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ITTO Tropical Forest UPDATE

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A newsletter from the International Tropical Timber Organization to promote the conservation and sustainable development of tropical forests

Council appoints new head of ITTO

Meeting in November 2016 at its 52nd session, the International Tropical Timber Council appointed Dr Gerhard Dieterle as ITTO's new Executive Director for the next four years. A citizen of Germany and the first ITTO Executive Director from a consumer country, Dr Dieterle is highly qualified for the post, with 35 years of experience in national and international forest policymaking.

Dr Dieterle's appointment comes at a moment that demands assured leadership. Globally, forestry faces challenges and opportunities on multiple fronts—such as those posed and presented by climate change; trade policies; the rights of indigenous peoples and local communities; biodiversity conservation; demand for land,

Criteria and indicators revised; C&I in Mexico; forest management audit in Gabon; ITTO–CITES Programme in Latin America; Council session

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International Tropical Timber Organization
International Organizations Center – 5th Floor
Pacifico-Yokohama, 1–1–1 Minato Mirai, Nishi-ku
Yokohama 220–0012 Japan
t 81–45–223 1110
f 81–45–223 1111
tfu@itto.int
www.itto.int

Cover image: ITTO's newly appointed Executive Director, Dr Gerhard Dieterle, addresses the 52nd session of the International Tropical Timber Council, November 2016. *Photo: K. Sato/ITTO*

Above: Foresters conduct an inventory in the Kabaung Reserved Forest, Myanmar, as part of activities under ITTO project RED-PD 038/11 Rev.3 (F). Good information on the extent and condition of forests is essential for SFM. *Photo: Myanmar Forest Department*

... Editorial continued

water and wood; food security; and the Sustainable Development Goals. Dr Dieterle will also be tasked with working with members to strengthen the Organization's governance and financial controls when he takes office in April 2017.

Since its inception, one of the key challenges ITTO has been addressing is the promotion of sustainable forest management (SFM) as a unified way of managing the many often-competing demands and claims on forests. The concept has evolved in the Organization's 30 years of existence and will no doubt continue to do so as human societies change, along with their needs from forests. ITTO pioneered the concept of criteria and indicators (C&I) as a way of describing, monitoring and assessing SFM, publishing, in 1990, *Criteria for the Measurement of Sustainable Tropical Forest Management*. Since then, the Organization has revised these criteria and accompanying indicators several times in light of changing circumstances, policies and attitudes towards forests. ITTO published the latest revision of the C&I in 2016, and the article on page 3 introduces this new version. Criteria characterize the essential components of SFM, and indicators are ways of assessing each component. When monitored over time, C&I show changes and trends in the biophysical, socioeconomic and policy conditions relevant to SFM.

Are C&I simply a tool for policymakers and international organizations, or are they also useful at the local scale? An ITTO project, reported by Reygadas Prado and Franco Cáceres on page 8, worked with indigenous and local communities in southeastern Mexico to adapt "global" C&I to local circumstances as a way of understanding, promoting and implementing SFM. The project found that the locally adapted C&I—and, crucially, the participatory adaption process employed—have brought new confidence to communities in applying silvicultural practices and planning and documenting their forest operations. More work needs to be done by the communities to put forest management on a sustainable footing, but the C&I project has been an important step, to the extent that the authors advocate the incorporation of the local C&I in national forest regulations.

Another ITTO project, reported on page 12 by Ahimin and co-authors, involved a forest management audit of 14 forest concessions in Gabon using a set of principles, criteria and indicators (PCI) for African forests. The audit found that only a few of the audited forest companies have achieved a high level of compliance with SFM principles at the field level. Although this is a disappointing finding, indicating that companies need to strive much harder to implement SFM, it does show the benefit of the PCI as a yardstick for monitoring performance, and more such audits in industrial-scale forest concessions—backed up, if necessary, by government-imposed sanctions for non-compliance—would undoubtedly encourage greater efforts.

The article on page 16 changes tack to continue (from previous editions) our examination of the ITTO–CITES Programme for Implementing CITES Listings of Tropical Tree Species, this time in Latin America, where Programme activities have achieved impressive results. Speaking at the 52nd session of the International Tropical Timber Council, the CITES Secretariat's Milena Sosa Schmidt reported that, globally, the ITTO–CITES Programme has brought about a remarkable shift in expectations in both range states and importing states about the listing of tree species. She told the Council that, thanks to the Programme, previously held erroneous beliefs in CITES signatory countries about CITES listings of tree species have given way to positive support, which will undoubtedly be to the long-term benefit of species conservation and trade.

This and other outcomes of the 52nd session of the International Tropical Timber Council (page 20), including the appointment of Dr Dieterle, new funding for ITTO Fellowships and projects, and steps to increase transparency, show that the Organization is well placed to continue helping bring about SFM and a sustainable timber trade in the tropics, both of which are vital for the future of the planet.

Continuing the work on C&I

ITTO has published a new edition of its criteria and indicators for sustainable tropical forest management

by Jürgen Blaser[1] and Steven Johnson[2]

[1] Professor of International Forestry and Climate Change, School of Agricultural, Forest and Food Sciences, Bern University of Applied Sciences, Switzerland (juergen.blaser@bfh.ch)

[2] ITTO Secretariat, Yokohama, Japan

Measuring REDD+: Local people receive training in measuring tree diameters to estimate carbon stocks in the Meru Betiri National Park, East Java, Indonesia, as part of ITTO project PD 519/08 Rev.1 (F). *Photo: FORDA*

Criteria and indicators (C&I) for sustainable forest management (SFM) are arguably one of the most important and innovative policy instruments for operationalizing the SFM concept (ITTO 2011). Criteria characterize the essential components of SFM, and indicators are ways of assessing each component. When monitored over time, C&I show changes and trends in the biophysical, socioeconomic and policy conditions relevant to SFM.

Since 1990, nine C&I schemes covering some 150 countries have been established, collectively encompassing all the major ecozones—boreal; temperate; subtropical and tropical dry; and tropical humid. Grainger (2012) provided a critical and comprehensive analysis of the schemes and their strengths and weaknesses.

Evolving nature of C&I

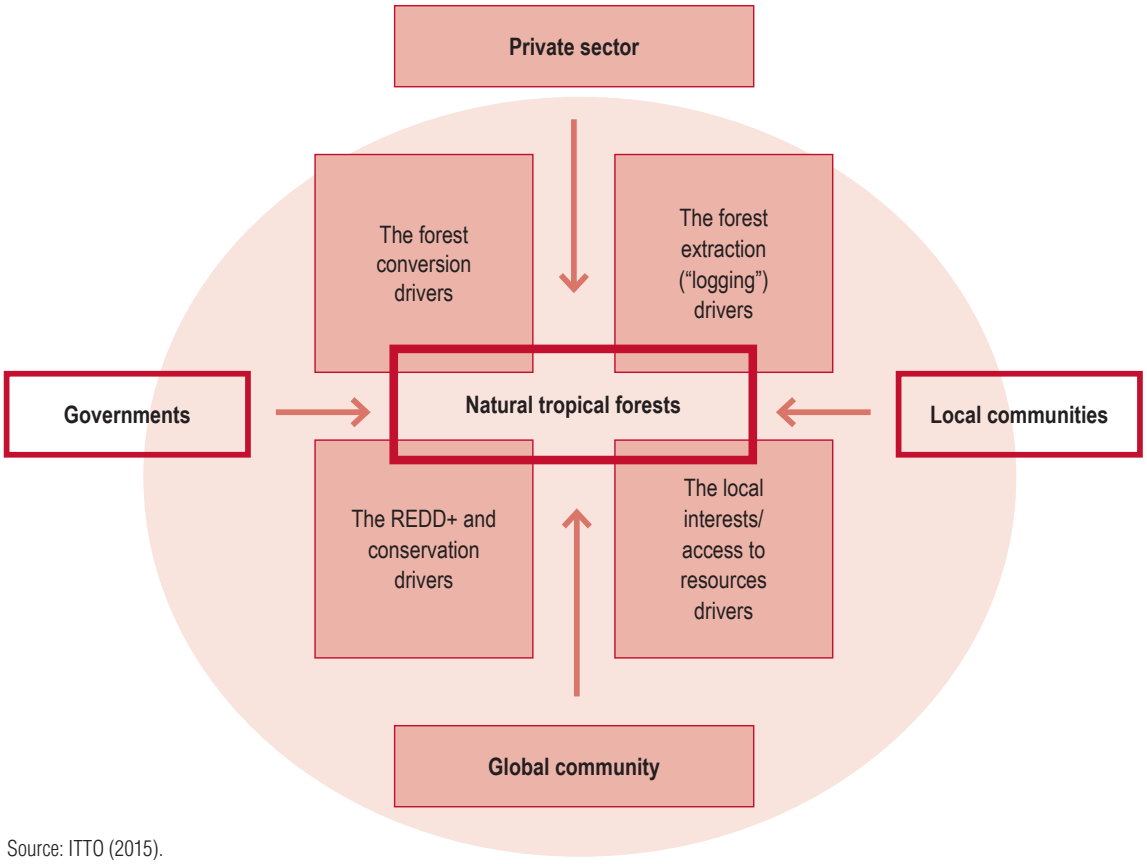
ITTO pioneered the development of C&I in tropical forests in the early 1990s, publishing the world's first set of criteria for SFM (*Criteria for the Measurement of Sustainable Tropical Forest Management*; ITTO 1992) with the aim of enabling the assessment of the condition of tropical forests in producer member countries and identifying weaknesses in forest practices and the improvements needed. By 2000, based on ITTO's early work and the outcomes of the 1992 Rio Earth Summit, C&I initiatives had been launched worldwide (Caswell et al. 2014), including the Montreal Process (1994) for temperate and boreal forests; Forest Europe (for European forests), beginning in 1995; the Tarapoto process for the Amazon countries (also starting in 1995); and *Principles, Criteria and Indicators for the Sustainable Management of African Natural Tropical Forests* (published by the African Timber Organization and ITTO in 2003).

ITTO published *Criteria and Indicators for Sustainable Management of Natural Tropical Forests* in 1998 (ITTO 1998a,b), an updated version of its original criteria (i.e. ITTO 1992) that included manuals for applying the C&I at the national and forest management unit (FMU) levels. ITTO subsequently published the *Revised ITTO Criteria and Indicators for the Sustainable Management of Tropical Forests including Reporting Format* (ITTO 2005), updating the C&I and providing a clear template for monitoring and reporting.

Since 2005, significant progress has been made in further developing C&I. The predominant view is that C&I are tools for adapting management over time (rather than an end in themselves) to maintain the health and productivity of forests in the light of changing economic, social and environmental conditions and demand for forest goods and environmental services. Taking this view into account, a conference of interested parties (including ITTO) in 2003 identified "seven thematic areas" of SFM based on the criteria common to the major C&I processes. From 2007, these seven thematic elements have formed the basis of the common understanding of SFM in the United Nations system (UNGA 2007) and have provided the organizing framework for the periodic global forest resources assessments produced by the Food and Agriculture Organization of the United Nations (FAO), to which ITTO provides inputs based on its own C&I.

In 2014, ITTO's governing body, the International Tropical Timber Council, decided that, based on experience using the C&I for monitoring, assessing and reporting on tropical forests, another comprehensive review was needed to ensure that ITTO's C&I continue to meet the evolving needs of forest stakeholders and to fully inform the development of forest policies and management practices. The most recent edition of the ITTO C&I (ITTO 2016) is the outcome of that process. It is timely in light of recent global developments in forest

Figure 1: The various sectors with direct influence on the conservation and sustainable management of natural tropical forests



Source: ITTO (2015).

policy, such as the Sustainable Development Goals and the Paris Agreement on climate change, as well as recent work among C&I processes and FAO to streamline and rationalize national and international reporting on forests. The use of the C&I is voluntary; their purpose is to assist countries in their efforts to achieve SFM and also to help bring consistency to international data.

The ITTO C&I are designed as a framework, within which each country can develop its own system for determining sustainability at the national and FMU levels. C&I are an evolving concept and therefore need periodic review and refinement in the light of experience and changing economic, social and environmental conditions. Such revision should take into account new knowledge on the functioning of tropical forest ecosystems, the vulnerability of forests to natural hazards, the (planned and unplanned) human impacts on forests, and the ever-changing needs of society for forest goods and environmental services. Moreover, the capacity to measure indicators, and their technical, financial and political feasibility, will change over time, and knowledge will improve on which are the "best" indicators for assessing, monitoring and reporting on tropical forest management.

Role of C&I

C&I are playing important roles in a range of forest-related developments and issues, including as a foundation for international initiatives to assess forest governance in the context of REDD+[1] and to establish principles, criteria and indicators for sustainable intensive woodfuel production (FAO 2010). C&I are also relevant to the assessment of forest-related trends pertaining to the Convention on Biological Diversity (CBD)'s Aichi Biodiversity Targets (CBD 2013).

A number of countries apply C&I in national forest carbon calculations and in related efforts to put a value on carbon in the broader context of SFM. C&I frameworks have served as models for developing national environmental indicators and C&I applicable to, for example, rangelands/grasslands, agricultural crops, water and minerals. The experience and expertise gained in developing and applying the ITTO C&I and other sets of forest-related C&I processes could be valuable in similar initiatives in other fields (Caswell et al. 2014).

Many actors at the national and landscape levels have interests in forests (Figure 1), some of which are compatible and some of which are not. For example, some stakeholders might want to preserve a forest untouched, while others might want to clear it for commercial crops or mineral extraction. Between these two extremes lies a wide range of actors with a broad set of forest uses. For them, C&I constitute a key tool for ensuring that all forest values are accounted for in the management and use of the resource.

1 REDD+ is the term given to the efforts of countries to reduce emissions from deforestation and forest degradation and foster conservation, sustainable management of forests, and enhancement of forest carbon stocks (www.forestcarbonpartnership.org/what-redd).

Benefits of C&I

C&I constitute a common policy tool to assist countries in monitoring, assessing and reporting on trends in forest conditions and progress toward SFM at various levels, while allowing for differences within and between countries. Improvements in the quality, coverage and consistency of C&I data in an increasing number of tropical countries has enabled more comprehensive regional and global forest assessments, such as ITTO's reports on the status of tropical forest management (Blaser et al. 2011) and FAO's global forest resources assessments. Countries that use C&I for monitoring, assessment and reporting are likely to be well positioned to respond to external requests for forest-related reporting and to meet the requirements of independent forest management certification schemes (several ITTO members have used the C&I as a stepping stone in the development of national forest certification protocols, either independently or with established certification bodies).

The ITTO C&I can be used for monitoring, assessing and reporting on the production and protection of goods and environmental services in all types of tropical forests, both natural and planted, and for addressing the needs of specific stakeholder groups in tropical countries. They are applicable at the national/subnational and FMU levels, and they provide a basis for developing a global picture of the status of forest management. Figure 2 schematizes the use of the ITTO C&I.

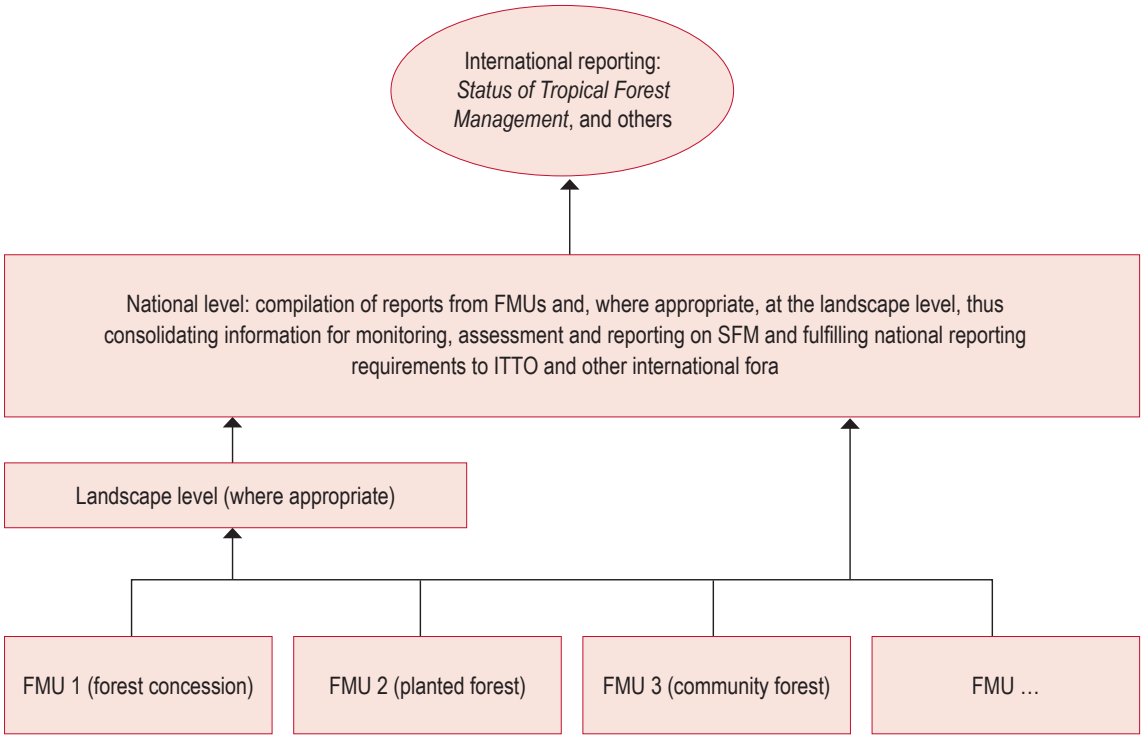
The information generated by the use of the ITTO C&I helps in communicating the status of SFM and efforts to achieve it. It assists countries in developing strategies for SFM as well as for REDD+, forest law enforcement, governance and trade, and forest and landscape restoration initiatives. The C&I enable the identification of research and development needs in areas where knowledge is deficient, as well as weaknesses in the implementation of SFM. They assist in improving policies and strategies for SFM and in identifying the need for international assistance and cooperation.

Good work: A woman works in a tree nursery in Benin. Ensuring the health and safety of workers is an important aspect of SFM. *Photo: J. Blaser*

The criteria

The ITTO C&I specify seven criteria as essential elements of SFM. Criterion 1, "Enabling conditions for sustainable forest management", is concerned with the general legal, economic and institutional framework, without which actions included

Figure 2: The use of the ITTO C&I as a tool for monitoring, assessment and reporting on sustainable forest management



Criterion 6, "Soil and water protection": Two people navigate a river on the border between Cameroon and Gabon, where a long-term ITTO project helped in the establishment and management of the Mengamé Wildlife Sanctuary. Forests play crucial landscape-scale roles in maintaining downstream water quality and flow and controlling flooding and sedimentation. *Photo: M.J. Dourojeanni/ITTO*

under the other criteria will not succeed. Jointly with Criteria 2, "Extent and condition of forests", Criterion 1 provides the necessary information to assess the enabling conditions for SFM. Criterion 3, "Forest ecosystem health and resilience", is concerned with the risk to forests posed by destructive agents and stresses. Criteria 4, "Forest production", Criterion 5, "Forest biological diversity", and Criterion 6, "Soil and water protection", are concerned with maintaining the multiple functions of forests to deliver products and environmental services. Criterion 7, "Economic, social and cultural aspects", addresses the economic, social and cultural values of forests and the extent to which forest management maintains those values, for example by adherence to social safeguards established in national and international financing mechanisms.

The indicators

An indicator is a quantitative, qualitative or descriptive attribute that, when measured and monitored periodically, indicates the direction of change in a criterion. Indicators identify the information needed for assessing and monitoring change, both in the forest itself (outcome indicators) and as part of the environmental and forest management systems used (input and process indicators). A time-series of the values of any measurable or clearly descriptive indicator can provide information on the direction of change, either towards or away from SFM. The indicators cannot by themselves establish the sustainability of management, however.

The 58 indicators presented in the latest edition of the ITTO C&I are arranged in 18 indicator groups that subdivide the criteria. They have been identified and refined based largely on the information received in the 28 national C&I workshops convened by ITTO from 2002 to 2014. The measurement of any one of the indicators over time will provide information that is both necessary and significant in assessing progress towards SFM. The indicators have been defined so they are clear and practical to monitor; to the greatest extent possible, they are based on available knowledge and data.

It is clear, however, that information is not readily available for all indicators in any given country. Where data are lacking, a self-rating system for assessing data quality (e.g. "high", "medium" or "low") at the indicator level could be used in national C&I reporting systems, where a rating of "low" data quality might exclude such data from ITTO's aggregated reporting.

Countries face a considerable burden in reporting on various aspects of forest management to different international organizations. This burden can be minimized by ensuring that institutions (e.g. the CBD, FAO, ITTO, the United Nations Convention to Combat Desertification, the United Nations Framework Convention on Climate Change, and the United Nations Forum on Forests) coordinate their requests for forest-related data. To the greatest extent possible, the indicators in the ITTO C&I have been selected for their compatibility with internationally agreed standards and

definitions. ITTO is also participating actively in efforts under the Collaborative Partnership on Forests to develop a "core set" of common indicators of SFM that, if adopted, will help to significantly reduce the reporting burden on countries while improving the reliability and consistency of international data on forests.

If the indicators are to give an accurate picture of trends, it is important that comparable methods are used between one assessment and the next and that there is a way of estimating the accuracy of the data presented. Ideally, the same methods of measurement and assessment will be used over time, but data collection and analysis techniques are dynamic: for example, the measurement of forest extent and quality using remote sensing and geographic information systems is evolving quickly. Moreover, certain forests are monitored independently (e.g. under forest certification schemes) and can provide valuable new inputs to official reporting. In each C&I report, therefore, countries should describe the methods used, estimate the accuracy of the data, and indicate any difficulties encountered in collecting or analyzing the data.

Conclusion

The new edition of the ITTO C&I is expected to make an important contribution to national and international forest policy discussions and to ITTO's ongoing work. It will also help ITTO member countries in reporting on their forests, including on the relevant SDGs and nationally determined contributions to climate-change mitigation and in establishing baselines for REDD+.

This article is adapted from Criteria and Indicators for the Sustainable Management of Tropical Forests, *published by ITTO in 2016 as No. 21 in its Policy Development Series and available at www.itto.int/policypapers_guidelines. A short video to promote C&I is available at www.youtube.com/user/ittosfm.*

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The participatory development of C&I in southeastern Mexico

The participation of local people in developing and evaluating criteria and indicators has increased their capacity to understand and adopt sustainable forest management and certification

by Fabiola Reygadas Prado and Carlos Franco Cáceres

National Institute for Forest, Agricultural and Animal Research (INIFAP), Southeast Regional Research Centre, Chetumal Experimental Station, Mexico (reygadas.guadalupe@inifap.gob.mx)

Loading logs: The C&I were reviewed in a harvesting operation in production pine forest in the Santa Catarina Ixtepeji community, Oaxaca, Mexico. *Photo: C. Franco*

Forests in Mexico are strongly characterized by the community nature of their tenure. The country has 31 518 *ejidos*[1] and farming communities[2], which collectively own 105 million hectares of land. Some 15 381 of these ejidos and communities contain more than 200 hectares of forest, which, combined, amounts to a forest area of 62.2 million hectares. It is estimated that forest production—the harvesting of timber, ornamental plants, medicinal plants, seeds and resin—constitutes the main source of income for 2994 forest-owning *ejidos* and communities (CONAFOR 2012).

Mexico is one of the planet's top-five megadiverse countries; it is home to 50% of the 96 *Pinus* tree species recorded worldwide, 21 of which are endemic to Mexico (Styles 1993). Biodiversity is linked to ethnic and cultural diversity, and there is a close correlation between the location of areas with a high indigenous presence and areas considered to be priority conservation sites because of their high biodiversity (Merino Pérez & Segura 2002). The National Forest Commission (CONAFOR) has identified sustainable forest development as the guiding tenet of Mexico's forest policy, with the aim of both improving the quality of life of Mexican men and women living in forest ecosystems and ensuring the conservation of the country's forest resources.

Mexico's southeastern region is home to one of the most important tropical forest resource bases in Latin America. The permanent forest estate (PFE) in the Yucatán Peninsula (Campeche, Yucatán and Quintana Roo) covers 761 459 hectares (6% of the total area). In the Gulf of Mexico (Chiapas and Oaxaca), tropical and temperate forests cover 9.9 million hectares (but no estimate of the PFE in this region is available).

A total of 92 972 m^3 of timber was harvested in the tropical forests of the Yucatán Peninsula in 2011 (the latest year for which processed data are available; SEMARNAT 2011), comprising 85 109 m^3 roundwood equivalent (rwe) of commodity tropical timber species (28% of total national production of commodity tropical timber) and 7862 m^3 of high-value timber species (*Swietenia macrophylla, Cedrela odorata and Cedrela mexicana*) (46% of total national production of those species). *S. macrophylla, C. odorata* and *C. mexicana* are exported to countries such as Japan, Germany and the United States of America, generating employment opportunities for landowners; the average sale price of 1 m^3 rwe in 2011 was MXN4000 (equivalent to US$333).

A total of 528 982 m^3 of timber was harvested from temperate and tropical forests in the Gulf region of southeastern Mexico in 2011; this was mostly softwood but included 20 632 m^3 of commodity tropical timber, with a production value of MXN12.5 million (equivalent to US$1.04 million).

Forest *ejidos*: the land base for the application of C&I

Although there has been a trend in Mexico towards the conversion of forests to agriculture, cattle-ranching and urban development, the country still has a large forest area (Table 1).

Under current laws, harvesting permits are awarded to landowners, which in the case of tropical forests (commonly known as *selvas*) are mostly *ejidos*. In *ejidos* with commercial

1 An *ejido* is a land area given to a rural settlement. The allocated area includes three types of land—urban plots, farming plots and community lands—and it is governed through an *ejido* hierarchical system, with general assemblies the highest decision-making authority.

2 A farming community is a land area given to a rural settlement. It is administratively and socially governed through a customary self-government system (mainly based on a hierarchical structure), with inalienable land tenure and use rights and duties.

Table 1: Natural vegetation area covered by temperate and tropical forests

Area of Mexico covered by natural vegetation	Natural vegetation area as % of total land area in Mexico	Temperate forest as % of natural vegetation area (area in brackets)	Tropical forest as % of natural vegetation area (area in brackets)	Other forest as % of natural vegetation area (area in brackets)
130 million ha	70.4	24.2 (33.4 million ha)	22.8 (31.5 million ha)	11.8 (16.3 million ha)

Note: These are the latest figures for which official data is available. Natural vegetation = vegetation that differs from crops and vegetation for agricultural purposes.
Source: CONAFOR (2012).

timber stocks, forest operations make important contributions to local income and employment (Simula et al. 2006). The PFE is the land area belonging to the social sector through the *ejidos* system; it is earmarked for forest production.

Forest management in southeastern Mexico requires knowledge of the rules that regulate forests as well as awareness of the cultural value of these resources for the people living in or near them. Participation in the process to develop criteria and indicators for the sustainable management of forest resources can enable stakeholders in *ejidos* and communities to become fully aware of the conservation value of their forests and, with the support of specialized technicians, to become working partners in ensuring the conservation of tropical forests and to benefit fully from their economic use.

Sustainable forest management in southeastern Mexico

The National Institute for Forest, Agricultural and Animal Research (*Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias*—INIFAP) implemented an ITTO-financed project to develop criteria and indicators for Mexico's tropical forests. Project PD 351/05 Rev.1 (F) "Criteria and indicators for the evaluation of tropical forest management sustainability in Mexico (southeastern coastal plains: Gulf of Mexico and Yucatán Peninsula)", which commenced in July 2006 and was completed in 2016, covered five states: Yucatán, Campeche, Quintana Roo, Chiapas and Oaxaca. Its development objective was to strengthen, encourage and evaluate sustainable tropical forest management in Mexico with a view to boosting sustainable forest development through criteria and indicators (C&I) and ensuring that internationally traded tropical forest products are sourced from sustainably managed and certified forests, as stated in ITTO's Objective 2000 and the Mexican Government's Forest Development Plan 2000–2025.

The project implemented and validated ITTO's C&I, as well as the C&I of other major international protocols, in nine forest management units (FMUs) in humid and subhumid tropical forests in the southeastern region of Mexico. The aim was to evaluate and monitor economic, social and ecological aspects of forest management in those ecosystems and thereby to establish a scientific basis for sustainable forest management (Figure 1).

Employment generator: A worker in a nursery for production forest in the Santa Catarina Ixtepeji community, Oaxaca, Mexico. *Photo: F. Reygadas*

Participatory development of C&I

Local people were strongly involved in the project. In total, the collaborating *ejidos* and communities accounted for more than 150 000 hectares of forest and encompassed various forest types and levels of organization. Taken together, the *ejidos* and communities embodied the difficult road towards the development of community enterprises and sustainable forest use (Table 2).

C&I for tropical forests in southeastern Mexico were developed in a series of 60 workshops of four types (Table 3), with the participation of stakeholders involved in the management and harvesting of tropical forests. Efforts were made to obtain the participation of producers from different ethnic groups, such as Mayas, Tzotziles, Tzeltales and Zapotecos, as well as bilingual professionals with ethnic backgrounds, thereby ensuring that diverse voices were heard during the process.

The internal organizational structure and history of participating *ejidos* and communities were key aspects in the development and evaluation of the C&I. Forest governance and equitable benefit-sharing are crucial for achieving social sustainability and for strengthening community identity (Franco et al. 2014).

Workshops were implemented at the state and regional levels with a view to: clarifying emerging concepts and ideas from different cultural environments; raising awareness among resource owners to enable them to progress towards

Table 2: Description of participating *ejidos* and communities, by state

State qualities	*Ejidos*/communities involved in C&I development	No. of active members	Vegetation type	Forest area under harvesting (ha)
Oaxaca (state with the second-largest temperate and tropical forest area nationally)	Santa Catarina Ixtepeji localities: Ixtepeji, Tierra Colorada, Yuvila, El Punto	614	Pine-oak forest	10 008
Campeche (state with the sixth-largest temperate and tropical forest area nationally)	20 de Noviembre	75	Medium sub-evergreen tropical forest	21 682
	Nuevo Becal	263		25 000
	Silvituc	63		51 100
	Álvaro Obregón	130		14 000
Quintana Roo (state with the largest area of forest as a percentage of total land area; it also has the largest area of temperate and tropical forests of all Mexican states)	Caoba	48	Medium sub-evergreen tropical forest	23 703
Chiapas (state with the 14th-largest area of temperate and tropical forest at the national level)	Monte Sinaí II	58	Montane cloud forest	542
	Francisco Romo Serrano	34		2 048
Yucatán (state with the 14th-largest share of social land ownership within its territory)	San Agustín	48	Medium sub-deciduous tropical forest	2 254
Total		**1333**		**150 337**

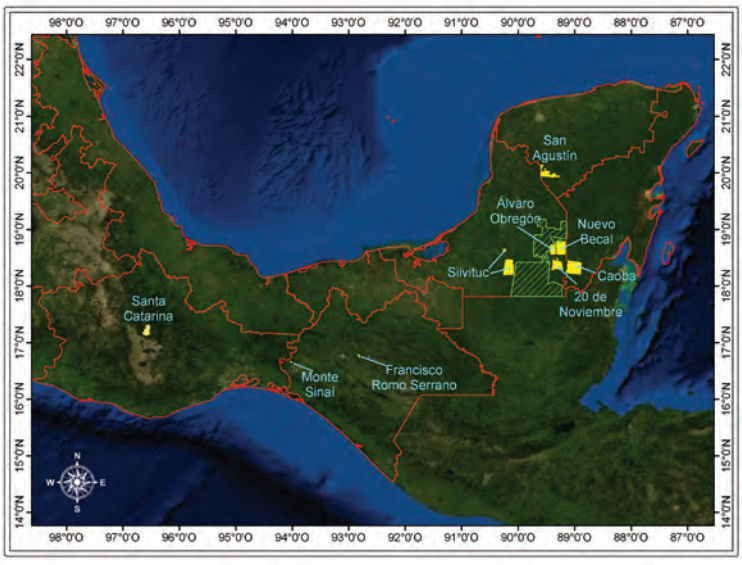
Source: Prepared by the authors in 2014, modified in 2016.

sustainability; and demonstrating to producers (i.e. members of *ejidos* and communities) the importance of sustainability for their livelihoods as well as for their future as communities (Franco et al. 2014). By the end of the process, C&I had been identified, developed and disseminated. Table 4 shows the number of principles, criteria, indicators and verifiers contained in the C&I for tropical forests in southeastern Mexico.

Achievements in the implementation of C&I

The C&I were applied in eight *ejidos* and one community to evaluate sustainable forest management in a total of 150 337 hectares of forests subject to harvesting. The concept and use of C&I was disseminated among 1333 *ejido* and community members who were the owners of these forest areas.

Figure 1: Location of participating ejidos and communities



As information owners, collaborating *ejidos* and communities received the results of the sustainable management evaluation, which are also contained in a document known as the "specific C&I kit". This kit sets out a systematic approach to the economic, social and ecological aspects of forest resource harvesting and conservation, incorporating all the necessary support elements. It is intended that the kit will be updated over time as each FMU strives to achieve sustainability. The specific C&I kit is a significant tool to assist users in monitoring and evaluating the sustainability of forest resource management in their *ejidos* and communities. It includes a sustainability evaluation model for each *ejido*/community, showing the rating scale and the level of sustainability obtained in each aspect and for each principle, criterion and indicator.

The project had a positive and immediate impact on *ejido* and community members as well as on participating technicians. The documentation used in the evaluation of economic and social C&I proved useful in supporting the indicators of the Forest Stewardship Council (FSC) for those *ejidos* involved in certification processes.

Ejidos and communities have used the results of the C&I evaluation to plan silvicultural activities, improve forest harvesting practices, identify priority research issues in their forests, and request funding for the implementation of various activities.

Participation in the project has had significant social impacts in participating *ejidos* and communities. In particular, it has increased understanding and acceptance of C&I as a tool for the evaluation, monitoring and management of their forests and for cultural enrichment by encouraging the sharing, among producers, of knowledge and learning on forest management planning and harvesting.

Table 3: Workshop modalities under the ITTO project

Workshop type	Content
Concept analysis	Analyzing and discussing concepts related to economic, social and ecological aspects of C&I and their uptake
Training on C&I	Providing training to forest technicians, forest producers and authorities in C&I methodologies
Progress mainstreaming	Providing feedback to users on the results of evaluations of their forest harvesting operations by discussing them in the presence of other stakeholders and extra-*ejido*/community bodies
Dissemination	Providing opportunities to *ejido* and community members not directly involved in forest harvesting but otherwise involved in the harvesting or gathering of tropical forest products to provide feedback and participate in achieved outcomes and outputs

Table 4: Number of agreed and applied principles, criteria, indicators and verifiers for tropical forests in southeastern Mexico

System	Principles	Criteria	Indicators	Verifiers
Ecological	4	12	17	32
Social	3	6	13	23
Economic	3	7	10	14
Total	10	25	40	69

Note: "Southeastern Mexico" comprises three states in the Yucatán Peninsula and two in the Gulf of Mexico.
Source: Prepared by the authors, 2014.

Conclusion

The implementation of the project has created a new enabling condition for those *ejidos* and communities involved in the development of the C&I: it has provided a reference and practical tool for producers for evaluating their forest management. In the process of learning about, developing and understanding the application of the C&I, participating *ejidos* and communities have become more confident in applying silvicultural practices and in planning and documenting their forest management operations. Among other things, they have confirmed that their forests can be harvested more intensively without jeopardizing conservation. The objectives of increasing employment and economic vigour through sustainable forest use should be achieved in the medium term; in the meantime, there is a general need to strengthen community enterprises, find market niches for their products, and obtain product certification.

Participating forest technicians and producers have received training to ensure the effective transfer of the C&I.

A workshop was held to review and compare the C&I and methodology used in the project with those used by the FSC for the certification of good forest management—specifically the principles of "social and labour rights" and "biodiversity conservation", both of which have proved challenging for producers and forest technicians in the certification process. The workshop found that the C&I developed by the project are more clearly defined and show how to verify compliance with each indicator. The FSC's C&I, on the other hand, are inadequately substantiated because they are not framed within the social, technical and operational context of *ejidos* and communities in southeastern Mexico. The statistical analysis applied in the exercise showed that the project's C&I are 75% more effective and user-friendly than those of the FSC.

It is considered, therefore, that mainstreaming the project-developed C&I into Mexico's forest regulations—such as the preventive technical audit standards and the Mexican standard for sustainable forest management certification—would have a positive impact on certification at the FMU level in *ejidos* and communities in tropical forests. This process has already been learned, implemented and monitored in *ejido* areas, and therefore the mainstreaming of the project C&I in forest regulations would increase the availability of up-to-date information and improve the reporting required to comply with those regulations.

Publications produced by the project can be found by inserting the project code PD351/05 Rev.1(F) into the ITTO project search function at www.itto.int/project_search.

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How well are companies implementing SFM

An ITTO project has been testing the African regional C&I as an evaluation tool for implementing sustainable forest management in Gabon

Adje Olivier Ahimin[1], Jean Bruno Mikissa[2] and Steven Johnson[3]

[1] Project Coordinator, 25 BP 1886 Abidjan 25, Côte d'Ivoire (ahiminolivier@yahoo.fr)

[2] ENEF lecturer and researcher, BP 3960 Libreville, Gabon

[3] ITTO Secretariat, Yokohama, Japan

Inspection: The audit team meets with the forest management team at a concession in Gabon. *Photo: O. Ahimin/ITTO*

According to ITTO's (2005) definition, sustainable forest management is "the process of managing forest to achieve one or more clearly specified objectives of management with regard to the production of a continuous flow of desired forest products and services without undue reduction of its inherent values and future productivity and without undue undesirable effects on the physical and social environment". Schlaepfer (2007) went further, emphasizing the link between SFM and the concept of sustainable development, which was earlier defined in the Brundtland report (WCED, 1987) as "development that satisfies the needs of the present without compromising the ability of future generations to meet their own needs". The term "sustainable forest management" also incorporates sustainable management methods based on establishing economic, social and environmental criteria and indicators (C&I; Schlaepfer 2007).

In 1990, ITTO was the first organization to establish criteria as an evaluation tool for sustainable forest management. It expanded these to include measurable indicators in 1992 and has revised its C&I several times since then, with the most recent version published in 2016 (ITTO 2016). In 1998, the African Timber Organization (ATO) established its own principles, criteria and indicators (PCI) for SFM, and shortly after this the ATO and ITTO combined efforts to establish a common set of PCI applicable in African countries (ITTO 2003), known as the ATO/ITTO PCI. Most ITTO member countries in Africa, including Gabon, have increasingly sought to encourage the development and use of forest management plans using the ATO/ITTO PCI as a basis.

The multiphase regional ITTO project PD 124/01 Rev. 2 (M) commenced in 2003 with the aim of promoting the implementation of the PCI in African ITTO member countries and supporting national-level stakeholders in developing PCI adapted to national conditions and based on consensus. The project recently completed its penultimate phase, with the ITTO Secretariat overseeing project execution after the ATO ceased operating in 2011.

As described by Lescuyer (2002), the ATO/ITTO PCI are based on three pillars: 1) the strong will to adapt the PCI to field constraints; 2) the importance ascribed to institutional and legal components for securing or reinforcing forest policy and law implementation; and 3) the involvement of local people in forest management.

The PCI are divided into two main groups. Principle 1 ("Sustainable forest utilization and maintenance of the multiple functions of forests are a high political priority") is used for evaluating national-level policy, legal, institutional and economic arrangements for promoting SFM. Principles 2, 3 and 4 are used for evaluating management plans at the level of forest management units (FMUs), as follows:

- Principle 2—"The FMU, designated for whatever form of land use, is sustainably managed with a view to supplying the required goods and services."
- Principle 3—"The main ecological functions of the forest are maintained."
- Principle 4—"According to the importance and intensity of forest operations, the FMU manager contributes to the improvement of the economic and social well-being of workers in the FMU and of local populations."

Eba'a Atyi (2001) noted that forest management has two major stages: 1) the development of management plans; and 2) the implementation and monitoring of those management plans. The challenge is to ensure that forest concession owners (forest companies) develop, implement and monitor forest management plans in compliance with sustainability

principles. With this in mind and through a partnership between WWF, ITTO project PD 124/01 Rev. 2 (M) and the ministry responsible for forests in Gabon, audits were conducted between 2012 and 2014 to evaluate the implementation of SFM in 14 forest concessions in Gabon.

Material and methods

The evaluation framework used by the auditors was based on the ATO/ITTO PCI adapted to Gabon by the National Working Group in Charge of SFM and Forest Certification (a multistakeholder forum) in 2004. The audits addressed principles 2, 3 and 4—that is, those pertaining to FMUs in Gabon.

For each indicator and sub-indicator, a qualitative evaluation was conducted to determine the level of compliance, where a score of 0 = non-compliant (NC); 1 = partially compliant (PC); and 2 = compliant (C). The "compliance rate" for each FMU was determined as follows, based on the ATO/ITTO evaluation framework:

- For each indicator, all relevant sub-indicators were considered to carry the same weight based on the following formula:

Indicator compliance rate (%) = 100*∑ (scores of sub-indicators/number of sub-indicators)

- For each criterion, all relevant indicators were considered to carry the same weight based on the following formula:

Criterion compliance rate (%) = (∑ compliance rate of indicators)/number of indicators included in the criterion)

- For each principle, all relevant criteria were considered to carry the same weight based on the following formula:

Principle compliance rate (%) = (∑ compliance rate of criteria/number of criteria included in the principle)

- For each FMU, all three principles were considered to carry the same weight based on the following formula:

FMU compliance rate (%) = (∑ compliance rate of principle/number of principles)

Training for auditors: Personnel are trained in auditing techniques and requirements before field visits to inspect logging companies. *Photo: O. Ahimin/ITTO*

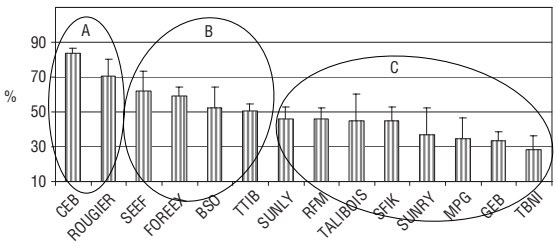
This method was used to conduct a global analysis of the extent to which SFM was being implemented in the audited FMUs and to determine those areas in which each audited company was most advanced and those areas in need of improvement. The results obtained from the 14 audited companies were processed using Excel software, and a "principal component analysis" was conducted using the STATISTICA 6 statistics software.

Results

Factor 1: Forest company compliance with SFM

Figure 1 shows that the audited forest companies can be classified into three main groups: A) those certified by the Forest Stewardship Council (FSC), which achieved global scores above 70%; B) "forest concession under sustainable management" (CFAD) companies, which have fully operational forest management teams (with specialists in forest management, biodiversity, mapping and social relations, etc.) and achieved scores close to those obtained by certified companies (i.e. 50–70%); and C) CFAD companies without forest management teams—or, if present, only embryonic ones—with scores below 50%.

Figure 1: Mean compliance rating in audited forest companies



Sustainable? A landing in a logging concession in Gabon, where an audit evaluated the implementation of SFM according to the ATO/ITTO PCI. *Photo: A. Ahmin/ITTO*

Factor 2: Forest company compliance with SFM-related principles

Figures 2 and 3 show the level of implementation of the three SFM principles by forest companies, with the position of companies relative to their axes showing how closely they are implementing the principles. When the two figures are superimposed, companies in the same area of the graph as the principles are putting the principles into practice, and those that are distant are having difficulty in doing so. CEB, for example, is adhering well to principles 3 and 4. In the same sub-group, Rougier—even though, like CEB, it has FSC certification—is facing difficulties in complying with principles 2 and 3. All other companies are yet to achieve an adequate level of compliance with the three principles. In summary, it appears that most forest companies (especially those in Group C) face challenges in implementing principles 2, 3 and 4. The few companies performing relatively well are either FSC-certified (Group A) or supported by a project for managing small Gabonese forest licences (Group B).

Figure 2: Projection of entities (forest companies) in relation to two factors

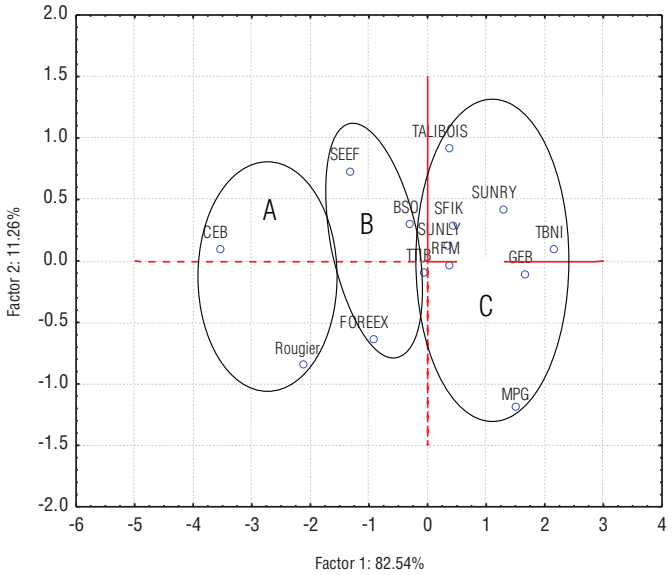
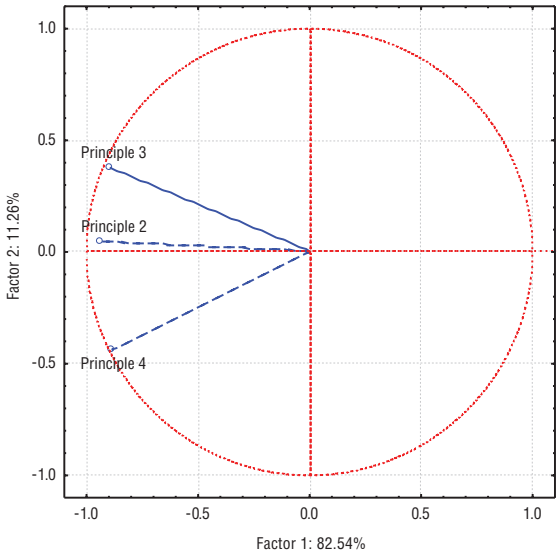


Figure 3: Projection of variables (principles) in relation to two factors



Discussion

The findings of the audits show that the PCI can be considered an appropriate tool for ensuring the implementation of forest policies and laws and for evaluating the involvement of local people in forest management (Lescuyer 2002) while ensuring biodiversity conservation. The PCI are also useful for evaluating the planning, implementation and monitoring of SFM. It is easy for forest companies in Gabon to comply with regulations requiring management plans because such plans are usually produced by specialized consulting firms. Implementing the management plans has proved much more challenging for companies, however, especially those without defined forest management teams. Only certified companies and companies working towards certification have been able to implement their validated management plans effectively. Certified companies are also performing satisfactorily in monitoring forest management, which is a requirement of all commercial forest certification schemes.

The evaluation also showed that, although companies have relatively little difficulty in complying with the forest law (subject to controls by the forest administration), enforcing other laws (e.g. labour laws on, for example, work safety and conditions) relevant to SFM is more challenging.

Conclusion

Forest companies appear to have mastered the development of management plans, but, in reality, this task is usually subcontracted to consulting firms. Many companies have encountered enormous difficulties in implementing those management plans and monitoring compliance, indicating a lack of "ownership" of management plans prepared by third parties. Only certified companies and companies engaged in the certification process have been able to address emerging forest management issues.

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Reports and publications produced by the project can be found via the ITTO project search function at www.itto.int/project_search (using the project number given in the article).

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The ITTO–CITES Programme in Latin America

This collaborative programme is helping improve the implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora for listed tree species in Latin America

by Sofia R. Hirakuri[1], Ivan Tomaselli[2] and Steven Johnson[3]

[1] ITTO–CITES Programme Assistant Regional Coordinator for Latin America (shirakuri@stcp.com.br)

[2] ITTO–CITES Programme Regional Coordinator for Latin America

[3] ITTO Secretariat, Yokohama, Japan

High-tech: An assistant climbs a mahogany tree to set up time-lapse cameras as part of a phenology study in the Rodal Semillero Tahuamanu Conservation Concession, Madre de Dios, Peru. *Photo: L. Ríos/CANDES*

Since 2007, ITTO and the Secretariat of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) have been implementing a collaborative initiative, the ITTO–CITES Programme for Implementing CITES Listings of Tropical Tree Species, with the aim of ensuring that international trade in CITES-listed timber species is consistent with their sustainable management and conservation and to increase the quality of information on listed tree species to facilitate better forest policies and planning.

The Programme is implemented through activities proposed by range states that are significant exporters of products derived from listed tree species; in Latin America, participating countries include Bolivia, Brazil, Guatemala, Guyana and Peru. The Programme complements the work of the CITES Plants Committee: some activities of the Committee are linked with the activities of the Programme, including the Committee's work on CITES decisions 14.135, 14.145 and 14.146[1], and CITES oversees the Programme's activities to maximize opportunities for integrating the results of the Programme into the work of the Committee.

The main species covered by the Programme to date in Latin America are *Swietenia macrophylla* (bigleaf mahogany), *Cedrela odorata* (cedar), *Bulnesia sarmientoi* (lignum vitae, palo santo), *Aniba rosaeodora* (Brazilian rosewood) and *Dalbergia* species (rosewood). Table 1 summarizes the coverage of the ITTO–CITES Programme in Latin America by range state, species and CITES Appendix.

CITES requires non-detriment findings (NDFs) to allow trade to occur in species listed in its Appendix II. NDFs are a key requirement of CITES; they are prepared by the Scientific Authority of the range state as a way of ensuring that the export of specimens is not detrimental to the survival of the species in the wild, but most tropical countries have difficulty in preparing NDFs. Aware of the challenges in implementing the legal requirements of listings, the ITTO–CITES Programme helps range states strengthen their capacities for preparing NDFs and ensuring the proper implementation of CITES for listed tree species.

This article examines the impacts of activities implemented under the ITTO–CITES Programme in improving the implementation of CITES for listed tree species and ensuring the sustainability of those species. It covers activities under the first (2007–2011) and second (2012–2016) phases of the Programme, which have been funded by a range of donors led by the European Union.

Non-detriment findings

The tree species addressed by the Programme are not currently threatened with extinction but may become so without trade controls; the Programme also encompasses species that resemble listed species and need to be regulated as part of efforts to control the trade in those listed species. The majority of species addressed by the Programme are listed in CITES Appendix II, which includes species not necessarily threatened with extinction but for which trade must be controlled to avoid uses that are incompatible with their survival. Maintaining a sustainable trade is important, both for the economies of range states in Latin America and as a way of promoting sustainable forest management (SFM) and conservation. When mahogany was included in CITES Appendix II in 2002, for example, the Parties to CITES

1 Decision 14.135 (Timber species and medicinal plants: non-detriment findings); Decision 14.145 (An action plan for the control of international trade in bigleaf mahogany, *Swietenia macrophylla*); Decision 14.146 (Action Plan for *Cedrela odorata, Dalbergia retusa, Dalbergia granadillo and Dalbergia stevensonii*).

Table 1: Coverage of the ITTO–CITES Programme in Latin America by species, CITES Appendix, and range state

Species		CITES Appendix (and year of listing)	Main range states covered by Programme activities
Scientific name	**Common name**		
Aniba rosaeodora	Brazilian rosewood	Appendix II, 2010	Brazil
Bulnesia sarmientoi	Palo santo, *lignum vitae*	Appendix II, 2010	Bolivia, Paraguay
Cedrela odorata	Cedar, cedro, red cedar	Appendix III, 2001	Bolivia, Brazil, Guatemala, Peru
Dalbergia spp.	Rosewood	Appendix II, 2016	All tropical regions
Swietenia macrophylla	Bigleaf mahogany	Appendix II, 2002	Bolivia, Brazil, Guatemala, Peru

Source: Compiled by the authors based on CITES (2016).

stressed that the inclusion was a measure to promote legal and sustainable trade in high-value timber species and should not be interpreted as a restriction on trade. For any species listed in Appendix II, CITES requires a scientific and technical opinion (i.e. an NDF) that trade is not detrimental to the conservation of the species.[2]

In general, NDFs are prepared using the best available knowledge of a species. They are done at the discretion of the CITES Scientific Authority in each country, taking into account the following elements: basic information on population status; geographical distribution; population trend; harvest level, including volumes; other biological and ecological factors; and trade information.[3]

The main concern of forest-product importing and exporting countries regarding the implementation of CITES is the capacity of exporting countries to prepare NDFs—that is, to issue technical and scientific opinions based on reliable information—because most tropical countries have difficulty generating such information. For example, there is often a lack of information on the growing stock and its distribution in the country or region, as well as on regeneration and ecology. In addition, there may be insufficient capacity and resources in CITES Management Authorities with respect to monitoring, control, transparency, and communication and information systems.

Given that the contents of an NDF will depend on the national standards of each country, there is a risk that species protection will be insufficient in countries that lack stringent standards. Additionally, a common problem in timber trade is the ability of customs officials to identify species and thereby to confirm that shipments correspond with the documentation.

To fill such gaps, the ITTO–CITES Programme has been helping build capacity and conduct studies where information is lacking. The overall aims are to improve the global framework for the production, collection and analysis of information related to the biology and management of species and trade in tropical forest products, and to assist CITES national authorities and the private sector to meet the requirements for managing and regulating trade in CITES-listed tree species.

2 CITES, Article IV, Paragraph (2), Regulation of Trade in Specimens of Species Included in Appendix II.

3 CITES Resolution Conf. 8.6 on *Role of the Scientific Authority*, at CoP10 (Harare, 1997), Resolution Conf. 8.6 (Rev.) was replaced by Resolution Conf. 10.3 on *Designation and Role of the Scientific Authorities*.

Main achievements of the Programme in Latin America

The main achievements of the ITTO–CITES Programme can be summarized in three categories: 1) technical guidance for management plans and NDFs; 2) establishment of scientifically sound harvest quotas; and 3) knowledge sharing and capacity building. A synopsis of these is presented below.

Technical guidance for management plans and NDFs

- National timber yield tables have been developed for bigleaf mahogany standing volume and export-grade sawnwood in Guatemala and Peru: this allows the estimation of timber volumes using trees registered in annual operating plans and helps in checking the volumes requested by exporters in the CITES export permit.
- A biological foundation has been established for the sustainable management of mahogany in southern Amazonia (Bolivia, Brazil and Peru) based on long-term studies of growth, reproduction and regeneration in natural populations in primary and logged forests.
- An approach has been developed for controlling mahogany shoot borer (*Hypsipyla grandella*) in Brazil, using a combination of measures that increases the efficiency of mahogany drill control that was previously unknown in the scientific literature. The approach increases the feasibility of bigleaf mahogany plantations, because mahogany shoot borer was previously a major constraint to these.

Botany class: Staff at the Fundación Naturaleza Para la Vida in Guatemala receive training in the botanical identification of *Dalbergia* species as part of capacity building under the ITTO–CITES Programme. *Photo: F.N. Palacios*

From little things: Mahogany flowers collected from the forest floor in the Rodal Semillero Tahuamanu Conservation Concession, Madre de Dios, Peru. *Photo: L. Ríos/CANDES*

- An empirical framework has been developed for NDFs by applying silvicultural research results and using the bigleaf mahogany growth and yield model (see below) to assess the long-term sustainability of management plans in Brazil.
- Scientific and technical understanding of bigleaf mahogany populations and regeneration dynamics in Bolivia, Brazil and Peru has increased.
- In Peru, implementing agencies have partnered with conservation non-governmental organizations and timber concessionaires and other companies to develop and implement biodiversity conservation and sustainable use objectives for both mahogany and cedar.
- Governmental forestry plans have been developed for the recovery of bigleaf mahogany and cedar populations in Peru based on the results of activities conducted under the ITTO–CITES Programme through a participatory planning process.
- Guatemala—in partnership with Spain's University of Cordoba—has developed simple, clear and comprehensive guidance for CITES exporting parties on the preparation of NDFs.

Establishment of scientifically sound harvest quotas[4]

- Work has commenced to establish sustainable harvest quotas for all species based on population estimates and the demographic characteristics of populations; annual export quotas have been established in Bolivia and Peru, based on population surveys.
- National timber yield tables developed for bigleaf mahogany standing volume and export-grade sawnwood in Guatemala and Peru are being used to determine annual export quotas. The validated methodology can also be applied to other timber species in producer countries.

Tracking, traceability and wood identification

- In Peru, the efficiency with which valuable species such as cedar and bigleaf mahogany can be tracked for the issuance of CITES export permits has increased.
- A pilot study is underway on the use of near infrared spectroscopy for monitoring the bigleaf mahogany trade in Brazil, with applications in other countries and for other species under investigation.
- In Guatemala, a forensic laboratory has been established for identifying and describing wood as a way of assisting in legal processes and traceability systems for products included in CITES.

Knowledge sharing and capacity building

- Lessons learned have been communicated to the private sector and governmental policy and regulatory institutions in all range states in Latin America.
- A website (www.swietking.org) has been established dedicated to disseminating information on bigleaf mahogany to general and specialized public audiences, based on an activity implemented in Brazil.
- An activity in Brazil has developed the freely available, computer-based, user-friendly "bigleaf mahogany growth and yield model", which simulates the response of local mahogany populations to a wide range and intensity of harvest practices. A user manual for the model has been produced.

4 CITES considers that an export quota system is a management tool for ensuring that exports of specimens of a given species are maintained at a level that has no detrimental effect on the population of the species.

- Scientific and technical findings have been disseminated widely, including in scientific journals, manuals and presentations in academic conferences and symposia at the local, national and international levels; activities under the Programme in Latin America have collectively produced more than 50 publications.
- Peru has strengthened its capacity to make NDFs for trade in bigleaf mahogany. It was able to provide relevant information to the CITES Plants Committee at its 17th meeting, with the Committee determining that it was unnecessary to include Peru in its "review of significant trade" for this species.
- The Peruvian government has widely used a manual for evaluating seed trees and regeneration for bigleaf mahogany and cedar produced by an ITTO–CITES Programme activity.
- The private sector, the forest products industry and forest management regulatory agencies in Central and South America have benefited from technical extension activities under the Programme.
- Regional and subregional training workshops have been held for the CITES Scientific and Management Authorities in Bolivia, Brazil, Guatemala, Guyana and Peru.
- Regional workshops have been held to share the findings arising from Programme activities in Latin America and to encourage the exchange of experiences among CITES Management and Scientific authorities in range states, thereby strengthening their capacities.

All information generated by the ITTO–CITES Programme in Latin America will help underpin NDFs for CITES-listed tree species in range states.

Conclusion

NDFs are key to the long-term sustainability of high-value species such as bigleaf mahogany, cedar, palo santo and rosewood. Large-scale selective logging has caused a reduction in populations of many such valuable species, and most remaining populations are under heavy pressure.

Although the vulnerability to overexploitation of the species covered by the Programme—and the role of trade in this—has been recognized in their inclusion in national and international listings of endangered species, the level of protection and conservation is still often inadequate. Insufficient information is available on the biology, botany, ecology, regeneration, growth rates, seeding and appropriate management techniques to enable the development of sustainable harvesting models for most of these species, and more research is needed.

The ITTO–CITES Programme is engaged in several activities in range states to fill these information gaps. The Programme also serves to exchange experiences on the management and governance of these species in the countries concerned and to identify the challenges to increasing the effectiveness of CITES implementation for these species in exporting countries. The Programme involves all stakeholders, including the private sector, which previously had frequently been left out of the dialogue on CITES; the Programme is promoting the greater involvement of the private sector in the implementation of CITES regulations.

Activities funded through the Programme on the management and regulation of trade in bigleaf mahogany, cedar, palo santo and rosewood in Latin America have successfully promoted species conservation and sustainable trade. In particular, they have helped in developing guidance to ensure that use is not detrimental to the survival of high-value timber species, thereby contributing to the implementation of CITES regulations.

Species listings in CITES Appendix I are sometimes seen as the key to conservation success. The conservation of high-value timber or other forest products, however, will be more successful when a sustainable trade produces returns for forest owners and managers and thereby provides them with an incentive to manage their forests sustainably. Integrating conservation and sustainable timber production is an important approach that is being promoted in Latin America through the ITTO–CITES Programme.

More information on the activities carried out under the ITTO–CITES Programme in Latin America and in other countries in the tropics is available at www.itto.int/country_activities. A video on bigleaf mahogany prepared under the programme is available on ITTO's YouTube channel at www.youtube.com/user/ittosfm.

Reference

CITES 2016. Appendices I, II and III.

52nd session of the International Tropical Timber Council

The Council made a range of important decisions, including the election of Gerhard Dieterle as ITTO's next Executive Director

New ED: The ITTO Secretariat and newly elected Executive Director, Gerhard Dieterle (centre), at the 52nd Session of the International Tropical Timber Council, Yokohama, November 2016. *Photo: K. Sato/ITTO*

ITTO's governing body, the International Tropical Timber Council, elected Gerhard Dieterle as ITTO's new Executive Director by consensus at its 52nd session, which was convened in Yokohama, Japan, on 7–12 November 2016. Dr Dieterle won the position from a strong field of six candidates and after inconclusive deliberations on the matter at two previous Council sessions.

Dr Dieterle, a citizen of Germany, has a strong background for the post. He has 35 years of experience in national and international forest policies, environmental and development policies, sustainable forest management, landscape management and conservation. Currently at the World Bank and based in the United States of America (USA), Dr Dieterle has also worked in Indonesia and Togo.

In accepting the appointment, Dr Dieterle thanked his fellow applicants for their fairness and positive attitudes, as well as the Council members for their willingness to come together at the session to resolve the challenges facing ITTO's future.

"I will invest every effort to nurture this partnership between producers and consumers," said Dr Dieterle. "With this, ITTO can grow and regain financial health."

In his presentation to the Council before his appointment, Dr Dieterle said he was committed to acting in the best interests of all producer and consumer countries and to promoting an atmosphere of trust, collaboration and partnership. He will take up his new position in April 2017.

The Council adopted several other decisions during the session, many of which are aimed at improving the transparency, governance and administration of the Organization following significant financial losses arising from failed investments made by previous management in 2013–2015. They include amendments to the staff regulations and rules, revision of the ITTO financial rules and procedures, further measures regarding the financial impairment, guidelines for addressing ITTO's financial shortfall, and standards of conduct for the Executive Director. The Council decided to establish an ad hoc working group to examine options for rotation between producer and consumer members in the appointment of the Organization's Executive Director. The Council also received a preliminary report on ITTO's biennial review of the world timber situation for 2015–2016 (see box).

Funding for projects and activities

New projects and activities were funded at the session, with funding also provided intersessionally in 2016. New funding from Japan and the USA of nearly US$5 million was announced at the session for the financing of ten activities in the 2015–2016 Biennial Work Programme (BWP) and eleven projects (the Council extended the 2015–2016 BWP through 2017). Table 1 provides details of funding announced at the session.

One of the funded BWP activities will allow Indonesia to host the International Conference on Mangrove Ecosystems in Bali, Indonesia, in April 2017, and Benin will host a training workshop on the *Voluntary Guidelines for the Sustainable Management of Tropical Forests* in June 2017 under another newly funded BWP activity. The Republic of Korea informed the Council that ITTO and the Korea Forest Service (KFS) had signed a memorandum of understanding earlier in the year to increase cooperation on the restoration and sustainable management of tropical forests. The agreement spans ten years and, to facilitate its implementation, the KFS will second a professional officer to ITTO from early 2017.

Table 1: Financing in 2016 for projects, pre-projects and activities

Project/activity ID number	Title	Amount (US$)
Projects		
PD 721/13 Rev.3 (F)	Building a participatory and inclusive sustainable forest management process for the reduction of deforestation and forest degradation in the Ixil forest areas of the municipality of Nebaj, Quiché, Guatemala	440 873
PD 723/13 Rev.2 (F) Phase I[1]	Capacity building for strengthening transboundary biodiversity conservation of the Taninthayi range in Myanmar	100 000
PD 732/14 Rev.2 (M)	Improve forest governance in Mozambique	321 138
PD 737/14 Rev.2 (I)	Developing supply capacity of wood-based biomass energy through improved enabling conditions and efficient utilization of degraded forest lands involving local communities in North Sumatra Province, Indonesia	589 863
PD 741/14 Rev.3 (F)	Capacity building for sustainable management of tropical dry forests on the north coast of Peru	437 478
PD 751/14 Rev.2 (M)[1]	Sustainable forest management in the Chimbo river basin, Ecuador: conserving forest resources and agroforestry systems as a mechanism to strengthen the economic inclusion of community families, particularly rural women	130 000
PD 754/14 Rev.3 (F)	Rehabilitation and sustainable management of sacred forests on Ramsar sites 1017 and 1018 in Benin	541 031
PD 764/14 Rev.2 (F)	Enabling customary landowners to participate effectively in community forest management schemes within six pilot areas of Papua New Guinea	663 829
PD 765/14 Rev.2 (F)[1]	Development of a forest landscape restoration programme for Guatemala based on ITTO guidelines	150 000
PD 770/15 Rev.1 (I)	Promotion and sustainable management of lesser-used timber species in the moist forests of the departments of Atlantida, Colon and Northern Olancho in Honduras	196 224
PD 777/15 Rev.2 (F)	Accelerating the restoration of Cibodas Biosphere Reserve functions through proper management of landscapes involving local stakeholders in Indonesia	564 491
Subtotal funding for projects		**4 134 927**
Activities under the extended BWP		
PP-A/39-162A	ITTO–CITES Programme	205 000
PP-A/48-274	ITTO's participation in international meetings on criteria and indicators	10 000
PP-A/50-297	Developing ITTO guidelines on gender equity	20 000
PP-A/50-304	Facilitate involvement of the Trade Advisory Group and the Civil Society Advisory Group	40 000
PP-A/50-305	ITTO's cooperation with the Collaborative Partnership on Forests	10 000
PP-A/50-308	Enhance the cooperation between ITTO and the World Customs Organization through the preparation of guidelines for frontline custom officials in combating illegal timber trade	4 000
PP-A/52-315	Capacity-building workshops on the ITTO voluntary SFM guidelines	59 032
PP-A/52-316	Promote the conservation, restoration and sustainable management of mangrove ecosystems	200 000
PP-A/52-317	Study on timber legality legislation	20 438
PP-A/52-318	ITTO's outreach at international events	15 000
PP-A/52-319	ITTO Fellowship Programme	264 427
Subtotal funding for activities		**847 897**
Grand total		**4 982 824**

[1] Partial funding.

Project support: A delegate of Benin informs the Committee on Reforestation and Forest Management about a project during the 52nd Session of the International Tropical Timber Council. *Photo: K. Sato/ITTO*

Project on wood DNA fingerprinting achieves win against illegal trade

An ITTO project discussed at the session has built capacity in seven ITTO member countries in Africa to identify the wood of species at high risk of illegal logging. This project was one of 17 projects declared completed at the session.

ITTO project PD 620/11 Rev.1 (M) developed DNA fingerprinting and other tools for verifying claims about timber species and geographic origin in tropical Africa for three important timber tree species—iroko, sapelli and ayous—in Cameroon, the Central African Republic, the Congo, the Democratic Republic of the Congo, Gabon, Ghana and Kenya. The project was just one element of ITTO's wide-ranging work on timber tracking and oversight of timber supply chains in tropical producer countries.

Other projects declared completed at the session included one that made a significant contribution to community-based forest fire prevention and control activities in Panama;

Tropical hardwood log imports down in 2015

Global tropical hardwood log imports dropped by more than one-tenth in 2015, despite an increase in 2013 and 2014, according to preliminary results of ITTO's biennial review of the world timber situation for 2015–2016. Frances Maplesden, an expert on the world timber trade, presented the draft review during the Council session.

The *Biennial Review and Assessment of the World Timber Situation* provides data and analysis on the production and trade of tropical forest products in ITTO member countries. The primary source of information is the Joint Forest Sector Questionnaire—a joint venture between ITTO, the Food and Agriculture Organization of the United Nations, the United Nations Economic Commission for Europe and Eurostat—sent to member countries each year.

Although tropical hardwood log imports by ITTO members accelerated in 2014, imports dropped by 12 percent in 2015 (the most recent year for which data are available), to 16.9 million m^3. Most of the decline was due to a significant drop in China's imports, where overstocking and slowing construction activity affected demand.

ITTO producer member countries produced 237.6 million m^3 of tropical logs in 2015, according to the draft review, with Indonesia, India, Brazil and Malaysia accounting for two-thirds of total production, the bulk of which was in the Asia-Pacific region.

Trade in secondary processed wood products (SPWPs), which had accelerated in 2013 and 2014, declined in value in 2015, with global imports valued at US$89.2 billion. Trade in wooden furniture, the most important SPWP, is dominated by imports by the USA, European Union countries and Japan, and exports from China and Viet Nam. Malaysia and Indonesia were important tropical exporters in 2015, although their exports have remained relatively static, and exports by China and Viet Nam have increased significantly in the last decade.

The outlook for the tropical timber trade beyond 2016 remains uncertain. Major issues include potential risks to China's economic growth and demand, and the growing trade between countries regarded as being at "high risk" of illegal logging and trade.

Thoughtful: Council Chair, Jennifer Conje, at the 52nd Session of the International Tropical Timber Council. *Photo: K. Sato/ITTO*

another (part of the ITTO–CBD Collaborative Initiative for Tropical Forest Biodiversity) that has increased information, knowledge and partnerships on transboundary biodiversity conservation in the Emerald Triangle landscape between Cambodia, the Lao People's Democratic Republic and Thailand; and another that helped increase the sustainability of the woodflooring production chain in Brazil.

ITTO Fellowships

The Fellowship Selection Panel convened at the 52nd Session to recommend to Council the awarding of eleven fellowships to nationals of nine ITTO producer member countries. These awards were made possible by the USA's pledge of US$60 000 to the Freezailah Fellowship Fund. The USA noted that this Programme is a top priority for them because it provides training in tropical forestry for future generations.

ITTO–CITES Programme making a difference in trade of listed tree species

A partnership between ITTO and CITES—the treaty for regulating trade in endangered species—has brought about a "remarkable" shift in expectations in both range states and importing states about the listing of timber species, according to the CITES Secretariat's Senior Scientific Programme Officer for Flora. Speaking during the session, Milena Sosa Schmidt said the partnership had also had a wide range of other benefits.

The Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) is an international agreement between governments with the aim of ensuring that international trade in specimens of wild animals and plants does not threaten their survival. The species covered by CITES are listed in three Appendices, according to the degree of protection they need. ITTO and the CITES Secretariat have been working in close partnership for more than a decade under the ITTO–CITES Programme for Implementing CITES Listings of Tropical Timber Species.

Valuable partnership: Milena Sosa Schmidt, the CITES Secretariat's Senior Scientific Programme Officer for Flora, speaks at the 52nd Session of the International Tropical Timber Council. *Photo: K. Sato/ITTO*

The inclusion of timber species in CITES Appendices has accelerated in recent years, said Dr Sosa Schmidt, and today more than 800 tree species are listed, of which around 650 are used for their timber. Historically, she said, states had associated CITES with trade bans, and this had resulted in fierce opposition to proposed inclusions of tree species in CITES Appendices. But the ITTO–CITES Programme has had a transformative effect.

"I have been glad to witness how these wrong beliefs have evolved into positive support among CITES signatory countries that are adopting all new listings of tree species," said Dr Sosa Schmidt. "This was one of the most remarkable impacts of this work." CITES is now regarded as an effective tool for ensuring that international trade is done in a controlled way so that it does not pose a threat to the survival of tree species in the wild.

"I believe that this programme has succeeded in demonstrating that range states can count on international technical and financial support when their tree species are included in CITES," said Dr Sosa Schmidt.

Other benefits of the ITTO–CITES Programme for member states, she said, were improved forest management and the regulation of trade in CITES-listed tree species in participating member states, and increased awareness and cooperation in research, silviculture and CITES compliance. Moreover, the Programme has promoted the greater integration of knowledge on sustainable forest management and species conservation, management and international trade to provide a coherent policy framework. There is also increased awareness and capacity worldwide to manage and regulate international trade in CITES-listed tree species.

At the session, several Council members, including range states of listed species as well as importing countries, acknowledged the importance of the ITTO–CITES Programme and a possible third phase. The Government of China, for example, stated its continued support, in recognition of the Programme's "high value" in fostering collaboration between the two organizations and its benefits for the range states of tropical tree species and the ITTO membership in general. The Government of the USA announced a commitment of a further US$205 000 for the Programme. The European Union indicated that it was considering providing finance for a third phase, which would be made through the CITES Secretariat, with ITTO continuing as a partner. The Government of Germany announced that it will organize, in 2017, an expert meeting on capacity building for competent authorities to support the implementation of CITES decisions on *Dalbergia* species.

ITTO–CBD partnership makes important advances

The Council also heard a report on the partnership between ITTO and the Secretariat of the Convention on Biological Diversity (CBD), called the ITTO–CBD Collaborative Initiative for Tropical Forest Biodiversity, which has involved a total investment of more than US$15 million in eleven field projects.

Speaking at the Council session on behalf of the CBD Executive Secretary, Catalina Santamaria of the CBD Secretariat briefly described three "flagship" projects of the Initiative. One of these is addressing the integrated management of natural resources and biodiversity in the Tacaná Volcano and its range of influence in Mexico and Guatemala, and a second is focused on institutional strengthening among member countries of the Amazon Cooperation Treaty Organization in the sustainable management of forests in the Amazon.

A third project is addressing the management of the Emerald Triangle Protected Forests Complex shared by Thailand, Cambodia and the Lao People's Democratic Republic.

"The importance of this transboundary project cannot be overstated in a region where few intact forests remain to enable large endangered mammals to exist," according to the CBD Secretariat's statement.

The International Tropical Timber Council meets at least once a year to discuss a wide-ranging agenda aimed at promoting sustainable tropical forest management and the trade of sustainably produced tropical timber.

More information on the 52nd Session of the International Tropical Timber Council is available at www.itto.int/ittc-52. Coverage by the Earth Negotiations Bulletin is available at www.iisd.ca/forestry/itto/ittc52.

Fellowship report

A recent impact assessment indicates that the ITTO Fellowship Programme is having a strong positive influence on careers while strengthening capacity in the forest sectors of developing countries

by Kumiko Tanaka

ITTO Secretariat
(tanaka@itto.int)

Fellow in the field: ITTO Fellow Ankush Teshwar interviews a local shopkeeper in Yamunanagar district, Haryana State, India, as part of his research on industrial development and livelihood improvement through agroforestry. *Photo: A. Teshwar*

The aim of the ITTO Fellowship Programme is to develop human resources and enhance professional expertise in member countries in tropical forestry, tropical timber industries and related disciplines with a view to promoting the sustainable management of tropical forests, the efficient use and processing of tropical timber, and better economic information on the international trade in tropical timber. The Programme supports young and middle-level professionals to develop their careers in a wide range of ways, from the pursuit of short-term training and post-graduate degrees to the production of technical documents.

The ITTO Fellowship Programme, which began in 1989, is highly regarded for its role in building human resources worldwide in disciplines related to tropical forests and the tropical timber industry and economy; it is perhaps the only international scholarship programme specialized in such disciplines. One of the great attributes of the Programme is its cost-effectiveness. Awarded funds go directly to young and middle-level professionals working in ITTO's priority areas, without the involvement of intermediate executing agencies or institutions. The Programme has funded 1342 Fellows from 49 mostly developing countries since inception, at a total cost of about US$10 million. The philosophy behind the Programme is that investment in the development of human resources is a key accelerator for improving the management of tropical forests and creating sustainable forest-based industries and trade.

Impact assessment

The ITTO Secretariat recently conducted a survey to assess the impact of the ITTO Fellowship Programme on its Fellows at the personal, organizational, national and international levels. The questionnaire used in the impact assessment was similar to that used in a previous survey conducted in 2010 (a summary of the results of that survey is available in TFU 21/1, published in 2011). It contained eleven personal questions and 34 questions related to professional achievements and impacts.

Responses

Questionnaires were sent by email in June–August 2016 to 220 Fellows who were awarded Fellowships between 2010 and 2014. The overall response rate was 70%, up from 55% in 2010. Of the 155 Fellows from 28 countries who responded, 98% were from producer countries (33% from Africa, 35% from Latin America and 32% from Asia) and 2% were from developed consumer countries (consistent with the ratio of awards made to these groups); 42% of respondents were women. Eleven percent of Fellows were aged 20–29 years, 52% were aged 30–39 years, 25% were aged 40–49 years, 11% were aged 50–59 years, and one Fellow was aged 70 years. Figure 1 shows that about three-quarters of respondents are working in universities, the public service or research institutes; 10% work for non-governmental organizations; and about 7% work in the private sector. In their Fellowships, 36% of respondents participated in short training courses or internship programmes, 21% undertook post-graduate degree programmes, 21% published technical documents, 16% attended international conferences, and 6% undertook study or demonstration tours.

Findings

The vast majority of respondents gave positive feedback about the benefits of the ITTO Fellowship Programme. Figure 2 shows that the Programme has caused a shift towards higher qualifications among respondents; for example, 77 of 155 respondents now have Masters degrees, compared with 57 before the awarding of Fellowships. Eighty-five percent of respondents now hold either PhD (42%) or Masters (58%)

Figure 1: Current employment of 2010–2014 ITTO Fellowship awardees, by sector

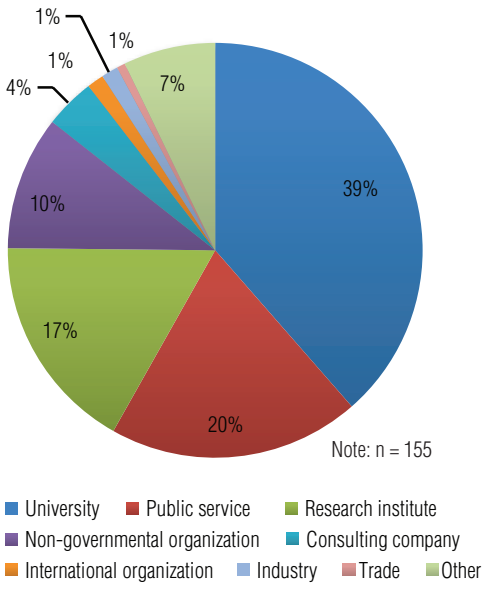
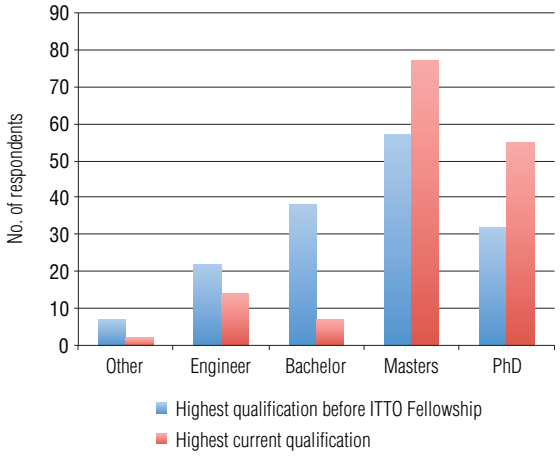


Figure 2: Highest qualification before and after ITTO Fellowships



degrees in forestry and related disciplines, and more than one-third received those degrees through activities supported by the ITTO Fellowship Programme. Sixty-five percent of respondents have published scientific papers, books, field manuals or national-language reports based on the results of their Fellowship activities, and 88% said they had been able to pass on to others the knowledge and experiences obtained from their Fellowships to a significant or very significant extent.

ITTO Fellowships have clearly benefited the professional development of recipients and improved their career prospects. For example, 73% of respondents answered "totally related" or "strongly related" to the question of whether any job promotion or new job position they had obtained was due to the skill or knowledge they gained from the Fellowship; 61% responded that they had obtained a relevant job position or job promotion immediately after completing their Fellowship activities.

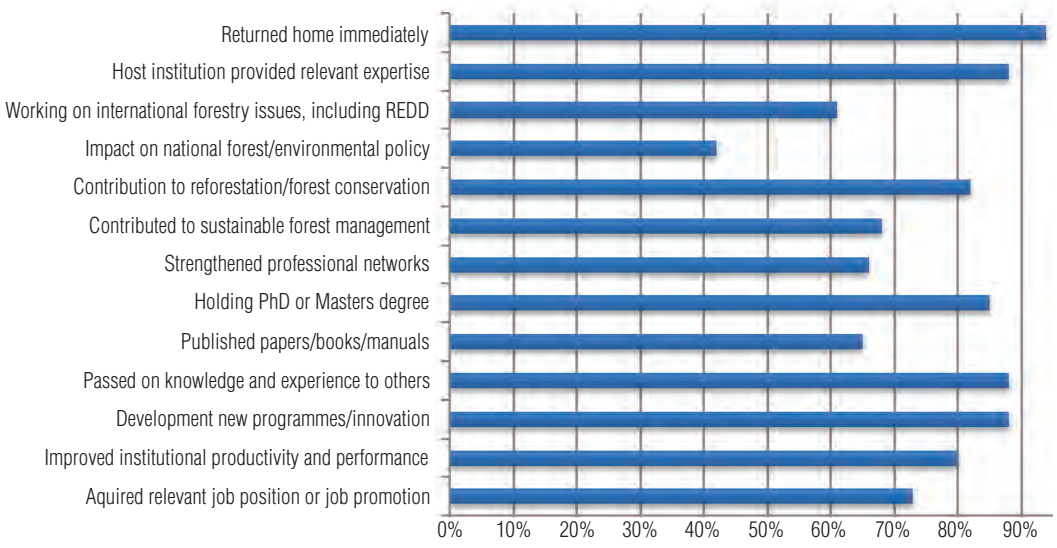
Most respondents (94%) returned home immediately on completion of their Fellowship activities, and only 6% continued their degrees or found jobs in countries other than their own. Home countries, therefore, are mostly retaining the human capacity developed under the ITTO Fellowship Programme.

Eighty-two percent of respondents indicated that they were making a large or very large contribution to reforestation/forest conservation in their home countries, and about 88% indicated that, on returning home from their Fellowships, they had been able to improve the productivity and performance of their home institutions by developing new programmes or innovative ways of working. Forty-two percent of respondents indicated that the knowledge and skills they acquired through the ITTO Fellowship Programme had helped them influence national forestry and environmental policies in their home countries. Sixty-one percent of respondents indicated that they were now working on international forestry issues, such as climate change.

Conclusion

The impact assessment provides convincing evidence that the ITTO Fellowship Programme is having a beneficial effect on award recipients and their countries. Especially in terms of knowledge sharing, the impact goes well beyond the individual achievements of Fellows, contributing to human resource development in institutions and strengthening professional expertise in member countries in diverse but relevant disciplines.

Figure 3: Impact of ITTO Fellowships



% of respondents (n = 155) agreeing with statement

The voices of ITTO Fellows

Ms Rita Ebune, environmental scientist at the Environmental Governance Institute, Cameroon

"There is a huge need for capacity building, and I strongly believe this is an international issue. Many problems still reside not only in the research itself but in how to carry out the research and how to communicate the findings to policymakers. Many institutional facilities do not really train students to specialize in specific aspects. If experts could really specialize in specific themes, the impact could be greater. The ITTO Fellowship Programme can help in reshaping the scope of experts. The training programme I undertook at Wageningen University in the Netherlands is a response to failing conventional natural resource management approaches that are unable to deal with conflicting interests in resource use; different perceptions of stakeholders on conservation vis-à-vis development; power imbalances across and between multiple scales in the natural resource management sectors; and the implications of rapidly changing global–local interrelations in environmental governance and markets. My view on natural resource management and conflicts is now wider after my Fellowship, and this is helping me in my current profession, now that I have been able to identify my niche and area of interest."

Dr Modhumita Dasgupta, scientist, India

"At a personal level, the training through the ITTO Fellowship has provided me with confidence to apply technology to tropical tree species to understand the uncharacterized genomes in terms of chromosome number, structure and evolution. I am presently working on developing molecular markers for wood property traits, and this will help in improving the productivity of plantations, thus reducing pressure on natural forests. The long-term conservation of forest genetic resources will remain a cornerstone target for the sustainable utilization of tropical forests. Infusion of these technological advances in conventional conservation and breeding programmes can provide needed support and accelerate the process of trait-based breeding in tropical trees. We are still in the early stages of biotechnological research in forest tree species. The subject is gaining importance and laboratories are being upgraded to handle big data, but not many laboratories are working in this area specifically in tree biotechnology/genomics. One of the major impediments is the lack of trained human resources to initiate high-end research in perennial species."

Dr Rashmi Shanbhag, post-doctoral researcher specialized in ecosystem services, India

"In my case, the research institute was not well equipped, lacking all the instruments needed for my research. When I attended a conference through the ITTO Fellowship I came to know about an Indian scientist whose laboratory had all the facilities related to my core working area. He invited me to work there, and I was able not only to work with needed new equipment but also to drastically improve my capacity thanks to this new network, which also guided me in many other academic opportunities. The ITTO Fellowship is one of the best things to have happened in my life. Academically, it took me to heights I never dreamt of reaching in this short period. The conference I attended opened up a new dimension and new challenge in my current work. After my Fellowship, two of my juniors also obtained ITTO Fellowships for training in developed countries, and they have incorporated the findings in their PhD studies, which otherwise was not possible in India."

Mr James Oppong Amponsah, principal technical officer at a research institute, Ghana

"The knowledge acquired from my ITTO Fellowship has proven to be very useful in my work schedule—monitoring the phenology of forest trees for effective seed collection and conservation in the Bobiri Forest Reserve in Ghana. A phenochart of the species I worked on during my Fellowship has now been adopted by the National Tree Seed Centre for the effective seed collection of the species within the study area. Also, after the completion of my Fellowship I obtained a job promotion from senior technical officer to principal technical officer. The Fellowship has greatly contributed to my career development in a way I could not have imagined."

Market trends

The 2016 Annual Market Discussion looked at the pros and cons of free-trade agreements for tropical timber

by Mike Adams[1] and Frances Maplesden[2]

[1] Coordinator, Tropical Timber Market Information Service (mjadams_itto@hotmail.com)

[2] Consultant, New Zealand

Free-trade talk: From left to right: André de Boer, European Timber Trade Federation; Jorge Malleux, Peru; and Barney Chan, Trade Advisory Group. *Photo: Francis Dejon/IISD* (www.iisd.ca/forestry/itto/ittc52/9nov.html).

ITTO Annual Market Discussions are arranged and presented by the Trade Advisory Group during sessions of the International Tropical Timber Council. The 2016 edition, which was held in Yokohama, Japan, in November and was co-chaired by Jorge Malleux (Peru) and Barney Chan (Malaysia), featured speakers from Mexico, Nigeria, Thailand, Peru, the European Union (EU) and the United States of America (US). Their presentations are summarized below.[1]

ETTF to capture benefits of open trade by promoting tropical timber

Referring to free-trade agreements (FTAs) negotiated by the EU, André de Boer, the Secretary General of the European Timber Trade Federation (ETTF), said "the more the better" (for importers). He noted, however, that European manufacturers—especially those relying of domestic markets—might have different points of view.

The European Commission has clear aims for its FTAs, which it negotiates to strengthen the EU economy and create jobs by enabling European businesses to compete more effectively and export more. FTAs also increase access to raw materials and vital components from around the world.

Mr de Boer outlined how the ETTF is capturing the benefits of open trade in tropical timber products through active promotion. Its efforts have been boosted by the EU Sustainable Tropical Timber Coalition (an alliance of industry, businesses, governments and non-governmental organizations created in 2013), which has the ambition and resources to stimulate an increase in EU imports of tropical timber products.

1 Presentations are available at: www.itto.int/ittc-52/presentations.html.

What is TAG?

The Trade Advisory Group (TAG) was established to provide inputs to ITTO's policy and project work. Membership is open to anyone with an interest in the tropical timber trade, including representatives of tropical forest industries, timber exporters and importers, timber trade and industry consultants, and trade and industry associations.

Please contact TAG chair, Barney Chan, for more information (barney.chan@gmail.com).

Peru must re-examine root causes of forest-sector problems

Trade agreements can be powerful tools for boosting Peru's timber exports, according to Erik Fisher Llanos, the President of the Forestry Committee of the Peruvian Association of Exporters. But, he said, this goal is not being achieved because the development of the timber sector in Peru is hampered by a misdiagnosis of the problems in Peru's tropical forest sector. This, in turn, has resulted in an emphasis on fighting illegal logging and its associated trade at the expense of the fundamental cause of the problem—poverty. The present approach "is not enough to guarantee the sustainability of tropical forests", said Mr Fisher.

To address the challenges facing Peru, Mr Fisher recommended:

- boosting forest governance and strengthening the management capacity of regional administrations, because these are the ones closest to the forest;

- improving the business climate to release domestic and international investment;
- tackling the overregulation of the sector; and
- improving communication to send signals to international markets, especially in those countries with which Peru has FTAs.

US–Peru FTA boosts trade

The US–Peru Trade Promotion Agreement was signed in December 2007. By 2013, Peru's exports to the US had increased by 38%, to US$8.1 billion, while American businesses exported US$10.1 billion in merchandise to Peru in the same year.

Source: ustr.gov/trade-agreements/free-trade-agreements/peru-tpa

The North American Free Trade Agreement

Data from the US government show that US exports to Mexico have increased by almost 450% since NAFTA came into force in January 1994 and that US imports (all products) from Mexico have increased by more than 600%. NAFTA is a three-country accord negotiated by the governments of Canada, Mexico and the US.

Source: www.cfr.org/trade/naftas-economic-impact/p15790

Increase in competitiveness of small enterprises needed in Mexico

Enrique Tellez Pacheco, President of the Mexican National Chamber of Wood Industry (CANAINMA), said he recognized the benefits to Mexico of the North American Free Trade Agreement (NAFTA) and other FTAs. But although such agreements might provide new export and import opportunities for tropical timber, much work is required to deliver such opportunities to the domestic tropical timber sector in Mexico, which is dominated by small and medium-sized enterprises (SMEs).

The challenge, said Mr Tellez, is to increase the competitiveness of Mexican companies so they can take advantage of the FTAs. Achieving this will require the government and organizations such as CANAINMA to address the fragmentation of tropical timber production in the Mexican southeast, where only low-value-added products are manufactured. Efforts are needed, he said, to open up financing for replacing obsolete equipment, boosting skill levels, and increasing transparency in the sector as a way of tackling illegal logging.

Nigerian consumers stranded by lack of purchasing power

FTAs had many pros and cons for the timber trade, according to Dr Labode Popoola, Professor of Forest Economics/Sustainable Development at the University of Ibadan, Nigeria (he is also President of Nigeria's Forestry Association). Although West African wood-product exports are significant, the production and trade of wood products is poorly integrated, reducing the economic benefits and the capacity of the sector to meet the needs of domestic and regional markets.

An imbalance in purchasing power between international and domestic markets, and the resulting over-concentration of effort on the export trade, has left legitimate domestic wood demand—which is growing quickly—unaddressed. A common strategic framework is needed to generate meaningful data on local, national and transboundary trade and its impact in the subregion.

Professor Popoola recommended more effective enforcement, negotiation and knowledge generation in the sector, and a greater sharing of knowledge and expertise among forest agencies in the subregion. He said the value chain for forest products in the subregion is still inefficient because of the continued use of obsolete technologies compounded by weak governance in the sector, and these issues need to be addressed. There is also an urgent need for comprehensive resource assessment; greater private-sector and community involvement in forest development; greater access to technologies and market information; a review of forestry and environmental laws; and more education and research.

Change of government in US will affect trading environment

The outcome of the presidential election in the US had just become known when Joe O'Donnell, Senior Manager for Government and Public Affairs at the US-based International Wood Products Association (IWPA), made his presentation. The outcome meant that the Trans-Pacific Partnership (TPP) would now not go ahead in the US, at least in the near term, he said. He indicated that the election result would likely have other impacts on the trade environment in the US, too, but that the IWPA is committed to working to keep trade flows open.

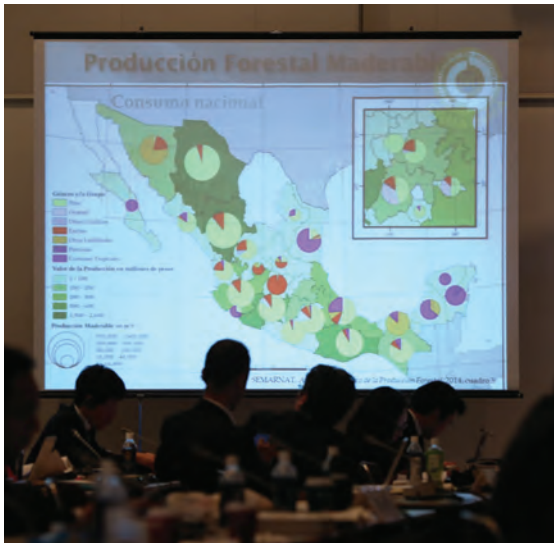
The US has FTAs in effect encompassing 20 countries, reported Mr O'Donnell, and these have proven to be one of the best ways to open up foreign markets to US exporters. The reduction of trade barriers and the creation of a more stable and transparent trading and investment environment make it easier and cheaper for US companies to export their products and services to trading partner markets.

The US is negotiating the TPP with Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Viet Nam. The US and the EU launched negotiations on the Transatlantic Trade and Investment Partnership in June 2013.

Small enterprises in Thailand survive by creating culture of design and craft

Jirawat Tangkijngamwong, Chair of the Thai Timber Association and a director of Deesawat Industries and Deesawat Design, spoke about the way in which open trade drives finished-product exports and design opportunities. There are 1500 registered wood manufacturers in Thailand, of which only 52 would be considered large scale, a further 210 are medium-sized, and the balance—more than 1200—are small. A close look at the sector, said Mr Tangkijngamwong, reveals that there are also 8000 unregistered "micro industries".

SMEs in Thailand are slow and unproductive, and they cannot compete with larger domestic companies and certainly not with foreign rivals. To help them survive in the increasingly harsh competitive environment, said Mr Tangkijngamwong, the Thai industry is, unaided, using its entrepreneurial skills to adapt traditional crafts and designs to create products to attract international buyers.



Up for discussion: Participants view a graphic during a presentation at the 2016 Annual Market Discussion. *Photo: K. Sato/ITTO*

Interventions and discussion

The presentations were followed by a lively discussion, moderated by Jorge Malleux, from Peru.

A delegate from the EU noted that tropical producer countries face many challenges in the tropical timber trade, and he asked for comment on how best to develop advanced technologies and attract investment in wood processing and trade. Mr Pacheco responded by saying the problem is complex; in Mexico, the underlying issue is that many forest owners are indigenous communities, who manage forests according to customary procedures, and production is inefficient and small-scale. Achieving improvements in productivity requires engagement with these communities to design programmes and promote technologies appropriate to their needs and capabilities.

Mr Pacheco said that building trust with forest communities is essential for any development programme in Mexico because forest communities have had bad experiences in the past. To attract investment in wood-processing industries, legal security is another fundamental requirement, he said. When investments involve communities living in or close to the forest it is necessary to ensure that benefits are fair and evenly distributed. Mr Pacheco noted that, in Mexico, despite the many challenges, forest communities welcome investment in forestry and wood processing.

A delegate of Thailand noted that market transparency is key to sustainable forest management (SFM) and a legal trade, and that many speakers had noted the extent of illegal logging and trade in their respective countries. Against this background, he asked whether FTAs do indeed enhance transparency and help eliminate illegal trade. Professor Popoola responded that trade is motivated by profit and that investments flow to where profits can be made. He said government involvement is required to ensure equity in trade.

A delegate of the US outlined the many benefits she considered that the US–Peru Trade Promotion Agreement is providing and the positive changes that are occurring in the forest sector in Peru as a result. In the long term, she said, these changes should benefit the timber industry in Peru.

A delegate of PNG noted the importance of clarity on what constitutes illegal logging, and countries need to define it to suit their own contexts. Mr de Boer responded that the EU Timber Regulation's definition of legality is clear: EU importers must ensure that imports are in compliance with national laws in producing countries, and they are obliged to undertake due diligence to ensure that shipments are legal. Mr de Boer also noted that the conclusion of voluntary partnership agreements and the issuing of Forest Law Enforcement, Governance and Trade licences will ensure access to EU markets.

A delegate of Guatemala acknowledged the role played by ITTO in enabling his country to invest in technologies to improve online timber market data and to develop an electronic verification system (known as SEINEF), which now provides a strong chain of custody. He said that, since its development in 2014, SEINEF has increased the availability of forest products and improved information on local markets.

A delegate of Mexico commented that his government is introducing a strategy to promote SFM, with five goals: 1) social inclusiveness; 2) forest management for biodiversity conservation; 3) economic development; 4) monitoring; and 5) poverty reduction. The strategy is expected to support the expansion of legal trade in wood products.

An observer asked whether FTAs are benefiting communities that depend on forests for their livelihoods. Is it possible, he asked, to improve FTAs so they are better able to reduce poverty and thereby to bring the informal and often illegal trade conducted by local people into the mainstream sector? None of the panelists responded directly to this question.

A delegate of Germany commented that the movement of wood products across borders requires the verification of origin and species. Germany, he said, supports the Global Timber Tracking Network, which is facilitating and promoting the use of DNA and stable isotope markers and timber-tracking technologies as a tool to ensure legal timber trade. He suggested that the success in eliminating illegal timber trade achieved through the application of these technologies warrants wider replication.

The takeaway from the discussion

Of the six speakers at the 2016 Annual Market Discussion, two were from consumer countries and four were from producers. The two consumers heaped praise on the FTAs negotiated by their governments, but the speakers from producer countries voiced reservations. If the discussion were a football match, the score would be 2:4 against!

Bilateral and regional FTAs have proliferated in recent years as efforts to secure a global deal on trade liberalization through the World Trade Organization have stalled. But are exporters using them? If not, why not? What benefits do they provide? And what is the downside? The Annual Market Discussion heard from manufacturers, trade associations and academics, and the takeaway message was that FTAs, though well-intentioned, are not delivering equally for every partner.

A recent analysis by HSBC Global Connections looked closely at the use of FTAs in Association of South East Asian Nations (ASEAN) countries, where exporters have no lack of options in their approach to FTAs because their governments have provided them with many choices. According to the HSBC analysis, however, "the choices may be rich, but utilization is surprisingly low, with each FTA signed in ASEAN used, on average, by only one in four exporters".

Recent editions

Compiled by Ken Sato

ITTO 2016. *Criteria and indicators for the sustainable management of tropical forests*. ITTO Policy Development Series No. 21. International Tropical Timber Organization, Yokohama, Japan.

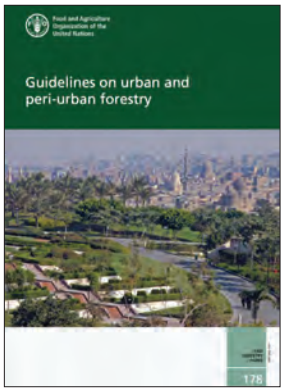
ISBN: 978-4-86507-028-6
Available at: www.itto.int/policypapers_guidelines

ITTO pioneered the development of criteria and indicators (C&I) for sustainable forest management (SFM) in the early 1990s to assist in monitoring and assessing the condition of natural tropical forests in the Organization's producer member countries and in identifying improvements needed in forest practices. ITTO published *Criteria for the Measurement of Sustainable Tropical Forest Management* in 1992 and revised versions in 1998 and 2005.

In 2014, ITTO's governing body, the International Tropical Timber Council, decided another comprehensive review was needed to ensure that ITTO's C&I continue to meet the evolving needs of forest stakeholders and to fully inform the development of forest policies and management practices.

This revised edition of the ITTO C&I is the outcome of that process. It is timely in light of recent global developments in forest policy, such as those related to climate-change mitigation and adaptation, the Convention on Biological Diversity's Aichi Biodiversity Targets, and the Sustainable Development Goals, as well as in view of recent work among C&I processes and the Food and Agriculture Organization of the United Nations to streamline and rationalize national reporting on forests.

See also the article on page 3 of this edition.

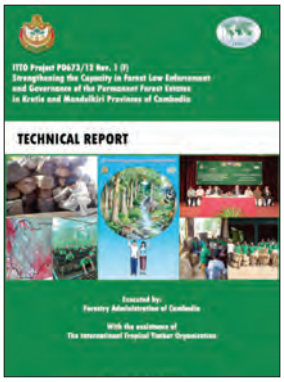


Salbitano, F., Borelli, S., Conigliaro, M. & Chen, Y. 2016. *Guidelines on urban and peri-urban forestry*. FAO Forestry Paper No. 178. Food and Agriculture Organization of the United Nations (FAO), Rome.

ISBN: 978-92-5-109442-6
Available at: www.fao.org/3/a-i6210e.pdf

Although cities occupy only 2% of the planet's surface, their inhabitants use 75% of its natural resources; by 2050, 70% of the global population will live in cities and towns. Sustainable urban development is crucial, therefore, for ensuring the quality of life of the world's people. Forests and trees in cities, if properly managed, can make important contributions to the planning, design and management of sustainable, resilient urban landscapes. They can help make cities more pleasant, attractive and healthy places in which to live, as well as safer, wealthier and more diverse.

FAO initiated and supported a collaborative process to develop voluntary guidelines aimed at optimizing the contributions of forests and trees to sustainable urban development. Scientists, practitioners and public administrators from cities worldwide were brought together to discuss the elements and key challenges of urban forestry, and a smaller team of experts was assembled to distil this vast knowledge. This document is the ultimate result of that process. Intended for a global audience comprising urban decision-makers, civil servants, policy advisors and other stakeholders, it will assist in the development of urban and peri-urban forests that help meet the present and future needs of cities for forest products and ecosystem services. These guidelines will also help increase community awareness of the contributions that forests and trees can make to improving quality of life, and of their essential role in global sustainability.



Forestry Administration of Cambodia 2016. *Technical report on strengthening the capacity in forest law enforcement and governance of the permanent forest estates in Kratie and Mondulkiri Provinces of Cambodia*. Phnom Penh.

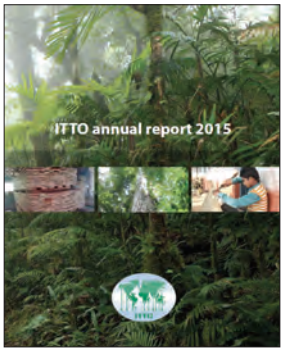
Available at: https://goo.gl/Wd1XFg and by using ITTO's project search function (insert the project ID) at www.itto.int/project_search.

This publication summarizes the outcomes of ITTO project PD 673/12 Rev.1 (F), which was implemented by Cambodia's Forestry Administration with a focus on training and awareness-raising among stakeholders on forest law enforcement and governance (FLEG) and the development of a strategic FLEG plan. The publication was compiled and published by the Forestry Administration with the financial support of ITTO. The project has substantially enhanced the capacity of the Forestry Administration in forest law enforcement and therefore in achieving the objectives of forest reform.

Forestry Department Peninsular Malaysia 2016. *Report on the workshop on capacity building of forestry department Peninsular Malaysia's staff in identification of* Aquilaria *to species level and in the grading of agarwood*. Kuala Lumpur.

Available at: https://goo.gl/XLGGoP

This publication contains information gathered from stakeholders in Malaysia to facilitate the identification and grading of agarwood for the better enforcement of regulations under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The report was produced under the ITTO–CITES Programme.



ITTO 2016. *ITTO annual report 2015*. International Tropical Timber Organization, Yokohama, Japan.

ISBN: 978-4-86507-029-3
Available at: www.itto.int/annual_report

ITTO made significant progress in 2015 in fulfilling its mandate of promoting the conservation and sustainable management, use and trade of tropical forest resources, implementing a wide range of targeted projects and activities and contributing strongly to productive partnerships with diverse organizations and stakeholders. The 2015 annual report provides insights into ITTO's work through field projects, the thematic programmes and other activities, which aimed at sustaining tropical forests.

Moreno-Casasola, P. & Infante Mata, D.M. 2016. *Conociendo los manglares, las selvas inundables y los humedales herbáceos* ("Knowing mangroves, flooded forests and herbaceous wetlands"). Instituto de Ecología, A.C. (INECOL), Veracruz, Mexico.

ISBN: 978-607-7579-56-4

This publication compiles species information on mangrove, wetland and flooded forest ecosystems, their structure, distribution, population dynamics, state of conservation, and the laws that regulate their conservation and use in Mexico. It is written in a simple style suitable for all kinds of audience, and it contains a comprehensive collection of photographs to illustrate mangroves, wetlands and flooded forest ecosystems. It was produced as part of ITTO project RED-PD 045/11 Rev.2 (M).

Ramírez-Pinero, M. & Guevara Sada, S. 2015. *Técnicas, mañas y prácticas para recuperar y cuidar los árboles y el monte en los médanos de Veracruz* ("Techniques, tricks and practices to restore and maintain trees and woodland in the dunes of Veracruz"). Instituto de Ecología, A.C. (INECOL), Veracruz, Mexico.

ISBN: 978-607-7579-47-2

This publication, produced as part of ITTO project RED-PD 045/11 Rev.2 (M), describes techniques for attracting birds, bats, insects and other wildlife that carry the seeds of trees and other plants to cleared dunes, thereby helping in the natural regeneration of those areas, providing connectivity between habitats, and restoring environmental functions. Techniques include providing perches for birds and bats; the use of nets for collecting wind-borne seeds; and methods for attracting native mammals to restored areas.

Moreno-Casasola, P., ed. 2016. *Servicios ecosistémicos de las selvas y bosques costeros de Veracruz* ("Ecosystem services of tropical and coastal forests of Veracruz"). INECOL, ITTO, CONAFOR & INECC, Comisión Nacional Forestal, Veracruz, Mexico.

ISBN: 978-607-7579-57-1

This publication presents the results of an economic valuation of flooded forests and wetlands (mangroves, swamps and marshes) conducted by ITTO project RED-PD 045/11 Rev.2 (M) in the state of Veracruz on the Gulf of Mexico. Among other things, these forests provide crucial protection against storms and floods, help regulate the water supply, underpin a lucrative fishing industry, host important biodiversity, provide a food supply, and store large quantities of carbon. The valuation concluded that the economic value of these services is much greater than the value generated by cattle-raising. The challenge is to ensure that landowners can capture more of that value as an incentive to conserve the few remaining forests in the region.

The aim of the publication is to provide scientific evidence of the value of ecosystem services and to raise awareness among farmers and policymakers of the importance of balancing development with the essential benefits provided by nature. The report summarizes the results of the project in 16 chapters containing photographs, maps, charts, figures and graphics to illustrate the ecosystem services and their value.

These three books can be downloaded free of charge. To obtain the links, please insert the project identification number (RED-PD 045/11 Rev.2 (M)) into the ITTO search function at www.itto.int/project_search.

Alcalde Méndez, M.A., Gómez Guerrero, A. & Valdez Hernández, J.I. 2016. *Foresta Mexicana*. Comisión Nacional Forestal & Colegio de Postgraduados, Mexico.

ISBN: 978-60-7-715223-1
Available at: conafor@conafor.gob.mx

Mexico is one of 17 megadiverse countries worldwide, and forests cover 70% of its national territory and are home to 11 million inhabitants. These forests include temperate forests, temperate rain forests (home of the Monarch butterflies during their winter migration), warm temperate moist forests, tropical rain forests, subtropical forests, tropical dry broadleaf forests, mangrove forests and gallery forests. The aim of this publication is serve as a bridge between the forests and Mexican society by presenting a collection of images that capture the value, richness and beauty of all types of forests in the country, across the seasons.

Fellowship awardees

Eleven Fellowships were awarded at the 52nd Session of the International Tropical Timber Council, encompassing nine producer member countries and including five female Fellows. The total value of the fellowships is US$58 725. Details of the awardees are available at www.itto.int/fellowship_detail/id=4966.

Meetings

1–2 February 2017
Lignofuels 2017
Helsinki, Finland
Contact: www.wplgroup.com/aci/event/lignocellulosic-fuel-conference-europe

2 February 2017
International Seminar for Incentivizing REDD+ Actions: Bridging Public-Private Investment
Tokyo, Japan
Contact: redd-plus@jifpro.or.jp

7–9 February 2017
International Workshop on Tree Species in CITES
La Antigua, Guatemala
Contact: ishii@itto.int

7–10 February 2017
UNFF Expert Consultation on Reporting Format and Cycle
Brasilia, Brazil
Contact: sen@un.org

13–14 February 2017
IV Bonn Challenge
Griya Agung, Palembang, Indonesia
Contact: www.cifor.org/event/iv-bonn-challenge

13–14 February 2017
2nd Biomass Trade & Power Europe
Copenhagen, Denmark
Contact: www.cmtevents.com/aboutevent.aspx?ev=170202&

13–15 February 2017
International Woodfiber Resource and Trade Conference
Furama Resort, Da Nang, Viet Nam
Contact: http://events.risiinfo.com/wood-fiber

22–23 February 2017
8th Carbon Dioxide Utilization Summit
San Antonio, TX, USA
Contact: www.wplgroup.com/aci/event/co2-us

27 February–1 March 2017
3rd Biomass & BioEnergy Asia
Jakarta, Indonesia
Contact: www.cmtevents.com/register.aspx?ev=170303a&

1–3 March 2017
2017 Timberland Investment Conference
Amelia Island, FL, USA
Contact: www.ugacfb.com/timberlandasset

1–4 March 2017
DelhiWood
Greater Noida, India
Contact: www.delhi-wood.com

4–6 March 2017
Forum ATIBT
Dubai, United Arab Emirates
Contact: info@atibt.org

7–9 March 2017
Dubai Wood Show
Dubai, United Arab Emirates
Contact: www.dubaiwoodshow.com

20–24 March 2017
Land and Poverty Conference 2017: Responsible Land Governance—Towards an Evidence-based Approach
Washington DC, USA
Contact: www.worldbank.org/en/events/2016/08/22/land-and-poverty-conference-2017-responsible-land-governance-towards-an-evidence-based-approach

29–31 March 2017
39th Session Joint ECE/FAO Working Party on Forest Statistics, Economics and Management
Geneva, Switzerland
Contact: www.unece.org/forests/wpfsem2017#

3–7 April 2017
19th Commonwealth Forestry Conference
Dehradun, India
Contact: www.cfc2017.in

18–21 April 2017
International Conference on Sustainable Mangrove Ecosystems: Managing a Vital Resource for Achieving the SDGs
Bali, Indonesia
Contact: www.itto.int/mangrove2017; ma@itto.int

1–5 May 2017
12th Session of the UN Forum on Forests (UNFF12)
New York City, USA
Contact: www.un.org/esa/forests/events/unff-12/index.html

4–5 May 2017
RISI's Forest Investment Conference
London, UK
Contact: http://events.risiinfo.com/investment-conference

15–18 May 2017
8th Biomass Pellets Trade & Power
Tokyo, Japan
Contact: www.cmtevents.com/aboutevent.aspx?ev=170501&

22–24 May 2017
2017 Conference to Explore Latest Industry Trends in Asia and Beyond
Shenzhen, China
Contact: http://events.risiinfo.com/asian-conference/en

22–26 May 2017
Innovate4Climate: Finance and Markets Week
Barcelona, Spain
Contact: www.worldbank.org/en/events/2016/11/16/innovate4climate-finance-and-markets-week

29 May–2 June 2017
XVI World Water Congress
Cancun, Mexico
Contact: www.worldwatercongress.com

12–15 June 2017
European Biomass Conference & Exhibition
Stockholm, Sweden
Contact: www.eubce.com/home.html

12–16 June 2017
Expert Consultation on Global Forest Resources Assessments: Towards FRA 2020
Joensuu, Finland
Contact: www.fao.org/forestry/events/en

14–16 June 2017
2017 IUFRO Division 5 (Forest Products) Conference
Vancouver, Canada
Contact: www.iufro2017.ca

17–19 July 2017
High-level Political Forum on Sustainable Development 2017
New York City, USA
Contact: sustainabledevelopment.un.org/hlpf

24–27 July 2017
23rd meeting of the CITES Plants Committee
Geneva, Switzerland
Contact: www.cites.org/eng/news/calendar.php

24–27 July 2017
IUFRO/INAFOR Promoting Sustainable Resources from Plantations for Economic Growth and Community Benefits
Yogyakarta, Indonesia
Contact: www.iufroinafor2017.com

4–15 September 2017
13th Conference of the Parties of the United Nations Convention to Combat Desertification
Ordos, Inner Mongolia, China
Contact: www2.unccd.int/cop13

6–8 September
2nd Asia-Pacific Urban Forestry Meeting
Seoul, Republic of Korea
Contact: www.fao.org/forestry/events/en

11–13 September 2017
2017 International Renewable Energy Conference
Mexico City, Mexico
Contact: www.ren21.net/irecs

19–22 September 2017
IUFRO 125th Anniversary Congress
Freiburg, Germany
Contact: http://iufro2017.com

2–6 October 2017
3rd International Conference on Scaling-up Global Efforts to Secure Community Land and Resource Rights
Stockholm, Sweden
Contact: rightsandresources.org/en/event/commitments-implementation-strategies-accelerate-recognition-rights-ground/#sthash.wNwS0jX6.dpbs

8–13 October 2017
Forest Stewardship Council General Assembly
Vancouver, Canada
Contact: https://ic.fsc.org/en

9–13 October 2017
Lasy2017: Joint Session of the ECE Committee on Forests and the Forest Industry and the FAO European Forestry Commission
Warsaw, Poland
Contact: www.unece.org/forests/lasy2017#

6–17 November 2017
23rd Session of the Conference of the Parties to the UN Convention on Climate Change
Bonn, Germany
Contact: secretariat@unfccc.int

27 November–2 December 2017
53rd Session of the International Tropical Timber Council and Sessions of the Associated Committees
Lima, Peru
Contact: www.itto.int/workshop_detail/id=4991; itto@itto.int

4–6 December 2017
3rd Meeting of the UN Environment Assembly
Nairobi, Kenya
Contact: www.unep.org/about/sgb

5–7 December 2017
53rd Global Environment Facility Council Meeting
Washington DC, USA
Contact: www.thegef.org/events/53rd-gef-council-metting

ITTO's 2017 project cycle deadline

The deadline for submitting project proposals—through the relevant ITTO country focal point—is 6 February 2017. For more information go to www.itto.int/calls_proposals/id=4994. The ITTO manual for project formulation is available at www.itto.int/projectformulation/manuals.