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FISCAL AND NON-FISCAL INCENTIVES FOR SUSTAINABLE FOREST MANAGEMENT

Synthesis of the lessons derived from case studies in Brazil, Cambodia, the Congo, Côte d'Ivoire, Myanmar, Peru, Thailand and Viet Nam

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Peru, Thailand and Viet Nam

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The International Tropical Timber Organization (ITTO) is an intergovernmental organization promoting the conservation and sustainable management, use and trade of tropical forest resources. Its members represent the bulk of the world's tropical forests and of the global tropical timber trade. ITTO develops internationally agreed policy documents to promote sustainable forest management and forest conservation and assists tropical member countries to adapt such policies to local circumstances and to implement them in the field through projects. In addition, ITTO collects, analyzes and disseminates data on the production and trade of tropical timber and funds projects and other actions aimed at developing sustainable forest industries at both the community and industrial scales. Since it became operational in 1987, ITTO has funded more than 1200 projects, pre-projects and activities valued at more than USD 430 million. All projects are funded by voluntary contributions, the major donors to date being the governments of Japan and the United States of America.

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Front-cover photo: Forest inventory being conducted in the Kabaung Reserved Forest, Myanmar.

Photo: Myanmar Forest Department

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FOREWORD

The economic viability of sustainable tropical forestry is often marginal at best, with returns from sustainable timber production and other marketable goods and services comparing poorly to those of alternate land uses. ITTO and its member countries have long recognized that natural tropical forests in particular have had difficulty in attracting investments to help realize their potential to contribute to sustainable development. Several tropical countries have experimented with incentives programmes to try to remedy this in recent years, but there has been no systematic analysis or review of the effectiveness of these.

This report is part of an ongoing effort by ITTO to provide knowledge and learning experiences about potential frameworks for incentivizing investments in natural tropical forests and the sustainable production of wood and non-wood products arising from them. The information and case studies herein will help engage both governments and private-sector players more prominently in climate-change mitigation and REDD+ processes linked to tropical forests. In particular, the report examines models and approaches enabling governments to provide incentives such as tax reforms, tariff adjustments and other monetary and non-monetary benefits that can drive private- and public-sector investments at scale in developing countries. It also contributes to a better understanding of governments' interest and willingness to engage in innovative incentive mechanisms and to pay the cost of such programmes.

The work summarized in this report took place in parallel with a related activity that examined potential gaps between the supply and demand for tropical timber to 2050 and the implications of supply/demand trends for the kinds of existing or planned incentives programmes detailed here. That report, to be published separately by ITTO as *Tropical Timber 2050* (Technical Series No. 49), will also be available in 2021.

ITTO is grateful to Alain Karsenty, the lead consultant who oversaw all the work reported in this study and who also contributed directly to the African case studies. We also thank Unique Forestry and Land Use (responsible for the related supply–demand study mentioned above) and all the consultants and national stakeholders who contributed to the case studies summarized here (the full reports of the case studies, which are very informative, are available on the ITTO website). Finally, we thank the Government of Germany in particular and also the governments of the United States of America and Japan for making funding available to carry out this important study, which I commend to all ITTO members and stakeholders.

Steve Johnson

ITTO Officer-in-charge

Yokohama, April 2021

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Many thanks are also due to Alastair Sarre, who edited this report, and to Claudine Fleury, who translated the Côte d’Ivoire and Congo case studies from the original French.

With great sadness we write that, shortly before this report was published in April 2021, Mr Alain Marius Ngoya-Kessy, who co-authored the Congo case study contained in the annex to the report, passed away suddenly. The author and ITTO express their condolences to Mr Ngoya Kessy’s family and friends—his keen understanding of, and observations on, Congo’s forest sector will be missed.

ABBREVIATIONS AND ACRONYMS

CAR	Rural Environmental Registry (<i>Cadastro Ambiental Rural</i>) (Brazil)
CDA	community development area (the Congo)
CDM	Clean Development Mechanism
CFUG	community forestry user group (Myanmar)
EUR	euro(s)
FSC	Forest Stewardship Council
ha	hectare(s)
ICMS	goods and services tax (<i>Imposto sobre Circulação de Mercadorias e Serviços</i>) (Brazil)
ITTO	International Tropical Timber Organization
LKTS	lesser-known timber species
NWFP	non-wood forest product
PEF	forest permit (<i>périmètre d'exploitation forestière</i>) (Côte d'Ivoire)
PEFC	Programme for the Endorsement of Forest Certification
PES	payments for environmental services
PFE	permanent forest estate
PFES	Payment for Forestry Environmental Services (Viet Nam)
PPA	Water Producer Programme (Brazil)
PPECF	Programme for the Promotion of Certified Forest Operations (<i>Programme de Promotion de l'Exploitation Certifiée des Forêts</i>)
PRA	environmental formalization programme (Brazil)
REDD+	reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
SERFOR	National Forest and Wildlife Service (<i>Servicio Nacional Forestal y de Fauna Silvestre</i>) (Peru)
SFM	sustainable forest management
SODEFOR	Forest Development Corporation (<i>Société de développement des forêts</i>) (Côte d'Ivoire)
USD	United States dollar(s)
VPA	voluntary partnership agreement
XAF	Central African CFA franc(s)

EXECUTIVE SUMMARY AND RECOMMENDATIONS

The aim of this report is to provide an analytical vision of incentives and disincentives for sustainable forest management (SFM) in the tropics with a view to increasing the capacity of ITTO producer member countries to develop and implement effective and successful incentives for the sustainable development of their forests. The report includes case studies prepared by national consultants in Brazil, Cambodia, the Congo, Côte d'Ivoire, Myanmar, Peru, Thailand and Viet Nam. The 22 recommendations made below, based on the report's findings, are for the consideration of governments and other relevant stakeholders.

Fiscal incentives

As a general rule, fiscal and other incentives in the forest sector should be granted only when there is a direct and demonstrable link to SFM. In most of the countries examined in this study, fiscal incentives are available for timber operations in marginal or remote areas, for downstream wood processing, and for locating processing facilities in special economic zones. They are linked only rarely to the quality of forest management (e.g. in the case of tax rebates for certified companies in Brazil and Peru).

- 1) **Develop theories of change** indicating the changes that would occur as a consequence of a given measure or combination of measures. Ideally, such theories would be prepared before deciding on changes to the forest tax regime. Robust theories of change would also point out existing disincentives and structural hurdles that might prevent a proposed incentive from yielding its expected results. This would help in embracing systemic approaches to change and pursuing appropriate policy reforms.
- 2) **Link fiscal incentives to independent third-party certification.** Forest tax rates should be differentiated according to whether certification has been achieved by a company or other forest manager and the type of such certification. Several countries, including Brazil and Peru, already have this type of incentive. Of considerable interest is the policy adopted in Gabon in mid-2020 that identifies three rates for the area-based tax: 1) the most favourable, being for concessions with forest management certification; 2) an intermediate rate, for concessions with a legality certificate;

and 3) the highest rate, for concessions without certification. The weighting of the area tax in the overall fiscal burden is not high, however, and a further step would be to also adjust the harvest and export taxes using the same approach.

Feebates, also known as bonus–malus mechanisms, constitute an instrument of ecological taxation that combines an increase in taxes on unsustainably produced products with a decrease in taxes on products deemed sustainable (e.g. certified). The aim is to achieve budget neutrality by balancing (on an annual basis) tax increases and decreases, as proposed below.

- 3) **Contemplate three levels of forest tax** applicable to the main components of forest-related taxes (i.e. forest area under concession, harvest volume and export-related): 1) malus (if no certification is applied); 2) bonus (if legality certification is applied); and 3) “super bonus” (if forest management certification is applied). Such a system would provide concessionaires with a strong incentive to improve their management practices.

In addition to fiscal incentives linked to the certification of legality and forest management, targeted incentives could be considered as a way of reducing high-grading (i.e. highly selective logging targeting a small number of marketed species). The following suggested incentives may be considered second-order compared with incentives that directly target the quality of forest management:

- 4) **Differentiate tax rates among tree species to promote the harvesting of lesser-known timber species (LKTS).** Any encouragement to increase the harvesting of specific LKTS should be preceded by sound assessments of the sustainability of such a measure.
- 5) **Differentiate tax rates according to location and transport costs** to provide an incentive to reduce high-grading in remote areas. To be effective, however, this measure should be combined with differentiated tax rates for species to encourage the greater use of LKTS.
- 6) **Exempt trees harvested in private plantations from forest taxes,** with such taxes replaced by existing corporate taxes based on profits.

Non-fiscal incentives

Many countries use bidding procedures to allocate forest concessions and lease public plantations. These procedures often comprise both a technical criteria assessment and a financial offer.

- 7) **Give more points in bidding procedures to certified companies applying for new permits.**
- 8) **Adjust financial offers involving annual payments according to timber price trends, and provide incentives (through the payment of rebates) for certified concessionaires.**

Public marketing incentives for legal and sustainable timber should be considered.

- 9) **In public timber procurement policies, target suppliers that can prove timber legality and, ideally, sustainability through third-party certification.**
- 10) **Establish “green lanes” in export procedures to facilitate and speed up the export of certified timber.**
- 11) **Where log export bans exist, relax them for plantation trees to increase prices and thereby provide financial incentives for plantation operators and growers.**

Incentives and disincentives are often linked to tenure and land-use legal frameworks.

- 12) **Design and establish in law a permanent forest estate (PFE) through appropriate legal procedures (e.g. gazetting) and the free, prior and informed consent of local communities.** The first purpose of a PFE is to prevent the allocation of classified forest lands to agriculture and grazing. Forest concessions should be gazetted and local people consulted.

A legally established PFE will generally be insufficient to prevent the allocation of mining or oil permits, but it would raise the expected level of environmental or financial compensation (e.g. through biodiversity offsetting).

- 13) **Recognize the ownership of trees outside forests by landholders** based on simplified and inexpensive procedures conducted with the agreement of neighbours and helped by geolocation. Local governments (e.g. municipalities and districts) should be enabled to grant land titles that provide farmers with sufficient tenure security.

- 14) **Outside the legally established private and public forest estates, prioritize the recognition of forest property rights for communities, households and families to support small-scale private forestry.** This would encourage farmers to keep and take care of trees and will increase opportunities for the development of legal small-scale forest-based enterprises.
- 15) **Enable small-scale informal loggers to enter the formal economy and recognize tree ownership for communities, households and families to provide a framework for legal relationships between landholders and forest operations.** Forest officers should be incentivized, through financial rewards, to facilitate legal permits for small-scale loggers.
- 16) **Encourage supply contracts that allow small-scale wood processors to use industrial sawmill wastes.** The use of rubberwood and oil-palm trunks by both large-scale and small-scale sawmillers and other wood processors should be allowed.

Many forest concessions and plantations are encroached by illegal loggers, farmers and poachers. Relationships with local communities are often difficult because local people think they do not benefit sufficiently from forest use. When concessions are large, inevitably there are overlapping rights with customary landholders. Some concessionaires have started mapping customary areas that overlap with their concessions and are using such maps as a management tool and for benefit-sharing.

- 17) **Require the more-equitable sharing of benefits arising from timber harvesting between concessionaires and local communities, potentially based on the participatory mapping of overlapping rights.** Part of such shared benefits could be conditional on contractual agreements on hunting and the prevention of illegal logging and poaching.
- 18) **Strive to make the governance of forest concessions more inclusive, and consider local communities as stakeholders with voices in management decisions that affect them.** Combined with conditional benefit-sharing measures (as proposed above), this will encourage cooperation against illegal logging and poaching.

Farmers should be incentivized to conserve forests, plant trees and restore natural ecosystems on lands they own or control. Some countries, including India, obtain large shares of their national timber production from agroforestry and trees outside forests.

- 19) **Make financial and non-financial incentives available to farmers for conserving trees, enabling natural regeneration and planting trees on their own lands**, in preference to investing large amounts of public money in state-owned plantations, especially when tenure is unclear and disputed. Payments for environmental services (PES) have been introduced and are in use in a growing number of countries, including Brazil and Viet Nam, and these conditional payments can be powerful instruments for encouraging attitudinal change among farmers towards forest resources.
- 20) **Consider national PES schemes targeting forest conservation and restoration as a key element for successful REDD+ and other environmental policies**, including climate-change adaptation strategies.

Some countries (e.g. Costa Rica) have succeeded in ensuring sustainable financing for national PES schemes through earmarked levies on, for example, fuel and water consumption, supplemented by international financial assistance.

- 21) **Consider various levies as a basis for funding national PES schemes**, understanding that the larger the levy base, the lower its rate and greater its social acceptability.

Financing initiatives such as national PES schemes need to look beyond regular national budgets for financing. Levies on mass-consumption products and services could raise significant funding, but there is a need to also obtain private investment. National and international carbon markets might, in the future, provide financial inputs for the forest sector, but a great deal of uncertainty exists about the parameters of such markets and the level of financial incentives they can provide. Another way of attracting private investments, especially from extractive and agribusiness industries, could be through national schemes for ecological offsetting (particularly biodiversity offsetting).

- 22) **Consider schemes for biodiversity offsetting**, especially as a legal obligation framed by clear regulations, as a means to help fund forest restoration and to remunerate forest holders (including concessionaires) for conservation and restoration measures. If a portion of such offsetting is in monetary form, it could supplement national PES schemes.

1 INTRODUCTION

This report presents an analysis of existing—and the potential impact of new—incentives for promoting investment in productive forests to achieve deforestation-free landscapes and value chains for green growth in the tropics. It is part of an ITTO initiative, springing from collaboration with the World Bank, that also includes a global study of supply–demand gaps for tropical timber (reported separately). The overall aim of the initiative, which is primarily funded by a grant to ITTO from the Government of Germany and its Federal Ministry of Food and Agriculture, is to strengthen sustainable timber value chains to improve their economic, social and environmental benefits, from production to consumption. In particular, the initiative aims to strengthen the contribution of sustainable timber value chains to achieving the Sustainable Development Goals and objectives associated with combating climate change. By proposing and carrying out this initiative, ITTO is assisting its member producer countries in identifying channels for legal and sustainable supply chains—which are increasingly important, given the proliferation of initiatives taken by large companies and government entities to combat deforestation and forest degradation.

The study reported in this document is a step towards the assessment, formulation and proposal of tax and non-tax incentives, subsidies and other macroeconomic tools for strengthening investment in tropical production forests in order to meet the challenges of future supply and demand for certified timber. The aims of the report are to provide an analytical vision of the complexity of incentives, including the dynamics of supply and demand, and to improve the capacity of ITTO producer member countries to develop and implement effective incentives for the sustainable development of their forests. The report includes case studies prepared by national consultants in Brazil, Cambodia, the Congo, Côte d’Ivoire, Myanmar, Peru, Thailand and Viet Nam.

What are incentives?

Before the development of incentive regulation, economists derived and recommended optimal pricing formulas. In contrast, incentive regulation acknowledges regulatory imperfections and moves

the aim from optimal regulation in the direction of practical regulation with desirable properties. Incentive regulation derives from the conviction that conventional regulation to achieve social and environmental objectives has worked poorly in the past and that approaches based on differences in relative prices (i.e. the price of an item compared with the price of other items) could do better by changing people’s behaviour and thereby help align private and collective interests.

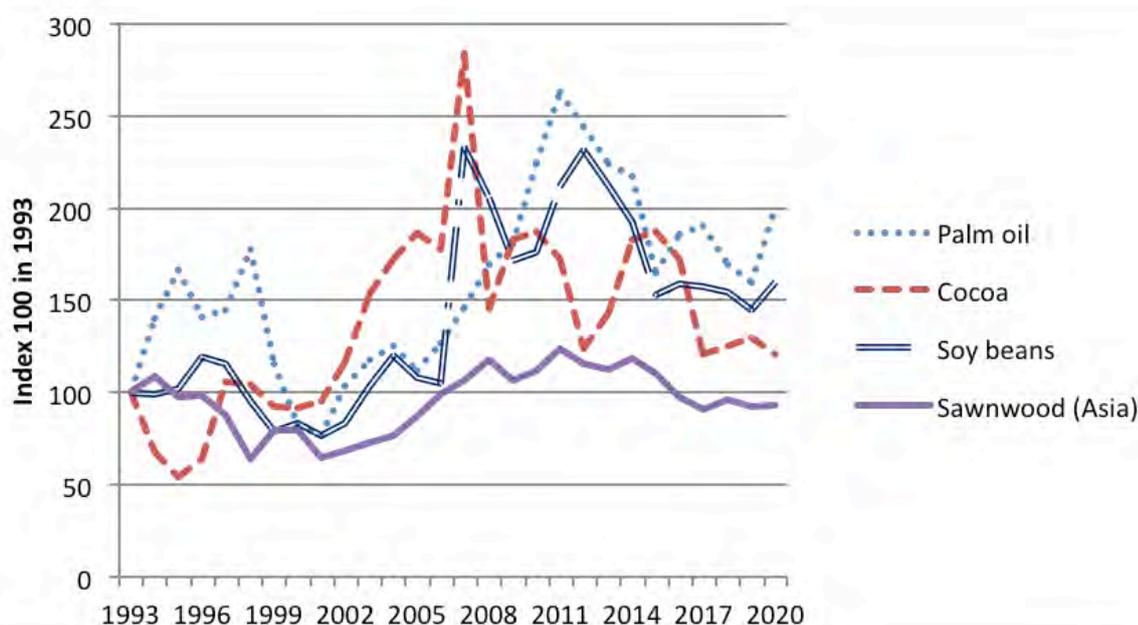
For the purposes of this study, incentives are defined as policy instruments that increase the comparative advantage of sustainable forest management (SFM) and forest plantations and thus stimulate investments in SFM and plantation establishment and management.¹

Traditionally, tropical forestry has relied mainly on prescriptions and coercive regulations to enforce rules. Growing awareness of the depletion of the main commercial species in natural tropical forests due to insufficient regulation has led to the development of a new generation of management plans that are more constraining than in the past, increasing costs and therefore reducing profits for compliant operations. The budgets of many government forest services have declined in recent decades as a result of financial crises that have induced severe cuts in public expenditure. Corruption in extractive activities, and widespread informality, weakens the effectiveness of field control and favours illegal logging, which exerts downward pressure on timber prices and thus reduces the profitability of legal and sustainable timber.

Land-related fiscal policies also have an impact. Weak or absent rural property taxation creates incentives for the extensification of agricultural and pastoral systems, to the detriment of forests. Gaps in land taxation are linked directly to difficulties in developing cadastral systems, and this situation is detrimental to the stated desire of intensifying agricultural production to ensure food security and conserve forest resources.

¹ This definition is derived from Enters, T., Durst, P. & Brown, C. 2003. *What does it take? The role of incentives in forest plantation development in Asia and the Pacific*. Food and Agriculture Organization of the United Nations, Bangkok.

Figure 1: Change in the relative prices of some agricultural and forestry commodities, 1993–2020



Source: IndexMundi.com

More generally, Figure 1 shows that the relative prices of commodities have been unfavourable for forest products in the last two decades, representing a disincentive for compliant forest operations. Pressure has increased over time for the conversion of forests for agriculture and livestock; at the same time, a lack of sustainable harvesting practices has meant that large areas of natural tropical forests have become degraded, helping to justify land-use change.

Finally, an increase in informal forest harvesting (i.e. forest harvesting that takes place outside governmental regulatory and reporting systems) in many countries has hindered the development of domestic markets for sustainably produced industrial timber. This phenomenon is not specific to the forest sector—entire sections of many economies (especially in very poor countries) are experiencing informalization processes—but it has a significant impact on operations striving to ensure forest sustainability.

Direct and indirect incentives

Sectoral and macroeconomic policies help provide the general investment climate and heavily influence the economic behaviour of individuals and corporations.

Creating a sound, long-term investment climate requires, among other things, clarity on property rights for land and forests; the effective rule of law; dissuasive sanctions for illegal activities; access to credit; good-quality infrastructure; and the availability of research findings. Nevertheless, such “indirect incentives”, which are not specific to forestry, do not target the adoption of SFM.

Some indirect incentives, such as clarity on property rights, may be considered as direct incentives, notably for forest plantations. The performance of public-sector plantations has generally been disappointing and the challenge now is to encourage private owners and communities to plant trees and manage them sustainably. Conflicts over land are a significant obstacle for the development of private forest plantations, and the first condition for encouraging this land use, therefore, is tenure security (even for fast-growing plantations). Tenure security is also essential for SFM in natural forests, but the initial investment might be lower compared with plantations.

This report focuses on direct incentives that can make a difference in the adoption of sustainable practices.

2 OVERVIEW OF THE SITUATION IN CASE-STUDY COUNTRIES

Forestry—not a high policy priority

It appears that forestry is not a high policy priority in any of the countries studied. In Southeast Asia, large agricultural plantations are favoured because they supposedly offer better and faster returns on investment, with high levels of job creation and foreign-currency earnings. In Brazil and Peru, a mix of extensive ranching, agricultural plantations and mining is more financially attractive. In Côte d'Ivoire, cocoa development has been highly promoted, and forests have been used as a land asset for settling immigrants. In the Congo, there is a tangible attraction to the agribusiness model, although it is not yet applied widely; mining and other extractive activities are favoured over forest concessions.

As a consequence, the implementation of management plans in natural forests has not been adequately monitored, and stocks of commercial species have progressively been depleted. Dedicated funds for forestry have suffered from insufficient financing; in the Congo, Côte d'Ivoire and Myanmar, for example, many forestry-related taxes and fees have been diverted from such funds into public treasuries.

Land conflicts impede the development of large-scale forest plantations, especially in rural areas with significant population growth. When in-country migration and influxes of people from neighbouring countries are unplanned, people may settle in areas where land tenure is ambiguous. This can make conflict resolution difficult, with uncertain outcomes, requiring lengthy negotiations with community representatives. This issue is pronounced in Brazil and Côte d'Ivoire.

Land tenure is also an issue in many natural forests. In Cambodia, for example, the allocation of economic land concessions to agribusinesses without the agreement of local land users generates recurrent conflicts. Such concessions are often encroached by chainsaw-millers, who may struggle to gain legal access to forests, and by farmers looking for land to cultivate. Wildlife hunting is also expanding inside concessions, jeopardizing biodiversity and, in some cases, tree regeneration (in situations where animals subject to hunting are seed dispersers). Local

communities and families are not considered stakeholders with a legitimate say in concession governance; on the other hand, their greater participation in benefit-sharing in concessions would help guard against poaching and illegal logging by outsiders.

Expansion of informal logging

In most of the case-study countries, the expansion of informal logging, mostly outside concessions but sometimes within them, is having a significant negative impact on forest management. This is not only because their activities are unregulated and therefore unsustainable but also because they supply domestic markets (and sometimes international markets) with low-priced timber at the expense of legal companies that must pay taxes and bear the costs of SFM and certification. This is especially the case in Peru, where many concessions are inactive due to their limited competitiveness, and also in Brazil, Côte d'Ivoire, Myanmar and Thailand.

Domestic markets are huge in Brazil, Côte d'Ivoire, Peru and Viet Nam, while export markets predominate in the Congo and Gabon. The downward pressure on timber prices due to buoyant informal sectors hinders investment in SFM, more-efficient processing and certification. The forest law enforcement, governance and trade processes underway in several case-study countries (e.g. the Congo, Côte d'Ivoire and Viet Nam), and recent changes in national laws, such as one in China prohibiting the trade of illegal timber, might help improve the situation for international trade but appear to have had limited impact to date on domestic markets.

Financing for sustainable forest management

Financing for forest operations and reforestation is a key element of SFM. High interest rates are often quoted as a significant disincentive, but this is secondary to the reluctance of commercial banks to provide loans without safe collateral. In Myanmar, for example, banks do not accept leased state land or planted trees as collateral. There may be a role for development banks such as the World Bank, the African Development Bank and the

Asian Development Bank to create two-step loans with commercial banks and to underwrite the risk otherwise posed by a lack of collateral. Alternatively, development-finance institutions could lend directly to or invest in qualified national enterprises or joint ventures.

Certification—from private initiatives to a public instrument

Certification is a private instrument that is increasingly embedded in public policies. There are two basic types, both of which are subject to third-party auditing: certification of the legal origin of timber (with a traceability system) (also known as chain-of-custody certification); and the certification of forest management based on specific forest management criteria. Although considered a purely private initiative, there is growing interest in the use of forest certification as a public policy instrument by offering incentives for its uptake or making it compulsory. In Sarawak, for example, the Malaysian Timber Certification Scheme (the national system, endorsed by the Programme for the Endorsement of Forest Certification—PEFC) will become compulsory by 2022. In Gabon, all concessions should be certified by the Forest Stewardship Council (FSC) by 2022 (although this deadline will probably be postponed to 2025). The Congo's new forest law mentions compulsory certification for forest concessions.

Other countries are using incentives to encourage certification (rather than make it compulsory):

- In Brazil, certified forest concessions can enjoy discounts of up to 5% on the royalty paid to the Brazilian Forest Service for forest products extracted from public forests. Thus, certification (by either the Brazilian Forest Certification Programme—CERFLOR, a national scheme endorsed by the PEFC—or the FSC) is an incentive for SFM in concession areas.
- In Peru, a rebate of up to 35% is applied to concession fees for voluntary forest certification, the adoption of good practices duly certified, and the certification of legal origin. An additional 20% discount is available if these measures are maintained beyond the fifth year.

Carbon finance

Many forest managers seek carbon finance. Unlike afforestation/reforestation, forest management activities were ineligible for the Clean Development Mechanism (CDM); nevertheless, concessionaires may obtain financing through the carbon-offset policies of corporations and institutions on a voluntary basis. So far, efforts towards this end appear to have largely been unsuccessful in the case-study countries. An exception in Brazil involves a major timber company, Manoa, which manages a natural tropical forest in Rondônia and was able to negotiate carbon credits. Currently, the company generates annual revenue through this means equivalent to 5–10% of the total revenue generated from forest harvesting.

Even though low-impact logging reduces damage and therefore carbon emissions compared with unplanned operations, especially when logging intensity (i.e. the number of trees harvested) is high, the counterfactual is not easy to establish and the net carbon gain is often uncertain. In any case, corporations looking for carbon offsets are generally reluctant to buy them from logging operations, even those with low impact. Another option explored by some concessionaires is to set aside conservation areas (beyond what is required in management plans). This is a more promising avenue, but the additionality of such measures may be disputed. In the Democratic Republic of the Congo and Peru, for example, many concessions are inactive due to a lack of profitability, and set-asides will not be harvested anyway. Even in active concessions, areas within them may intrinsically have low commercial timber value (e.g. due to a lack of access or low densities of commercially valuable species); claims to obtain carbon credits for setting aside such areas may lack credibility, underlining the difficulty of setting appropriate reference scenarios.

If carbon finance will only marginally assist sustainable natural forest management, carbon offsets could potentially be more influential in supporting long-term forest plantations and agroforestry. This, however, would require addressing the thorny issues of non-permanence (i.e. uncertainty over the period in which carbon would be stored in trees and soils) and additionality (the CDM Executive Board rejected almost all the industrial plantation projects submitted to it because they were judged already profitable, even without carbon credits).

Payments for environmental services

Among the case-study countries, payment schemes for environmental services (PES schemes) are well developed in Brazil and Viet Nam, experimented with in Côte d'Ivoire, and mentioned in the Congo.

In Viet Nam, since 2011, the state has contracted households, individuals and communities to protect and manage special-use and protection forests using money collected through the Payment for Forestry Environmental Services (PFES) scheme. This scheme requires downstream water users—water-supply companies and hydroelectric plants—to pay fees for the water they use. Public institutions collect the money and then pay those providing the services through their forest management. In 2018, USD 90.2 million was collected through the PFES scheme, representing 22% of the total state budget of the forest sector and helping fund the protection of 6.40 million ha of forests.

Communities allocated natural special-use or protection forests are entitled to payments from the state budget for their work in protecting and developing those forest areas. On the other hand, communities allocated natural production forest receive no payments from the government for their protection efforts. Moreover, households still prefer to establish forest plantations for the production of woodchips and pulp because these involve rotations of only 4–5 years rather than for sawlogs, which require longer rotations, because of difficulties in accessing state support. This suggests that the PFES scheme might need adjustment.

In Brazil, the regulation of the National Policy for Payment for Environmental Services has not yet been approved, but some states have established their own PES schemes.² The Water Producer Programme (PPA), which is an initiative of the National Water Agency, focuses on the conservation of water resources. The PPA is based on the PES concept as a way of compensating rural property owners for the environmental services generated on their properties and therefore to encourage them to adopt improved management practices in their production and conservation areas.

There is no general rule for the way in which PES schemes work in Brazil. Incentives associated with existing schemes include, for example, direct financial payments; tax reductions; the provision of commercialization platforms for certified credits from environmental services; differentiated credit lines; and the provision of seedlings and technical assistance.

PES schemes in Brazil are mostly coordinated by state environmental agencies. Financial support may be obtained from government budgets and through bilateral or multilateral agreements and they may be channelled through specific funds (e.g. state funds for PES resources).

In Côte d'Ivoire, an international cocoa company pays farmers for each tree planted and maintained over time as a way of encouraging them to produce shade-grown cocoa using agroforestry. A pilot REDD+³ project in the country is also using PES to develop agroforestry. Côte d'Ivoire has put PES at the forefront of its REDD+ strategy but has not endorsed recommendations to finance PES through domestic taxation on widely consumed items (e.g. mobile-phone units and beverages). A dedicated fund has been announced but without a mechanism to generate financial inputs for it. PES is also mentioned in the Congo's new (2020) forest law, but details on financing are lacking.

Land-use planning and establishing a permanent forest estate

Land-use planning, which begins with land zoning plans to establish primary land-use categories, is a key factor in the coherence of public policies. Establishing a permanent forest estate (PFE) (or other category of permanent forests) should be the primary objective of a national SFM strategy. Establishing a PFE in law (i.e. by following appropriate legal procedures) will strengthen the legal position of those forest areas in the event of a unilateral allocation of mining or other (e.g. agricultural) permits by different ministerial departments. Adhering to international standards for consulting local stakeholders in the establishment of a PFE will strengthen its legitimacy at the local level.

2 On 3 July 2020 the Ministry of the Environment adopted the Forest+ Programme (*Programa Floresta+*) that aims to strengthen the preservation of the Brazilian natural forest. The programme is aimed at supporting individuals, legal entities, community groups and others who conduct environmental service activities in areas of natural vegetation or support natural forest recovery. According to the ministry, this is the largest programme of payments for environmental services in the world.

3 The term REDD+ refers to "policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks" (Decision 1/CP.18, 13th Conference of the Parties to the United Nations Framework Convention on Climate Change, Bali, Indonesia, 3–15 December 2007).

In Indonesia, decentralization processes have led to the uncoordinated allocation of forestry and agricultural concessions, resulting in considerable confusion and uncertainty about the consistency of the PFE. Efforts to achieve a unified map (the “One Map” process) have not yet been successful. In Africa, official discourses emphasize the theme of “emergence”, often translated into encouragement for the development of agro-industries such as palm oil, rubber and cocoa. From this perspective, a number of measures taken in the past to allocate land to forest uses (timber production and conservation) are being questioned by authorities on the grounds that they hamper development. In some countries (e.g. Cameroon), this is leading to a refusal to gazette forests and, sometimes, to the degazetting of forests for the establishment of agricultural plantations and mining complexes.⁴

4 Ongolo, S. & Karsenty, A. 2015. The politics of forestland use in a cunning government: lessons for contemporary forest governance reforms. *International Forestry Review* 17(2): 195–209.

3 EXISTING AND POTENTIAL INCENTIVES FOR SUSTAINABLE FOREST MANAGEMENT AND FOREST PLANTATIONS

Fiscal incentives

Non-specific fiscal incentives

Fiscal incentives are not always targeted at SFM. In Brazil and Peru, tax exemptions are granted for logging in remote areas of the country (e.g. the Amazon), and tax benefits are granted for wood processing. These incentives are aimed at encouraging:

- investment in remote areas, close to the logging sites and in a logic of vertical integration; and
- the development of industrial clusters in special economic (“free”) zones. This is the case in the Congo (under the new forest law) and Gabon.

In Peru, tax breaks are also offered to companies investing in forestry research and local-level social education programmes.

In several Central African countries, taxes are modulated according to the distance to major export markets or ports (e.g. the free-on-trucks tax in the Congo and the three tax zones in Cameroon), with a reduced tax base for timber harvested in the most remote concessions. Although this approach offers an incentive for the development of peripheral areas, it is difficult to see it as an incentive for SFM because it benefits operators regardless of the extent to which they are practising good forest management.

In Peru, fiscal and non-fiscal advantages are granted to companies that harvest and process at the same locality. This is not necessarily an incentive for SFM either, because the incentive does not relate directly to forest harvesting and management methods. It should also be noted that, in Central Africa, the trend is rather to separate the place of harvesting from that of processing through the development of free zones. Gabon’s Special Economic Zone is located near the port of Libreville-Owendo; in the Congo, the intention is to create a free zone at the port of Pointe-Noire.

Incentives related to the conservation and sustainable management of forests

Favouring lesser-known timber species. In tropical forests characterized by highly selective logging, some species have been overexploited and others (“lesser-known timber species”—LKTS) have been disregarded because of a lack of commercial value. Increasing stumpage rates for the most commonly harvested species and reducing them for certain LKTS would represent an incentive to diversify the species subject to harvesting; by increasing the profitability of forest harvesting (by increasing timber yields), such a measure could encourage SFM practices and reduce pressure on overharvested species. Thus, tax rates on logs should be differentiated by species, bearing in mind that any encouragement to increase the harvesting of a specific LKTS should be preceded by a sound assessment of the sustainability of such a measure.

Viet Nam has such a differentiation of tax rates among species, but it is unclear whether lower rates take into account the sustainability of increasing the harvesting of identified species.

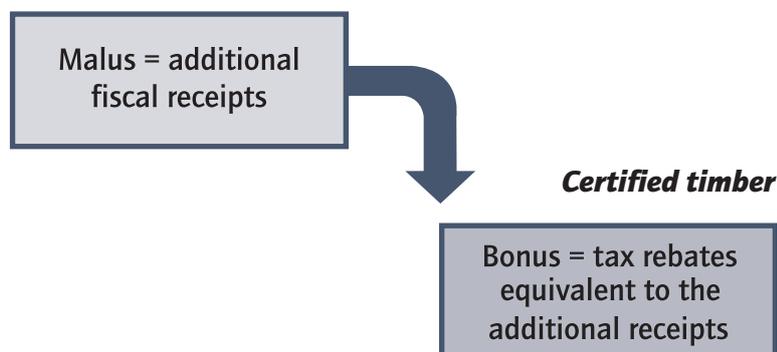
Feebate (bonus–malus) mechanism. An ecological feebate or bonus–malus mechanism⁵ combines an increase in taxes applied to the production or purchase of “polluting” (or unsustainable) products with a decrease in taxes for products deemed “clean” (or sustainable). In such a mechanism, the reduction in tax for sustainable products (i.e. the bonus) is at least partly financed by the increased tax on unsustainable products (i.e. the malus). A bonus–malus mechanism can aim for fiscal neutrality (in which tax increases and decreases are balanced annually), or the government can decide that only part of the malus will be used to finance the bonus.

In forestry, an option would be to use forest management certification (e.g. that of the FSC or the PEFC) and chain-of-custody certification to differentiate the level of tax for forest products. Thus, a distinction would be made between

5 Bonus–malus is a Latin term meaning “good–bad”; in a business context, the term is used to describe systems that reward (bonus) or penalize (malus).

Figure 2: The bonus–malus system for certified and uncertified timber

Uncertified timber



certified and uncertified wood, the former benefiting from a bonus with respect to one or more forest-related taxes (e.g. those based on concession area, stumpage, felling or export). Figure 2 illustrates the concept: additional revenues derived from an increase in the tax rate for uncertified wood are used to finance the subsidies associated with reduced taxation for certified wood.

The ecological bonus–malus system has been used in the automotive sectors of various European countries to penalize the purchase of cars that emit relatively high amounts of carbon dioxide and to encourage the acquisition of less-polluting models; such a system has also been used to reduce the use of pesticides in agriculture. The mechanism aims to change purchasing behaviour.

The trouble with such a mechanism is that it is difficult to predict the extent to which consumers and producers will be sensitive to the tax differential created in the bonus–malus system and thereby change their behaviour, and this makes it challenging to achieve an annual budget balance (i.e. to ensure that the bonus paid to producers of certified products is entirely financed by the malus on other products). For example, more producers than expected may change their behaviour when the system is introduced, in which case the system will be in deficit (i.e. insufficient malus to finance the bonus). Alternatively, the system may induce fewer changes in behaviour than expected, thereby creating a surplus system in which the malus yields more than what is needed to finance the bonus. In the French automotive sector, the bonus–malus system was in deficit in its first years, and authorities reacted by tightening the criteria for the reduction of carbon dioxide emissions necessary to

obtain the bonus: the system then became surplus (fewer bonuses served than malus collected). Because the composition of new-car purchases changes from year to year, authorities regularly revise the bonus–malus scale in this sector.

In forestry, wood is either certified or uncertified. If, from one year to the next, the volume of certified wood sold does not correspond to forecasts, the mechanism would need to be adjusted so that revenue from the malus matches the subsidies associated with the bonus.

If governments want to encourage more forest management certification while acknowledging efforts below this level, the same mechanism could be used with three tax levels: 1) malus—no certification; 2) bonus—legality certification; and 3) “super bonus”—forest management certification. Such a system can easily be simulated. With the right settings, the mechanism would encourage operations to become certified; thus, the bonus and malus rates would need to be revised annually, based on the forecast change in the volume of certified wood destined for export.

Governments may fear erroneous projections (e.g. a higher volume of certified wood than expected, thus increasing the bonus pay-out) that would cause them to lose tax revenue.⁶ To avoid this, rates could be set in a way that provides the treasury with a safety margin (e.g. by setting the target higher for tax receipts than for expected expenditure). Such a safety margin would help guard against losses caused by a higher-than-expected volume of certified wood.

⁶ But note that such forecast errors could also be made in the other direction, resulting in an excess of tax revenues.

Table 1: Tax rebate amounts for five scenarios, the Congo

	Scenario					
	1	2	3	4	5	6
	Certified area (million ha)					
	3 100 000	3 550 000	3 950 000	4 550 000	4 850 000	4 960 000
Tax rebate						
%	EUR					
10	1 187 454	1 359 826	1 513 046	1 742 875	1 857 790	1 899 926
20	2 374 907	2 719 652	3 026 091	3 485 751	3 715 581	3 799 851
30	3 562 361	4 079 478	4 539 137	5 228 626	5 573 371	5 699 777
40	4 749 814	5 439 303	6 052 183	6 971 502	7 431 161	7 599 703
50	5 937 268	6 799 129	7 565 228	8 714 377	9 288 951	9 499 629
60	7 124 721	8 158 955	9 078 274	10 457 252	11 146 742	11 399 554
70	8 312 175	9 518 781	10 591 320	12 200 128	13 004 532	13 299 480
80	9 499 629	10 878 607	12 104 365	13 943 003	14 862 322	15 199 406
90	10 687 082	12 238 433	13 617 411	15 685 879	16 720 112	17 099 331
100	11 874 536	13 598 259	15 130 457	17 428 754	18 577 903	18 999 257

Differentiated tax rates without feebates. Some governments may not want to use a bonus–malus mechanism, fearing the economic and social impact of the malus on those producers unable to cope with a tax increase and with insufficient means to obtain certification. In Gabon, the Amending Finance Law of July 2020 introduces three rates for the area-based tax, which was previously set at XAF 400 per ha for all concessions. Under the new law, the area tax is XAF 300 per ha for forest management-certified concessions, XAF 600 per ha for certified-legal concessions and XAF 800 per ha for uncertified concessions. The measure aims to both increase the level of tax revenue to the state and provide incentives for certification. In Gabon, this development was made possible by a low level of initial taxation. In countries where the tax burden is already high, however, governments may be reluctant to raise taxes further for companies unable to certify in the short to medium term.

An alternative would be to compensate lower taxes for certified companies by international transfers, at a level and for a period of time agreed between a producer country and its international partners. In 2019, the Programme for the Promotion of Certified Forest Operations (*Programme de Promotion de l'Exploitation Certifiée des Forêts*—PPECF) commissioned a feasibility study on a mechanism for compensating states for reducing the forest tax for certified concessions in three Central African

countries, including the Congo. Table 1 presents the results obtained in the study, based on current tax rates, for various harvesting and processing scenarios in the Congo.

Table 1 proposes several scenarios for the area of certified forest and possibilities for reducing forest taxation (from 10% to 100%), with the corresponding amounts to be compensated to the state by development partners. For example, for the current area of FSC-certified forest in the Congo (around 3.1 million ha), a 30% reduction in forest taxes for certified concession-holders would amount to EUR 3.56 million per year, which could be offset by the partners.

It is also possible to adjust tax rebates according to the type of certification. For example, chain-of-custody certification would qualify for a 20% rebate and forest management certification for a 50% rebate.

Non-fiscal incentives

Procedures for bidding for access to forest resources may—or may not—be related to tax rates. Bids can set the annual area fee (e.g. in Cameroon), or they may represent a one-off payment to access the resource. Linking bids to the area fee (equivalent to an annual rent for the land) is controversial because the bid amount becomes a fixed cost to be paid independently of the volume of timber extracted and the prices obtained.

Bidding processes for concessions or leases

A system for allocating resources through auctioning to set annual area fees has been in place in Cameroon since 1996. In this kind of system, economists recommend giving more weight to upstream taxation (e.g. area) than to export taxes because the latter does not provide an incentive to increase productivity or to use the raw materials more efficiently. Moreover, export taxes and restrictions reduce the price of inputs used in downstream production and thus provide an implicit subsidy to domestic industries, which may lead to inefficiencies.

Given asymmetry in the availability of information between prospective concessionaires and the administration, auctioning is a smart way to capture a large share of the forest economic rent—provided there is genuine competition between bidders and a robust auctioning system. Auctioning is also a means to increase the weighting of upstream taxation. Well organized, auctioning can be a powerful instrument to counter corruption, especially if the process is monitored by independent observers and if authorities act on the recommendations for improvements made through such monitoring. For the system to work well, operators need high-quality information on the timber resource for which they will be bidding. In jurisdictions with well-functioning administrations, such information may be a public good provided by the forest service. In states with less capacity, however, operators may need to make their own surveys, which are private goods. The duplication of efforts by several private operators is a waste of financial resources; moreover, the survey cost is an initial barrier to the participation of less-wealthy operators, such as many national players, who therefore often oppose this procedure.

In Myanmar, private-sector stakeholders consider existing regulations and processes for acquiring leases to be complex and onerous. Although tenders are evaluated on the basis of financial criteria (annual land rental plus a one-off premium), a long list of technical criteria must also be submitted, introducing a significant element of subjectivity in decisions on tenders. An alternative approach would be prequalification for bidding based on criteria (e.g. whether the company has forest management certification for its other permits) designed to demonstrate financial, technical and management capability, with the awarding of tenders for specific areas to prequalified bidders based on a more limited set of criteria such as the financial offer. In all cases,

the tender criteria and evaluation processes at each stage should be clear, the basis for decisions transparent and results publicly available.

Competitive auction systems for setting annual fees have certain inherent risks, which are exacerbated by excess installed capacity and a lack of information in the launching phase. The heterogeneity of forests in terms of, for example, the occurrence and distribution of commercially valuable species, timber quality and the proportion of unproductive areas is not always taken into account in forest inventories (both reconnaissance and large-scale), and information asymmetries always exist when public information is limited. Paying a fixed annual area fee—as is the case in Cameroon—when a large portion of the cash flow is determined by often-volatile international prices exposes concession-holders to considerable risk if markets go down.

Thus, competitive auctions should be implemented in concert with targeted fiscal measures aimed at reducing the risks arising from the volatility of international markets. These may include one or more of the following:

- Forest services (or private firms acting on their behalf) could be given the financial means to undertake forest inventories aimed at providing accurate public information on the commercial potential of the resource to be auctioned. Sufficient time should be given to enable potential bidders to make their own surveys.
- The area fee could be linked to the international price of tropical wood, based on an annually updated wood-price index for baskets of products (e.g. logs, sawnwood, veneer and plywood) from various species.
- Export, harvesting and other potential taxes on LKTS could be reduced significantly to promote the commercialization of such species and thereby counter the tendency for high-grading and increase revenue from SFM. Where amendments to forest management plans after auction require a reduction in harvest volume (e.g. by increasing the minimum harvesting diameter for key species), the area fee should be reduced correspondingly.
- Management plans will delineate production and non-production areas within a given concession, but these may not be available at the time of resource allocation. Area-based fees could be charged only for production areas, as identified in the finalized and approved management plans (this would also help ensure that management plans are implemented effectively).

- Concessions could be transferable at auctioned prices with minimal intervention from the forest administration. In cases of evident overbidding (payment default), operators should be required to return concessions without delay, and non-compliance with forestry rules should be sanctioned adequately.

Incentives for certified timber in public procedures

Public purchasing policies. It would be desirable for certified timber to benefit from significant advantages in the awarding of public procurement contracts. In Brazil, public timber purchasing policies require, at a minimum, certified-legal timber; where possible, public purchases should favour forest management-certified timber.

Export procedure privileges. Many timber export ports are congested, especially in Africa, with wood sometimes piling up and deteriorating while customs procedures are completed. Certified timber could benefit from a “priority track” in clearing customs to reduce loading times.

Ecological fiscal transfer

Several states in Brazil have pioneered the use of ecological fiscal transfers through the use of the goods and services tax (*Imposto sobre Circulação de Mercadorias e Serviços*—ICMS) to compensate municipalities for land-use restrictions and the opportunity costs incurred by protected areas. Under the ICMS-Ecológico mechanism, certain states grant municipalities a share of annual financial transfers based on the extent to which they hold conservation units, protected areas and water resources that supply neighbouring municipalities.

Brazil’s 1988 Constitution establishes that 25% of ICMS collection should be transferred to municipalities. Of this amount, 75% should be distributed according to criteria established in the Constitution and 25% may be distributed according to criteria established by state laws. This latter element has enabled the adoption of environmental criteria in the distribution of 25% of the ICMS destined for municipalities.

In Paraná, the distribution of the ICMS-Ecológico is based on criteria pertaining to conservation units in terms of their size, importance and investment level, as well as water catchment sources and other factors.

Such transfers from national or provincial governments to local jurisdictions can have the effect of encouraging such jurisdictions to protect

their forest resources and engage in zero-deforestation initiatives. On the other hand, this kind of mechanism is less useful for improving the management of production forest unless a proportion of the transfer goes to forest management-certified forests.

Ecological fiscal transfer mechanisms, which also exist in other countries, such as India, imply the strong decentralization of decisions (e.g. in the creation of protected areas) to the level of target jurisdictions. Indicators are difficult to determine. Simple indicators are generally used, such as the area under conservation. In India, the central government grants higher financial transfers to federal states if the forest area increases, but it is unclear whether increases are the result of state policies or due to demographic and agricultural changes.

The quality of the management of production forests could be indicated by, for example, the proportion that is certified, but certification is rarely an outcome of policies at the local jurisdictional level. If, on the other hand, the creation of protected areas is a jurisdictional responsibility, ecological fiscal transfers might encourage an increase in the area of protected forests, possibly to the detriment of production forests. In this case, the increase in protected areas may result in a decrease in timber availability and a shift in harvesting pressure to other jurisdictions (i.e. leakage). It may also result in the unregulated intensification of timber harvesting in a jurisdiction’s unprotected forests to meet timber demand.

Transferable development right

In Brazil, a percentage of private land—called “legal reserves”—must be kept under natural vegetation; in the case of forests, such areas may be used for sustainable timber production. The percentage of legal reserves established by the Forest Code depends on the biome in which the property is located, as follows:

- 80% of rural properties in forest areas in the Legal Amazon;
- 35% of rural properties in cerrado/savannah areas in the Legal Amazon; and
- 20% of rural properties in other regions/biomes.

Compliance with this legal provision is essential for obtaining registration in the Rural Environmental Registry (*Cadastro Ambiental Rural*—CAR).

The registration of rural properties in the CAR is, in turn, a requirement for access to various programmes, financing, benefits and authorizations, including environmental formalization programmes

(PRAs),⁷ and for obtaining agricultural credit and access to financing lines, tax credits, and tax exemptions for inputs and equipment.

When a property does not meet the legal-reserve requirement, the owner must provide an “adjustment” for formalization. For this, the Forest Code establishes a time limit of 20 years (i.e. one-tenth of the required area every two years). States can establish the same deadline or a shorter period for formalization.

Adjustments can be made through natural regeneration, intercrop tree-planting and environmental compensation. The environmental compensation mechanism is related to “transferable development rights”, which is a cap-and-trade instrument. Legal-reserve compensation links landowners who possess an area of natural vegetation in excess of that required under the Forest Code with landowners with smaller areas of legal reserve than required (the percentage of required area varies by biome—see above). Thus, this mechanism enables owners with insufficient legal reserves to meet requirements by acquiring equivalent areas in another rural property rather than by allocating land already under productive use to natural regeneration or restoration. Landowners may use this compensation mechanism as long as the acquired legal reserve is in the same biome and if, as of 22 July 2008, the property contained an area of legal reserve that was less than required by the law then in force.

Usually, compensation takes one of two forms:

- 1) *Leasing an area in an environmental easement regime*: owners lease properties with native vegetation to meet their legal-reserve obligation.
- 2) *Acquisition of environmental reserve quota*: owners who lack a sufficient area of legal reserve acquire a quota in another property, provided that the sellers still retain sufficient legal reserve to meet their own obligations.

As with all compensation mechanisms, the main issue here is additionality. Quotas sold by owners might not result from management or conservation efforts but simply from a lack of capital or outlets to clear their forests. On the other hand, surplus areas in forest management plans can be used as compensation areas. The market for such areas is on the rise and may soon become a significant incentive for SFM, especially in the Amazon, where the legal-reserve requirement is 80% of the total area.

⁷ PRAs comprise sets of measures to be developed by rural landowners to obtain environmental approval for their properties—see the Brazil case study.

This incentive mechanism is specific to Brazil, where most forests are owned privately and where the legal-reserve system is in force, thereby generating the “cap” for the cap-and-trade principle. A compensation mechanism has been tested in Côte d’Ivoire in which concessionaires have reforestation obligations that they may fulfil, in part, by funding reforestation programmes in *forêts classées*; the lack of tenure security in *forêts classées*, however, weakens such programmes. Instead of targeting *forêts classées*, it might be more effective to redirect funds to smallholders engaged in agroforestry or the restoration of degraded lands. The validity of such an approach would require well-performing institutions that can ensure control and permanence and avoid greenwashing.

Benefit-sharing and the evolution of concession governance

Large forest management units, which may be plantations, concessions or private properties, face increasing pressure from farmers seeking lands to cultivate or establish pastures on; small-scale illegal loggers and miners; and poachers. In Brazil, the encroachment of managed forests is a significant concern and is cited as a disincentive for investment in SFM. This is also the case in Peru, where several concessions are inactive. In Myanmar, encroachment and the theft of roundwood in plantations are mentioned as disincentives for investment. Although not a major issue in the northern Congo and Gabon, where population densities are low, encroachment is common in Cameroon, the Central African Republic, the Democratic Republic of the Congo and, to a lesser extent, in the southern Congo.

In Myanmar, a 2020 World Bank study⁸ has recommended that “sharing harvest proceeds with local communities” would help reduce encroachment. In Central Africa, relations between forest concessions and local communities are complex. The presence of forest concessions reduces the activities possible for local people but, on the other hand, forest concessions constitute one of the few sources of employment in often isolated areas in the subregion. Rather than desiring them to leave, local people often negotiate benefits with concessionaires.

⁸ World Bank 2020. *Incentivizing sustainable private sector investment in timber plantations in Myanmar: policy options to encourage socially and environmentally responsible investment*. World Bank, Washington, DC. Available at <https://openknowledge.worldbank.org/handle/10986/34149>

What approaches might enable local people and forest companies to coordinate their forest uses in mutually beneficial ways? How can competition be avoided between the activities of local people and those of concessionaires? Decision-makers targeting long-term viability should focus on the complementary organization of different uses in the same ecosystems. Many companies operating forest concessions have adopted forest certification that takes into account social requirements and local land rights.

In Gabon in the early 2000s, a European company worked with a team of Gabonese researchers to map village *finages* across its 615 000-ha concession (a *finage* is similar to a customary territory, reflecting the extent of land held and more or less used by a community). The goal was to distribute a share of logging revenues to villages for community projects, with the sum reflecting the proportion of the village's *finage* overlapping with the concession. This initiative inspired the Government of Gabon to establish the legal existence of *finages* through Decree 105 in 2014: concessionaires must now sign agreements with those local people using resources within a concession and pay a contribution to local development funds from its logging revenues (based on the volume extracted from the *finage* overlapping the concession).

Similar provisions have existed in the Congo since 2007. There, concession management plans must include zones for agricultural development for the benefit of local people, thereby recognizing agricultural uses within concessions. The redistribution of logging revenue feeds local development funds. This experiment has been inconclusive in the Congo, however: to use local development funds, village communities must propose projects that the administration and concessionaire consider viable, and this has proved difficult.

A new generation of forest concessions could adopt governance approaches adapted to the management of multiple overlapping uses of forest lands and their associated resources. This requires shared decision-making via an institutionalized negotiating platform, including public administrations and local authorities, with each stakeholder having the right to vote. In such new concessions, the rights to share profits from logging could be accompanied by contractual commitments from communities, for example to ensure that authorized agricultural plantations do not exceed specified areas and that agreed hunting rules are respected.

Payments for environmental services

Studies are ongoing on means for attracting finance through the demonstration of the environmental and social services rendered by certified concessionaires. The question is whether loggers will find buyers for such services or whether potential customers will prefer to buy services generated in protected areas because of the better image associated with conservation areas (or, conversely, the negative image associated with logging).

PES schemes are already in use in some case-study countries, primarily Brazil (in some states) and Viet Nam, to help finance conservation and reforestation. Such schemes are being experimented with in Côte d'Ivoire to encourage agroforestry and could be deployed under REDD+ strategies in many countries, some of which are aiming to establish national PES schemes. Nevertheless, PES is a contractual instrument that needs to be funded on a regular, long-term basis to be transformational. Moreover, the payments made to land users may need to go beyond compensation for the opportunity costs of conserving forests because of a need for systemic change in farming systems to maintain the provision of certain ecosystem services—potentially requiring, for example, investment, training, income protection, and the development of value chains and markets.

To ensure the success of PES schemes, it is essential to ensure the allocation of sufficient financial resources, as Viet Nam has done with its hydroelectricity-generation and water-distribution levy (and as Costa Rica and Mexico have also done). Such financial resources must be sheltered from annual budget decisions and therefore earmarked for the PES scheme through a specific fund or from a national PES financing institution. In general, deploying broad-based levies on widely consumed products or services will help keep the rate low, thus limiting their social impact.

To help shore up their financing, countries could obtain funding from, for example, the Green Climate Fund, the World Bank and other multilateral initiatives and allocate such funds to PES schemes aimed at rewarding climate-change mitigation activities. There is no guarantee, however, that such financial flows would be maintained or sufficient to ensure the sustainability of such schemes.

4 CASE-STUDY SUMMARIES

The detailed reports of case studies carried out for this study that are summarized alphabetically in this section are included in a separate annex to this report which (due to its length) is available electronically as a separate file on the ITTO website.⁹ The detailed case-study reports included in the annex are as submitted by their authors, with minor corrections. They are available in English only, with the exception of the Congo and Côte d'Ivoire case studies, which are also available in the original French, as submitted.

Brazil

Current situation

Brazil has 488 million ha of natural forest and 9.9 million ha of planted forests. The country's natural forests occur in six biomes: Amazon, caatinga, savannah (cerrado), Atlantic forest, pampa and wetland (Pantanal). The Amazon, caatinga and cerrado biomes contain 94% of the total forest area.

Natural forests are widespread in the northern states of Acre, Amazônia, Mato Grosso, Pará, Rondônia and Roraima. On the other hand, planted forests are mostly found in the southeast (Minas Gerais and São Paulo), northeast (Bahia), centre-west (Mato Grosso do Sul) and south (Paraná and Santa Catarina). Most (about 90%) of the industrial timber supply is derived from plantations, especially *Eucalyptus* (7.5 million ha) and pine (2.4 million ha).

Lands in Brazil may be owned publicly or privately. Public forest lands are mainly natural—only a very small portion of them is planted. Public forest lands belong mainly to the federal government, but there are also areas that belong to states and a smaller portion that belongs to municipalities. Indigenous peoples have secure land rights to 13.8% of Brazil's land area. In 2006, 300 million ha, mainly in the north of the country, lacked proper land title; an estimated 53% of land in the Legal Amazon has uncertain property rights.

Timber harvesting can occur on public lands through forest concessions and on private lands. Concessions were initially considered a good option for providing the timber industry with a sustainable supply and providing an incentive for SFM;

nevertheless, the area of forest in concessions is small (with 3 million ha allocated) and the impact on timber supply is insignificant.

To harvest in private natural forest lands, a timber company should hold a land-title document or a land lease contract and obtain an approved management plan, an annual operational plan and a logging permit. Harvesting permits are not required for forest plantations (either native or exotic species).

A percentage of private land must be kept under native vegetation, called legal reserve, with the function of conserving forest and other natural vegetation, although this land may be subject to sustainable use—forested legal reserves may be used for SFM, including timber production. The percentage of legal reserve established by the Forest Code depends on the biome in which the property is located (as set out in Chapter 3).

In addition to legal reserves, landowners must maintain permanent preservation areas along streams and on steep slopes to protect soils and ensure water quality.

With the goal of helping ensure the environmental formalization of rural properties and possessions, the Government of Brazil established the CAR (see Chapter 3) in 2012. Rural properties must be registered in the CAR to gain access to programmes, financing, benefits and authorizations, including PRAs, and obtain agricultural credit and access to financing lines, tax credits and tax exemptions for inputs and equipment. CAR registration is also a prerequisite for calculating permanent preservation areas and the legal reserve.

PRAs are sets of measures to be developed by rural landowners to make adjustments and achieve environmental formalization for their rural properties. When a property does not meet the legal-reserve requirement, the owner must provide an "adjustment". For this, the Forest Code establishes a time limit of 20 years (i.e. one-tenth of the required area every two years). States can establish the same deadline or a shorter period for formalization. Adjustments can be made through natural regeneration, intercrop planting or environmental compensation. The environmental compensation mechanism is related to "transferable development rights", a cap-and-trade instrument. Legal-reserve compensation links

⁹ www.itto.int/technical_report

landowners who possess an area of native vegetation in excess of that required under the Forest Code with landowners with less legal reserve than required. Thus, this mechanism enables owners with insufficient legal reserves to meet requirements by acquiring equivalent areas in another rural property rather than by allocating land already under productive use to natural regeneration or restoration. Landowners may use this compensation mechanism as long as the acquired legal reserve is in the same biome and if, as of 22 July 2008, the property contained an area of legal reserve that was less than required by the law then in force.

Usually, compensation takes one of two forms:

- 1) *Leasing an area in an environmental easement regime*: owners lease properties with native vegetation cover to meet their legal-reserve obligations.
- 2) *Acquisition of environmental reserve quota*: owners who lack sufficient legal reserve acquire a quota in another property, provided that the sellers still retain sufficient legal reserve to meet their own obligations.

Concessions are allocated through a bidding process. Interested companies submit two proposals:

- 1) *Price proposal*: bidders indicate the amount to be paid for products and services to be harvested in the forest concession area, such as the price per cubic metre of wood to be harvested.
- 2) *Technical proposal*: bidders present goals and commitments related to social benefits, environmental impact, efficiency and local added value to the products or services to be exploited. Bids may include, for example, the number of jobs that will be generated and the amount that will be invested annually in infrastructure, goods and services for the benefit of local communities.

The “contract reference value” is calculated at the signing of contracts, which is an estimate of the annual production value for the contracted area based on the price of winning proposals.

Specific forest taxes apply to concessions in public forests and other forest-related activities. Those pertaining to concessions involve the Brazilian Forest Service and are based on the estimated annual production and the price set in winning proposals.

Existing incentives

Tax incentives are scarce in the forest sector, and most are at the state level. The Government of Brazil has defined mechanisms to provide incentives for forest management and conservation and the harvesting, processing and trade of forest products. A general assessment suggests that these are relatively limited.

The Government of Amazonas has, since 2013, exempted domestic operations based on the implementation of small-scale SFM plans and SFM plans for low-impact logging from the ICMS-Ecológico (i.e. the goods and services tax—see Chapter 3). The ICMS-Ecológico is a state-level tax incentive, first implemented by the Government of Paraná in 1991, involving the transfer of financial resources to municipalities that hold conservation units, protected areas or water sources to supply neighbouring municipalities.

Bonuses have been allowed in forest concession contracts since 2011; these offer a discount of 5% on the roundwood stumpage (by species group) established in contracts for certain actions such as low-impact logging, job generation, participation in research projects and socio-environmental management. Forest concessions can also obtain a discount of up to 5% on the stumpage paid to the Brazil Forest Service if they achieve certification.

Current disincentives

The management of concessions and private forests is associated with various risks, such as encroachment, illegal harvesting, illegal mining, forest fire and deforestation.

The management of natural tropical forests, and timber processing operations, are highly regulated in Brazil. Companies must invest considerable time and money in maintaining the documentation needed to demonstrate legality, and the system for the control and monitoring of forest-related operations is complex and ineffective. The complexity creates high transaction costs and inefficiency in command-and control-instruments; there is a relatively low probability of detecting predatory activities, and offenders often receive only small fines. This favours illegal operations, which exert downward pressure on timber prices and thereby penalize compliant operations.

Transaction costs and associated risks are also a limitation in dealing with concessions. The government has not been efficient in the process

of structuring concessions. Most concessionaires involved in managing concessions are small or medium-sized companies and have limited investment capacity. Concession contracts impose restrictions and generate high transaction costs. It is legally difficult to control encroachment, deforestation and forest degradation involving illegal logging and illegal mining. Moreover, financial institutions do not accept concession contracts as guarantees, limiting access to credits. Although several lines of credit/financing are available designed to subsidize agriculture and forestry, obstacles exist in accessing these.

Several legal provisions support sustainable public procurement in Brazil, but there is no public policy compelling administrators to include environmental criteria in public procurement and thereby support SFM.

Cambodia

Current situation

Cambodia has an estimated 8.48 million ha of natural forests and 40 000 ha of forest plantations. Of the natural forests, an estimated 1.60 million ha (18.9%) is in the PFE and the balance (6.88 million ha) is outside it. Eighty-three percent of the total forest area is owned publicly and 17% is owned privately. All production forest is owned by the state. The felling cycle is 25 years. The 2002 Forestry Law allows the state to grant collective ownership to indigenous communities, who are not allowed to transfer or dispose of their lands to third parties.

Forest management through a forest concession system was introduced in 1991, when the government granted 36 commercial forest concessions for 7 million ha (65% of the country's forest area). A logging moratorium was imposed on all natural-forest concessions in January 2002, and about 3.3 million ha of forest remains under valid concession licences today. Outside forest concessions, timber is produced in annual coupes, and large quantities of timber are also produced from the conversion of forests for agro-industries in economic land concessions. Land conflicts are frequent, due largely to a lack of consultation on the establishment of economic land concessions and the subsequent dispossession of customary lands. These conflicts hamper the development of forest plantations.

Successful bidders for annual harvesting coupes are not permitted to export the harvested forest products and byproducts unless there is a surplus from domestic consumption, requiring approval from the Forestry Administration. Operators of annual coupes cannot compete with the clearfelling of economic land concessions. There has been a ban on the export of logs, sawnwood and squared wood with dimensions thicker than 25 cm since 2006.

Existing incentives

There are incentives for forest plantations but not for SFM in natural forests.

The registered owners of private forest plantations are not required to pay licence fees (such as royalties, transport permit fees or quotas) to harvest and use wood and non-wood forest products (NWFPs) in their plantations. The collection of concession land rental fees for long-term and permanent crops, such as the planting of fast-growing tree species, commences only from the third or fourth year of production. Also, export fees are reduced by 50% for products from forest plantations and by 100% for furniture and final processed products from forest plantations.

Current disincentives

The suspension of 3.3 million ha of concessions since 2002 and the reliance on annual area coupes for timber have been highly detrimental to SFM and have fuelled illegal logging. The dispossession of many customary lands has created tenure insecurity and land conflicts detrimental to plantations.

Regulations do not allow plantation owners and managers—especially small-scale private companies and local communities—to receive fiscal incentives for the establishment of teak plantations smaller than 1000 ha in size or the development of plantations of mainly fast-growing forest species for the pulp and paper industry smaller than 200 ha.

The Congo

Current situation

The Congo has natural forest cover of nearly 65%—about 22 million ha—of the land area and low deforestation. Much of the forest cannot be considered productive, however. In the northern forest complex, for example, only about 60% (9 million ha) of the 15 million ha of forest is outside flood-prone areas and therefore exploitable.

Nationally, taking into account existing national parks, productive forest is estimated at about 10 million ha.

Forests are generally considered public property, even though forest concessions are not gazetted (meaning that the PFE is not established in law). Private plantations can be established from deeds in the public estate, which amounts to a transfer in favour of private entities because even trees that have not been planted become the property of the operator. Provisional certificates of ownership can be drawn up on the basis of customary land rights. However, few provisional certificates of ownership and land titles have been issued because commissions lack the financial resources to operate.

One of the Congo's issues is the overlapping of use rights, particularly between mining and forestry. As in most countries, mining rights have political priority over forest management rights. No national land development planning or other land-use planning document for allocating land has been compiled, even though there is legal provision for this process.

The Congo has 12 million ha of savannah (about 35% of the national territory) that is relatively unexploited. The Government of the Congo has expressed a desire to use part of this land for timber and bioenergy plantations, either subject to public governance or in association with the private sector. Legally, the savannah is part of the public estate, but it has been appropriated by individuals, families and ancestral lines according to customary processes. Land occupation is not normally highly visible, but development involving plantations is often a source of claims over the land concerned. The government aimed to create 1 million ha of plantations but, as the result of several difficulties, no more than 80 000 ha has been established to date (no data are available on survival rates).

Log exports are restricted through an obligation on companies to process at least 85% of their log production. The Congo has the largest area of certified natural forest in the tropics, with 3.16 million ha under FSC forest management certification. This area is being managed by two logging companies (CIB-OLAM and IFO) and four forest management units. Just over 2 million ha under three other logging companies is certified as legal or "legal source".

Unlike other countries in the subregion, the Congo did not seek to establish autonomous community forests until the promulgation of Forestry Law 33-2020 in July 2020. The model selected involves community development areas (CDAs) in forest concessions. CDAs must be indicated in forest concession management plans for the development of community-led initiatives. Several potential CDAs have not been implemented, however, and local people are not familiar with the concept. A few simple management plans have been produced, but their implementation has been inconsistent.

In the interests of good governance and transparency, the Congo established an independent forest monitoring system in 2006 to strengthen forest control. This system was implemented by an international non-governmental organization (NGO) until 2013 and by a national NGO since then.

As in several other Central African countries, there are three main forest-related fees based on land area, felling volume, and export—although established companies are subject to about 30 fees. There is a discrepancy between theoretical and actual taxation: often, companies do not pay the forest taxes they should ordinarily pay, owing to bilateral (and usually not-made-public) agreements with different authorities involving tax prerogatives. There are rebates in exchange for services (e.g. the maintenance of roads and the use of equipment for administrative structures), some of which are the subject of formalized procedures and others are based on informal arrangements.

Forestry Law No 33-2020 contains several measures designed to promote SFM, including:

- the obligation for concession-holders to obtain forest management certification or certification of legality. Companies must "certify the management of their concessions under management or the legality of the products harvested and processed therein" (article 72). The law also mentions the possibility of acknowledging private certification for the verification of legality and the implementation of a national forest certification system;
- the acknowledgement of community forests, "with a local community being responsible for the initiative leading to its creation and sustainable management", community forests being "of the natural forest found in the land of a local community and indigenous peoples [and] that has been gazetted in their favour";

- the “right to generate carbon credits and to market them” for “natural and legal persons”, and a principle of co-ownership between the project promoters, the state, local authorities and holders of customary rights; and
- the introduction of the concept of prior consent of communities and civil-society organizations for the gazetting of forests—“forest gazetting obeys the principle of free, prior and informed consent of the populations affected by the gazetting project and the principle of consulting civil-society organizations in the district concerned”.

Many of these innovations should be favourable to SFM, but the accompanying regulations will need to confirm this. Several articles in the law refer to a package of measures that profoundly and unilaterally alter relations between the Congolese state and the forest industry and will result in a reduction in tax revenues. In summary, this package: bans the export of most logs (only “heavy and hard” timber that uses specific technology for machining can be exported—the species list needs to be set by regulation); introduces a “production-sharing regime”, which requires the physical delivery to the state of a percentage of logs produced by forest companies; and converts a number of taxes and levies (e.g. corporate tax) into in-kind contributions through the transfer of logs to the state.

Existing incentives

Management standards in the Congo are rigorous and fairly comprehensive. Independent surveys have shown that FSC-certified Congolese companies (forest management certification) have obtained convincing results in antipoaching and wildlife management. Certification provides a guarantee of the proper implementation of forest management plans and encourages companies to go beyond legal standards.

The establishment by the Government of the Congo of independent forest monitoring in the 2000s and then as part of a voluntary partnership agreement (VPA) with the European Union is a very favourable measure for SFM. The signing of the VPA was another positive step towards improving forest governance.

The Congo’s approach to including the timber sector in the Extractive Industries Transparency Initiative has increased knowledge of the country’s forest tax revenues and produced payment declarations by certain companies. One company published detailed payments, but some companies simply

reported the overall total of taxes paid, with no breakdown. The vast majority of companies reported no data.

The Congo’s 2014 forest policy document proposes innovative avenues for involving local communities in the co-management of forest concessions on the basis of the recognition and acknowledgement of their user rights, while also allowing the possibility of autonomous use and management of timber resources. The obligation to form CDAs within the framework of forest management plans constitutes a step forward in participatory management, although the principle of acknowledging customary rights throughout the concession, as referred to in the forestry policy document, has not yet been implemented.

Tree-planting is conditional on land security, and this is promoted by the possibility of recognizing customary rights. Planting trees outside the PFE is encouraged by an individual’s right to exclusively enjoy the benefits of the planted land and to own the trees therein, subject to the rights of third parties.

Current disincentives

The process of recognizing customary rights is associated with “land development”, which may encourage users to replace natural forest with crops to demonstrate such development. The lack of resources allocated to commissions in charge of recognizing customary rights keeps many communities in a state of legal insecurity.

The requirements for management standards are focused on the timber resource and place only modest emphasis on biodiversity. The minimum replenishment rate for marketable tree species is established for the first cutting cycle, but standards do not address the issue of sustainability beyond the first cutting cycle.

Certified companies face unfair competition from other forest companies that only partially comply with regulation, and this undermines their economic position. The inadequate enforcement of the regulatory regime, particularly regarding non-compliance with forest management plans, is a major issue. The insufficiently dissuasive nature of sanctions and the absence of a system of joint liability between contractor companies and subcontractors limit the capacity to capitalize on independent monitoring. The practice of granting tax rebates for work contravenes the transparency required when collecting tax revenue.

The introduction of a production-sharing principle—that is, the obligation for companies to deliver physical quantities of logs to the state—can probably be explained by the Government of the Congo’s desire to establish free zones for the processing and export of timber, similar to Gabon’s Special Economic Zone. Because some companies wishing to set up in such free zones may not have forest concessions, the delivery of timber to the state (or to an operator it controls) could enable it to meet the raw-material supply needs of industries in those free zones.

Some certified companies have invested in industrial units for turning almost all timber production into logs. An obligation to deliver a percentage of logs to the state could result in difficulties in supplying these processing facilities (with the resultant economic consequences) or provide an incentive to increase the volume harvested; both outcomes would be detrimental to SFM.

Côte d’Ivoire

Current situation

Côte d’Ivoire’s forest area decreased from 16 million ha in the 1960s to 3.4 million ha in 2015, the country basing its economic development policy on agricultural exports (e.g. of cocoa, coffee, rubber and palm oil). The attraction of producing cash crops in a context of poverty, high population growth (+2.55% per year) and poor law enforcement encourages producers to convert forests to agriculture. A high rate of immigration of agricultural workers from neighbouring Sahelian countries to work on cocoa plantations, often established in *forêts classées*, has created a complex land situation characterized by ambiguity over the nature of each other’s rights.

Traditionally, in Côte d’Ivoire, a distinction is made between *forêts classées* (the gazetting of which was initiated during the colonial era), with an area of 3.5 million ha and managed by a public organization (SODEFOR), and the rural domain. The process of degradation and agricultural occupation in *forêts classées* began in the 1980s, and timber production was essentially concentrated in the rural domain where the administration issued forest permits (*Périmètres d’exploitation forestière*—PEFs) that were poorly regulated. A total of 384 PEFs was issued for an area of 14.2 million ha for periods of 10–20 years. Each PEF has a minimum

area of 25 000 ha and, since 1994, must have a management plan. One of the consequences has been the elimination, by farmers, of trees in their fields and agricultural plantations in order to avoid damage to crops during logging operations. *Forêts classées* are no longer being harvested because regeneration efforts (including of teak trees planted in the 1990s to delimit *forêts classées*) have been insufficient in the face of agricultural encroachment. Approximately 120 000 ha of plantations has been established, including 75 000 ha of teak.

The official timber harvest volume peaked in 1973 at 5 million m³, partly supplied by the conversion of woodland areas to agriculture, and has been at about 1 million m³ per year for the past few years. The resilience of the forest industry is surprising given the level of resource degradation and the increasing scarcity of traditional species such as samba (*Triplochiton scleroxylon*), tiama (*Entandrophragma angolense*) and iroko (*Milicia excelsa*). The industry works mainly with fromager (*Ceiba pentandra*), a pale, low-density wood found in open spaces and gallery forests. The focus on this species has enabled wood processors to increase their recovery rates. Log exports have been banned in Côte d’Ivoire since 1995; the exception was plantation wood (mainly teak and gmelina) until 2015, when processing became mandatory for plantation wood before export. A major part of wood exports go to Europe, but West African regional markets are increasingly important.

The informal sector harvests at least 3 million m³ of timber each year, supplying markets domestically and in neighbouring countries. Artisanal sawing takes place mainly in agricultural plantations that are themselves located in PEFs.

A new category of forest, “agroforests”, was created in 2019. These are old *forêts classées* that are at least 75% degraded or deforested (*forêts classées* that are not so degraded are to be transformed into protected areas). Permanent agroforests, the area of which will not exceed 20% of the area of the former *forêts classées*, will be available to communities, and the government will strive to promote agroforestry. Temporary agroforests, on the rest of the designated area, will be offered under concession to companies and planters for the growing of perennial crops. These concessions will be granted for terms of 24 years for cocoa and 40 years for rubber trees. It will

be the concessionaire's responsibility to reforest the area, either by practising agroforestry or by gradually reforesting the concession in order to ultimately hand over a forest to the state.

A decree issued in 2019 reformed the PEF system. The main change is that operators will be required to comply with an exploitation quota based on periodic inventories.

As part of its national REDD+ strategy, Côte d'Ivoire plans to create a national PES scheme, aimed particularly at achieving the national objective of 20% forest cover by 2040. The financing mechanisms for such a programme have not yet been decided, however.

The Cocoa–Forests Initiative is a joint initiative of cocoa-producing companies in Côte d'Ivoire and Ghana. Signatory companies are implementing systems to eliminate deforestation from their cocoa supply chains, including mapping more than 1 million ha of plantations in their direct supply chains. The companies have also distributed more than 4 million tree seedlings to producers for the establishment of agroforestry systems and the reforestation of degraded forests in the two countries.

Existing incentives

For decades, public policies in Côte d'Ivoire have been directed towards agriculture-oriented growth at the expenses of forests, but significant changes have occurred since the beginning of the 2010s with the objective of achieving zero-deforestation agriculture and agroforestry.

The 2014 Forestry Law paved the way for the recognition of the ownership of naturally growing trees to landowners, but this requires obtaining land certificates, which are still not widely available in Côte d'Ivoire. Recognition of tree ownership would help change the relationship between farmers and trees—previously, farmers have perceived trees as a risk because they could be cut down by loggers who would not properly compensate farmers for any crop damage. More generally, the potential recognition of ownership would encourage tree conservation and should be favourable to agroforestry.

Côte d'Ivoire is signatory to a VPA with the European Union as part of its efforts on forest law enforcement, governance and trade. The development of legality verification and traceability systems should enable the timber industry to find new outlets in remunerative markets.

Current disincentives

Disincentives are related mainly to the impact of the unregulated informal forest sector, which deprives the formal timber industry of outlets in the domestic and some subregional markets. The informal sector also puts downward pressure on timber prices, hampering investment in the formal sector.

Small-scale wood processors are not allowed to buy wooden waste from the wood-processing industry because there is no permit category for such transactions.

The ban on the export of plantation logs deprives operators of important markets. This is especially the case for small-diameter teak in India, where it is used widely for ritualistic cremations and the demand is therefore for roundwood rather than processed wood.

The wood-processing industry is also not allowed to buy or use rubberwood from growers, or to make various products, including furniture, using that material. This is a disincentive because it deprives the industry of byproducts derived from the country's 600 000 ha of rubberwood plantation. Small-scale informal wood processors also cannot use this resource.

The forest-related fiscal system is complex and does not distinguish species. Export tax rates are not based on the commercial value of products.

Myanmar

Current situation

In Myanmar, the state owns all natural forests. The Forest Law (2018) allows the government to grant private ownership, including for trees planted in private plantations and those established outside forest lands and in community forests registered with the Forest Department. All teak trees remain formally under state ownership. Natural forests are managed under the Myanmar Selection System, with a felling cycle of 30 years and a minimum cutting diameter for teak of 63 cm. The annual allowable cut has recently been reduced by 55% for teak and by 33% for non-teak hardwood species. According to some observers, this measure has fuelled illegal logging. A log export ban has been in place since 2014.

Given past overexploitation, uncontrolled shifting cultivation and illegal logging, a one-year logging moratorium was declared nationwide in 2016–17 to allow forests to recover (the moratorium was for ten years in the Bago region, to 2026–2027).

The Forest Department has established 64 777 ha of teak plantations. Overall, the planted-forest estate covers more than 1 million ha, comprising mainly fast-growing species. Since 2019, the government has allowed the export of teak and other hardwood poles, posts and logs from state-owned and private plantations, especially thinned poles and posts from forest plantations.

The Myanmar Forestry Department has indicated that land tenure for community forests initially granted to community forestry user groups (CFUGs) for 30 years will be extended in 30-year periods for as many times as appropriate. CFUGs have also been given the right to form enterprises to harvest and commercialize wood products and NWFPs and are free to sell their products at market prices.

Existing incentives

Existing fiscal incentives include income and corporate tax holidays, ranging from seven years in zone 1 (which is classified as least-developed) where forest plantations are likely to be established, to three years for zone 3 (where there is adequate development). Thus, this incentive is likely to be of interest only for short-rotation plantations that can generate taxable income within the seven-year tax holiday period.

Community forests established on forest lands are exempt from land-based fees. Land leased for 30 years for forest plantation establishment is renewable for up to two ten-year periods; it can be inherited or sold to other persons or organizations according to existing laws with the permission of the Forestry Department.

Since 2019, the private sector and local communities planting high-value commercial forest tree species on their own land are able to harvest those trees without the need for approval from the Forestry Department, as was required in the past. Since 2015, the private sector, farmers and local communities who are approved to cultivate on reserved forest areas are not required to pay annual land rent. This has motivated stakeholders to plant forest trees on their lands.

Current disincentives

Restrictive measures such as the logging ban (still in force in the Bago region), the log export ban, and reduced harvest quotas have increased illegal logging, and plantations have not delivered as expected.

Peru

Current situation

Peru has the second-largest area of Amazon forests and the fourth-largest area of tropical forests worldwide. The country's 74 million ha of forest (57% of the land area) is mostly natural forest. Fourteen species account for 87% of Peru's wood production in natural forests. Planted forests cover about 1.2 million ha, 85% of which is in the Andes, comprising *Eucalyptus* and pine species.

Forests planted on public lands, and natural forests on public and private land, are considered part of the national forest patrimony and are therefore under government regulation. Forest management plans and authorization are required to harvest these, and the harvested timber is subject to taxation. On the other hand, forest plantations on private and communal properties are not considered part of the national forest patrimony and authorization is not required for their harvesting.

Peru's Constitution establishes that customary rights can be used as a basis for the application of legal principles. The authorities of indigenous and rural communities may perform decision-making functions in their territories in the exercise of their customary rights.

Economic ecological zoning is a mechanism designed to prevent conflicts related to overlapping titles and improper land use. Forest concessions are irrevocable, and holders should comply with their obligations and management plans as stipulated in forestry legislation. There are four types of concession:

- 1) *Forest concessions for timber purposes* are awarded for 40 years, and contracts are renewable. If a grantee wishes to use other resources in its concession area, such as NWFPs, they must submit additional management plans for approval by the competent authority. A little more than 700 000 ha of this type of concession is FSC-certified.
- 2) *Concessions for forest products other than timber* are granted in permanent production forests and forests with production land for a renewable term of 40 years and for areas up to 10 000 ha in size.
- 3) *Ecotourism concessions* are granted for up to 10 000 ha of forests, preferably not classified as permanent production forest or land for protection, for renewable periods of up to 40 years.

- 4) *Conservation concessions* are granted on protection lands to develop biodiversity conservation projects for a renewable period of up to 40 years. The main objectives of these concessions are protection, research and environmental education. There is no area limitation, and allocation is based on technical studies and proposals submitted to the National Forestry and Wildlife Service (*Servicio Nacional Forestal y de Fauna Silvestre*—SERFOR).

Peru's timber concessions programme covered 10 million ha in 2002, but it is estimated that only 2 million ha is now active and the other 8 million ha is dysfunctional or abandoned. SERFOR estimates that 40% of the total wood volume produced in Peru is of illegal origin. Logging permits based on falsified annual plans are used widely to harvest trees in unauthorized areas. As a result, much of the timber coming out of the Peruvian Amazon is sourced from outside authorized concession areas. Despite this, the Government of Peru plans to shift 15 million ha of forest into concessions, which is expected to increase the forest sector's share of the economy from the existing 0.17% of gross domestic product.

Existing incentives

The following incentives are available to concessionaires:

- a 25% discount on concession fees for carrying out research aligned with the forest research programme approved by SERFOR and obtaining field results based on demonstrable and replicable scientific data;
- a 25% discount on the concession fee for reporting to the Regional Forest and Wildlife Authority and SERFOR annually on the results of permanent sampling plots established in a concession area; and
- a discount of up to 25% on the concession fee for conservation and restoration areas not intended for forest use.

In government procurement, public institutions should apply rules requiring evidence of the legal origin of forest products, including evidence of forest certification and good-practice schemes for qualifying proposals. The criteria used for these aspects in the selection of suppliers under the procurement process lack precision, however.

SERFOR is promoting the use of forest residues resulting from logging under management plans and in processing plants, as well as the recycling of forest products, and it has established mechanisms to

make this possible. For example, the use of such wood waste does not require payments for the right to use.

SERFOR encourages forest certification to promote legality and SFM and facilitates the marketing of certified forest products. To access the benefits of and incentives for voluntary forest certification, producers should obtain one of the following types:

- forest management certification;
- chain-of-custody certification;
- controlled-wood certification; or
- another type of certification recognized by SERFOR.

A discount of up to 35% on concession fees applies for voluntary forest certification, the adoption of good practices (duly certified), and the certification of legal or other origin. An additional 20% discount can be obtained if such certification is maintained beyond the fifth year. Concessionaires receive a 5% discount for up to one year for the issuance of an evaluation report or the scoping of concessions by a certifying company. These discounts can be cumulative and a maximum discount of up to 70% on forest concession fees is allowed.

Current disincentives

The main disincentive for SFM is the vulnerability of forest concessions to encroachment by illegal loggers, miners and farmers. Because concessionaires are responsible for the proper management of their concessions according to approved management plans, such illegal operations are a potential source of liability.

Illegal logging, which is widespread, discourages investment in SFM by creating unfair competition. Large companies have only a small share of the domestic market. Therefore, they tend to operate with a relatively smaller number of internationally marketable timber species, meaning relatively low harvest volumes and high operational costs. Article 183 of Supreme Decree No. 018-2015 addresses the legal origin of forest products in government procurement processes, but this provision has not been properly considered.

Peru has a relatively complex legal framework for forests involving a large number of institutions and organizations with diverse legal requirements. This results in lengthy decision-making processes and difficulty in developing national strategies to favour SFM, such as reforming the verification of legality system.

Thailand

Current situation

Thailand's National Forest Policy (1985) sets a target of 40% of the country area in the PFE, comprising 15% for protected forests for nature conservation, recreation and environmental protection and 25% for production forests to produce timber and other forest products. The country's Forest Community Act 2562 (2019) provides local communities with the right to establish and manage community forests. The state owns all natural forests regardless of their status as protected areas or national forest reserves; all trees established on private lands are private property.

Logging became an important economic sector in Thailand in the 1930s and peaked from the 1960s to the mid-1980s. Due to ineffective control and excessive logging, often illegal, however, the forest area declined at an alarming rate, and this led to the imposition of a logging ban in natural forests in 1989, which is still in force.

The National Forest Policy states that efficiency in timber production should be increased through appropriate forest management techniques using both selection and clearfelling systems, but this provision has become irrelevant in natural forests because of the logging ban. Silvicultural treatments such as thinnings are not allowed in natural forests; the production of NWFPs is allowed, and this is mainly carried out by local people.

Commercial forest plantations have been grown in Thailand since the 1980s by government agencies, companies, landowners and farmers. The government implemented the Private Tree Farm Incentive Plantation Promotion Programme from 1994 to 2002 (except 2001), with a planting target of 1.28 million ha. This provided subsidies to encourage the private sector and farmers to plant specified economic tree species on their lands at a density of 1250 seedlings per ha. More than 80 000 farmers joined the programme and a total of 169 400 ha was planted, which is 13.2% of the target. The programme is ongoing, even though it was designed to end in 2002. As of the end of 2018, there was a total of 1.55 million ha of forest plantations, of which 1.49 million ha (96%) was privately owned. The main industrial species planted are *Eucalyptus* and teak.

Existing incentives

The Royal Forest Department of Thailand provides free seedlings to poor, forest-dependent people who are permitted to live in reserved forest areas to reforest their occupied land. In addition, community forest management committees and community forest members have the right to extract forest products and use natural resources and biodiversity for household consumption.

Current disincentives

There are no laws or regulations on carbon credits and associated benefit-sharing mechanisms in Thailand. Thus, private companies cannot receive carbon credits for the trees they have planted in degraded areas under the various reforestation programmes launched by the government, including on their own land. No mechanism or legal framework exists to implement and incentivize PES in natural forests.

Viet Nam

Current situation

Viet Nam's amended Land Law of 2003 stipulates that land is under public ownership, with the state acting as the representative. Organizations, households and individuals may be allocated or leased natural forest for long-term forestry use, but they cannot obtain private ownership or transfer, mortgage or inherit user rights. Under the 2017 Forestry Law, however, organizations, households, individuals and communities may own planted production forests established on their own land, as well as forests they have received as transfers or gifts or inherited from other owners.

Forest management practices focus on managing protection forests, special-use forests and production forests. Natural forest logging predominated before 1960 but, from the 1990s, there was widespread degradation and loss of natural production forest, coupled with uncontrolled forest exploitation; a logging ban was imposed in natural forests in 2016.

The large-scale development of forest plantations began in 1976 with the national afforestation programme, which enabled an increase in the area of forest plantations from 219 000 ha in 1975 to an estimated 1 million ha in 1985. Programme 327 in

1993–1998 was succeeded by Programme 661 (the Five Million Hectare Reforestation Programme) in 1998–2010. Programme 327 assisted in protecting 1.69 million ha and restoring 700 000 ha of natural forest and the afforestation of 640 000 ha of degraded forest lands. Programme 661 led to an increase in forest cover of 2.2 million ha, comprising 900 000 ha of new plantations and 1.3 million ha of natural regeneration. By 2018, the planted forest area had reached 4.24 million ha, of which 3.50 million ha (80.5%) was in production forests and available for harvesting and 741 000 ha was in special-use forests and protection forests, in which harvesting is either not permitted or permitted with various restrictions. An estimated 1.5 million ha of forest plantations comprises acacia species, representing 43% of the total plantation area in production forests in Viet Nam.

Existing incentives

In extremely poor communes and regions, the state exempts land rent for the first 15 years and halves it for the next seven years for enterprises and companies involved in afforestation, forest protection, and the planting of medicinal plants and NWFPs.

Households contracted by the state to protect production and protection forests receive a payment of USD 20 per ha per year. If they are contracted to plant forest trees to reforest areas, they will also receive a grant of USD 80 per ha per year for the first three years and USD 30 per ha per year for the next three years for the purchase of seedlings and fertilizers and for managing the planted areas.

The government contracts households, individuals and communities to protect and manage special-use forests and protection forests with funding through the PFES scheme (see Chapter 2). It also provides grants of USD 2000 to communities and villagers who live in the buffer zones of special-use forests to enable them to increase the productive capacity of forest lands. Production forest is allocated to households, individuals and enterprises for 50 years, enabling them to invest in forest protection and development with a longer perspective. Land-use certificates granted to them can be used as collateral in applications for bank loans, which can then be used to enhance the management and development of the forest lands.

Current disincentives

Households face difficulties in accessing government support to develop certified forest plantations for sawlog production, although the government has set a target of having 300 000 ha of certified forest plantations by 2020 and 1 million ha by 2030 and has developed policies supporting households towards this end.

The use of high-yielding acacia seedlings in forest plantations is still limited, especially in mountainous areas, because of their high cost and unavailability, even though the government has introduced and encouraged the use of these seedlings.

The economic viability of sustainable tropical forestry is often marginal at best, with returns from sustainable timber production and other marketable goods and services comparing poorly to those of alternative land uses. This report, which includes case studies in Brazil, Cambodia, the Congo, Côte d'Ivoire, Myanmar, Peru, Thailand and Viet Nam, analyses incentives and disincentives for sustainable forest management in the tropics with a view to assisting ITTO producer member countries to put effective incentives in place. The report is part of ITTO's ongoing effort to provide knowledge and learning on potential frameworks for incentivizing investments in the sustainable management of natural tropical forests; it makes 22 recommendations for designing incentives that can make a difference in the adoption of sustainable practices in the tropical forest sector.



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