The NFSMS is a web-based system with six modules, as described here.

Module 1: Registration. All holders of DENR-issued authorizations, permits or agreements that involve the harvesting of trees must be registered with the NFSMS. Each agreement- and permit-holder must upload the necessary supporting documents to the system (at one of DENR's field offices—CENROs), such as authorizations and permits and their terms and conditions; approved long-term comprehensive development and management plans; valid environmental compliance certificates; and certificates showing that (where applicable) affected Indigenous Peoples have given their free, prior and informed consent to the harvesting. Each agreement- and permit-holder is given an account name and number, where their contact details and other information are stored.

Module 2: Inventory. The CENRO concerned creates a timber inventory team, which must ensure they have sufficient radio frequency identification (RFID) nail tags for the task at hand. The team inventories all trees to be harvested—identifying the timber species, measuring tree diameter, determining merchantable and total height using a range finder, and recording the location using a global positioning system—and fixes an RFID nail tag to the base of each tree to be harvested. The information is stored in a handheld RFID reader, which is capable of storing

Figure 1: The NFSMS has been tested in three provinces—Quezon, Bukidnon and Agusan Del Sur





Tag team: A forest officer attaches an RFID tag to the base of a tree during a tree inventory. *Photo: F.J. Caraga*

information for about 10 000 trees. The system will only accept fully identified timber species. This module generates a “cutting list” of trees.

Module 3: Felling, bucking and scaling. The NFSMS-generated cutting list of trees forms the basis of actual harvesting. The CENRO concerned informs the permit-holder via email that the cutting list is available and that felling and bucking may proceed. A CENRO scaling team determines the quantity of timber to be transported from the harvest area, based on the tree inventory, and the corresponding forest charges to be paid by the permit-holder (if required). The team attaches an RFID nail tag to each bucked log; these tags are linked by code to the tag that was fixed to the base of the standing timber during the tree inventory.

Module 4: Transport. When the permit-holder has paid the required forest charges, they can apply for a CTO to enable them to transport the timber. The CENRO uploads an official receipt to the account of the permit-holder in the NFSMS and issues a CTO, and the log transport may proceed. The verification of the nail tags can be done online or offline using a handheld reader. It can also be done (using either the same device used for verifying nail tags or an Android mobile phone) through quick response (QR) codes embedded in transport documents, but this requires an internet connection.

Module 5: Wood processing. Logs cut from naturally grown trees can be checked at any time en route to a wood-processing plant, which serves a forest law enforcement function by verifying whether shipments are still intact

(and, for example, that they haven’t been supplemented with illegally obtained timber). Further checks are made on the logs and the accompanying documentation before a shipment is allowed to enter a wood-processing facility, and a forest law enforcement officer must clear the shipment using a handheld reader. The operator of the wood-processing facility must segregate the lumber produced from each log with an RFID nail tag and then attach labels with QR codes—associated with the RFID tags that accompanied the log—to each piece of lumber. When all lumber pieces are labelled, checked and ready for shipment, the wood-processor requests a CTO as an accompanying transport document. For logs harvested in private forest plantations registered with DENR, the NFSMS issues self-monitoring forms for transportation to a wood-processor or other user.

Existing regulations in the Philippines require that the FMB confirms each CTO. Thus, each CTO prepared by a CENRO contains a watermark that says “UNCONFIRMED”, and the FMB is copied automatically. If the documentation is in order, the FMB will send an electronic confirmation letter to the CENRO, thus confirming the CTO; the watermark is changed accordingly and the shipment may proceed.

Module 6: Verified legal origin. The NFSMS verifies uploaded documentary evidence that the logs have been harvested and lumber processed and transported according to the NFSMS-generated CTO and thus issues a verified-legal-origin (VLO) certificate, certifying that the subject shipment of logs or lumber has been verified as legally sourced. The VLO process is anchored by the six ASEAN Criteria for Timber Legality and eight associated indicators.

Turning the project into a working national system

DENR intends to adopt the NFSMS system nationally to serve as the backbone of the country's timber legality assurance system. The NFSMS was prepared based on existing forestry laws, guidelines and regulations. For it to be used by DENR field offices, however, it must be covered by implementing rules and regulations (IRRs) in the form of a DENR administrative order that must be signed by the DENR Secretary.

As an indication of the strong intention to adopt the NFSMS nationally, the FMB provided DENR field personnel with nationwide training in the system in August–November 2019, and the FMB is also drafting new IRRs. DENR provided substantial funds for all DENR field offices to procure the equipment necessary for operationalizing the NFSMS. This equipment is now being used for training DENR field personnel.

Moving forward

The next steps for the NFSMS are to update the various libraries embedded in the system, including the database of DENR field offices (some have been relocated, merged or abolished); the operating system for the Android version; and the list of CITES-listed timber species. The coverage of the NFSMS also needs to be widened to include timber products such as plywood, veneer and pulpwood and even imported logs and lumber.

Outside the NFSMS, we are always hopeful that the country's internet performance and coverage will be improved so that it reaches all corners of the archipelago, enabling the NFSMS to be accessed anywhere, anytime, in real time. As a web-based system, the NFSMS requires a stable internet connection to ensure speedy office transactions, as well as efficient and effective forest law enforcement and improved forest governance.

Project outputs can be found by inserting the project code PD 599/11 Rev.1 (M) into the ITTO project search function at www.itto.int/project_search. The project was funded by the governments of Australia, Japan, the Republic of Korea and the United States of America.

Improving teak resources in the Mekong

An ITTO activity is helping foresters and smallholders grow higher-quality teak

by Chumnun Piananurak¹ and Somporn Khumchompoo²

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Improved resource: Farmers work in their teak nursery in Lampang, Thailand, which is producing higher-quality teak planting stock as part of efforts to expand and improve the area's planted-teak resource. *Photo: ITTO*

The aim of ITTO's "Teak in the Mekong" activity¹ is to improve the management, production and marketing of teak as a means for enabling smallholders in the Greater Mekong Subregion to boost their livelihoods. The activity, which is funded by Germany's Federal Ministry of Food and Agriculture, involves five countries in the subregion: Cambodia, the Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand and Viet Nam. This article outlines some of the activities conducted to date under the activity to improve the growing stock of smallholder teak-growers.

Training course on propagation technique of teak

The Joint Training Workshop on Teak Propagation Technique and Silvicultural Practice was convened at the Elephant Training Center, Lampang Province, Thailand, on 5–9 August 2019. It was attended by 45 people, comprising five foresters from each participating country, plus additional attendees from Thailand (five forest officers from Thailand's Royal Forest Department, five Forest Industrial Organization staff, and 15 smallholders). The aim was to increase skills and knowledge among forest officers and smallholders on teak propagation and genetic improvement, covering topics such as the basic genetic improvement of teak, the selection of materials for propagation, the principles of plant propagation, and teak propagation techniques. The intention was that the trainees would themselves become trainers in their own countries, capable of conveying knowledge and information to diverse stakeholders interested in growing teak.

Second round of training

As intended, some participants in the workshop became instructors, supported by the ITTO activity. Cambodia's Forestry Administration conducted training for 26 participants in December 2019; in Lao PDR, 150 local people from six villages were trained in teak propagation in October–December 2019; Myanmar conducted training for more than 20 participants; and, in Viet Nam, more than 100 people received training in three workshops. In Thailand, two workshops on teak vegetative propagation were held in 2020 for smallholders—one at the Northeastern Silvicultural Center in Nakhon Ratchasima Province and the other at the Ngao Silvicultural Station in Lampang Province—to develop skills and networking. More than 20 000 good-quality teak seedlings were distributed to participants in these workshops to use as original stock for propagation.

Small-farmer extension

The activity assisted some of the trained farmers in Ngao district to expand their nurseries, which are now producing high-quality teak seedlings that can be sold at prices five times higher than those previously obtainable.

Applying the knowledge gained from training—a teak clonal trial

Thailand had installed a clonal teak trial in 2000 involving about 400 "plus" (high-vigour) trees, but another 100 plus-trees were untested in that trial. Therefore, the activity is now undertaking a clonal trial at the Maegar Silvicultural Research Station in Phayao Province, which is one of the demonstration sites, involving these remaining plus-trees.

¹ ITTO activity PP-A/54-33: "Enhancing Conservation and Sustainable Management of Teak Forests and Legal and Sustainable Wood Supply Chains in the Greater Mekong Subregion".



Teak teach: Participants from five countries learn vegetative propagation techniques at a training workshop in Lampang, Thailand. *Photo: ITTO*



Bring out the clones: These seedlings have been prepared for a teak clonal test at the Maegar Silvicultural Research Station, Phayao Province, Thailand. *Photo: ITTO*

Plus-trees are selected by phenotype—that is, the observable physical characteristics of the tree, which, in turn, are determined by the genotype interacting with the environment in which it grows. In clonal tests, the aim is to evaluate the genotypic value of plus-trees by planting a range of them in the same environment (thus removing “environment” as a factor in determining their physical properties). The genotype $\times$ environment interaction can be examined by replicating the clonal test at different sites. Ultimately, the top-ranking clones can be selected and propagated, for either deployment in plantations or additional improvement. Thus, the aims of teak clonal testing are to:

- select the best individuals for further improvement or for establishing clonal seed orchards or clonal plantations;
- assess the genotypic value of existing plus-trees or clones to be used as indicators for re-selecting plus-trees, and perform genetic thinning, primarily in a teak seed orchard;
- assess broad-sense heritability, and study the genetic correlation of various characteristics of teak from the tested clones; and
- assess the genotype $\times$ environment interaction of existing plus-trees or clones to enable the selection of the most suitable clones for planting on different sites.

Conclusion

Starting with a single training event, the activity has expanded knowledge and expertise in the five participating countries. More than 300 people now know the importance of using good-quality teak trees in their plantings and how to propagate teak effectively; some local farmers are producing high-quality seedlings for sale. The improved performance of the new teak plantings will, in turn, serve to convince other farmers of the benefits of investing in good-quality planting stock to achieve better tree growth rates and form and, ultimately, higher prices for the timber.

This work is part of an ongoing activity under ITTO's Biennial Work Programme, with funding from the Government of Germany.

To receive a copy of the activity newsletter, subscribe at www.teaknet.org or send an email to secretariat@teaknet.org. Visit the Facebook page at www.facebook.com/ITTO-TEAK-IN-Mekong-393301941225768

Vegetative propagation of teak for clonal testing

Seedlings were prepared for clonal testing at the Maegar Silvicultural Research Station in January–March 2020. Scions (young shoots) were collected from the target clones just before the buds started to sprout; these were grafted onto prepared stumps using a patch budding technique, and the resultant seedlings were raised in the nursery. When they were three months old, they were top-cut to allow axillary buds to produce young branches that could be used for cuttings, which were planted out in 2021 at three sites (each site has four replications of three line plots, and the spacing is 4×4 m). During the preparation of seedlings for the clonal test, research was conducted on the effect of serial harvesting of shoots on the rooting ability of teak clones.

The rise of India's timber market

An analysis of trends and projected demand suggests that the country's wood imports will rise dramatically in coming years

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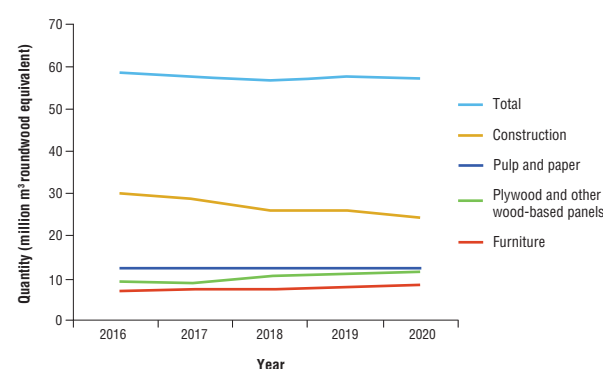
Log jam: Teak logs at the Forest Research Institute's timber depot, Dehradun, India. Photo: Santan Barthwal

There has been a sustained—although slow—increase in forest and tree cover in India for the past two decades. The most recent Indian *State of Forest Report* (FSI 2019) estimated the country's total forest cover at 71.2 million ha in 2019, which is 21.7% of the total area and significantly more (+397 000 ha) than the area reported in 2017 (FSI 2017); tree cover outside forests also increased (by 121 000 ha) between 2017 and 2019, to 9.50 million ha (2.89% of the total area). The total area of forests and tree cover outside forests, therefore, is 24.6% of the country's land area. The total growing stock in 2019 was estimated at 5.92 billion m³, of which 4.27 billion m³ was inside forests and 1.64 billion m³ was outside forests.

Despite the increase in forest and tree cover in recent years, India remains deficient in timber production due to conservation-oriented policies, and an increasing proportion of the burgeoning timber demand is met by imports. The total production of roundwood in India is around 47 million m³ per year, of which about 2 million m³ comes from state-owned forests and the rest (45 million m³) from trees outside forests. Based on calculations done on timber output data from various sources, including statistical yearbooks of FAO and statistical publications of the state forest departments and their annual reports, the estimated compounded annual growth rate of timber production declined every year in the decade 1991–2000—by 0.70% for industrial coniferous roundwood, by 1.15% for industrial non-coniferous roundwood, by 8.72% for coniferous sawnwood, by 8.39% for non-coniferous sawnwood and by 5.09% for veneer. The decline was even sharper in the following decade after the Supreme Court of India placed severe restrictions on forest harvesting through a series of orders.

India's total current timber demand, expressed in roundwood equivalent, is about 57 million m³ per year, of which 47 million m³ is met from domestic sources and

Figure 1: Estimated total timber demand, India, 2016–2020



the rest from imports and the use of substitutes. Figure 1 shows that total demand in 2020 was slightly less than in 2016, with a substantial decline in construction and increases in the furniture and panels subsectors.

To forecast demand for the coming decade, the authors developed growth models for four broad categories of wood-based industries (pulp and paper; furniture; construction; and plywood and other wood-based products¹) based on past trends in input values and expected increases in demand due to population growth, higher incomes and better education. For pulp and paper, the best explanatory model projected nil growth to 2030, and the furniture industry was forecast to grow linearly. Demand for plywood and other wood-based products was projected to increase nearly fourfold from 15.4 million m³ in 2021 to 57.5 million m³ in 2030 (Figure 2). The timber used in construction is mostly from sawmills and the plywood and other wood-based products subsector.

¹ The plywood and other wood-based products subsector includes plywood, panels and other engineered wood.

Total timber demand in the four subsectors is projected to rise to around 98 million m³ by 2030. The projected steady demand for roundwood in the pulp and paper industry reflects a decrease in the number of industries producing wood-based paper, from 30 in 2010–11 to 18 in 2019–20. Demand for paper, especially packaging and other industrial paper, should increase as the population grows and in light of the “Make in India” policy,² but this is likely to be met by a sharp increase in the use of recycled fibre, which is seeing robust growth in light of government policies that favour reuse and recycling.

Demand in the furniture industry is projected to increase modestly, from around 9 million m³ in 2021 to 13 million m³ in 2030. This seems reasonable given that a large part of the furniture sector, especially office furniture, is increasingly made of non-wood materials—due in part to the increasing cost and maintenance requirements of furniture made of traditional timbers such as teak and rosewood.

The projected exponential increase in demand for wood in the plywood and other wood-based products subsector reflects a shift in preference in the construction industry for plywood and panels (including medium-density fibreboard) and a projected sharp increase in the construction of housing units in the coming decade. Timber used in construction includes that for scaffolding, and demand for such timber will rise with the increase in construction output. This won't necessarily lead to a significant increase in consumption, however, because scaffolding can be reused; moreover, there is an increasing reliance on iron and steel in the scaffolding used in larger construction. The demand for roundwood in the construction sector is expected to be around 15 million m³ in 2030 (not counting plywood used in construction).

On the supply side, Figure 3 presents estimates of total domestic production and exports and imports for various wood products. Those for the volume of roundwood produced in state forests are based on reports of state forest departments, and those for the volume of roundwood obtained from trees outside forests are based on various editions of India's *State of Forest Report*, with missing values extrapolated based on preceding and succeeding years. Roundwood production was steady at around 2 million m³ in state forests for most of the period 2009–2019 and at 44 million–46 million m³ per year for trees outside forests. The volume of roundwood imports was in the range of 4 million–5 million m³ per year over the period, but sawnwood imports increased from 0.16 million m³ in 2009 to 1.63 million m³ in 2019. Among the value-added products, veneer imports increased from 19 700 tonnes in 2009 to 3.2 million tonnes in 2019; plywood imports were consistently low, however, due to the high tariff on this product. Export volumes (not shown in Figure 3) were consistently very low over the period.

Traditionally, teak is the most preferred species in India, given its excellent stability and durability and aesthetic appeal, among other properties. There are about 1.7 million

Figure 2: Forecast demand for the wood-based industry, by subsector, 2021–2030

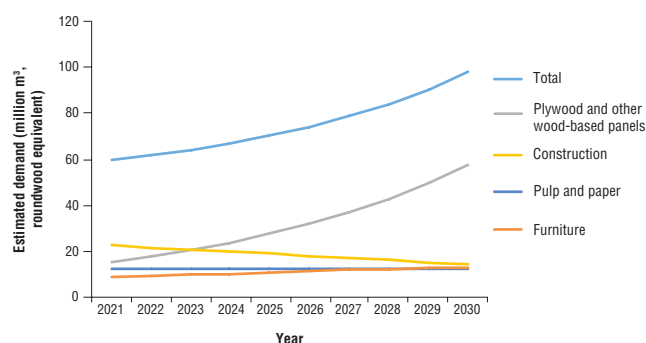


Figure 3: Estimated domestic production and imports of major wood products, 2009–2019

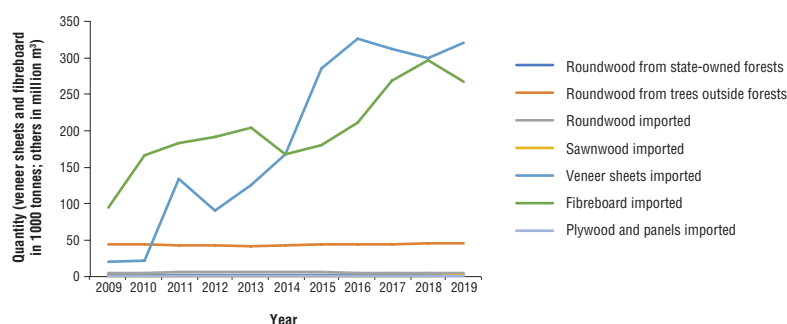


Table 1: India's exports and imports of teak, 2009–2019

Year	Imports		Exports	
	Roundwood in rough	Sawn/chipped	Roundwood in rough	Sawn/chipped
	(1000 m ³)			
2009	583	29.8	0.36	15.6
2010	648	36.7	0.46	7.15
2011	934	94.1	0.14	8.45
2012	997	56.0	0.32	9.18
2013	1000	43.6	0.24	30.2
2014	928	45.8	0.72	6.48
2015	843	69.8	0	5.71
2016	816	71.9	0.08	2.92
2017	834	123	0.33	1.15
2018	1070	131	0.50	1.01
2019	1020	196	0.30	0.76

hectares of teak plantations in India, and the total annual domestic harvest is estimated at 50 000 m³. Most of the demand is met by imports (mostly roundwood but also sawn and chipped). Roundwood teak imports nearly doubled from about 583 000 m³ in 2009 to 1.02 million m³ in 2019 (Table 1), but sawn teakwood imports were relatively low due to a high tariff. India's teak exports (most of which appear to go to neighbouring Nepal) are negligible.

² “Make in India” is an initiative of the Government of India to encourage companies to develop, manufacture and assemble products in India and incentivize dedicated investments in manufacturing in India.

Table 2: Estimated production of industrial roundwood, sawnwood, veneer and plywood, by coniferous and non-coniferous, India, 2009–2019

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	1000 m ³										
Industrial roundwood	47 000	46 000	45 100	44 500	44 000	45 000	46 100	46 700	47 100	47 600	48 200
Industrial roundwood (C)	182	158	148	173	199	183	174	183	180	179	181
Industrial roundwood (NC)	46 800	45 800	45 000	44 400	43 800	44 800	46 000	46 500	46 900	47 420	48 000
Sawnwood	26 400	25 200	25 800	25 300	24 900	25 300	25 800	25 900	25 600	23 600	24 000
Sawnwood (C)	162	157	134	137	156	147	145	154	286	258	190
Sawnwood (NC)	26 300	25 100	25 600	25 200	24 700	25 200	25 600	25 800	25 300	23 400	23 800
Veneer	3680	3910	4 000	4320	4540	4790	4950	5270	8040	8620	9060
Veneer (C)	0	0	0	0	0	0	0	0	0	0	0
Veneer (NC)	3680	3910	4 000	4320	4540	4790	4950	5270	8040	8620	9060
Plywood	3870	4120	4390	4680	4970	5290	5630	6030	8930	9500	10 000
Plywood (C)	0	0	0	0	0	0	0	0	0	0	0
Plywood (NC)	3870	4120	4390	4680	4970	5290	5630	6030	8930	9500	10 000

Note: Estimates of plywood production 2017–2019 are based on a report by the Federation of Plywood and Panel Industries (Pandey and Roy, 2020). Due to upgraded technology, there was a sharp jump in plywood production in 2017 in two of the largest factories that produced more than half the plywood in the organized sector in that year. Estimates for 2009–2016 were extrapolated using an average compounded annual growth rate of 6.5%. C = coniferous; NC = non-coniferous.

Table 3: Plantations raised on private, community and forest lands

	2012–13	2013–14	2014–15	2015–16	2016–17
No. of seedlings planted (million)	1303	1197	1224	973	1404
Notional area covered (million ha)	2.01	1.84	1.88	1.50	2.16

Source: National Afforestation and Eco-restoration Board.

Table 2 gives estimates of the production of industrial roundwood, sawnwood, veneer and plywood in India in 2009–2019. The plywood and pulp industry—which is located entirely in the subtropics and tropics due to the availability of land, cost-effective labour, raw materials and other needed amenities—is fed mostly by non-conifers such as eucalypt and poplar growing outside forests. Removals of conifer logs decreased considerably after the imposition of a ban on tree-felling above an altitude of 1000 m in 1981; conifer roundwood removals comprised just 8.5% of total roundwood removals in 2019.

Plantation-growing is a major activity of state forest departments in degraded forest areas and of village panchayats on village common lands. Agroforestry is popular in wheat-growing areas in northern and central India and on marginal agricultural land elsewhere. Table 3 shows the number of tree seedlings planted between 2012–13 and 2016–17, and the (nominal) area affected.

An often-asked question is whether India can increase its wood output substantially in coming decades. The area with forest cover has been rising consistently since the 1990s, and, on average, 1.5 million–2 million hectares of private and public lands are planted with forest tree species each year under various afforestation and reforestation programmes. Yet the volume of timber produced in the country has remained static at around 47 million m³. The new forests might be meeting the country's ecological needs, but forest policies are heavily oriented towards conservation and discourage harvesting. Thus, it is unlikely that there will be a substantial increase in domestic wood production in India in the foreseeable future, even as demand continues to grow in line with a growing population and increasing prosperity. Accordingly, demand for wood imports is likely to rise dramatically in coming years.

The report is part of an ongoing activity in ITTO's Biennial Work Programme. The full report is available at www.itto.int/other_technical_reports

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New e-course to help develop supply chains

ITTO has released a free online course designed to help realize the potential of timber supply chains to encourage sustainable forest management

by Mahtuf Ikhsan, University of Eastern Finland, European Forest Institute headquarters, Joensuu, Finland (Mahtuf.Ikhsan@efi.int)



Online learning: A prospective course participant views the landing page of ITTO's free online course on legal and sustainable timber supply chains. Photo: Mahtuf Ikhsan

Engaging online in their day-to-day dealings has become increasingly necessary for people worldwide. In the midst of the COVID-19 pandemic, urgent measures are needed in the online world to ensure that societal priorities are addressed. For example, continued access to education and training is imperative to avoid bottlenecks in the path towards sustainable development, which demands skills and adaptability in the short, medium and long terms. Online learning is now one of the global community's top priorities and opportunities: in these unprecedented times, providing well-conceived and -delivered education online will help prepare the next generation for dealing with the uncertain future.

ITTO, the Food and Agriculture Organization of the United Nations and the International Union of Forest Research Organizations are collaborating on the Global Forest Education Project, financed by the German Federal Ministry of Food and Agriculture, with a view to improving forest education worldwide. As part of this effort, ITTO launched a free online course on legal and sustainable timber supply chains (the LSSC course) in March 2021. This article introduces the course.

ITTO's course on legal and sustainable supply chains

The course is designed to assist entrepreneurs, forestry professionals, government officials, students and others to understand legal and sustainable timber supply chains. Ultimately, the aim is to encourage the uptake of sustainable forest management (SFM) by creating a conducive policy environment and building the capacity of businesses to meet market requirements for sustainability.

What is the course about?

The LSSC course provides comprehensive, up-to-date materials on sustainable timber supply chains and increases awareness of the importance of legality, sustainability and demonstrating the origin of forest products. The LSSC training

course has been designed based on ITTO's wide-ranging work on the production, trade and use of forest products, especially its Programme on Legal and Sustainable Supply Chains of Tropical Wood and Tropical Forest Products.

The LSSC course contains learning materials on multidisciplinary aspects of sustainable tropical timber supply chains globally. For example, it provides learnings on the implications of the 4.0 industrial revolution technology for the forest sector, the implementation of coding systems¹ for trade and market transparency derived from case studies, and the impact of COVID-19 on timber markets. The course enables participants with differing expertise to interact and communicate with various audiences and stakeholders on topics of interest to them. It has four modules, addressing:

- 1) two key components of SFM—reduced impact logging and forest landscape restoration;
- 2) the assessment of legality and achieving accountability, with examples of innovative technologies for improving market transparency and accountability;
- 3) means by which meeting legality requirements for forest management can help ensure sustainable outcomes; and
- 4) markets, and access to these—exploring trade statistics, innovative marketing practices and international trade regulations.

Course format

Course participants view video lectures and case studies and gain access to diverse but focused reading materials. In the lectures, each of which spans 10–15 minutes, instructors explain course content using visual aids such as figures, tables and photographs. Reading materials prepared for the course further explain the subject matter. The video case studies show practical aspects of sustainable timber supply chains, alongside explanations given in the video lectures. Participants can also discuss issues with experts and peers in a group discussion forum designed to help participants understand the topics addressed in the course and for sharing information. Additional reading materials are indicated for each topic.

Participate now!

The LSSC course is open to anyone worldwide with access to the internet. It is designed to be practical and engaging. The course will be useful for participants from a wide spectrum of interests, including policy development, business management and academic research.

Readers are encouraged to take the course now to receive and apply new knowledge on timber legality and the development of sustainable timber supply chains. Participants who pass a short examination at the end of the course obtain certificates of completion. The course contributes to the achievement of Sustainable Development Goals 4 (“quality education”), 9 (“industry, innovation and infrastructure”), 12 (“responsible consumption and production”) and 15 (“life on land”).

The LSSC online course is available at <https://lsscourse.com>

¹ i.e. the use of statistics tools such as R programming and Python to help record trade data.

Fellowship report

An ITTO Fellow's study plans took an unexpected turn because of the pandemic, but she still emerged with a master's degree

by Angelica Barrero

ITTO Fellow

(barreroangelica@gmail.com)



Rocky times: Master's students discuss the biological and socioeconomic basis of conservation at Turrialba, Costa Rica, as restrictions ease during the pandemic. *Photo: A. Barrero*

I am a biologist. Towards the end of 2019, I received the wonderful news that my application for an ITTO Fellowship had been approved. This was a great opportunity for me because, after ten years of working and saving, it meant I would finally be able to continue my studies and pursue my master's degree. After I finished my professional training in 2009, it was clear to me that I wanted to continue studying to contribute to the conservation of natural resources. At that time, however, my aim was to get hands-on experience to establish the basis for fully understanding the subject matter that was to be the focus of my master's degree.

Thus, I started working in field conservation projects in various roles. I would especially like to highlight my involvement in the Conservation Landscapes Program—this initiative, which was implemented in Colombia, focused on six clusters covering different types of ecosystems, including tropical dry forests (TDFs). TDFs are under ongoing threat due to habitat loss caused by production systems such as extensive cattle-ranching and agriculture and by high demand for timber species (Alexander von Humboldt Biological Resources Research Institute 2014). My experience in the Conservation Landscapes Program, which lasted four years, allowed me to understand the social and environmental dynamics of the area in which I was working and to contribute to the establishment of conservation corridors connecting TDF relicts in the Caribbean region, mainly in the department of Bolívar. The project implemented a series of components focused on improving the productive livelihoods of local communities, and it also helped strengthen governance and generate spaces for dialogue with communities with a view to promoting conservation.



Connected? A *Caesalpinea ebano* tree, San Juan Nepomuceno, Bolívar, Colombia. *Photo: A. Barrero*

I am relating this experience because the application I submitted to ITTO focused on the development of propagation protocols for three TDF species: *Aspidosperma polyneuron*, *Bulnesia arborea* and *Caesalpinea ebano* (see photo).

This idea arose because, within the framework of the Conservation Landscapes Program, we found that communities were harvesting timber and non-timber resources directly from protected areas, such as regional and national reserves, rather than creating their own resource



Cultivating resilience: The author works in a vegetable plot at CATIE, Turrialba, Costa Rica, during the pandemic. *Photo: A. Barrero*

through planting. As a result, the populations of these and other species are decreasing and local landscape connectivity has been reduced.

Against this background, one of the components of the initiative was to teach communities living in TDFs in this area of Colombia how to propagate selected species, thus not only helping to grow the species but also collecting valuable data on local practices applied at different stages of seedling growth and development.

And now let me share a bit more about my academic and personal journey. Once I was notified about the ITTO Fellowship, I completed the necessary arrangements to begin my studies in the International Master's Program on Development and Conservation Practice at the Tropical Agricultural Research and Higher Education Center (CATIE) in Costa Rica. I began this wonderful journey on 7 January 2020. It had taken more than ten years to resume my studies, and I had very high expectations. After extensive research, the master's programme I selected focused on natural resource conservation and rural community development. Moreover, the curriculum was designed to continuously practise what we learned and to strengthen teamwork skills. I started the journey in very high spirits.

For the first three months everything went according to plan—and then along came the COVID-19 pandemic. Suddenly, all plans changed for everyone, and we had to switch quickly from practical lectures, field trips and face-to-face discussions to virtual learning. This tested my ability to adapt to a new reality in conditions of great uncertainty. I must confess that, at first, I found this situation very challenging, because it meant I was not accomplishing my goals in the way I had planned. However, the priority for all of us was to safeguard our health; moreover, despite everything, I realized I had the privilege of overcoming the situation in an area full of exuberant natural resources, with clean air, beautiful sunsets and the company of my colleagues, who certainly helped me a great deal to overcome the obstacles.



Soul balm: A sunset during the pandemic in the surroundings of CATIE, Costa Rica. *Photo: A. Barrero*

Fortunately, as the months went by, we were able to return to the classroom and to small-group practical sessions in compliance with biosafety protocols.

At the academic level, this experience enabled me to enhance my knowledge base for promoting rural development and the conservation of natural resources. I obtained my master's degree and received recognition from CATIE for achieving the best academic grades in my master's programme. I was also offered the opportunity to publish the results of the analysis I carried out (as part of the master's programme) on the use of a gender approach in timber legality projects in Honduras and Colombia for the FAO–CATIE Technical Series.

In the short term, I plan to travel to the Caribbean area of Colombia to disseminate and distribute the tree propagation protocols among communities. Additionally, in the medium term, I would like to set up a non-governmental organization to help raise resources to support local community development in harmony with the environment.

I would like to express my sincere appreciation to ITTO for trusting and supporting me with the Fellowship, without which I would not have been able to continue my formal learning and complete my studies. Obtaining my master's degree enabled me to win a new job (with a 45% increase in income) as a planning, monitoring, evaluation and training officer in an organization that seeks to contribute to the welfare of farmers in various areas of Latin America.

Recent donors to the ITTO Fellowship Programme have been the governments of Japan, the Netherlands and the USA. For more information see www.itto.int/fellowship

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The 2021 Annual Market Discussion organized by ITTO's Trade Advisory Group examined challenges in manufacturing and trade during the pandemic

by Michael Adams
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Choppy seas for freight: The extraordinary rise in shipping prices during the pandemic has had a huge impact on the tropical timber trade. Freight costs are likely to remain above historical levels for the foreseeable future. *Photo: SimplyADLC/POND5*

Control measures adopted to slow the spread of the COVID-19 virus continue to have a devastating impact on manufacturers, according to speakers at the 2021 Annual Market Discussion, which was convened by ITTO's Trade Advisory Group on 30 November as part of the 57th Session of the International Tropical Timber Council.

In countries with well-advanced vaccine rollouts, restrictions on movement have eased; in others, however, efforts to protect people from the delta variant remain in place, hindering the recovery of business operations. The timber industry is facing many challenges, but a priority for all enterprises is to develop protocols for safe working so output can be ramped up. Also crucial are diversifying raw-material supply chains; coping with disrupted shipping and the consequent catastrophic increases in the cost of international freight; and managing deliveries at a time when demand is surging for wood products in international markets.

A global economic recovery is possible, but a faster and more effective vaccine rollout globally is essential. Activity has picked up in many sectors, but the pandemic is widening gaps in economic performance between countries and sectors, increasing social inequalities. There is no room for complacency; vaccines must be deployed faster—and globally. Below, we summarize the main points made by the speakers (Box 1 shows the titles of presentations).

Ivan Tomaselli (Brazil), President of the engineering consulting firm SCTP, reported that the pandemic has had a severe impact on gross domestic production and manufacturing in Latin America. In most countries, the forest sector was labelled an essential sector but, although companies were still operating, production suffered from the impact of control measures. The domestic consumption of wood products fell in the region in the first half of 2020 but export demand was maintained.

Box 1: Presentations made at the 2021 Annual Market Discussion

- Impact of COVID-19 on the Latin American forest sector and recovery—Ivan Tomaselli
- Challenges in manufacturing and trade during the COVID-19 pandemic—Wu Shengfu
- Challenges and opportunities in international wood products trade—Bradley A. McKinney
- Challenges of sustainably managed tropical timber and future of tropical forests—Benoit Jobbé-Duval
- ASEAN furniture production and exports during this pandemic—multiple challenges and diverse response—Ernie Koh Jyh Eng
- Update on implementation of Indonesian TLAS (SVLK), FLEGT VPA and impact of COVID-19 pandemic on timber exports from Indonesia—Sigit Pramono
- Review of maritime transport 2021—Jan Hoffman

The timber industry recovered in 2021 due to strong international demand. Commodity prices increased, which had a positive impact on regional economies and job security. The industry is facing severe supply-chain issues, however, including the limited availability and very high costs of shipping containers (up to ten times pre-pandemic prices), stockpiling at ports and factories, and the cancellation of orders. Professor Tomaselli said he expected that COVID-19 would continue to be an issue in the region for the next 3–4 years, exacerbated by the slow rollout of vaccinations in some countries.



Late pandemic lift? The timber industry is facing many challenges, but a priority for all enterprises is to develop protocols for safe working so output can be ramped up. Photo: Kyril Gorlov/POND5

Wu Shengfu at the China National Forest Products Industry Association said the pandemic has led to large cost increases for Chinese wood product producers, including labour, materials, energy and shipping. These increases are being compounded by growing trade barriers and reduced communication between suppliers and buyers due to the pandemic. Dr Wu noted that most tropical countries now prohibit log exports, and obtaining sufficient raw materials is an increasing challenge for Chinese manufacturers. The pandemic has driven the development of “green” products for the domestic market, said Dr Wu, as well as technological innovations aimed at reducing energy consumption and increasing resource-use efficiency.

Bradley A. McKinney, the Chief Executive Officer of the International Wood Products Association, said demand for imported wood products has been very high in North America in 2021, with many people working from home and others moving out of urban areas, leading to rises in home construction, repairs and remodelling. Mr McKinney said that the increase in economic activity has led to labour shortages and increases in wages, and the inflation rate is also the highest it's been for more than 30 years. North American wood product importers are facing the same supply-chain challenges as other regions, said Mr McKinney, including a shortage of containers, low inventories and high costs, and he expected such disruptions to continue for some time.

The focus of the presentation by **Benoit Jobbé-Duval**, the Managing Director of Association Technique Internationale des Bois Tropicaux (ATIBT), was on market perceptions of sustainable tropical timber. For various reasons, he said, European markets are turning away from tropical timber, even if it is sustainable—indeed, the concept of sustainability is given scant recognition in some major consumer countries. In calling for action, Mr Jobbé-Duval said that the number

one challenge is to create a good image for tropical timber and to present powerful messages to counter, for example, the exclusion of tropical timber from the construction of the Olympic village for the 2024 Paris Olympic Games.

Reporting on developments in the furniture industry in the ASEAN region, **Ernie Koh Jyh Eng**, Executive Director of Koda and chair of the ASEAN Furniture Industries Council, said there have been wild fluctuations over the course of the pandemic, including fears about impacts in the first half of 2020 followed by surging demand—and production costs—in the second half of that year. Furniture production ramped up further in early 2021, said Mr Koh, but problems with logistics—most notably soaring freight rates—meant that many factories were forced to fill warehouses with finished goods waiting for shipping containers. Production declined during lockdowns in some ASEAN countries in mid-2021, said Mr Koh, but is now increasing again. He speculated that the pandemic could lead to the regionalization of furniture markets, with customers seeking to increase the resilience of their supply chains by sourcing more in their local regions. Mr Koh also expected the current high demand for furniture to level off as people start travelling again and therefore have less money to spend on home improvements.

Sigit Pramono, from Indonesia's Ministry of Environment and Forestry, presented on the country's legality assurance system, SVLK, which is the product of 20 years of collaborative work. He reported that, as of October 2021, more than 5600 forest-based enterprises and nearly 30 million hectares of state production forests have been SVLK-certified. Moreover, since 2013, more than 1.5 million legality documents have been issued under the SVLK to support timber product exports worth USD 77.5 billion. Mr Pramono detailed interventions by the Government of Indonesia to



“Harvesting timber is not deforestation”—according to the TAG statement, delivered by TAG coordinator Barney Chan (pictured here in 2019).
Photo: R. Carrillo/ITTO

assist the wood products industry during the pandemic, including the removal of a value-added tax on roundwood, a reduction on export tariffs for veneer, and the streamlining of bureaucratic procedures. Most timber exports declined in 2020 due to the pandemic, said Mr Pramono, but have recovered in 2021.

Mr Pramono said that the SVLK has helped Indonesia address illegal logging and regain the confidence of global markets for its wood products, but challenges remain—such as the high cost of certification, especially for small and medium-sized enterprises, and the lack of incentives on the demand side to reward this investment.

Jan Hoffman from the United Nations Conference on Trade and Development presented on recent trends in seaborne trade and enumerated six reasons why he expected freight rates to remain high for some time: 1) the pandemic is not yet over, and the need for social distancing and other controls inevitably means that ships need to spend more time in ports; 2) the shipping cycle, with fewer ships being built; 3) an ongoing process of consolidation among shipping lines and therefore a reduction in competition; 4) the need to decarbonize shipping, which implies increased costs during the transition phase; 5) the need for more ships if they move more slowly (to reduce greenhouse-gas emissions); and 6) an increase in risk premiums given uncertainties in the global regulatory environment, especially around emissions and the price of carbon. Mr Hoffman said simulations indicate that higher freight rates will affect consumers most in Small Island Developing States.

Another factor that will affect the shipping sector in coming years, said Mr Hoffman, is the need to protect vessels and their on-board technology from cyber threats and climate change. Investment in seaport infrastructure and technologies is also needed—this is an increasingly urgent challenge, particularly in developing countries, he said.¹

Highlights from the statement by the Trade Advisory Group

As per its usual practice, the Trade Advisory Group made a statement to the International Tropical Timber Council at the conclusion of the Annual Market Discussion. Below are extracts from it.

¹ The United Nations Conference on Trade and Development's *Review of Maritime Transport 2021* can be found at: https://unctad.org/system/files/official-document/rmt2021_en_0.pdf

“Chairman, Ladies and Gentlemen. No, it is not business as usual. The world-wide COVID-19 pandemic hit the timber trade badly in both ITTO Consumer and Producer countries. As the virus cases escalated from early 2020, many countries went into various levels of lockdowns which created very different challenges for Consumers and Producers.

“The worst of the pandemic is over in the consumer countries and business is roaring. Members of the European Timber Trade Federation (ETTF) report strong business, in both the northern and southern European countries.

“As business activity improved, prices and turnover rose strongly until markets suffered a shortage of products. Demand in the home improvement and DIY sectors were good in 2020, though not as good so far this year. However, wholesale was strong in both 2020 and 2021. Imports were quite good but suffered from severe disruptions in the supply chain.

“In contrast to the recovery in the consumer countries, most tropical timber producer countries are still battling the virus. Manufacturers suffer from a lack of raw material, not only raw timber because no logging was taking place, but also a lack of imported materials. Manufacturing was badly hit when workers were laid off and driving many to go back to their rural homes thus creating labour shortage for the manufacturers. Moreover, in some countries, foreign workers are kept away because of closed borders.

“Shipping continues to be a major problem. Even as demand picked up exports of finished products faced problems of shipping, both in terms of availability of containers and the high ocean freight charges. Shipping containers are still scarce in some regions.

“Allow me to illustrate these problems by looking at the example presented by Viet Nam, one of the top players in timber trading. Viet Nam imports timber raw material from 110 countries and exports wood products to 140 countries. As one example of increasing production costs, prices of timber from the US alone have gone up 20–30%. Container sea freight from Viet Nam to North American and some European ports went from US\$2400–4000 per box in pre-COVID times to US\$15,000–18,000 per box, some even as high as \$20,000 in late 2021.

“Such outrageous increases understandably boosted speculation of price abuses by shipping companies. This is the reality faced by Viet Nam and it is by no means unique to that country. ITTO producers face the same scenario in varying degrees.

“Ladies and Gentlemen, there is a proposal for a new Regulation in EU concerning certain commodities and products associated with deforestation and forest degradation. We understand this is an enhancement of the existing EUTR, seemingly moving away from legality to sustainability in an effort to reduce the EU consumption footprint and to stop deforestation.

“In general terms, TAG supports such a proactive move if it does not limit market access. However, there is serious apprehension over this proposal and TAG wants to draw the Council's attention to a few important points in this Proposal.

“The proposed Regulation will only allow the import into the EU of commodities and products which are deemed to be “deforestation free” and it seems, “forest degradation free”.

Everyone knows that timber harvests from sustainably managed forests do not cause deforestation. We urge the EU to clearly articulate this in the proposed Regulation.

“Another point of concern is “plantation products” since these appear unacceptable in the proposed Regulation. The EU draft has defined plantation as follows, and I quote:

‘plantation’ means trees established through planting and/or deliberate seeding of native or introduced species that is intensively managed and that at maturity is composed of one or two species, has one age class, and has regular tree spacing.’

“This appears to suggest products from planted forests will be ruled out of the EU market. Every ITTO member country with forest plantations needs to take a close look at the proposed EU Regulation.

“There are also other elements in the proposed Regulation which make us in the TAG feel uncomfortable. For example: The EU has introduced the conceptual label ‘low risk country’, even though this has yet to be defined. One can imagine the controversy for any country which is not labelled low risk. If not low risk, what does this imply?

“More striking is the lack of recognition of both FSC and PEFC by EU. Certificates from FSC and PEFC must also play an important role in the new Regulation. They can prove that certified products originated from sustainable forestry and have nothing to do with deforestation.

“EU recognises there are many drivers of deforestation. This new Regulation will also cover meat of bovine animals, cocoa, coffee, palm oil and soya beans.

“EU is a member of ITTO so the TAG calls on EU to engage with ITTO members, the Secretariat and national and international timber trade organisations, both inside and outside EU, to ensure any proposal is practical and workable on the ground. TAG also calls on ITTO to work with EU on this proposed Regulation.

“Finally, Ladies and Gentlemen, Climate Change is very much in the news lately, especially with the Conference of Parties COP 26 in Glasgow. At least two initiatives directly related to forests and timber were launched in conjunction with COP26. A coalition of timber industry associations is collectively hosting the ‘World of Wood Festival’ in London, online, and virtually for six weeks. The Tropical Timber Accord called for a global solution, not only by FLEGT, to incentivising international legal trade framework for tropical forest and forest product supply chain governance and management.

“Headlines flashed around the world saying “More than 100 countries agree to end and reverse deforestation by 2030 at COP26” (CNN). Such a clarion call may mislead the already confused people about the role of timber trade and deforestation. We call upon ITTO as the global leader working with the tropical forests and trade, to stand up and state very clearly that HARVESTING TIMBER IS NOT DEFORESTATION.

“We do not want the general public to take away the call for action in COP26 as to mean avoid the use of tropical timber products. On the contrary, we want COP26 statements to galvanise more demand for sustainably produced tropical timber products as a contribution to Climate Change mitigation.”

Presentations of the ITTO Annual Market Discussion and TAG’s full statement are available at www.itto.int/ittc-57/presentations. To watch the video recording of the ITTO Annual Market Discussion, visit www.itto.int/ittc-57/market_discussion

Tropical and topical

Compiled by
Ken Sato

Countries declare stronger effort on forests and land use

As of late November 2021, 141 countries had signed the Glasgow Leaders' Declaration on Forests and Land Use, which was issued at the 26th Conference of the Parties to the UN Framework Convention on Climate Change (COP26). In the Declaration, leaders "commit to working collectively to halt and reverse forest loss and land degradation by 2030 while delivering sustainable development and promoting an inclusive rural transformation". Among other things, the signatories say they will strengthen their shared effort to "(r)each international financial commitments and significantly increase finance and investment from a wide variety of public and private sources, while also improving its effectiveness and accessibility, to enable sustainable agriculture, sustainable forest management, forest conservation and restoration, and support for Indigenous Peoples and local communities". According to Rod Taylor et al. at the World Resources Institute, the declaration was supported by the following developments:

- A total of USD 19.2 billion (USD 12 billion from public sources and USD 7.2 billion in private financing) (as of 12 November 2021) was pledged to help protect and restore forests globally. This includes USD 1.7 billion to help Indigenous Peoples and local communities exercise decision-making and design roles in climate programmes and finance instruments.
- A group of 28 countries pledged to protect forests while promoting development and trade through the Forest, Agriculture and Commodity Trade Roadmap. Twelve companies with a major global market share in commodities such as soy, palm oil, cocoa and cattle also committed to halting forest loss associated with agricultural commodity production and trade.
- More than 30 financial institutions managing over USD 8.7 trillion in assets committed to working to eliminate agricultural commodity-driven deforestation risks in their investment and lending portfolios by 2025.

Read the Declaration at <https://ukcop26.org/glasgow-leaders-declaration-on-forests-and-land-use>

Read the World Resources Institute blog at www.wri.org/insights/what-cop26-means-forests-climate

Workshops raise awareness on forest landscape restoration

Forest landscape restoration (FLR) is a multifaceted endeavour that must improve local livelihoods to succeed, according to participants at a recent virtual workshop for Central America and Mexico co-hosted by ITTO and the Tropical Agricultural Centre for Research and Education (CATIE). The workshop, held in August 2021 with the participation of about 70 restoration experts from Central American countries and Mexico, was the first of a series of training events worldwide on FLR designed to increase awareness and understanding of ITTO's *Guidelines for Forest Landscape Restoration in the Tropics*. The second virtual workshop in the series, which was co-convened by ITTO and the Asian Forest Cooperation Organization for the Asia-Pacific region, was held in late August/early September for more than 70 restoration practitioners and other specialists. The third workshop, held virtually in September 2021 and co-hosted by ITTO and CATIE, was attended by about 90 restoration experts from more than a dozen countries in Latin America and the Caribbean.

Read these and other ITTO news stories at www.itto.int/news/2021

Indigenous communities affected by deforestation and crime in Peru

Mongabay investigated the territorial security of Indigenous communities in five Peruvian Amazon regions—Huánuco, Loreto, Madre de Dios, Pasco and Ucayali. A team of journalists analyzed geospatial data and visited communities in which the data suggested the situation was most dire. The team found that 1 247 Indigenous communities are being directly affected by illegal mining and deforestation and illicit coca crops. Moreover, four Kakataibo leaders and three Ashaninka leaders have been murdered in 2021 (as of early November). Kakataibo lands, in both the Huánuco and Ucayali regions, have become the most critical areas in terms of the presence of illegal activities, especially drug trafficking. The survey found that 647 self-identified Indigenous groups in these five regions lack formal recognition from regional authorities, making it impossible for them to validate their existence and secure legal ownership of their lands.

Read the Mongabay article at <https://news.mongabay.com/2021/11/in-peru-amazon-deforestation-and-crime-sweep-through-indigenous-communities>

US and Viet Nam reach agreement on timber sourcing

The governments of the United States of America and Viet Nam signed an agreement on 1 October 2021 resolving an investigation under Section 301 of the US Trade Act into allegations of illegal timber imports into Viet Nam. The negotiated agreement secures commitments that will help keep illegally harvested or traded timber out of Vietnamese supply chains.

Read the press release at <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2021/october/ustr-announces-agreement-between-united-states-and-vietnam-resolve-timber-section-301-investigation>

Private sector launches accord on tropical timber governance

COP26 provided the platform for the launch of "Global Forests Need Global Governance—A Tropical Timber Accord", which was signed by forest trade and industry associations in Africa, China, Europe, South America and Southeast Asia. The accord calls for a strong legal framework within which people can operate to maintain forests, manage them for future prosperity and for future generations and stop illegal deforestation. Timber Trade Federation Chief Executive Dave Hopkins said that the aim of the accord is to "update the ambition and the policies that are framed by governments in the International Tropical Timber Agreement that's been ratified now for several decades". Moreover, he said, "standards and principles in the FLEGT agreements need to be refreshed and updated, given a new lease of life and injected with a new wave of political commitment".

Read more at www.itto.int/mis/id=6905 and www.globenewswire.com/en/news-release/2021/11/04/2327091/0/en/Global-Forests-Need-Global-Governance-Tropical-Timber-Accord-Launches-at-COP26.html

Recent editions

Compiled by
Ken Sato



Kant, P. & Nautiyal, R. 2021. *India timber supply and demand 2010–2030*. ITTO, Yokohama, Japan.

Available at www.ito.int/other_technical_reports

This report analyzes India's timber market dynamics by reviewing historical trends for 2010–2019 and forecasting the likely situation to 2030. The report shows that, although India's forest cover has increased steadily for nearly two

decades, timber production is substantially less than consumption, and an increasingly large proportion of demand is being met by imports. The report forecasts a jump of nearly 70% in roundwood demand in India in the next decade, from 57 million m³ in 2020 to 98 million m³ in 2030, driven largely by the construction sector. Without policy changes to increase domestic wood production, say the authors, India will need to rely heavily on imports to meet this surge in demand.



FAO. 2021. *A guide to forest–water management*. FAO Forestry Paper No. 185. Rome.

ISBN: 978-92-5-134851-2

Available at www.fao.org/3/cb6473en/cb6473en.pdf

The aim of this publication is to improve the global information base on the protective functions of forests for soil and water. It reviews emerging techniques and methodologies, provides guidance and recommendations on how

to manage forests for their water ecosystem services, and offers insights into the business and economic cases for managing forests for water ecosystem services.

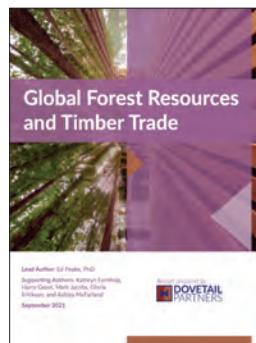


Sools, R., Stortelder, S., Knippers, R. & Boer, E. 2021. *The voluntary carbon market as an opportunity for the sustainable forest management sector: a state of affairs*. Form International, the Netherlands.

Available at https://precious-forests.foundation/wp-content/uploads/SFM-Carbon-Report_Final_Public-Version_bev.pdf

This paper, based on a literature review and company expertise,

explores the opportunities for and place of sustainable forest management (SFM) in carbon markets. It analyzes applicable methodologies and explores the market role of SFM, the technicalities of SFM's carbon claims, and the improvements needed to position SFM to benefit from climate finance.

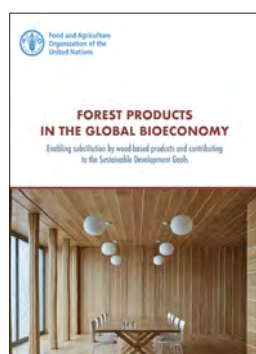


Pepke, E., Fernholz, K., Groot, H., Jacobs, M., Erickson, G. & McFarland, A. 2021. *Global forest resources and timber trade*. Dovetail Partners, Minneapolis, USA.

Available at: <https://dovetailinc.org/upload/tmp/1632318719.pdf>

This report analyses global forest resources (the supply side) and global trade, production and consumption (the demand side).

The report is global (albeit with a focus on the United States of America) and includes insights into tropical timber markets. It considers market trends and market and political forces affecting trade.



Verkerk, P.J., Hassegawa, M., Van Brusselen, J., Cramm, M., Chen, X., Imparato Maximo, Y., Koç, M., Lovrić, M. & Tekle Tegegne, Y. 2021. *The role of forest products in the global bioeconomy: enabling substitution by wood-based products and contributing to the Sustainable Development Goals*. FAO on behalf of the Advisory Committee on Sustainable Forest-based Industries, Rome.

ISBN: 978-92-5-135151-2

Available at <https://doi.org/10.4060/cb7274en>

This report addresses the role of forest products in replacing fossil-fuel-based greenhouse-gas-intensive products. It presents an overview of the understanding of the bioeconomy and the role of forest products across the world; provides examples of conventional and innovative forest products and describes their role in the bioeconomy; reviews the quantitative and qualitative understanding of the environmental impacts and benefits of substituting fossil-fuel-based products with forest-based products and of the contribution of substitution to the Sustainable Development Goals; outlines the current understanding of future global demand and supply dynamics for forest products and the potential impacts that increased substitution might have on these; identifies gaps in the global forest product value chain; and makes recommendations and draws conclusions.

Meetings

ITTO meetings

5 May 2022

New Opportunities for Teak Sector in the Post-COVID-19 Scenario (side-event at XV World Forestry Congress)

Seoul, Republic of Korea
More: www.itto.int/events

8–10 June 2022 (to be confirmed)

ASEAN Forest Fire Workshop

Jakarta, Indonesia

<https://www.itto.int/events>

The aim of the event is to share knowledge and practices in the design and implementation of early-warning and monitoring systems and promote research and capacity building to prevent and combat forest fires in Southeast Asia.

5–8 September 2022

4th World Teak Conference: Global Teak Market: Challenges and Opportunities for Emerging Markets and Developing Economies

Accra, Ghana

More: www.worldteakconference2020.com

This conference, which ITTO is co-organizing, will address the most crucial issues facing the global teak sector, including the sustainable management of smallholder teak farming systems to supply markets with high-quality teakwood; improving existing silvicultural systems and practices for better stand management to achieve high-quality teakwood; market structures and value chains for teakwood trading and their impacts on the profitability of teak investments; and evaluating private and public investments in the teak sector and their impacts on socioeconomic conditions and rural livelihoods. The conference will make strategic, conceptual and operational recommendations to support the sustainable development of the teak sector.

7–12 November 2022

58th Session of the International Tropical Timber Council and Sessions of the Associated Committees

Yokohama, Japan

The International Tropical Timber Council is ITTO's governing body. It meets once a year to discuss wide-ranging issues of interest to members, including those related to the legal trade of tropical timber and the sustainable management of tropical forests. Council sessions are open to official delegates and accredited observers.

More: www.itto.int

Other meetings

7–11 March 2022

(to be confirmed)

74th meeting of the CITES Standing Committee

Lyon, France
<https://cites.org>

15–17 March 2022

Dubai Woodshow

Dubai, United Arab Emirates
More: www.woodshowglobal.com/dubai

29 March–1 April 2022

International Materials Fair, Technology and Components for Furniture and Interior Projects—FIMMA Maderalia 2022

Valencia, Spain
More: <https://fimma-maderalia.feriavalencia.com>

25 April–8 May 2021

Fifteenth meeting of the Conference of the Parties to the Convention on Biological Diversity

Kunming, China
www.cbd.int/conferences/2021-2022

27–29 April 2022

International Forest Policy Meeting

Bonn, Germany
More: <https://ifpm4.info>

2–4 May 2022

2022 Short Rotation Woody Crops International Conference

Asheville, USA
More: <https://woodycrops.wixsite.com/srwc2022>

2–6 May 2022

XV World Forestry Congress

Seoul, Republic of Korea
More: www.wfc2021korea.org

9–13 May 2022

17th Session of the United Nations Forum on Forests

New York, USA
More: www.un.org/esa/forests/forum/index.html

June 2022 (dates pending)

Socio-ecological Conflicts in Forest Management: Risks of (not) Adapting?

Nancy, France
More: <https://workshop.inrae.fr/iufro-risk-analysis-nancy>

1–3 June 2022

ATIBT Biennial Forum, General Assembly and 70th Anniversary of Carrefour International du Bois

Nantes, France
More: www.timbershow.com

26 June–1 July 2022

Foliar, Shoot, Stem and Rust Diseases of Trees

Durham, USA
More: www.iufro.org/science/divisions/division-7/70000/70200/70202

17–20 July 2022

5th World Congress on Agroforestry

Quebec, Canada
More: www.agroforestry2022.org

September 2022

(dates pending)

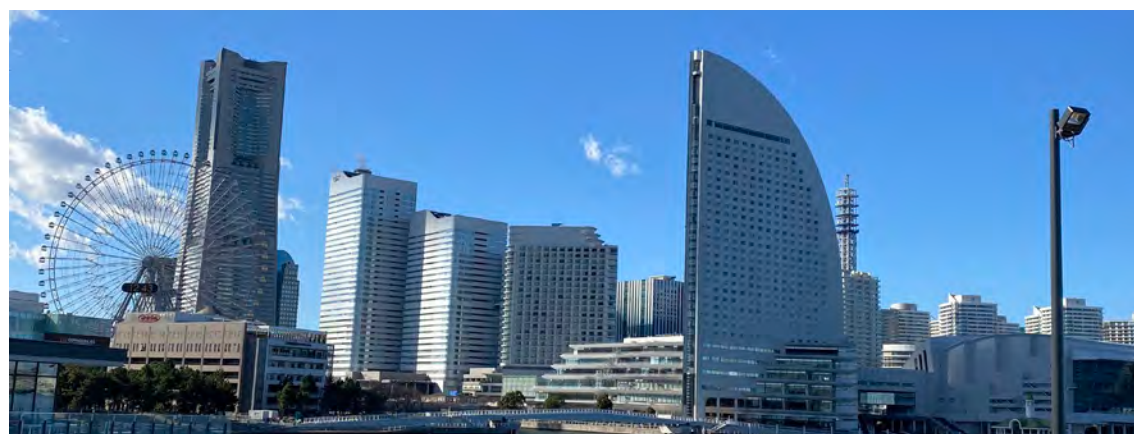
ForestSAT 2022

Krakow, Poland
<http://forestsatsat2020.forestsat.com>

14–25 November 2022

Nineteenth meeting of the Conference of the Parties to CITES

Panama City, Panama
<https://cites.org/eng/cop19>



Looking forward to face-to-face meetings: Minato-Mirai, Yokohama, showing the Pacifico Yokohama (right foreground), the complex that hosts the Yokohama International Organizations Center and ITTO headquarters. *Photo: R. Carrillo/ITTO*

Note that all meetings are subject to change or cancellation in light of the COVID-19 pandemic. Please check the contact addresses for the latest information.

ITTO provides this list of international meetings as a public service and is not responsible for changes in date or venue or for other errors.

