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34

THE PROS AND CONS OF PROCUREMENT

Developments and progress in timber-procurement policies as tools for promoting the sustainable management of tropical forests

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INTERNATIONAL TROPICAL TIMBER ORGANIZATION

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DEVELOPMENTS AND PROGRESS IN TIMBER-PROCUREMENT POLICIES AS TOOLS FOR PROMOTING THE SUSTAINABLE MANAGEMENT OF TROPICAL FORESTS

ITTO TECHNICAL SERIES #34

INTERNATIONAL TROPICAL TIMBER ORGANIZATION

The pros and cons of procurement

Developments and progress in timber-procurement policies as tools for promoting the sustainable management of tropical forests

ITTO Technical Series No 34

by Markku Simula

with contributions from Baharuddin Haji Ghazali, Richard Eba'a Atyi and Oscar Perez Contreras

The International Tropical Timber Organization (ITTO) is an intergovernmental organization promoting the conservation and sustainable management, use and trade of tropical forest resources. Its 60 members represent about 80% of the world's tropical forests and 90% 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, analyses and disseminates data on the production and trade of tropical timber and funds projects and other actions aimed at developing industries at both community and industrial scales. All projects are funded by voluntary contributions, mostly from consumer member countries. Since it became operational in 1987, ITTO has funded close to 1000 projects, pre-projects and activities valued at nearly US$350 million. The major donors are the governments of Japan, Switzerland and the United States.

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FOREWORD

Timber procurement policies have emerged as potent tools for public agencies, trade associations and private companies in addressing public and consumer concerns over the environmental credentials of timber and timber products. Purchasers are increasingly demanding that these products are derived from sustainable or at least legal sources through a process which is verifiable in order to ensure credibility in the eyes of the public. While the ultimate aim of timber procurement policies is to promote sustainable forest management particularly in the tropics, the development of these policies in the context of the proliferating and varying market requirements for tropical timber and timber products is generating significant impacts, both planned and inadvertent, on the trade, marketing, and competitiveness of these products.

This study is the latest to be commissioned by ITTO in its continuing pursuit of its objective of promoting the expansion and diversification of international trade in tropical timber from sustainably managed and legally harvested forests. It reviews developments and progress regarding timber procurement policies, assesses the positive and negative impacts of these policies, analyses the main similarities and differences among timber procurement policies, indicates the extent to which suppliers in ITTO member countries are able to meet the requirements and costs of these policies, and evaluates the need and desirability for as well as the practicality of promoting convergence and coordination among timber procurement policies as a means of facilitating the international trade in tropical timber.

Gaps in the information on and the understanding of timber procurement policies as well as in the capacity of tropical timber suppliers in meeting the requirements of these policies are critical aspects addressed in the study. Key underlying and direct drivers of these policies are identified and analyzed together with germane issues surrounding the policies ranging from proliferation of requirements to the application of social criteria, differences in recognition of forest certification systems, implications of trade regulations in the European Union (EU) and the United States of America (USA), developments of green building initiatives and the role of the private sector.

The inadequate capacity of tropical timber suppliers in achieving and demonstrating legality as well as sustainability is highlighted in the study. Their capacity has been constrained by deficiencies in governance and the slow progress towards the achievement of sustainable forest management. Uncertainties in realizing market benefits to meet the additional costs of meeting the legality and sustainability requirements coupled with the lack of clear and coherent strategies have further added to the suppliers' predicament.

In view of the profound and wide-ranging trade, economic, social and environmental impacts of timber procurement policies and the impending shift from these 'soft' policy tools to the 'hard' regulatory instruments as exemplified by the US Lacey Act and the EU Due Diligence Regulation, the report underscores the essential and urgent need for the tropical timber sector to adopt a positive and proactive approach towards addressing these challenges.

A comprehensive list of recommendations directed to ITTO, governments of ITTO consuming and producing member countries as well as the timber industry and trade has been offered by the study. These recommendations deserve to be seriously considered and taken due account of by the targeted quarters if the positive impacts of timber procurement policies are to be enhanced to support the promotion of legality and sustainability in the tropics.

On its part, ITTO will pay due attention to the report and its recommendations and continue to monitor developments concerning timber procurement policies in the context of promoting the expansion and diversification of international trade in tropical timber from sustainably managed and legally harvested forests through its policy work, project activities and, in particular, its Thematic Programme on Forest Law Enforcement, Governance and Trade (TFLET).

Emmanuel Ze Meka
Executive Director
International Tropical Timber Organization
(ITTO)

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- Malaysia Case Study
- Peru Case Study.

EXECUTIVE SUMMARY

Timber-procurement policies (TPPs) are being considered and implemented by public agencies, trade associations and private companies in many traditional tropical timber markets. The public and private sectors of many ITTO member countries (both producers and consumers) are in the process of implementing such policies with specific requirements for timber and timber products. More recently, green building initiatives have started to specify how timber and timber products used for construction should be produced.

This study was undertaken to assist ITTO in monitoring public and private procurement policies for timber and timber products that might influence market access for and the competitiveness of tropical timber producers. The objectives were to identify the drivers, trends and impacts of TPPs, to analyze their differences and commonalities, and to assess the capacity of tropical-timber producers to meet these emerging market requirements. The study had two main components: (i) a review and analysis of existing TPPs in the public and private sectors; and (ii) country case studies.

PROCUREMENT POLICIES AS A TOOL FOR SUSTAINABLE FOREST MANAGEMENT

Key drivers

Public-sector and private-sector TPPs are demand-side tools designed to strengthen forest governance and promote sustainable forest management (SFM). There are four main underlying drivers for their emergence: (i) international commitments, such as those made under the International Tropical Timber Agreement, 2006; (ii) general concerns about illegal logging and unsustainable forest practices, particularly in the tropics; (iii) general national strategies for sustainable consumption and production; and, more recently, (iv) the need for climate-change mitigation. The strongest direct driver has often been pressure from non-governmental organizations (NGOs) in combination with responsible companies that have sought a level playing-field against illegal logging and trade and a marketing advantage. Another contributing factor has been grassroots public concern about the environmental credentials of timber and timber products.

Objectives of procurement policies

The key direct timber-supply objectives of most current TPPs (both public-sector and private-sector) are to ensure that products come from legal sources and that the law is respected in the supply chain. Most policies also include SFM in their minimum requirements or as a preferential criterion for the awarding of contracts. While the original objective was to promote legally and sustainably produced products through TPPs, the emphasis appears to have shifted somewhat towards the exclusion of illegal and unsustainable products from the market altogether through regulatory measures.

Public-sector procurement policies

At present, twelve countries have operational central-government public-sector TPPs. The development of such policies has been particularly strong in Europe, partly as a result of guidance and promotion by the European Union (EU). Six EU member states – Belgium, Denmark, France, Germany, the Netherlands and the United Kingdom (UK) – have operational public-sector TPPs. Outside the EU, China, Japan, Mexico, Norway, New Zealand and Switzerland have operational policies. Several other countries are in the planning stage of public-sector TPPs or address the issue within broader green public-sector procurement policies.

Public-sector TPPs are relatively new instruments and their implementation is at an early stage. Many apply stepwise approaches and include ambitious targets that have often proved to be unrealistic. Development processes have been time-consuming due to different stakeholder views on the procurement criteria that should be applied. Only in a few cases have *ex ante* impact assessments been made, usually from the perspective of the implementing country itself.

Several countries are in the process of revising their public-sector TPPs. Belgium and Denmark are in the final stages of the adoption of new policies.

Germany's TPP will be reviewed in 2010 and France will revise its policy to include criteria for the recognition of forest certification schemes.

Product and material coverage

The product coverage of public-sector TPPs always includes timber/wood and products but varies with regard to paper products. The overall tendency appears to be towards comprehensive coverage, including paper and board and products made thereof. The Norwegian policy is an exception as it refers to tropical timber only, prohibiting its use. Raw-material coverage is usually comprehensive but some policies do not include sawmill co-products or recycled wood. This presents a problem for reconstituted wood-based panel producers, among others.

Minimum requirements

The minimum requirements for timber supplies in public-sector TPPs refer to legality or sustainability, or both. In the EU, four countries (Belgium, France, Germany and the UK) have set sustainability as a minimum requirement, thus going beyond the guidance of the EU, which specifies legality as the core (minimum) criterion. The Japanese and New Zealand policies require legality, while sustainability is preferred. In Mexico, legal origin and sustainability are required. The Chinese policy requires that timber supplies meet the criteria of a domestic eco-labelling scheme. Some policies allow a degree of flexibility with regard to the availability of supply. The overall tendency appears to be towards both legality and sustainability as minimum requirements in public-sector TPPs.

Degree of obligation

All policies are mandatory for central governments except in Denmark, Norway and Switzerland, where they are voluntary. The mandatory obligation has been expressed in different ways and some policies are more flexible than others (e.g. 'must buy' versus 'must seek to buy' versus 'if available' versus 'if possible'). The tendency is clearly towards more binding mandatory implementation in purchasing by central governments; in many countries, local governments are also strongly encouraged to follow the national policies.

Implementation

For all TPPs, implementation requires adequate evidence of compliance by the supplier and the delivered products. In most countries, guidance for purchasing agents and suppliers is fairly general or is still lacking. The UK is an exception and its detailed approach could serve as a reference for other countries. Good guidance mechanisms are particularly needed in situations where progress in policy implementation is slow. Sanctions may not always be defined but it is apparent that non-compliant suppliers are at a significant risk of losing future business in the public-sector market.

Definition of legality

Clear definitions of legality and sustainability are crucial to the implementation of TPPs. The general approach to defining legality is to equate it with compliance with national laws and international conventions. This is in line with the recognition that trading-partner countries have the sovereign right to define legality in their specific conditions. However, many public-sector TPPs contain quite detailed specifications on the scope and aspects of relevant national legislation that must be covered in order to qualify for 'legality'. Public-sector TPPs in different countries have different interpretations of which regulations should be covered. Some of the differences have significant implications for tropical-timber producers and should be duly considered in policy design to avoid unnecessary obstacles to trade. There is a need for more clarity in definitions of legality, and for greater consistency between various public-sector TPPs. Since, overall, the various approaches are quite similar, they offer ground for harmonization through, for example, the development of a generic definition (or standard) of legality. Future harmonization efforts could build on the experience of Denmark, the Netherlands and the UK, which have made significant progress in this field.

Definition of sustainability

Three approaches have been taken to the definition of sustainability in TPPs. These are the use of:

- short, overarching definitions (e.g. Japan) or the listing of a few key elements of SFM (e.g. Belgium)

- detailed provisions for various elements of sustainability, largely within the framework of internationally agreed elements of SFM (e.g. Denmark, the Netherlands and the UK)
- the definitions used by forest certification systems (e.g. France, Germany, New Zealand and Switzerland).

In effect, the sustainability criteria in TPPs represent unilateral requirements for SFM that must be complied with by all timber-product suppliers (domestic and foreign). The level of detail in such requirements, particularly if expressed in prescriptive forest-management terms, can be problematic because they may not be applicable to specific countries in the tropics with varying forest, ecological and socioeconomic conditions.

Trade rules require that all the selection and award criteria in public procurement are related to the subject matter of the contract. There is an ongoing process in Europe to clarify whether social criteria can be applied in this context. Due to the variety of social aspects relevant to forest management, and their broad scope, this area is likely to remain subject to debate, even though such aspects form one of the three pillars of the sustainability concept.

Proliferation of policy requirements

Significant differences between the TPPs of different countries in their detailed SFM and legality requirements is a cause of concern for those tropical-timber producers who want to supply several markets. There is a danger that differing definitions will continue to emerge, further complicating international trade. Detailed, comprehensive sets of requirements for sustainability are likely to lead to a situation in which the options for demonstrating compliance will, in practice, be limited to certificates issued under 'acceptable' forest certification systems. Tropical-timber producers, however, are not always capable of providing proof of legality or sustainability through forest management certificates; it is particularly important, therefore, that they have feasible, clearly identified options for providing such proof.

A clearer picture is emerging gradually on the definition of sustainability: internationally agreed criteria and indicators for SFM are increasingly referred to as a framework, and there is a strong trend towards relying on Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification schemes (PEFC) certificates as proof of sustainability. In the case of legality, however, commonly agreed approaches do not yet exist. There is a clear need to streamline the use of the concepts of legality and sustainability and their respective verification in public-sector TPPs because current un-harmonized approaches could distort markets and impose additional administrative costs on bidders. Streamlining could be achieved through an intergovernmental instrument by defining appropriate, globally applicable framework standards for legality and SFM that could be relied on by national procurement authorities. Such an approach would remove uncertainty and confusion about how to define sustainability and legality and take them into account in public-sector TPPs. It would also help tropical-timber-producing countries to meet market requirements on an equal footing with other suppliers.

Evidence of compliance with policy requirements: certification

Public-sector TPPs provide three main options for providing evidence that a product complies with their requirements: (i) certificates issued under a recognized certification system; (ii) audit statements issued by an independent body; and (iii) other documentary evidence. The first type of evidence plays a leading role in implementation and therefore a need has arisen to define criteria and methodologies for assessing certification standards and systems. This should also concern the standards and verification systems of legality, but there is less progress in these towards harmonized, broadly accepted approaches than in forest certification.

Four countries (Belgium, Denmark, the Netherlands and the UK) have set minimum requirements for certification systems, including definitions of legality, sustainability, standard-setting processes, chain of custody and labelling, and the structure and operation of these systems. The overall approach is similar between the four countries but there are also significant differences. Other countries have directly recognized certain certification systems without publishing the basis of assessment (Germany and France), or referred to systems that may provide adequate evidence

without formally endorsing them (Japan, New Zealand and Switzerland). Yet another variant is the case of Mexico's public-sector TPP, which only accepts certificates issued by bodies that comply with certain legal requirements and are registered by the government.

A situation appears to be developing in which the two international certification schemes (FSC and PEFC) dominate as acceptable proof of SFM (and legality). Independent national certification schemes in tropical countries have had difficulties in obtaining broad acceptance and PEFC endorsement appears to be the only feasible way for them. Friction is likely to arise if only one of the international schemes (i.e. FSC) is accepted, an outcome that is being pursued by NGOs in some countries. This would have significant market implications, since insufficient supplies of FSC-certified timber and timber products would be available to meet demand.

Other evidence

Trade rules do not allow reference to specific certification schemes in central-government procurement policies without provisions for other types of evidence. Existing public-sector TPPs take a variety of approaches. The policies in France, Japan and New Zealand, for example, provide a menu of options. In the UK, the Netherlands, Belgium and Germany, the requirements cover the same elements as those in certification systems; meeting such requirements through means other than specific certification schemes would be difficult for tropical-timber producers and therefore these options have hardly been used in practice. If an alternative documentation route is to be offered, it should be a realistic, practical option and not merely a way of circumventing international trade rules.

Local-government policies

Since the 1990s many sub-national and local governments have established their own, frequently quite restrictive rules for their timber-procurement contracts, often targeted at prohibiting or limiting the use of tropical timber. These policies are based on the erroneous perception that such restrictions would help combat deforestation in developing countries. The policies of local governments have often been created under local pressure driven by environmental groups and are not bound by considerations related to international trade rules. Nor have local-level policies always duly considered the TPP being applied by the central government, resulting in differences between national and local policies. In the longer run, however, national and local TPPs are likely to converge, and several national governments are promoting this approach.

Local-government efforts to promote legal and sustainable products are not limited to tropical-timber-consuming countries. Brazil is a good example of a producer country in which several local-government TPP initiatives have been taken in recent years.

TRADE REGULATION MEASURES

European Union

Progress in combating illegal logging and trade at the multilateral level has been relatively slow, and the EU and the United States have taken regulatory measures to address the problem. FLEGT licences issued under voluntary partnership agreements (VPAs) are designed to provide proof of the legality of tropical-timber supplies. Two countries (Congo and Ghana) have already signed VPAs, and six more countries are negotiating them or are in pre-negotiation consultations with the EU. The impact of VPAs is broader than on exports to the EU alone, since, in principle at least, the required timber-legality-assurance system (TLAS) covers a signatory country's entire timber production. FLEGT licences are already referred to in the UK and French TPPs, and more countries could adopt the same approach.

Since not all timber-supplying countries will find it feasible to sign a VPA and the risk of circumvention remains, the EU is planning to adopt additional measures to fight illegal logging at the global level. These include a 'due-diligence' regulation aimed at preventing the trade of illegally harvested timber in the EU. This would require operators to apply a due-diligence system that would minimize the risk of placing illegally harvested timber and timber products on the EU market. The due-diligence system would include measures and procedures to enable operators to track their timber and timber products, to access information concerning compliance with applicable legislation, and to manage the related risk.

United States

The United States (US) has recently amended the Lacey Act with the aims of combating illegal logging and expanding the Act's anti-trafficking measures to a broader set of plants and plant products. The Act has made it unlawful to import, export, transport, sell, receive, acquire, or purchase, in interstate or foreign commerce, any plants or products made from plants that were harvested or taken in violation of a domestic or foreign law. The Act gives the government the power to fine and jail individuals and companies that import timber products that have been harvested, transported or sold in violation of the laws of the country in which the timber was harvested. In any prosecution, the burden of proof is on the US government to demonstrate that the violators knew or should have known of the underlying violation. The amended Act also includes new import-declaration requirements that have implications for tropical-timber suppliers to the US market.

The new legislative measures in the US and the EU, and a number of similar initiatives under discussion in countries such as Switzerland, Norway and New Zealand, will provide a robust incentive for tropical-timber producers and exporters to stamp out illegal practices in forest management and the timber trade, and encourage them to make rapid progress towards the demonstration of legal compliance. The US and EU regulations represent different approaches but are likely to have similar impacts for all exporters to these markets. Tropical-timber producers will have to build robust management systems and provide sufficient means of proof to enable buyers to adequately assess the risks and to avoid penalties for buying illegal products. The US and EU regulations set clear baselines for legal timber; it can therefore be questioned whether, in these two markets, public-sector TPPs need to refer to legality any more.

GREEN BUILDING INITIATIVES

In several countries, green building initiatives have been under active development for a number of years. The aims of such initiatives are to minimize construction impacts on the environment; use fewer resources, particularly energy; and minimize waste. Targeted schemes are reported in nine countries and there are also several international initiatives. The overall market impact of green building initiatives has so far been fairly limited except in the UK and the US, where more experience has accumulated. However, such initiatives are likely to become a strong market driver for sustainably produced timber. Existing schemes tend to rely on forest certification as a key tool for demonstrating compliance. There is, therefore, a high degree of convergence between public-sector TPPs and green building standards. Where the policies and standards appear to differ is in the acceptance of individual certification systems as proof of sustainability and legality. Further convergence would therefore be desirable, particularly within countries with differing local-government rules.

At present, green building initiatives do not adequately consider life-cycle assessment in material specification and this puts timber at a disadvantage: the carbon-storage role of wood is not considered, the renewability of forests as a source of timber is not recognized, and legality and sustainability criteria are not applied to other materials. Many such initiatives provide insufficient incentive for the increased consumption of wood, since credit points can be gained only by the use of timber certified under a particular certification system (which has a limited supply). This constraint limits the effectiveness of green building initiatives in promoting legally and sustainably produced timber products.

PRIVATE-SECTOR POLICIES

Several large enterprises in the forest sector and their main customers have adopted their own corporate purchasing policies. These focus on: (i) the accuracy and credibility of information on timber supplies, often associated with third-party verification; (ii) the sustainability of forest management; (iii) the legality of production; and (iv) knowledge of product origin. There are differences in how the various concepts are expressed, and detailed criteria also vary. It is difficult for tropical-timber producers to provide proof of performance if they are supplying several buyers with different purchasing criteria. However, many corporate policies refer to one or both of the existing international certification systems.

In at least twelve countries in Europe and North America, timber trade and industry associations and their federations are reported to have purchasing policies or codes of conduct related to wood supply,

and these have become an increasingly important market driver. In most cases, the principle of trading legality-verified timber, at a minimum, is inherent, with a preference for sustainable supplies whenever possible.

The codes of conduct and purchasing policies of timber trade and industry associations are a powerful instrument – it is estimated that, depending on the country, association members account for 60–80% of total national imports of timber and timber products. Although private-sector purchasing policies often have common goals and similar overall approaches, there are also significant differences between them in terms of the formulation of commitments, the degree of obligation, and their specific requirements for the operations of suppliers and member companies. From the viewpoint of tropical timber suppliers, this diversity is unfortunate.

Like almost all governments, timber trade and industry associations largely agree on the need to harmonize their purchasing policies. At present, the main mechanism being deployed towards this end is an exchange of information and experience. The mutual recognition of each other's policies would be another option, but it has received only limited interest. It is possible that regulatory requirements will harmonize some private-sector policy provisions in the EU and US, demonstrating the importance of the role of governments in these kinds of issue.

COSTS AND CAPACITY OF TROPICAL-TIMBER-PRODUCING COUNTRIES

In general, most TPPs mean that, in the long run, suppliers in tropical-timber-producing countries will be expected to provide, through appropriate means, adequate evidence of the legal origin of their products, the legal compliance of their operations, and the sustainability of forest management in the areas in which the timber is harvested. There are two main, non-exclusive options for how such evidence can be provided, and it appears that, in the short and medium terms, both systems will be applied in parallel:

- Government-implemented assurance system for legality: this is likely to be applicable in countries where the size of the timber sector is sufficient to justify the necessary public investment in setting up such a system.
- Private-sector-implemented auditing/certification or other due-diligence systems, typically involving independent audits: this option is generally applicable to sustainability requirements but may also apply to legality verification in situations where the government-operated control and supervision system cannot (yet) provide the necessary assurance of legal compliance.

National-level legality-assurance systems

Initial experience in strengthening existing monitoring and control systems in countries that have signed or have entered a negotiation process to sign a VPA with the EU has shown that considerable effort is often needed before a national TLAS will be deemed adequate by trading partners. Few tropical countries have sufficiently robust control systems in place.

The measures needed to strengthen national enforcement systems in tropical-timber-producing countries depend on the current level of performance. They vary widely, from relatively small improvements in control systems to major legal and institutional reforms. The need for institutional strengthening is not limited to the forestry sector: the effective elimination of illegal logging often also requires improvement in the functioning of the overall regulatory and institutional framework.

Improving existing TLASs in tropical-timber-producing countries is a complex, country-specific exercise that requires resources and time. Often, despite their higher apparent costs, countries should favour advanced technologies, as Malaysia intends to do, because digitized systems can eliminate the loopholes of paper-trail-based systems. In the short term, however, many countries are likely to opt to improve their existing systems because of the significant additional costs of a digitized control system.

Private sector

In the private sector, the key instrument for demonstrating sustainability is forest certification. Certification, however, imposes a significant cost burden on forest management units and the industry, particularly in community forests and

smallholdings. Depending on country conditions, the size of the enterprise/forest management unit, the level of planning, the management system in place, and the need for additional studies, staff and training, the additional cost can amount to several percentage points of the product sale price.

Need for financing and external support

In aggregate, in Cameroon, it would cost about US$36 million for all timber producers to achieve legality and another US$17 million to achieve SFM certification in each individual forest management unit. The cost of an improved national information system would be another US$4 million. In Peru, strengthening the control system would require about US$14 million in investment and US$2.7 million in annual operational costs. Another US$28 million would be required for the certification of all forest management units in the country. While these costs would have to be paid mostly by the government and timber producers, there is a need for external support.

Such support would be needed in producer countries in a range of areas. In Malaysia, for example, external assistance is needed for: (i) process support, including institutional redevelopment and especially capacity building; (ii) research, as well as technical assistance, to strengthen the security of the asset and other aspects of control, such as chain-of-custody auditing; and (iii) information and communication support to enhance the marketability of Malaysian timber. Short-term capacity-building needs have been estimated at US$1.6 million, while the government is planning to arrange financing for institutional restructuring focused on law enforcement, costing about US$4 million.

These examples show that, in most cases, considerable additional investment will be required to improve TLASs sufficiently to meet TPP requirements, and operational costs will also be significant. External support is particularly needed for the investment phase; operational costs should ultimately be borne by the sector.

IMPACTS

Demand

Depending on the exporting country, 25–40% of the total medium-term demand for tropical timber in the major import markets could be subject to legality and sustainability verification to meet public-sector and private-sector TPP requirements and the criteria of green building initiatives. For logistical reasons, such a large market share would also have a significant leverage impact on other purchasing.

The direct impact of public-sector TPPs will be strongest in timber products used for office furniture and building construction and also in civil works, such as marine construction, where tropical timber has an established position. The market segment least affected by public-sector TPPs is likely to be home furnishing. Private-sector policies have already had a major impact on imported garden furniture of tropical origin, but change has been minimal in other home furniture.

The short-term potential demand for legal and sustainable tropical timber induced by public-sector TPPs in the six EU countries with operational TPPs alone is estimated to be 1.8–2.0 million m^3 (roundwood equivalent) per year. The volume is expected to increase in the longer term when more countries introduce TPPs and their implementation in general becomes more systematic. Nevertheless, the impact on demand of public-sector TPPs appears so far to have been relatively modest. On the other hand, TPPs have increased awareness among procurement agents of the need to specify legality and sustainability. In Denmark, Switzerland and the UK it has become clear that the supply of temperate timber can respond to sustainability demands. The situation is different in the tropical-timber markets because, in some countries and market segments, the certified supply does not meet the demand.

The regulatory measures targeted at eradicating illegal timber products from international trade will have a much broader impact on demand because non-complying actors will gradually be eliminated from the supply chain. The present and planned regulations in the EU and the US will directly affect 49% of the total imports of tropical timber and timber products (including further-processed products) from ITTO producer countries and China combined.

The public sector is a very large and diversified enterprise in developing countries and its purchasing policies can have a major impact on the domestic demand for timber. In Vietnam, for example, 45–65% of the government budget is spent on procurement. Implementing a TPP in these countries is not a simple affair, however, and a number of issues would need to be addressed, including the appropriateness of the legal framework, the adequacy of existing procurement practices, the capacity and resources of procurement agents, and the availability of an adequate supply of acceptable products.

Supply

The total area of certified forests in Africa, Latin America and Asia is 23 million hectares, with an estimated annual production potential of about 4.1 million m^3 per year. In 2008 the area of certified forests dropped in Latin America but almost doubled in Africa; in Asia there were about 3 million hectares of certified forest. Combined, the three developing regions accounted for only 1% of the total global supply of roundwood from certified forests, illustrating the slow response of tropical-timber suppliers to the demand for certified products.

Based on global-level figures, certified production would appear to be sufficient to meet the short-term demand for sustainably produced tropical timber and timber products induced by public-sector and private-sector TPPs. This would not be the case in practice, however, due to differing product and geographic patterns between demand and supply, the complexity of supply chains, and the fact that part of the certified production is not sold as certified.

Prices

Available market information indicates that, at present, significant price premiums can be obtained for some tropical-timber species and products. In Europe, legality-verified timber from Asia can be sold with a 3–15% premium, and high-end FCS-certified products from Africa and Brazil can obtain 20–50% premiums. Premiums of 5–10% have been reported for certified temperate hardwoods from the US. Price premiums of this magnitude appear to be mainly in niche markets and cannot be generalized. Moreover, the way in which such price premiums are shared between various phases of the supply chain is unclear, since much lower figures are quoted by exporters in producer countries: it appears that most of the premium is secured further along the supply chain and does not reach forest management units.

Timber prices would rise significantly if there was a concerted international move to eradicate illegal logging. Success in such efforts would mean eliminating from the market the trade in stolen timber and timber products and their associated price advantages due to the avoidance of compliance costs.

With the gradual elimination of illegal logging, industrial roundwood production in developing countries could decrease by up to 8% in 2020 compared to 2007, and world prices could rise by 1.5–3.5% for industrial roundwood and by 0.5–2% for processed products. Winners would be countries with low rates of illegal logging, mostly in the northern hemisphere, and losers would be those developing countries where illegal logging rates are high. Price increases would benefit those tropical-timber-producing countries that already have effective controls in place.

Substitution

The substitution of timber by other materials would be promoted by a general price increase in legally and sustainably produced timber. It is possible, however, that practical difficulties in procuring timber due to sustainability and legality requirements that are not faced by other materials are likely to have a stronger effect on substitution than will cross-price elasticities. On the other hand, the increasing attention being paid to promoting low-carbon building materials may give timber and timber products a competitive edge over other materials.

Trade impacts on ITTO member countries with tropical forests

The total trade of tropical timber and timber products, including further-processed products, from ITTO producer countries is valued at about US$44 billion per year. China's share of this total is 47%, followed by Malaysia, Indonesia, Brazil and Thailand and then by other smaller exporters. However, as a share of the total production of logs,

sawnwood, veneer and plywood, exports are highest in Thailand, Malaysia, Papua New Guinea (PNG), Cambodia, Democratic Republic of the Congo, Gabon and Myanmar.

The dependency on 'sensitive' markets with TPPs (i.e. the EU, the US and Japan) is highest in the Philippines, Mexico, Liberia and Cameroon (more than 80% of total export value), followed by China, Brazil, Democratic Republic of the Congo, Indonesia, India, Côte d'Ivoire and Bolivia (more than 60%).

At a regional level, TPPs in consumer countries will have the strongest direct impact in Africa due to the high dependence of producers in that continent on exports to the EU (53% of total export value). The recent amendment to the Lacey Act in the US is likely to have a strong impact in Latin America because the US share of total regional exports there is high (39%), but intra-regional trade is more important in Latin America than in Africa. The US takes a quarter of Asia's total tropical-timber exports, followed by the EU (21%) and Japan (15%).

Tropical-timber exports to 'non-sensitive' markets – i.e. those with no TPP pressure, at least for the time being – is becoming increasingly important. The exports of Cambodia, Vanuatu, Myanmar, Trinidad and Tobago, Venezuela, Colombia, Panama and PNG, for example, go almost exclusively (i.e. more than 80% of the combined export volume) to such markets. Chinese imports have had the greatest impact on the trade patterns of tropical timber. In fact, the trade impacts of TPPs will largely depend on how effectively the sustainability and legality requirements can be met and demonstrated by producers in China and other in-transit producer countries (such as Vietnam).

Future country-level impacts will also be influenced by the perceived risk of illegal or unsustainable products entering the supply chain. Risk assessment will be an essential element of the due-diligence systems of tropical-timber importers, and suppliers in high-risk countries will therefore face a competitive disadvantage. To avoid biased results it is important that country risk assessments are based on clearly defined criteria, verifiable information and transparent processes with the full participation of the countries involved.

Forest-sector impacts

Progress towards legality and sustainability, as induced by TPPs, would have a positive impact on legal frameworks, forest governance, institutions, intersectoral coordination and cooperation. Voluntary certification has the potential to reduce government enforcement costs. Fiscal revenue could increase in countries where illegal production could be substituted by legal operators. This depends, however, on the country's demand–supply balance for industrial roundwood; there will be a loss of fiscal revenue if production needs to be scaled down to sustainable levels. Improved security in forest areas is another beneficial impact.

Forest industry

In countries where primary-processing capacity exceeds sustainable timber production, the downsizing of industries will be necessary. This will have drastic short-term impacts on employment and income in forest areas. On the other hand, improved management of supply chains is expected to bring significant competitive advantages in terms of cost savings and quality improvement. With legal and sustainable products, companies would gain access to new markets and, at least initially, would obtain price premiums in some market segments. The loss of the present sources of export revenue would also be prevented, which is crucial because alternative markets will be less lucrative.

Developmental and social impacts

In many countries, the impacts of TPPs on poverty reduction could be negative in the short term but in the longer term they could be positive if the necessary sector reforms can be implemented. The social costs are likely to be highest in countries where primary-processing capacity has to be downsized significantly. The capacity to offset these costs will depend on the ability of the sector to shift to alternative raw materials, such as plantation wood, and to build up competitive further-processing industries.

The most worrying impacts concern the informal timber-products sector, which, in many countries, supplies most of the national demand for timber products and employs large numbers of people. The informal sector's social benefits are significant, but 'legalizing' their operations is usually unrealistic, at least in the short term, for political, economic and

social reasons. In addition, forestry administrations are unable to monitor the activities of the informal sector. Abruptly excluding operators in the informal sector from national markets would have the perverse effect of increasing poverty rather than reducing it. It would be preferable, therefore, to put in place procedures that would allow operators in the informal sector to progressively enter the formal sector.

Local communities would need assistance to cover their financial and capacity needs. As part of the informal sector, community forests seem to be the easiest to monitor provided that land tenure is clear. In many countries, however, the economic viability of community forestry is far from clear and TPP requirements risk putting this segment at an additional disadvantage unless the necessary external support can be provided.

Environmental services

The benefits of sustainably managed tropical forests on biodiversity, soil, water, and forest health and vitality are well known. Improved governance, demarcated forest management units, the borders of which are protected effectively, and systematic forest management within an SFM framework would bring significant environmental benefits. In addition, improved forest governance would provide the necessary preconditions for forest owners to participate in emerging payment mechanisms for environmental services, including the mitigation of climate change. The implementation of effective TLASs and forest-management-unit legality verification/SFM certification may also reduce the risk to investors associated with forest carbon offsets and could therefore have a direct positive impact on carbon-related revenue.

CONCLUSIONS

Despite the difficulties and obstacles faced by tropical-timber producers in meeting the emerging requirements of public-sector and private-sector TPPs in major import markets, it should be recognized that these instruments are 'soft' policy tools. The market pressure towards a legal and sustainable trade is strong, and the timber sector worldwide must adjust. TPPs can be viewed as a compromise between market pressure and a cooperative approach between producers and governments. Pressure is expected to become even stronger in the future, not least because of the introduction of such 'hard' regulatory instruments as the US Lacey Act amendment and the planned EU due-diligence regulation. It is time for the timber sector at large to shift emphasis from resistance to change towards proactive measures. The current situation shows that this shift can pay off.

Many tropical-timber products have unique characteristics that provide producers with an inherent market advantage over temperate wood and other materials. Increasingly, the sector's growth in the tropics will have to be generated through the development of further-processing industries and new, sustainable sources of raw materials. Eradicating illegal logging and trade is necessary, not only for meeting current market requirements but also to enable the industry to adjust its operations domestically to sustainable levels.

This review of public-sector and private-sector TPPs revealed much scope for their improvement – in terms of their definitions of legality and sustainability, procurement criteria, time-schedules and implementation arrangements – in order to make them more effective in attaining their objectives. At least in the short term, the impacts of TPPs on tropical-timber-producing countries may be drastic and, if they lead to large job cuts, could create serious political problems for the governments of those countries. Such outcomes would not be in the interests of importing countries.

If the forest sector is to be socially acceptable in both tropical-timber-producing and tropical-timber-consuming countries, free-riding by illegal loggers and traders cannot continue. Sustainable forest industries can only be viable if responsible operators are able to compete on a level playing-field.

Importing countries should take the necessary measures to help tropical-timber producers to meet the requirements of their public-sector and private-sector TPPs. Such measures should include, among others: facilitating the effective participation of tropical-timber producers in the design of their TPPs; giving due consideration to the impacts of their TPPs on their trading partners in the tropics (e.g. through *ex ante* impact assessments); avoiding the proliferation of TPP requirements (between and within importing countries); improving the clarity

and consistency of TPP provisions; the adoption of realistic targets and time-schedules and the avoidance of constantly shifting (often unrealistic) goalposts; and significantly expanded technical assistance and financial support to tropical-timber-producing countries.

In order to meet the requirements of public-sector and private-sector TPPs, tropical-timber-producing countries must be prepared to accelerate their efforts to improve forest governance, TLASs, forest-sector information, and enterprise-level management and control systems. Of particular concern are community forests, small and medium-sized enterprises, and the informal sector, all of which are poorly equipped to meet the emerging requirements. There is a risk that these actors will be excluded from (export) markets that require legality and sustainability. Many countries, particularly those with excessive primary-processing capacity, should engage in sector-reform strategies that emphasize further-processing and the development of alternative raw materials through planted forests. The integration of the informal sector with regulated production is one of the most complex and politically sensitive issues to be addressed.

RECOMMENDATIONS

In order to enhance the positive impacts of TPPs in promoting legality and sustainable forest management in tropical-timber-producing countries and to mitigate their adverse effects on these countries, the following recommendations should be addressed:

ITTO

- To improve market transparency and to enable tropical-timber producers to plan their efforts based on adequate information, monitor the development of TPPs and the supply of and demand for legality-verified and SFM-certified timber and timber products, and the associated trade flows.
- To help tropical-timber suppliers to meet market requirements for their products, promote the convergence and comparability of procurement policies related to tropical timber and timber products through the enhanced exchange of information and lessons learned at the international level.
- Explore the feasibility of developing a common generic standard or set of guidelines for defining legality applicable in tropical-timber-producing forests, drawing on the accumulated experience.
- Assist producer member countries to assess the implications of TPPs for their production, exports, employment, fiscal revenue and environment, and to develop appropriate sector-reform strategies.
- Provide support for capacity building, particularly in forest information systems and training, to enable the planning and implementation of national TLASs.
- Support the development of community forestry through the analysis of the production chains of certified forest management units and their opportunities in international markets as well as the analysis of production and certification costs and ways in which these could be reduced and financed through market benefits.
- Facilitate the exchange of information and experience between member countries in building up information and verification systems, including benchmarking in production and on the transaction costs of legal and sustainable timber to meet the requirements of TPPs.

Develop tools for risk assessment and management to facilitate trade in legality-verified/SFM-certified tropical timber and timber products; such tools should be based on clearly defined criteria, verifiable information and transparent processes, with the full participation of the countries involved

Governments in tropical-timber-producing countries

- To enhance the trade's positive impact on legal compliance and SFM, participate in consultative processes related to the development of TPPs in importing countries.
- Promote voluntary SFM certification and independent legality verification as complementary instruments to government supervision and enforcement and to reduce public-sector control costs.
- Build up reliable TLASs, including by strengthening forest information systems, the

application of advanced technologies, inter-sectoral coordination and cooperation, and institutional improvements in enforcement.

- Recognize that paper-trail-based control systems tend to have loopholes and weaknesses and, therefore, embark on the piloting and introduction of improved technologies such as radio frequency identification for tracking and tracing products.
- Reduce transaction costs for legal production to minimize incentives for illegal operations
- Where appropriate, review forestry and related legislation to detect and eliminate contradictions and to include new provisions that recognize the new technological environment characterized by digitized information systems.
- Implement national public-sector TPPs to promote domestic demand for legal and sustainably produced timber.
- Provide incentives for timber-producing community forests and small and medium-sized enterprises to overcome the barriers they face in complying with legality verification and SFM certification.
- Take proactive measures to gradually integrate the informal sector into the formal sector, avoiding the adverse socioeconomic impacts that would occur if legality and sustainability requirements were introduced abruptly into the timber supply.

Governments in tropical-timber-consuming countries

- Consider the implications of their TPP requirements for tropical-timber-producing countries and notify their trading partners of their intentions to introduce or amend their national public-sector TPPs.
- In developing and revising national public-sector TPPs, consider the need to avoid the unnecessary proliferation of requirements.
- Promote the adoption of central-government TPPs by sub-national and local governments to make them compatible with the agreed policy objective of achieving a legal and sustainable trade of tropical timber and specifically to avoid the outright banning of tropical timber use.
- Provide expanded support programs to tropical-timber-producing countries to help them meet TPP requirements and to mitigate the possible negative socioeconomic impacts of their implementation (e.g. through such mechanisms as ITTO's Tropical Forest Law Enforcement and Trade Thematic Programme).

Forest industry and timber trade

- Be prepared to provide transparent and verifiable information on the sourcing and production of tropical-timber products.
- Gain understanding of the risks and obstacles associated with the purchasing and supply of legally and sustainably produced tropical-timber products, be responsive in reducing these barriers, and carry out adequate risk assessment in sourcing tropical timber.
- Given that sustainability will become a baseline requirement in most TPPs in the future, engage in legality verification and forest certification, as appropriate in local conditions.
- Develop appropriate codes of conduct to promote legal compliance and sustainability in production and sourcing.
- Seek to harmonize private-sector TPP requirements with those of the public sector.
- Support and engage in the certification of community forests, smallholders and small and medium-sized enterprises through appropriate group-certification approaches.

ACRONYMS

ANSI	American National Standards Institute
ATFS	American Tree Farm System
BES	BRE Environmental and Sustainability
BRE	Building Research Establishment
BREEAM	BRE Environmental Assessment Method
BRIK	Timber Industry Revitalisation Body (Indonesia)
CEC	Commission of the European Communities
CEN	European Committee for Standardization
CEF	Caixa Econômica Federal (Brazil)
CHPS	Collaborative for High Performance Schools
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CPET	Central Point of Expertise on Timber
CSA	Canadian Standards Association
EC	European Commission
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FLEGT	Forest Law Enforcement, Governance and Trade
FSC	Forest Stewardship Council
GFTN	Global Forest and Trade Network
ILO	International Labour Organization
ISEAL	International Social and Environmental Accreditation and Labelling
ISO	International Organization for Standardization
ITTA	International Tropical Timber Agreement
ITTO	International Tropical Timber Organization
LEED	Leadership in Energy and Environmental Design
LEI	Lembaga Ekolabel Indonesia (Indonesian National Forest Certification and Labeling System)
MC&I	Malaysian Criteria and Indicators for Sustainable Forest Management
MCPFE	Ministerial Conference on the Protection of Forests in Europe
MINFOF	Ministry of Forestry and Fauna (Cameroon)
MTCC	Malaysian Timber Certification Council
MTCS	Malaysian Timber Certification System

NGO	non-governmental organization
NPRPPM	non-product-related production processing methods
OSINFOR	Organismo Supervisor de los Recursos Forestales y de Fauna Silvestre (Peru)
PEFC	Programme for the Endorsement of Forest Certification Schemes
PPM	production processing methods
PRPPM	product-related production processing methods
REDD	reduced emissions from deforestation and forest degradation
RFID	radio frequency identification
RIL	reduced impact logging
rwe	roundwood equivalent
SFI	Sustainable Forestry Initiative
SFM	sustainable forest management
SGS	Société Générale de Surveillance
SNIC	Sistema nacional de información y control (National information and control system) (Peru)
SVLK	Wood Legality Verification System (Indonesia)
TCHPS	Texas Collaborative for High Performance Schools
TLAS	timber-legality-assurance system
TPP	timber-procurement policy
TTAP	Timber Trade Action Plan
UK	United Kingdom
UNCED	United Nations Conference on Environment and Development
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
US	United States of America
USGBC	United States Green Building Council
VPA	voluntary partnership agreement
WBCSD	World Business Council for Sustainable Development
WRI	World Resources Institute
WTO	World Trade Organization
WWF	World Wide Fund for Nature

UN country codes used in Figures 8.1–8.6

Code	Country
BRA	Brazil
BOL	Bolivia
KHM	Cambodia
CAF	Central African Republic
CHN	China
CMR	Cameroon
COD	Congo, Dem. Rep.
COG	Congo, Rep.
COL	Colombia
CIV	Côte d'Ivoire
ECU	Ecuador
FJI	Fiji

Code	Country
GHA	Ghana
GAB	Gabon
GTM	Guatemala
GUY	Guyana
HND	Honduras
IDN	Indonesia
IND	India
LBR	Liberia
MEX	Mexico
MMR	Myanmar
MYS	Malaysia
NGA	Nigeria

Code	Country
PAN	Panama
PER	Peru
PHL	Philippines
PNG	Papua New Guinea
SUR	Suriname
TGO	Togo
THA	Thailand
TTO	Trinidad and Tobago
VEN	Venezuela
VUT	Vanuatu

1. INTRODUCTION

Background

Timber-procurement policies (TPPs) are being considered and implemented by public agencies, trade associations and private companies in many traditional tropical timber markets. Twelve member countries (both producers and consumers) of the International Tropical Timber Organization (ITTO) are in the process of implementing public-sector procurement policies that establish specific requirements for timber and timber products. Several trade associations and larger private companies that are importers, buyers or users of tropical timber and timber products have also developed procurement policies or codes of conduct. More recently, green building codes adopted in a number of countries define specific requirements for how timber and timber products used for construction are produced; such requirements will affect the market for and competitiveness of tropical timber.

TPPs are being introduced principally to address public concerns about the environmental credentials of wood products by adding relevant criteria to the decision-making process. In order to maintain credibility in the public arena, many purchasers demand that products come from sustainable, or at least legal, sources and that this is verifiable.

Since progress in implementing public-sector TPPs has been relatively slow, stakeholder concerns about the acceptability of timber and timber products have resulted in regulatory actions in the European Union (EU) and the United States (US) to prevent or limit the access of illegally harvested timber to markets. These initiatives constitute importing-country policy instruments to encourage good governance and the sustainable management of forests worldwide. Both TPPs and regulatory measures have significant implications for tropical-timber suppliers; the benefits of these measures should be enhanced and possible adverse impacts mitigated to improve their effectiveness in achieving their identified goals.

Presently there is a multitude of approaches to TPPs and related instruments. This diversity presents a potential barrier for tropical-timber suppliers in responding to market requirements and tapping into the opportunities that these instruments may eventually offer. As the situation is changing rapidly, with frequent new developments, there is an urgent need for tropical-timber exporters to monitor various initiatives, to assess producers' ability to meet emerging requirements as they become increasingly adopted, and to explore the possible market threats and opportunities presented by these developments. At the same time, there is a need for those parties that are developing and implementing TPPs to duly consider the often significant economic, environmental and social impacts that such policies will have on tropical-timber producers.

Objectives

The purpose of this study is to contribute to the achievement of the following ITTO objectives, as defined in the International Tropical Timber Agreement (ITTA) (2006), Article 1:

> *k) Improving marketing and distribution of tropical timber and timber product exports from sustainably managed and legally harvested sources and which are legally traded, including promoting consumer awareness;*
>
> *o) Encouraging information sharing for a better understanding of voluntary mechanisms such as, inter alia, certification, to promote sustainable management of tropical forests, and assisting members with their efforts in this area*

More specifically, the study is designed to assist the ITTO Committee on Economic Information and Market Intelligence in monitoring public-sector and private-sector TPPs that have an influence on market access for and the competitiveness of tropical-timber producers. The study addresses the following questions[1]:

- What are the main drivers, factors and trends related to the development of TPPs?
- What are the impacts of these policies on the competitiveness of tropical timber; the tropical timber industry; and the management of tropical forests?

1 See the terms of reference in Appendix 1.

- What are the main similarities and differences among TPPs and the attendant implications for the procurement of tropical timber?
- What capability do suppliers in ITTO member countries have in meeting the requirements and costs of TPPs, and what access would they have to the opportunities and benefits generated by these policies?
- What are the key factors affecting the ability of suppliers in ITTO member countries to meet the requirements and costs of TPPs, and what concrete actions and measures should be taken to enhance their ability to overcome the constraints and meet the requirements?
- What is the need, desirability and practicality of promoting convergence, coordination and harmonization among TPPs as a means of facilitating the international trade in tropical timber, and, if significant, what action should be taken in this regard?

Methodology

The study has two main components: (i) a review and analysis of existing procurement policies in the public and private sectors; and (ii) country case studies to assess the impacts of the TPPs, the implications of meeting TPP requirements in three ITTO member countries, and the needs for strengthening the capacity of countries and suppliers to meet TPP requirements.

The study was carried out in close cooperation with the ITTO Secretariat. In addition, the Trade Advisory Group and the Civil Society Advisory Group provided valuable guidance. The study also benefited from cooperation with the Food and Agriculture Organization of the United Nations (FAO) and other parties.

Analysis of existing TPPs

The study reviewed procurement policies in the public and private sectors in ITTO consumer and producer member countries, with an emphasis on public-sector policies because of their likely stronger impact on tropical-timber markets. In the private sector, the review covered relevant policies of trade associations in tropical-timber-consuming and tropical-timber-producing countries, as well as those of selected enterprises that are operating internationally and therefore have a relatively broad impact on trade. The emergence of green building initiatives was also reviewed, since these are being applied in a number of tropical-timber-importing countries in both the public and private sectors. The standards and requirements contained in these initiatives may be viewed as TPPs if they set specific requirements for timber and timber products.

The study also reviewed the implications for tropical-timber procurement of legislation in the EU and the US targeted at prohibiting or limiting market access to illegally produced timber and timber products. The regulatory provisions are likely to be used as a reference in some TPPs and they will also influence how TPPs are formulated and implemented.

The data on existing TPPs was collected from desk and internet research complemented by a survey using a short, structured questionnaire sent to representatives of focal public-sector agencies in 31 countries. A total of 22 replies were received, which was a high response rate (71%). All the major consumer and producer countries active in public-sector TPPs replied. Selected trade associations, companies and other organizations were contacted for additional information.

The analysis of the similarities and differences between TPPs considered the following characteristics: policy objectives; product scope; level of obligation; definitions of and criteria for legality and sustainability; criteria for verification/certification systems and alternative evidence; the use of certification systems as a reference; and implementation aspects. The focus of the analysis was on those aspects of TPPs that have significant impacts on tropical-timber procurement.

Country case studies

Country case studies have been carried out recently in several countries in the tropics, many related to the implementation of the EU Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan.[2] These studies were useful sources of

2 Indufor (2008) completed an assessment of four case studies on the impacts of options for regulation pertaining to the entry of illegal timber to the EU market. That study included a theoretical analysis of cost impacts that was unrelated to a particular country situation. Brown et al. (2008) recently described the situation related to legal timber, including descriptive analysis of twelve tropical countries, but did not assess cost and resource requirements. Mayers et al. (2008) analysed the impacts of the EU FLEGT VPA in Ghana, including a comprehensive analysis of the impacts of meeting the market requirements for legal and sustainable tropical timber.

information and can be drawn on directly to identify impacts on the forest and on forest governance. Further country-level studies were deemed necessary, however, to assess the impacts on markets and cost-competitiveness, as well as the financial and human-resource needs for meeting TPP requirements. Three case studies were carried out as part of the study (Table 1.1).

The following methodology was adopted in the case studies:

- Assessment of the dependence on markets subject to TPPs and related initiatives (e.g. EU, US, Japan, and New Zealand).
- Assessment of the capacity to meet the requirements of the TPPs, and their costs, covering legal origin, legal compliance, the sustainability of forest management, and the chain of custody at the forest-management-unit (FMU) level. A standardized approach to cost assessment was attempted but could only be applied in full in Peru because of a lack of data.

Table 1.1 Country case studies

Region	Country	Justification
Africa	Cameroon	Certified FMUs; preparatory work carried out to devise improvements in the existing legality-assurance system; FMUs include large concessions as well as municipal and community forests; recent SFM certifications (FSC); high market dependency on the EU
Asia	Malaysia	Certified FMUs (under the national system – the MTCS – and the FSC); assessment of the legality-assurance system carried out; market dependency on Japan, the EU and the US
Latin America	Peru	Certified FMUs (both large-scale concessions and community forests); recent regulatory changes; dependency of mahogany and other timber products on the US market

2. PROCUREMENT POLICIES AND RELATED INSTRUMENTS AS TOOLS FOR PROMOTING THE LEGALITY AND SUSTAINABILITY OF TROPICAL-TIMBER SUPPLIES

Procurement policies as demand-side policy tools

A range of 'hard' and 'soft' policy instruments are available for influencing the demand for timber and timber products in ways that promote legal compliance and sustainable forest management (SFM, Figure 2.1). In the public sector, governments can apply regulatory measures such as mandatory public procurement policies to reduce or eliminate the access to markets obtained by illegal or unsustainably produced timber, or illegal products can be sanctioned. When procurement policies are voluntary they act as soft policy tools. In addition to restrictive action, positive measures can be taken to improve market transparency on illegal/legal and unsustainably/sustainably produced products, to support the promotion of legal and sustainable products, and to provide development assistance to producers in developing countries. There is also a recent trend to adopt green building standards – which may be mandatory or voluntary – that specify legality and sustainability requirements for timber and timber products.

In the last 15 years, progressive private-sector companies have implemented their own TPPs as tools to mitigate their reputational risks and to make use of environmentally sensitive market segments for timber and timber products (see Chapter 6). Individual company actions have included the establishment and implementation of TPPs, the strengthening of environmental management systems and the control of the supply chain, independent certification and verification, and various means of communicating improvements in the responsible performance of their operations. In several countries the private sector has also introduced green building initiatives as voluntary measures (see Chapter 5). Many private representative organizations have established codes of conduct and in some cases adherence to those codes has become a condition of membership, enhancing their effectiveness in influencing company behaviour.

It has also been recognized that public-sector and private-sector efforts can be harnessed by partnerships. The Timber Trade Action Plan[3] and RACEWOOD[4] are examples of partnerships targeted at trade development in legal and sustainable timber products. Trade-related partnerships can also involve civil-society organizations, of which the Forest Trust (formerly the Tropical Forest Trust) and the Global Forest and Trade Network (GFTN) of the World Wide Fund for Nature (WWF) are examples. Civil-society organizations have also sometimes acted as independent monitors of timber harvesting and transportation.

Voluntary measures such as forest certification and SFM labelling have made relatively slow progress in tropical countries, which account for only 8% of the world's certified forests (UNECE/FAO 2009). This is probably a key reason why pressure from non-governmental organizations (NGOs) has shifted towards the promotion of more stringent measures, such as mandatory TPPs and specific regulations to limit the access of illegal products to the market. Overall, the emphasis is now on targeting illegal activities rather than on promoting sustainability, and this has implications for the behaviour of operators and the efforts of producer-country governments.

To sum up, TPPs constitute only one of the demand-side options, and they have close linkages with other regulatory and voluntary measures. To achieve the identified policy goals, an optimal mix of available demand-side instruments is needed and their effectiveness should be assessed as a whole. It is emphasized, however, that, on their own, demand-side measures are insufficient, and they are

3 www.timbertradeactionplan.info.
4 www.ifia-association.com.

only second-best tools for achieving legal compliance and the sustainability of tropical forest management.

Purpose and drivers of procurement policies

In the last two decades many governments have adopted green public procurement policies in order to internalize environmental aspects in government purchasing. TPPs are more recent initiatives that are specific to timber and wood-fibre-based products and aim to promote improved governance and SFM in producer countries.

Such public-sector policies reflect the values of society as a whole. As these values change over time and market transparency improves, practices such as illegal operations, money-laundering and social injustice become increasingly unacceptable. TPPs influence demand for timber products because either only the purchase of 'acceptable' goods is allowed or preference is given to products that meet the predetermined criteria.

Four main underlying drivers have led to the development of public-sector TPPs: (i) international commitments made, for example, under the ITTA, 2006, the Non-Legally Binding Instrument on All Types of Forests, and regional forest law enforcement and governance processes; (ii) general concerns about illegal logging and unsustainable forest practices, particularly in the tropics; (iii) general national strategies for sustainable consumption and production; and, more recently, (iv) the need for climate-change mitigation.

The survey of focal public-sector agencies conducted as part of this study indicated that, in about half of the responding countries, NGO pressure has been one of the strongest *direct* drivers of TPPs, particularly in some countries in Europe that rely mainly on imports for their supply of timber and timber products. NGO pressure, often involving corporate-targeted campaigns, have also contributed to the development of private-sector TPPs as a tool for managing reputational risks related to timber and wood-fibre supplies. In the forest industries and trade, timber supply has become a key area of corporate social responsibility, and this has contributed to the strength of private-sector support for the development of public-sector TPPs. Responsible companies want a level playing-field so they do not compete with suppliers who do not bear the costs of legality and sustainability.

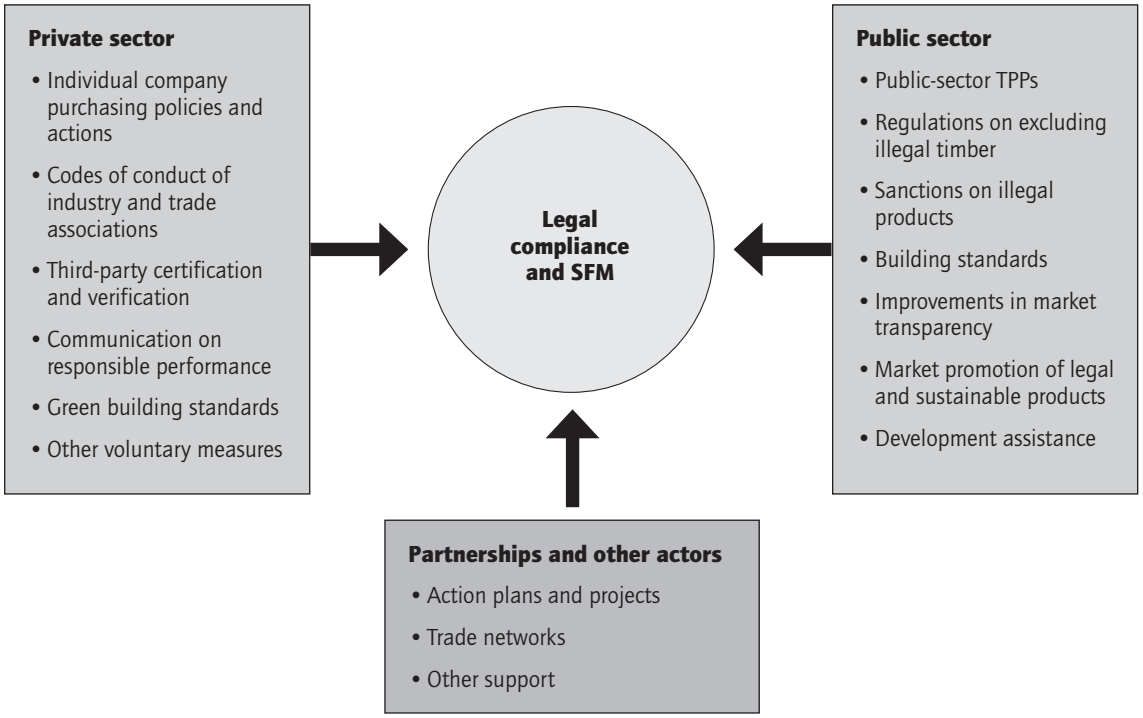
Another contributing factor has been grassroots public concern about the environmental credentials of timber and timber products, which has prompted local governments to establish their own TPPs. Public awareness has also driven various green building initiatives that often specifically address timber products. All these factors have helped build the overall political will to make use of TPPs to eliminate illegal and unsustainable timber products from public purchasing.

The survey of focal public-sector agencies showed that there are strong concerns among tropical-timber producers that public-sector TPPs in importing countries have been introduced for reasons of protectionism. The relative cost of complying with TPP requirements is expected to be much lower for producers in importing countries than for tropical-timber producers, giving the former group a competitive advantage (see Chapter 7). The survey clearly revealed, however, that the drivers of TPPs are more fundamental than that and are not pushed by the forest industry and timber trade in importing countries, which also have serious concerns about the cost impacts and feasibility of such policies. The private sector has become supportive of appropriate TPPs because it is understood that suppliers in the timber sector need to respond to social responsibility demands made by the consumers and public buyers of their products.

The key direct timber-supply objectives of most current TPPs (both public and private) are to ensure that products come from legal sources and that the law is respected in the supply chain. Most policies also include SFM in their minimum requirements or as a preferential criterion for the awarding of contracts. While the original objective of most TPPs was to promote legally and sustainably produced products, the emphasis appears to have shifted somewhat towards the exclusion of illegal and unsustainable products from the market.

TPPs also have a link with climate-change-mitigation objectives, which are becoming increasingly important in both the public and private sectors (e.g. PriceWaterhouseCoopers 2009). As promotional instruments they contribute to responsible and sustainable forest management and thereby to the maintenance and enhancement of forest carbon pools. They can also promote the use

Figure 2.1 TPPs and other demand-side measures to promote legality and sustainability of the timber supply



of wood as a building material, increasing carbon sequestration in 'harvested wood products'[5], and the use of wood-based bioenergy as a substitute for fossil fuels. These additional benefits are currently considered to be ancillary objectives of existing TPPs but they are likely to become strong drivers in the future.

The positive link between public-sector TPPs and climate-change-mitigation objectives rests on the assumption that TPPs will not become obstacles to the use of timber and timber products because of the complexities of their processes, thereby perversely encouraging the use of substitutes that may be environmentally much more harmful than timber. This lack of comparative assessment of materials in general green procurement policies remains a cause of concern for the forestry sector.

Timber-procurement process and its legal framework

The timber-procurement process consists of a number of distinct phases (Figure 2.2), each of which should be considered separately because the legal framework specifies how various types of procurement criteria can be introduced in each phase. The critical aspects are:

- defining the subject matter (i.e. timber product)
- technical requirements, which may include provisions for timber harvesting and for the tracking of products along the supply chain ('contract requirements')
- the need for the provision of information on the track-records of suppliers and their sources of supply, and the exclusion of suppliers who cannot be pre-qualified ('pre-qualification')
- information on timber-supply-related requirements in the tender documentation ('invitation to tender')
- the selection of eligible suppliers whose bids show compliance with tender requirements ('selection')
- the review and verification of the information provided by suppliers and its consideration in choosing the supplier ('awarding the contract')
- the verification of compliance with the contract performance requirements during contract implementation ('contract management').

5 The term used in negotiations conducted within the United Nations Framework Convention on Climate Change.

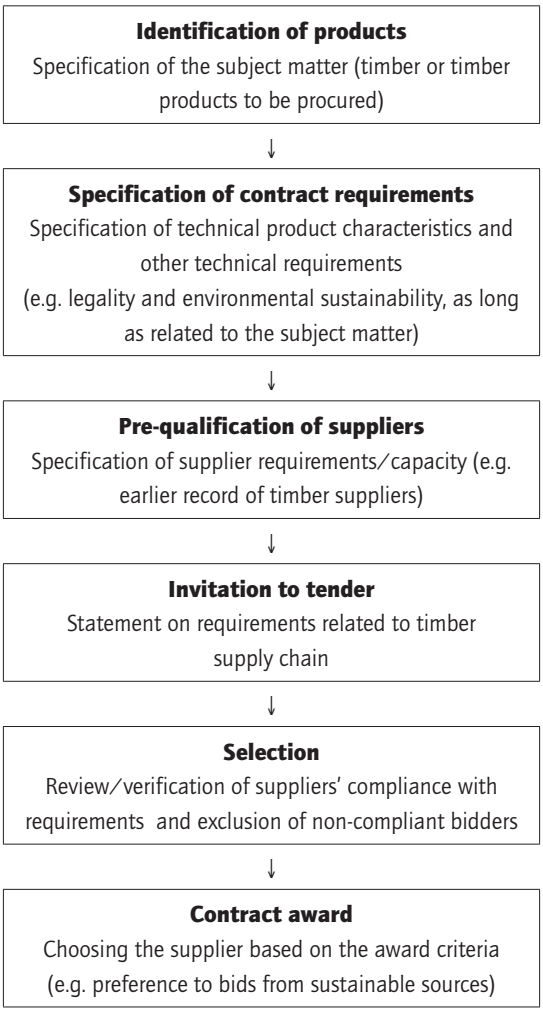
The 'subject matter' of a contract is about what product, service or work is to be procured. The international legal framework provided in the World Trade Organization (WTO)'s plurilateral Government Procurement Agreement requires that all criteria are linked to the subject matter of the contract in order to ensure non-discrimination. The EU has specific legislation for public procurement with the same provision.[6]

When defining the subject matter of a contract, contracting authorities have great freedom to choose what they wish to procure. The subject matter is translated into measurable technical specifications concerning performance or functional requirements. This is a critical stage in the procurement process as it is here where the environmental aspects linked to the product can be defined and where legality can be specified. In addition to basic technical specifications, others may be added that specify higher than basic requirements.

In addition to product characteristics, technical specifications may also concern production and processing methods (PPMs), which may be product-related (PRPPMs) or non-product-related (NPRPPMs). Relevant examples of PRPPMs are specifications related to recycled wood content, such as in particleboard, or to a particular tree species to be used in a wood product. Legality and SFM are typical NPRPPM criteria for TPPs. The difference between the two types of PPM has legal implications.

The core criteria in TPPs are those related to legality and (environmental) sustainability. They are linked to forest management in the source of products and therefore can be interpreted to be related to the subject matter. Sustainability, however, is a comprehensive concept that includes environmental, economic and social aspects. The inclusion of social criteria is debatable, since their scope is very broad and there are different interpretations of whether they are related to the subject matter and therefore whether they can be applied as part of the technical specifications under international or EU trade rules (Brack 2009b; see Chapter 3 for further discussion on the inclusion of social criteria).

Figure 2.2 The public procurement process for timber and timber products



Note: This general structured process typically applies in public procurement; in the private sector, less formal approaches are applied and there is freedom to apply legality or sustainability criteria in any phase of the process.

In order to be non-discriminatory and to treat suppliers equally, technical specifications cannot make references to specific sources of timber. If specific certification systems are used as a reference for proof of meeting requirements on legality or sustainability, a provision for optional evidence must be provided. This has led a few countries to define comprehensive requirements for certification systems that can provide acceptable proof.

6 Directives 2004/17/EC and 2004/18/EC.

For suppliers to comply with TPP requirements in different phases of the procurement process it is important that the criteria applied are clearly defined. Clarity is particularly important for the core criteria of legality and sustainability, for which generally agreed definitions do not exist (see Chapter 3).

At the pre-qualification stage, 'exclusion' criteria express reasons for non-eligibility, and the evidence for them must strong. Examples of such criteria are ongoing criminal cases, the use of child or forced labour, the sourcing of timber from conflict areas, or a record of grave professional misconduct. Exclusion can also happen in the selection phase if a supplier proves to be non-compliant with the specifications of the tender documentation. Abnormally low tenders may also be excluded if it is apparent that adequate implementation of the contract is impossible because of a lack of adequate resources.

In awarding the contract, conventional criteria (e.g. the lowest price or the most economically advantageous bid) are typically applied but the selected bid must meet the minimum requirements. If preferential award criteria (e.g. sustainability in cases in which it is not a minimum requirement) are applied, they determine the choice between otherwise-equal bids.

For contract performance, specific conditions can be set that do not have to be related to the subject matter. This provides flexibility for including conditions on, for example, social aspects that may not be allowable as part of the technical specifications. In any case, contract performance requirements on such aspects must be transparent and must not to be mixed with technical specifications or with selection or award criteria.

3. PUBLIC-SECTOR PROCUREMENT POLICIES

Status, scope and minimum requirements

Development and status of national policies

At present, twelve countries have operational central-government public-sector TPPs. The development of such policies has been particularly active in Europe, partly as a result of guidance and promotion by the EU (Table 3.1). Six EU member states – Belgium, Denmark, France, Germany, the Netherlands and the UK – have operational public-sector TPPs. Outside the EU, China, Japan, Mexico, Norway, New Zealand and Switzerland have operational policies. Several other countries are in the planning stage of public-sector TPPs, including Ghana, which recently announced a plan to establish a TPP[7], and Vietnam, where a preparatory study was recently carried out on the issue.[8] Some important tropical-timber-consuming countries – the US, Canada and Australia – are missing from the list, but they have taken different approaches by promoting public purchasing of legal and sustainable timber through general green procurement policies, local-government-level TPPs, green building initiatives, and specific actions to reduce illegal logging and trade.

The processes used in the development of various public-sector TPPs are summarized in Appendix 2.[9] The following general observations can be made:

Procurement policies specific to timber are relatively new instruments and many countries are still in early phases of development or implementation. In the UK, voluntary guidelines were issued as early as 1997 but the first specific policy was issued by Denmark in 2003.

Many public-sector TPPs are part of, or have evolved from, more general green public procurement policies and initiatives. They are not isolated efforts but part of broader strategies to promote sustainable production and consumption.

Stepwise approaches have been adopted that started with legality as a first step in the direction of sustainability. The UK, for example, used "progressing towards sustainability" as one category, although ultimately this was dropped because it created confusion among purchasing agents. With a few exceptions (such as New Zealand), TPPs no longer specify such intermediary steps and contain no more than two levels (legality and sustainability). This is a cause of concern for tropical-timber producers, who need time to achieve sustainability in their forest operations.

Relatively ambitious targets have been set and some of them may have to be revised in due course. France and the Netherlands, for example, had planned to achieve 100% procurement from sustainable sources by 2010, but this now appears impossible.

The development and revision processes have proved to be time-consuming, and reaching a consensus among stakeholders has sometimes been tedious (e.g. in Denmark and the Netherlands). Civil-society organizations generally pursue highly restrictive requirements, which are unacceptable to other stakeholders and may not be possible to meet in practice due to a lack of adequate product supply. Another reason for a lack of consensus is the acceptability or otherwise of non-Forest Stewardship Council (FSC) certification systems as proof of legality and sustainability – many NGOs want to promote only the FSC.

The participatory, 'bottom-up' processes used in the development of procurement policies have made them legitimate. On the other hand, they have also contributed to the proliferation of criteria and requirements. In the absence of international or regional standards, the harmonization of such criteria and requirements has made only limited progress (mainly among Denmark, the Netherlands and the UK).

In only a few cases (e.g. Denmark and the UK) have specific efforts been made through the consultation process to engage tropical-timber producers in TPP design.

7 ITTO (2009).
8 Xuang Ty et al. (2009).
9 FERN (2009) includes further descriptions of the national processes in six countries.

Table 3.1 Status, scope and minimum requirements for legality and sustainability in central-government public-sector TPPs

Country	Status	Product scope	Minimum requirements for timber and timber products	Degree of obligation for central-government agencies
Belgium	Operational since 2006; revision expected by end 2009	Wood products[a]	Sustainable sources	Mandatory
Denmark	Operational since 2003; current policy since 2006; revision in process	Wood and paper products[b]	Legal sources minimum; preference for sustainable sources	Voluntary
EU	Operational since 2004; revision in progress	All products (including wood)	Source demonstrably legal	Guidance to member states
France	Operational since 2004; revision in 2006 and 2008	Wood and paper products[c]	Legal and sustainable sources	Mandatory
Germany	Operational since 2007; review in 2011	Wood and wood products[d]	Legal and sustainable sources[e]	Mandatory
Luxembourg	Planning stage	Wood and paper products	Sustainable sources	
Netherlands	Announced in 2004; several revisions	Wood and paper products	Legal sources minimum; sustainability required if possible	Mandatory
Norway	Operational since 2008; revision by end 2010	Property management, paper products, office furniture[f]	No tropical timber to be used[g]	Voluntary
Switzerland	Operational since 2004[i]	Wood, wood products and paper	Sustainability but, if not possible, then legality	Voluntary
UK	Operational since 2003[j]; latest revision in 2009	Wood and paper products	Legal and sustainable sources or FLEGT licences or equivalent	Mandatory
New Zealand	Operational since 2004	Wood and paper products	Legal sources minimum; preference to sustainable sources[k]	Mandatory
China	Operational since 2007[l]	Processed wood products, wood flooring, furniture	Environmentally labelled products (national ecolabelling scheme)	Mandatory
Japan	Operational since 2006	Wood and paper products	Legality; sustainability is a criterion of consideration	Mandatory
Mexico	Operational since 2007	Wood and wood products, office paper	Certified legal origin and SFM[m]	Mandatory

a. Paper products are covered by another policy.
b. Original coverage tropical timber only, expanded to all timbers in 2006.
c. Original coverage tropical timber only, expanded to all types of timber in 2005.
d. Composite products are covered only if timber is the most significant component.
e. Recycled products to be preferred over non-recycled.
f. Priority product groups identified in the policy.
g. Including materials used during the construction period.
h. General public procurement policy; assessment on verifying legality and non-controversial sources of any material or product planned.
i. In 2008 the government issued another recommendation for sustainable construction, including a statement on timber products.
j. Several revisions.
k. A review was planned for 2008 to make sustainability mandatory.
l. Expanded to provincial levels in 2007 and fully implemented since 2008.
m. Office paper should contain a minimum 50% of recycled fibre.

Sources: Proforest (2007a, 2007b); country survey replies and national policy documents.

The need for policy revision has usually been identified 3–5 years after initial development. The experience in Denmark and the Netherlands shows that the revision process may be just as time-consuming as the original design phase, due to the wide range of stakeholder views.

Formal *ex ante* impact assessments have not been conducted but, in some countries (Belgium, Denmark, France and the UK), the impacts of TPPs have been assessed during implementation.

The EU has a policy of promoting green public-sector procurement. General guidance and strong encouragement are given to member states in the development of TPPs. In addition to the six listed above, several EU member states are in the process of planning TPPs or are considering ways to address timber products in broader green procurement policies. The European Commission (EC) is considering options for accelerating progress in green public procurement in which timber products are specifically addressed. EU member states are encouraged to develop policies which support and promote international agreements, such as voluntary partnership agreements (VPAs), within the framework of the EU FLEGT Regulation (CEC 2008b). Belgium, Denmark and the Netherlands are reported to be in the final stages of their policy-revision processes. The UK is reviewing the possibility of including social criteria in their minimum requirements, using a broad-based public consultation process.

At least Finland, Lithuania, Luxembourg and Spain are planning or considering measures to implement national TPPs. Sweden is also in the process of developing generic national green public procurement criteria for wood-based products.

Norway's policy is quite different from the others because it bluntly rules out the use of tropical timber in public-sector buildings and other construction works (property management). The policy is part of a voluntary action plan and, even though it refers to the origin of the product, has not been challenged under WTO rules.

Canada's green procurement policy also covers wood and wood products, but there is no specific national TPP. Individual provinces have issued their own policies targeted at promoting wood consumption in building construction but without reference to such criteria as legality and sustainability.

Mexico's law on public procurement makes provisions for forest certification and government-registered auditors, as specified in the forest legislation. This makes its policy different from other countries.

In Brazil, general procurement policies include environmental criteria, but there are several practical and legal constraints to the inclusion of legality and sustainability requirements in procurement at the federal level. Some states and municipalities have started to include proof of legal sourcing from sustainably managed forests in their requirements.

Ghana is promoting the use of legal timber in the domestic market with the aim of entirely eliminating the production and use of illegal timber in the country.

TPPs are relatively new instruments and several countries are in the process of revising their policies. Belgium and Denmark are in the final stages of the adoption of new policies. Germany's TPP will be reviewed in 2010 since the current policy is only valid until 2011. France will have to revise its policy because the environmental law (the Grenelle I) calls for the definition of criteria for the recognition of forest certification schemes – this is a departure from the approach of the current policy. Japan is also likely to revise its policy based on the experience accumulated during the implementation of the present policy.

Product and material coverage

The product coverage of TPPs always includes timber/wood and products but varies with regard to paper products – the Belgian and German policies, for example, do not include them. Two policies (those of Denmark and France) started with tropical timber only but were soon expanded to cover all types of timber. The overall tendency appears to be towards comprehensive coverage, including paper and boards and products made thereof. The Norwegian policy is an exception because it refers to tropical timber only, prohibiting its use in the construction and renovation of public buildings.

The Danish and UK policies make a special provision for recycled wood, which is defined in the UK policy as recovered wood that has been in previous use but is no longer used for the purpose for which the tree was originally felled. This definition is impractical because the purpose for

which the wood will be used is not necessarily known when the tree is felled. The two policies identify three categories of recycled wood: pre-consumer wood and wood fibre; post-consumer wood and fibre; and driftwood.[10]

In the majority of TPPs the issue of recycled wood has been addressed inadequately and should be considered in future revisions. In general, sawmill co-products should be considered acceptable if sufficient proof of legality and sustainability can be provided. In the case of Denmark, sawmill co-products may pass as verified virgin fibre without any verification.

Minimum requirements

The minimum requirements for timber supplies in public-sector TPPs refer to legality or sustainability, or both. In the EU, four countries (Belgium, France, Germany and the UK) have set sustainability as a minimum requirement, thus going beyond the guidance of the EU, which specifies legality as the core (minimum) criterion (CEC 2008b). The recent UK policy also accepts FLEGT-licensed timber, but this is presently only a theoretical option because such products are not expected to be available in the market before 2011. FLEGT-licensed timber is considered in the UK policy to be close to what is considered sustainable. Acceptance of the FLEGT licences in the UK is foreseen only up to 2015, after which only sustainable timber will be accepted.

While legality is a minimum requirement in Denmark and the Netherlands, sustainable products are preferable in the former case and mandatory ('if possible') in the latter case. In the Japanese and New Zealand policies, legality is a minimum requirement and sustainability is a criterion of preference.[11] The Mexican policy defines legal origin and sustainability as minimum requirements.

The Chinese policy specifies only a nationally recognized eco-label, but its criteria for timber supplies could not be reviewed for this study. An approach relying exclusively on a specific eco-label could be challenged under WTO rules.

The Norwegian public-sector TPP, which excludes tropical timber, could be seen as favouring temperate timber products and could therefore be challenged under WTO rules.

Overall the tendency appears to be towards both legality and sustainability as minimum requirements in public-sector TPPs. This is a positive trend provided that a realistic length of time is allowed for tropical-timber producers to achieve sustainability, although this is difficult to gauge at a general level because conditions vary between countries. In setting time-bound targets for the full implementation of sustainability as a general minimum requirement in TPPs, the availability of SFM-certified tropical timber should be considered.

Since most TPPs are applied to timber from all sources, problems can be foreseen for the acceptability of domestically produced products in countries where SFM certification has progressed slowly and where ready government tools do not exist to prove the legality of timber supplies. This issue is particularly important in countries in Europe and North America with extensive small-scale family forest ownership, since many of these forests have not been certified.

Degree of obligation

All policies are mandatory for central governments except in Denmark, Norway and Switzerland, where they are voluntary. The mandatory obligation has been expressed in different ways and some policies are more flexible than others (e.g. 'must buy' versus 'must seek to buy' versus 'if available' versus 'if possible'). Under the Dutch, French and Swiss policies, the availability of supply is a condition of policy implementation (in the Netherlands the legality of the product, in any case, needs to be verified prior to purchase). This kind of approach is appropriate because it takes a realistic view of the speed of policy implementation by procurement agencies and of the possible constraints in the availability of tropical timber for specific uses.

The tendency is clearly towards more binding mandatory implementation. However, this is influenced by whether the policy is issued as a law or through an advice note, a ministerial policy statement, or something similar. As an example of the shifting emphasis, in Denmark a framework contract for office furniture was tendered in 2008 to supply all Danish ministries and central-government institutions in 2009 and 2010.

10 Driftwood is wood that has been washed onto a shore or beach of a sea or river by the action of winds, tides, waves or man (www.wikipedia.org).
11 The Japanese policy states that legality is a criterion of evaluation and sustainability is a criterion of consideration.

In tendering, verifiable legally produced timber was set as a minimum requirement – i.e. as a contract clause – and the award criteria included a preference for sustainable timber. The law did not oblige the government to specify verifiable legally produced timber as a contract clause but it was included based on an assessment of its feasibility in this particular contract. A number of other product categories are covered by the same procurement mechanism, so legality may gradually become a *de facto* minimum requirement in Denmark, particularly because many local governments are adopting the same approach.[12]

Policy implementation

The UK provides the most detailed guidance for the implementation of its public-sector TPP, consisting of the following elements:

- *Invitation to tender*: the track-record of potential suppliers in supplying legal and sustainable timber can be considered, and those who do not have the capacity to show evidence of the chain of custody can be excluded.
- *Contract clauses*: these are provided through model contracts to help procurement agents to integrate the conditions into contracts.[13] Clauses include stipulations that the contractor must obtain documentary evidence on legality, sustainability or recycled timber before product delivery. If the evidence is unsatisfactory the contractor has to pay for independent verification.
- *Selection of suppliers*: bids not meeting the minimum requirements are rejected.
- *Contract award*: the procurement agent must first select between bids which apply minimum requirements and those with variants (meeting sustainability criteria). If there is a price difference between the variant and standard bids, it must be decided whether the difference is affordable and represents a good use of resources (in the positive case, the variant option is preferred). The contract is then awarded to the party who has submitted the best value-for-money bid among the bids of the selected group. If none of the bids complies fully with the requirements, a decision is made on whether to re-tender or to start negotiations.
- *Supplier information*: the bid statements on the capacity to supply evidence for sustainable or legal sourcing is taken at face value when bids are considered, but evidence can be requested prior to or after the awarding of the contract.
- *Contract performance*: the contractor must provide evidence at any time requested. Deliveries of non-compliant products are rejected.[14]

In most other countries the guidance provided is at a more general level and, in some cases, no specific guidance has been issued. With adjustments, the above UK-type approach may serve as a reference for how the situation will evolve in other countries. Detailed guidance is particularly needed in situations where progress in policy implementation is slow. There are differences between countries regarding the stage at which the evidence of legality and sustainability needs to be provided and how such evidence is to be evaluated or verified. The implementation of all TPPs requires, however, the provision of adequate evidence of compliance by the supplier and the delivered products. Sanctions may not always be defined but it is apparent that non-compliant suppliers are at significant risk of losing future business in the public-sector market.

Policy implementation has been assessed in Belgium, Denmark and the UK in order to identify barriers to implementation and measures to improve effectiveness. Key constraints include limited awareness among purchasing agents and suppliers, inadequate guidance, sometimes-confusing definitions, complicated modalities, and a lack of effective monitoring and reporting (Proforest 2007c; CPET 2008a; CPET 2009; Rambøll Management 2006). Several other countries are in the process of assessing the implementation of their TPPs. Evaluations have usually led to recommendations for the simplification of approaches, improvements in the clarity and practicality of procedures and guidance, and the revision of procurement criteria and requirements for proof of compliance.

12 Lundmark Jensen, C., Coordinator of International Forest Policy, Ministry of Environment-Forest Policy Division, Denmark, pers. comm., 2009.

13 This is also provided, for example, in the New Zealand policy.

14 www.proforest.net/cpet/toolkit.

Definitions of legality and sustainability

Legality

To make them operable by purchasers who are not experts in forestry issues, TPPs must have clearly defined criteria for the requirements of legality and sustainability. The Danish, Dutch and UK governments have developed detailed criteria for legality. Japan and New Zealand have short general definitions that leave considerable scope for interpretation. The TPPs of other countries have no specific definitions of legality, even though they refer to it. France, Germany and Switzerland have left the task of elaborating definitions of the legality and sustainability of forest management to certification systems.

The general approach to defining legality is to equate it with compliance with national laws and international conventions (Box 3.1). Since very broad definitions are difficult to apply in practice, several countries have specified the legislation and international conventions that are covered by their definitions. Regarding the latter, some policies refer only to those conventions that the country has ratified.[15] Compliance with the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is specifically mentioned in the Danish, Dutch, French and UK policies. The Dutch policy is the only one with an extensive (but non-exhaustive) list of international conventions (the Convention on Biological Diversity, CITES, the International Labour Organization – ILO, and the UN Declaration on Indigenous Peoples), irrespective of whether the listed conventions have been ratified by the exporting country.[16] It may be difficult to verify compliance with international conventions in non-ratified countries.

In general, adequate knowledge of the relevant conventions among forest managers in tropical-timber-producing countries is limited to those in advanced larger companies. Most other operators will require training on the implications of relevant conventions for their operations before the respective obligations can be known, understood and implemented. Additional capacity-building work may be needed to enable forest owners and managers to address compliance, particularly with those international conventions that the country has not ratified.

The UK definition of legality includes legal use rights to the forest, compliance with national and local laws on forest management, the environment, labour, welfare, health and safety, and other parties' tenure and use rights. All relevant royalties and taxes must also be paid and CITES must be complied with. The Danish and the Dutch policies apply essentially the same definition.

The Japanese definition mentions only forest laws. This can be interpreted to include local-level by-laws because, in addition to national laws, the definition mentions forest laws applied in forest areas. The same approach is adopted in the UK, Danish and Dutch definitions, which also refer to local legislation and regulations.

Japan also has an explicit (non-exhaustive) definition of illegal logging, which includes logging without legitimate permission, logging in prohibited areas, and the logging of prohibited timber species. In the Danish definition the term illegal activity refers to (illegal) exploitation, establishment of land settlements, land use, and initiated fires. The New Zealand policy divides legality into two areas: legal harvesting rights, and rights to use the forest; this is among the narrowest of definitions.

The Dutch policy is the only existing TPP that covers enforcement aspects by specifying that FMUs must be protected against illegal activities. This is not quite the same as compliance with national or local laws because the FMU could be subject to illegal activities even if the harvesting company or organization itself is law-abiding (Brack 2009a). The UK and Danish criteria also make a targeted reference to the adequate protection of the forest from unauthorized activities such as illegal logging, mining and encroachment.[17] Protection against illegal activities does not depend on the FMU alone, as a lack of government enforcement or weak general security in an area is often the reason for external illicit activities. In addition, in the absence of relevant guidance the terms 'sufficient' and 'adequate' protection are subject to interpretation.

15 Belgium's public-sector TPP makes no reference to specific conventions.

16 This comprehensive approach to the scope of legislation applies only to the definition of sustainability; the Dutch definition of legality includes only the conventions ratified by the country.

17 Item 1.2.5.c on ecosystem health and vitality under the criteria of sustainability.

Legality has been defined differently in different documents issued by the EC related to both public procurement and the EU FLEGT Action Plan (Box 3.1). In addition, EU guidance on public procurement proposes that the verification of legality requires that wood can be traced along the entire production chain from the forest to the product.

Parallel to the individual efforts of its member states, the EU has developed a generic definition of legality in its FLEGT Regulation[18], which was crafted within the framework of VPAs and also specifies how to identify, through a participatory process, which national laws should be included.[19] In subsequent briefing notes the following elements are identified as likely to be included in the practical working definition to be applied in partner countries: legal harvesting rights; regulations on permitted harvest levels; environmental and labour legislation; and respect for the tenure rights of other parties that may be affected (FLEGT 2005).20 Two recent documents – the EU legislative proposal on obligations for operators who place timber and timber products on the EU market (the due-diligence regulation) and the EC staff working paper on public procurement – elaborate on what is meant by legality and legally harvested timber. While these two EU-level definitions are mutually compatible, differences in wording and the level of detail are not helpful to the operators who need to comply with them or to the auditors who need to verify compliance. The differences are apparently due to the somewhat different perspectives on the concept of legality in different EU instruments.

The recent EC guidance on public procurement policies (CEC 2008b) is consistent with the FLEGT definition of compliance with national forest laws. FLEGT licensing is presented as a system that testifies to the legality of the timber products supplied. It also recommends that EU member states and their contracting authorities stipulate that all wood and wood products be sourced from legally harvested forests among minimum technical specifications and that sustainability be part of contract performance clauses for works contracts. A synergy between national procurement policies and the FLEGT Action Plan already exists in the French and UK policies, both of which accept the FLEGT licences as proof of legality.[21] There will also be a linkage with the definition of the due-diligence regulation (when approved), which is applicable to timber and timber products from all sources (domestic and imported).

The US Lacey Act amendments (see also Chapter 4) include an indicative list of potential illegal activities covered, including both 'overlaying' and 'underlying' violations with the broadest definition of (il)legality. This is different from policies that specify the relevant legislation to be complied with. The Lacey Act may also extend to less obvious activities, such as the transporting of timber at night in violation of a curfew designed to combat illegal timber-trafficking (Brack 2009a). Examples of illegal activities are also included in the Japanese definition and in the EU guidance on green public procurement.

In conclusion, various definitions recognize that trading-partner countries have the sovereign right to define legality under their specific conditions. TPPs contain provisions for the scope of relevant national legislation to be covered, which can be understood as the minimum requirement for qualifying for 'legality'. This may also be implicit – such as in the case of the TPPs of France, Germany and New Zealand, which rely on the definitions of recognized forest certification schemes.

For effective assessment and verification it is important that there is clarity on which legislation is to be included. At present, definitions of legality have differing approaches and wordings, leaving scope for interpretation. Some of the differences have significant implications for tropical-timber producers and should be duly considered in policy design. For instance, some definitions expand the scope of the application of international conventions beyond the countries that have ratified them, which has some practical difficulties (e.g. possible conflicts with national legislation). In addition, obligations to protect an FMU against external threats can rule out operators who are

18 The EU FLEGT defines legally produced timber as timber products produced from domestic timber that was legally imported into a partner country in accordance with national laws determined by that partner country as set out in the Partnership Agreement (Council Regulation (EC) No 2173/2005).

19 The UK policy does not consider this to be necessary usually.

20 The EU FLEGT VPA regulation includes provision for the development, through a participatory process, of specific legality definitions in VPA countries.

21 This is not the case in the Belgian and German policies, since 'sustainable source' is their minimum requirement. The FLEGT licence can only provide a partial input to the demonstration of sustainability.

law-abiding and are managing their forests sustainably but are helpless to control security or illegal activities beyond the borders of their FMUs.

While a degree of flexibility towards the interpretation of legality is useful for the application of external or international definitions under specific country conditions, there is clearly a need for more clarity and consistency between various public procurement policies and related regulatory instruments which refer to the legality of timber supplies. Despite the differences in definition identified in Box 3.1, overall the approaches are largely similar and offer ground for harmonization through, for example, the development of a generic definition (or standard) of legality. A common view is emerging among some countries on how legality (or, alternatively, illegal activities) can be defined based on national legislation and international conventions. Future harmonization efforts could build on this experience.

Box 3.1 Selected definitions of legality

Belgian procurement policy (2005)

Forest management respects national laws and international conventions.

Dutch draft procurement criteria (October 2008)

Relevant international, national and regional/local legislation and regulations shall be respected. To that end the system requires that:

- the forest manager holds legal use rights to the forest
- the forest manager complies with all obligations to pay taxes and royalties
- legal and regulatory obligations that apply to the FMU, including international agreements, are fulfilled
- the FMU is sufficiently protected against all forms of illegal exploitation, the illegal establishment of settlements, illegal land use, illegally initiated fires, and other illegal activities.

Guidance: relevant international agreements include the Convention on Biological Diversity, CITES, ILO agreements and the UN Declaration on the Rights of Indigenous Peoples. Irrespective of whether a given country has ratified these agreements, the standard of the certification system should, where relevant, reflect the intention of these agreements. This part of the definition applies only to SFM (not to the definition of legality).

UK timber-procurement policy (CPET 2009) and the Danish draft criteria for legal and sustainable timber and assessment of certification schemes (2007)

Definition of legal:

- The forest owner/manager holds legal use rights to the forest.
- There is compliance by both the forest-management organization and any contractors with local and national laws, including those relevant to: forest management; the environment; labour, welfare, health and safety, and other parties' tenure and use rights.
- All relevant royalties and taxes are paid.
- There is compliance with the requirements of CITES.

Process for developing the definition: in most countries it will be unnecessary to have a process to define legality as set out above. However, it is now recognized that, in some countries, laws may be unclear or conflicting, making a clear definition of legality difficult to achieve. The FLEGT process

has proposed that, in such countries, it will be necessary to have or to develop a practical working definition of 'legal' or a core set of laws that must be met, which has support from major stakeholder groups. This can be done through a national standard-setting process or other appropriate means.

Japanese procurement policy (2006)

Legal: harvested in a legal manner consistent with procedures in the forest laws of timber-producing countries and areas.

New Zealand procurement policy (2006)

Legal timber refers to timber or wood products from a forest that has been legally harvested and where the organization or body that felled the trees and provided the timber from which the wood is supplied or derived had legal rights to use the forest.

EU FLEGT regulation (Council Regulation (EC) No 2173/2005)

Legally produced timber means timber products produced from domestic timber that was legally harvested or timber that was legally imported into a partner country in accordance with national laws determined by that partner country, as set out in the partnership agreement.

EU FLEGT (FLEGT Briefing Note 9)

Definitions of legally-produced timber should incorporate laws that address the three pillars of sustainability: i.e. those aimed at economic, environmental and social objectives. These are likely to include:

- the granting of and compliance with rights to harvest timber within legally gazetted boundaries
- compliance with requirements regarding forest management, including compliance with relevant environmental, labour and community welfare legislation
- compliance with requirements concerning taxes, import and export duties, royalties and fees directly related to timber harvesting and timber trade
- respect for tenure or use rights to land and resources that may be affected by timber-harvest rights, where such rights exist
- compliance with requirements for trade and export procedures.

The definition of legality should also cover those laws identified by the timber-producing country to be most important in terms of the degree of harm caused by failure to comply with them. For example: environmental harm may be caused by extracting too many trees or damaging water systems; economic harm may result from failure to pay fees on timber, thereby robbing the forest owner (normally the state); and social harm may arise from ignoring local and Indigenous communities' tenure rights. Conversely, failure to comply with some laws, such as road-traffic offences, may cause relatively little harm or have minimal impact on SFM.

On this basis, a credible definition is likely to include the following elements:

- logging only where there are legal harvest rights, by the holder of those rights
- complying with regulations on permitted harvest levels, and with environmental and labour legislation
- payment of timber royalties and other directly relevant fees
- respect for other parties' legal tenure rights that may be affected by timber harvest rights.

Since the harm caused by failure to comply with laws affects different stakeholders in the timber-

producing country – government, private sector, the general public, and local and Indigenous communities – the process to decide which laws should be included in a definition should generally involve wide consultation.

EU proposal for a regulation laying down the obligations of operators who place timber and timber products on the market (CEC 2008a)

'Legally harvested' means harvested in accordance with the applicable legislation in the country in which the harvest occurs. Applicable legislation means the legislation of the country in which the harvest occurs that regulates forest conservation and management and the harvesting of timber, as well as legislation on trade in timber or timber products related to forest conservation and management and to the harvesting of timber.

EC staff working paper on public procurement for a better environment (CEC 2008b)

Legality refers to compliance with national forest law, where the latter is consistent and enforceable and supportive of basic SFM principles. Illegal harvesting may include not only harvesting practices that contravene the regulations but also the use of corrupt means to gain harvesting rights, extraction without permission, the cutting of protected species, and the extraction of timber in excess of agreed limits. Illegal practices may also extend to transport infringements, illegal processing and export, the non-payment of taxes or charges, and mis-declaration to customs.

US Lacey Act (Amendment 2008 – sections on plants and plant products) (APHIS 2008)

The Act states that:

"It is unlawful for any person:

(1) to import, export, transport, sell, receive, acquire or purchase any fish or wildlife or plant taken, possessed, transported, or sold in violation of any law, treaty, or regulation of the United States or in violation of any Indian tribal law;

(2) to import, export, transport, sell, receive, acquire or purchase in interstate or foreign commerce—…

(B) any plant—

(i) taken, possessed, transported, or sold in violation of any law or regulation of any State, or any foreign law, that protects plants or that regulates—

(I) the theft of plants;

(II) the taking of plants from a park, forest reserve, or other officially protected area;

(IIII) the taking of plants from an officially designated area; or

(IV) the taking of plants without, or contrary to, required authorization;

(ii) taken, possessed, transported, or sold without the payment of appropriate royalties, taxes, or stumpage fees required for the plant by any law or regulation of any State or any foreign law, or

(iii) taken, possessed, transported, or sold in violation of any limitation under any law or regulation of any State, or under any foreign law, governing the export or transshipment of plants; …"

Under the Act it is also unlawful to possess any plant taken, possessed, transported or sold in violation of any law or regulation of any state, or any foreign law, as specified in paragraph (2) above, within the special maritime and territorial jurisdiction of the US.

Sustainability

Three approaches have been applied to the definition of sustainability in TPPs: short overarching definitions (Japan) or the listing of a few key elements of SFM (Belgium); detailed provisions for various elements of sustainability, largely within the framework of the internationally agreed elements of SFM (Denmark, the Netherlands and the UK); and relying on the definitions of forest certification systems (France, Germany, New Zealand and Switzerland). Box 3.2 summarizes the definitions appearing in existing TPPs.

Box 3.2 Selected definitions of sustainability

Belgian policy (2005)

Sustainable: forest management based on internationally accepted principles and criteria (among others the Helsinki criteria) that are institutionally and politically adapted to the local situation (Criterion 1). This is further elaborated to incorporate respect for both national rules and regulations and international treaties,[22] and to ensure that:

- forest management is targeted, effective and economically viable
- forest management is based on a highly developed social dialogue and with due respect for Indigenous peoples
- there is adequate protection of the environment and social aspects.

Danish policy (2007)

SFM is "consistent with the Forest Principles as set out by UNCED [the United Nations Conference on Environment and Development] 1992". The standards for SFM should "build on relevant broadly recognised international, regional or national guidelines, criteria and indicators defining sustainable forest management at the forest management unit level."

Standards for SFM should ensure: legal timber production; minimising harm to ecosystems; the maintenance of forest productivity; the maintenance of forest health and vitality; the maintenance of biological diversity; the maintenance of the extent of the forest resources; and the maintenance of socioeconomic functions (uphold local peoples' rights and other social issues). The policy includes detailed provisions for each of these aspects.[23]

Dutch draft policy (2008)

Sustainability criteria are described for the following elements:

- legislative requirements (requirements of forest manager and on illegal activities)
- social aspects, covering the interests of stakeholders (tenure and use rights, consultation and permission, public availability, dispute resolution and objects of cultural and economic value) and health and labour conditions (covering health and safety, and employment conditions)
- ecological aspects (biodiversity, species and ecosystems, the conversion of forests, plantations, non-timber forest products, hunting and fishing)
- regulation functions (soil, water, ecological cycles, reduced impact logging, forest fires, diseases and pests, chemicals, and waste and litter)

22 In the Belgian policy, legal compliance is part of SFM.
23 The Danish policy includes a total of 30 individual criteria for sustainability, of which 20 are identical to those of the UK, six are similar but worded differently, and four are additional.

- economic aspects, including the production function (production capacity) and the contribution to the local economy (employment and infrastructure)
- management aspects, including the management system (management cycle, forest management plan, maps, monitoring, knowledge and expertise) and management group or regional association (group or regional association, SFM requirements).

UK policy (CPET 2009)

Sustainable timber and wood products must come from a forest that is managed in accordance with a definition of 'sustainable'[24] that meets the requirements set out below:

- The definition must be consistent with a widely accepted set of international principles and criteria defining sustainable or responsible forest management at the FMU level.
- The definition must be performance-based, meaning that measurable outputs must be included.
- Management of the forest must ensure that harm to ecosystems is minimized. In order to do this the definition of 'sustainable' must include requirements for the appropriate assessment of impacts and planning to minimize impacts; the protection of soil, water and biodiversity; the controlled and appropriate use of chemicals and the use of integrated pest management wherever possible; and proper disposal of wastes to minimize negative impacts. Management of the forest must ensure that the productivity of the forest is maintained. In order to achieve this, the definition of 'sustainable' must include requirements for management planning and the implementation of management activities to avoid significant negative impacts on forest productivity; monitoring which is adequate to check compliance with all requirements, together with review and feedback into planning; operations and operational procedures which minimize impacts on the range of forest resources and services; adequate training of all personnel, both employees and contractors; and harvest levels that do not exceed the long-term production capacity of the forest, based on adequate inventory and growth and yield data.
- Management of the forest must ensure that forest ecosystem health and vitality is maintained. In order to achieve this the definition of 'sustainable' must include requirements for: management planning which aims to maintain or increase the health and vitality of forest ecosystems; management of natural processes, fires, pests and diseases; and adequate protection of the forest from unauthorized activities such as illegal logging, mining and encroachment.
- Management of the forest must ensure that biodiversity is maintained. In order to achieve this, the definition of 'sustainable' must include requirements for: implementation of safeguards to protect rare, threatened and endangered species; the conservation/set-aside of key ecosystems or habitats in their natural state; and the protection of features and species of outstanding or exceptional value.

Process for developing the definition[25]

The process of defining 'sustainable' must seek to ensure balanced representation and input from the economic, environmental and social interest categories. The process of defining 'sustainable' must seek to ensure that no single interest can dominate the process and that no decision can be made in the absence of agreement of the majority of an interest category.

Japanese policy (2006)

Sustainable: 'harvested under sustainable management'.

24 Note that this definition has been developed to meet procurement requirements and therefore differs from the full definition of sustainable recognized by the UK government.
25 These provisions are relevant only to certification schemes and not to other verification mechanisms.

EU 'buying green' (CEC 2004)

SFM implies management with a view to, among others, sustaining biodiversity, productivity and vitality, also taking into account social aspects such as worker welfare and the interests of Indigenous and forest-dependent people.

EC staff working paper on public procurement for a better environment (CEC 2008b)

In Europe, the sustainability concept is generally defined at the national level. European and EU processes generally refer to the criteria and indicators endorsed by the Lisbon Ministerial Conference on the Protection of Forests in Europe (2–4 June 1998). Outside Europe, reference is made to the criteria of the UNCED Forest Principles (Rio de Janeiro, June 1992) and, where applicable, to the criteria or guidelines for SFM, as adopted under various international and regional initiatives (e.g. ITTO, Montreal Process, Tarapoto Process, and the UNEP/FAO Dry-Zone Africa Initiative).

A comparative analysis of the Belgian, Danish[26], Dutch and UK criteria has revealed a significant degree of harmonization between the last three, particularly between the UK and Danish criteria. The more general eleven Belgian criteria are also compatible with the other three, but many aspects are covered only implicitly (Proforest 2008a). There are, however, also differences, some of which may have important implications for tropical-timber-producing countries. These differences are illustrated in the following points arising from the comparative analysis:

- While the UK and Danish criteria for *soil and water* focus on the minimization of harm to ecosystems, the Dutch criteria have specific requirements for the maintenance and improvement (if possible) of soil quality and the water balance.
- The Danish criteria include a requirement for the *assessment of environmental impacts*, which is not explicit in the UK or Dutch criteria. In smaller FMUs this requirement is difficult to justify.
- While the UK and Danish criteria specify the controlled and appropriate *use of chemicals*, the Dutch criteria allow the use of chemicals if the maximum use of ecological processes and sustainable alternatives proves insufficient. The verification of the latter on the ground is a major challenge and requires scientific data that are rarely available in tropical FMUs.
- Somewhat different approaches are adopted for *logging methods*. The UK and Danish criteria call for the use of operations and operational procedures that minimize impacts, while the Dutch criteria require the use of the available methods and techniques most suited to the prevailing conditions. Identification of the most suitable option is often difficult in the tropics due to a lack of adequate information (e.g. proper comparative analyses between technology options).
- While the UK and Danish criteria call for the management of *fire* to maintain forest health and vitality, the Dutch criteria permit the use of intentional forest fire only if it is necessary for the achievement of management goals (fire prevention and suppression capacity are not considered).
- The Dutch criteria exclude the use of *genetically modified organisms*, which are not mentioned in the UK or Danish criteria. This aspect is likely to become increasingly relevant for plantation forestry in the tropics.
- The Dutch criteria do not allow the *conversion of forests* within FMUs into other types of land use, including timber plantations, except in justified exceptional circumstances. The Danish criteria take an alternative approach by including the aims of maintaining or increasing the area of forest and other wooded land and enhancing the various forest values of forest resources. In addition, the Danish criteria ask for more detailed requirements in national or local standards to address, for example, the

26 Denmark is in the process of revising its criteria for sustainability and refers to FSC and PEFC certificates or similar proof as a temporary solution.

conversion of forests. These provisions can be critical in tropical countries in which decisions are made on alternative uses for badly degraded forests (which are still classified as forests), or when the landowners (smallholder or community) want to convert forest into agricultural fields, as allowed by national legislation, to meet their livelihood needs. Such general restrictions in external requirements as in the Dutch criteria may be difficult to justify in many tropical-forest situations.

- The Dutch criteria on *plantations* call for preference to be given to native species and require a relevant share of the total area to be used for regenerating natural forest. The Dutch policy does not accept timber from plantations that were established through the conversion of natural forests after 1997. Even though detailed information is unavailable, some tropical countries have significant areas of land on which (often degraded) natural forest have been converted to plantations for industrial purposes or fuelwood production after 1997. The timber produced from these plantations is ruled out of the Dutch public-sector market. The UK and Danish policies do not have such requirements for planted forests.
- *Social criteria* are not included in the UK policy but are covered by the Danish and Dutch policies.
- There are also some differences in the criteria for *management systems* between the Dutch and the UK and Danish policies, while the latter two are harmonized with each other.
- In general, SFM *standard development* should be done through a consultative process and be open to participation by all interested parties, including economic, environmental and social stakeholders. The UK and Dutch policies also have a harmonized approach in this respect, but the Dutch policy is more demanding in some aspects.

The sustainability criteria of the Belgian, Danish, Dutch and UK TPPs, as compared above, constitute comprehensive sets of detailed unilateral requirements for SFM that are to be complied with by all timber-product suppliers (domestic and foreign) selling into the public-sector markets of those countries. The level of detail in such requirements, particularly if expressed in prescriptive terms, can be problematic, because they may not be applicable in specific country situations with varying forest, ecological and socioeconomic conditions.

The comparison also reveals that the largely harmonized UK and Danish approaches to sustainability criteria are more output-oriented than are the Dutch criteria, which have several prescriptions for input measures. From a practical, forest-management point of view, the former approach is preferable because it allows flexibility in choosing an appropriate way of complying with the identified safeguards under specific local conditions.

Although not explicit in all cases, it is clear that definitions of sustainability, and specific requirements for SFM at the FMU level, draw on the principles and criteria developed in international and regional processes. This offers common ground for the harmonization of requirements. However, there should be consistency in referring to various international processes.

The reliance of many TPPs on recognized forest and chain-of-custody certification as the main tools for proving sustainability is also contributing to harmonized approaches to sustainability. The two international certification schemes play a key role in this: almost all the certified forest area worldwide (325.2 million hectares in May 2009) has been endorsed by either the Programme for the Endorsement of Forest Certification (PEFC), which is the largest scheme, or the FSC (UNECE/FAO 2009).[27]

Significant differences between the detailed requirements on SFM and legality in the TPPs of different countries is a cause of concern for those tropical-timber producers who want to supply several markets. There is a danger that differing definitions will continue to emerge, further complicating international trade. Detailed, comprehensive sets of requirements for sustainability are likely to lead to a situation in which the options for demonstrating compliance will, in practice, be limited to certificates issued under 'acceptable' forest certification systems – because the use of alternative means of proof will

27 National schemes that have not been endorsed by the PEFC cover relatively small areas. The most important scheme is that of the Indonesian Eco-labelling Institute (LEI), under which 1.54 million hectares were certified as of the end of 2008.

become practically impossible. For tropical-timber producers it is particularly important that they have feasible, clearly identified options for providing alternative proof. The TPPs of France and Japan offer such options.

There is a clear need to streamline the use of the concepts of legality and sustainability and their respective verification in public-sector TPPs, because current un-harmonized approaches could distort markets and impose additional administrative costs on bidders (CEC 2008b).

Boxes 3.1 and 3.2 show that defining legality and sustainability is an evolving discipline. This has created uncertainty among tropical-timber producers with regard to the constantly shifting goalposts being set for them. The situation can be improved through an increase in the intensity of information exchange, since past efforts have produced only modest results. An intergovernmental instrument could also be used to define appropriate, globally applicable standards for legality and SFM, which could then be drawn on by national procurement authorities. This would remove uncertainty and confusion about how to define sustainability and legality and take them into account in TPPs. It would also help tropical-timber-producing countries to meet market requirements on an equal footing with other suppliers.

Issue of social aspects

Social aspects are part of the three-pillar concept of SFM; this is explicitly recognized in international and regional sets of criteria and indicators for SFM (C&I) and most certification standards. However, the interpretation of the EU procurement rules has led the UK, for example, to exclude social aspects from their TPP, while Denmark and the Netherlands have explicitly included them in detailed requirements. Other countries (including the UK itself) have covered social aspects implicitly through references to C&I sets or the recognition of some certification schemes or labels.

Brack (2009b) carried out an in-depth comparison of social aspects of the TPPs of Belgium, Denmark, the Netherlands and the UK, as well as in the FSC and PEFC forest certification systems, which are referred to in several other national TPPs (i.e. those of France, Germany, Japan and New Zealand). The comparison considered four areas: legality (since many social obligations are defined in national laws and regulations); the rights and interests of stakeholders in forest management; the protection of workers' rights and conditions; and participation in standard-setting and certification processes. The main findings of Brack's analysis on the commonalities and differences in the last three of these areas[28] can be summarized as follows:

- The *rights and interests of stakeholders* in forest management are among the most contentious issues in forest management because, in many countries, the legal basis of traditional or customary rights is unclear. Defining rights in such situations is difficult and can involve time-consuming processes. The Dutch TPP contains the most comprehensive and explicit treatment of social aspects of SFM, including the respecting of specific international conventions on human rights, labour and Indigenous peoples (regardless of whether the country has ratified the convention); the right to free, prior and informed consent before property or use rights are affected; the possibility of compensation if property or use rights are affected; the transparency of information; the protection of cultural and traditional economic values; and a contribution to community development. The Danish TPP also covers property and land-tenure rights, as well as legal, customary and traditional rights, and dispute resolution mechanisms (which are also identified in the Dutch TPP).
- *Protection of workers' rights and conditions*: health and safety, and workers' fundamental rights, are covered in the UK and Danish policies under legality. The Danish and Dutch TPPs include additional criteria, the former on safe working conditions and the provision, by the employer, of guidance and training. The Dutch TPP refers to ILO conventions (155 and 161) to protect forest personnel, including contractors and their employees and, where applicable, the local and Indigenous populations.
- The Danish and Dutch policies include the right to organize and the negotiation of wages by referring to the respective ILO core conventions.

28 Differences in approaches to legality were discussed above.

- *Participation* in standard-setting and certification processes is covered by all three policies, but there are differences in the detail. All three cover conformity with international standard-setting rules (i.e. those of the International Organization for Standardization – ISO, the International Social and Environmental Accreditation and Labelling – ISEAL, or equivalent) and all mention balanced representation. The Danish policy provides for a situation in which a standard-setting process has made a genuine offer for all major stakeholder groups to participate but one group chooses not to do so – under the policy, this would not constitute a failure. This provision is useful for avoiding situations in which a major stakeholder group's participation could become conditional on any standard-setting work.
- The three policies share three common elements in *standard-setting processes*: no single interest to dominate the process; the desirability of consensus, and voting if there is no consensus; and no decision to be made in the absence of agreement by any one of the three interest categories (i.e. social, environmental and economic). The three policies also have similar provisions for the transparency of the process and standards.
- There is a common view that the *certification process* should be open to the same kind of input as the standard-setting process. The Danish and Dutch policies also set out procedures for consultation with, or input from, external stakeholders, access to complaints mechanisms, and the transparency of the process.

The above differences are more related to the level of specificity and detail than to which aspects need to be covered. It is apparent, however, that to some extent the Dutch criteria appear to go beyond what is contained in the Danish TPP.

Brack (2009b) also analyzed the implications for the possible inclusion of social aspects in public-sector TPPs, of WTO and EU procurement rules, noting that, despite ambiguities around some social criteria and their relevance to the subject matter of timber-procurement contracts, it is generally argued that they can be allowed as being an essential part of the concept of sustainability. Even the UK TPP, which excludes social criteria from its requirements, does, in fact, specify some (e.g. participation in standard-setting and certification processes), while others are included implicitly through the acceptance of forest certification systems, which do cover social aspects.

The EU guidance on the matter is careful to include social criteria (only) in contract performance clauses due to the lack of a direct link between those criteria and the subject matter of timber-procurement contracts. This is weaker than including them in the technical specifications. General references to environmental and social criteria can only be included if they are linked to the subject matter of the contract, and this is not the case for all social aspects. The same holds true at the contract award stage, when sustainability criteria can be applied if they are linked to the subject matter. Under this approach, market access is guaranteed for all legally harvested wood and wood products. Complying with sustainability criteria would not be a pre-condition for entering the market but would give the supplier an advantage at the award stage (CEC 2008b).

The other option is to use sustainability as a contract performance clause, since this would be non-discriminatory because all suppliers awarded the contract should qualify. This would make sustainability (and social criteria as part of it) a *de facto* exclusion criterion. The downside of this approach is that social issues tend to be addressed only weakly in contract management. In principle, the verification of compliance should be made systematically. Moreover, the EU rules require that the possibility of proof equivalent to that provided by certificates of accepted certification schemes is offered, but social issues do not need to be covered in such equivalent evidence.

Given the wide variety of social aspects and their broad scope, this area is likely to remain subject to debate in TPPs, even though they form the third pillar of the sustainability concept. On the other hand, it cannot be expected that SFM will solve underlying social problems in often remote, weakly developed areas in the tropics, where FMUs operate within local frameworks governing the rights and resources of local stakeholders. Bringing SFM practices into these areas can make a significant contribution to social development but it cannot be

the fundamental solution to social problems. Setting social criteria too high for forest operations in importing-country TPPs from the beginning bears the risk of ruling out the introduction of SFM practices in areas where such an introduction could have a significant impact, leaving such areas lagging behind in poverty reduction and social and political development.

Since SFM certificates are the dominant tool for providing information on procurement criteria, the issue of explicitly including social aspects is likely to boil down to the consideration of those aspects covered in the recognized certification systems (Brack 2009b). This would be desirable not only because of their flexibility but also because certification systems have shown responsiveness in adjusting their rules in accordance with public-sector procurement criteria in the key import markets (Purbawiyatna & Simula 2008).

Finally, it needs to be emphasized that the social and labour-related criteria of SFM and its certification have not received the same level of treatment as have environmental and economic criteria. This should be addressed in future revisions of existing standards and in the elaboration of new standards (ibid.).

Evidence of compliance with policy requirements

Forest certification

TPPs have three main options for the provision of evidence of compliance with their requirements: certificates issued under recognized certification systems; audit statements issued by independent bodies; and other documentary evidence. The first type of evidence plays a leading role in implementation and therefore a need has arisen to define criteria and methodologies for assessing certification standards and systems, but this should also concern standards and legality-verification systems. Four countries (Belgium, Denmark, the Netherlands and the UK) have set minimum requirements for certification systems, including definitions of legality, sustainability, standard-setting processes, chain of custody and labelling, and the structure and operation of these systems. Other countries have recognized some certification systems directly without publishing the basis of assessment (Germany and France), or referred to systems that may provide adequate evidence without formally endorsing them (Japan, New Zealand and Switzerland). However, France at least has decided to define modalities for the recognition of forest certification schemes.

Yet another variant is the case of Mexico's public-sector TPP, which only accepts certificates issued by bodies that comply with certain legal requirements and are registered by the government. This raises the issue of non-discriminatory treatment of imported products because the approach covers only auditing bodies registered in Mexico (i.e. only domestic timber would qualify).

Requirements for certification systems

In standard-setting the Belgian, Danish, Dutch and UK policies refer to ISO and ISEAL requirements. The other criteria of these four countries concern participation, the decision-making process, and the public availability of standards. There is a considerable degree of commonality between the four policies; in general the differences are insignificant but they can be important in some situations. For example:

- The Dutch policy calls for the participation of relevant stakeholders; the UK policy requires balanced representation and input from the economic, environmental and social interest groups; the Danish policy encourages the participation of all affected parties; and the Belgian policy requires the active participation of forest owners and managers.
- In decision-making the Danish, Dutch and UK policies call for a consensus; voting is a possibility in the first two while the UK policy does not allow a decision in the absence of agreement from the majority of an interest category. All three policies share the rule of avoiding situations in which a single interest group dominates the process.
- The public availability of standards is specified in the Danish and Dutch policies but not mentioned in the UK policy. The Belgian policy requires complete transparency for stakeholders and the public (thus requiring the public availability of standards).
- The Dutch policy includes some additional elements: the need to take into account the potential limitations for certain groups, such as Indigenous peoples and small forest owners in providing input; requirements for public consultation; and how comments are handled.

On the *certification process* there are several common elements in the TPPs of the four countries, such as compliance with ISO guides; the accreditation of certification bodies; consultation with external stakeholders; review of the documentation and the management system; field audits; and complaints and dispute-resolution mechanisms. Only Belgium specifies the independence and accreditation of certification bodies. The Dutch policy has several additional elements for certification bodies: the need to be a legal entity; the distribution of responsibilities; the composition of decision-making and advisory bodies; and appeals procedures. These may be considered implicit in the UK and Danish policies.

There is a common requirement that accreditation bodies may be international or national but they must fulfil ISO requirements.[29] The Dutch policy also requires participation in a peer-review process within sister organizations, preferably within the framework of the International Accreditation Forum.

There is a common requirement among the four TPPs for the traceability of products; the chain of custody must be certified by an accreditation body. All four policies also allow the mixing of certified and non-certified material in products. Some of the differences between the policies are as follows:

- The UK and Danish policies require a verifiable system to ensure that non-certified material is derived from legal sources. The Dutch policy also requires that products are from undisputed sources without, however, defining what is meant by a disputed source.
- The UK policy requires that if the share of non-certified material exceeds 30% there should be a verifiable system to ensure that it is from sustainable sources. The Danish policy allows the reporting of a product as certified if the share of certified material is, on average, at least 70%. The Dutch policy does not have a threshold but requires that reporting is based on the mass balance[30] or percentage share of SFM-certified material.
- The Belgian policy only accepts certificates for products that have 100% certified raw material. This is confusing for the trade and tends to rule out composite products like particleboard and fibreboard.
- If recycled wood is used it can be pre- or post-consumer material. Driftwood is also allowed under the Danish and UK policies, provided that there is a verifiable system in place to prove the type of material. Neither country allows sawmill co-products (woodchips and other sawmill residues), but this is not ruled out in the Dutch policy.
- The Dutch policy requires the 'administrative' or physical separation of timber derived from verified and non-verified legal sources.

In labelling there is a common requirement for mechanisms for controlling all claims and ensuring that claims are accurate and that action is taken to prevent false claims. This also includes claims about the certified nature of products (e.g. whether certified and non-certified materials have been used in the same product). The Dutch policy also calls for the use of a copyrighted logo and a registered trademark.

Some of the above differences in requirements for certification systems are marginal, and some may seem unimportant but can have specific implications for the acceptance of particular certification schemes. Some details in the requirements are unnecessary because they are already covered by the reference documents cited in the policies (i.e. the ISO guides). There is also an overlap in some requirements, which can lead to confusion due to differences in wording. From a substantive point of view it is also difficult to justify some of the differences.

As a whole, it appears that more rigorous requirements are set for forest certification systems than in general for certification systems targeted at environmental labelling. This may be explained by the fact that forest certification is a relatively recent instrument, it addresses complex environmental and social issues, and specific stakeholder interests have pushed for criteria that can lead to the acceptance of only one system (usually that of the FSC).

29 ISO 17011:2004 Conformity assessment – general requirements for accreditation bodies accrediting conformity-assessment bodies.

30 Mass balance means that the proportion of the product sold as SFM-certified is equal to (or less than) the proportion of SFM material entering a process.

Acceptance of certification systems

Governments have assessed or accepted certification schemes in their own ways. Table 3.2 summarizes how national policies make reference to or recognize specific certification schemes. It shows that countries have come to differing conclusions about the acceptability of individual systems. The UK government has already completed two assessment rounds and there have also been incremental processes in Denmark and Belgium, where additions to the accepted list have been made over time.[31] Since September 2009, the Netherlands has accepted FSC International, PEFC Germany and PEFC Finland as certification schemes that supply sustainably produced timber. The Malaysian Timber Certification System (MTCS)[32], PEFC International, PEFC Belgium and PEFC Austria are being assessed.

The Chinese procurement policy makes reference to environmentally labelled goods, and a limited number of companies in each product group that have met such labelling requirements have been identified.[33]

The Swiss TPP refers to on-product labels by specified forest certification systems but allows consultations on the acceptability of other labels.

In addition to the identified certification schemes, the Belgian and German TPPs make provision for 'equivalent certification'. In the Belgian case it is further stated that certification must be carried out by an independent organization applying internationally recognized criteria that ensure that the timber is coming from sustainably managed forests. The equivalence of certification systems can be established when all the criteria of the federal-government circular are met. It appears that no assessments have been carried out.

The German TPP specifies that comparable certificates (or individual specifications) are acceptable if the bidder can prove that the FSC or PEFC criteria that apply in the country of origin have been met. It is not clear whether this refers to the SFM criteria only or to the full characteristics of these systems.

Table 3.2 demonstrates that most policies recognize both FSC and PEFC certification. In the UK, the notion that the PEFC can provide proof of both legality and sustainability was subject to intense criticism by NGOs but, as a result of revisions in the PEFC's rules, the UK TPP's acceptance of the PEFC was broadened to cover sustainability. Nevertheless, this remains an issue in Denmark and the Netherlands (for example), where FSC-supporting NGOs continue to push for an FSC-only policy.

Of the national certification schemes in tropical countries, Brazil's CERFLOR was endorsed in 2005 and the MTCS was endorsed recently. Previously the MTCS had been recognized in Denmark and the UK only for legality and for progressing towards sustainability. As a result of PEFC endorsement, this is no longer an issue for the MTCS in those two countries.

The Indonesian certification scheme, LEI, has been assessed in only two cases; in 2003 Denmark did not consider it to be good enough evidence of either legality or SFM but considered it to be a useful contribution in conjunction with other means of proof.[34] On the other hand, Japan has considered it adequate for sustainability. Non-PEFC-endorsed national schemes clearly have problems being accepted in the public-sector TPPs of export markets, as they need to be assessed separately from the two international schemes, resulting in extra costs that must be borne by the timber supplier. From a marketing point of view, such independent national schemes have limited value for export customers because their labels have no inherent brand value. Since the FSC does not recognize other schemes by rule, national schemes like LEI appear to have no other option than to seek PEFC endorsement if they are to obtain broad acceptance for LEI-labelled Indonesian products in the main export markets; the promotion of LEI's own branding would be prohibitively expensive.

The situation is different in Mexico, where the national TPP is apparently targeted at domestic timber products. The policy does not identify any

31 In the case of Belgium, initially only FSC and PEFC Belgium certificates were accepted. After further evaluation by an expert committee the list was expanded and two positive lists for PEFC-endorsed schemes were established (see footnote (a) in Table 3.2). Both were accepted but the first list was to be preferred in contract award. This proved to be impractical, however, because differentiation between PEFC national schemes is not suitable. The approach also created confusion among buyers and consumers because such additional information was not included in the label (Proforest 2007c).

32 Previously the Malaysian Timber Certification Council (MTCC).

33 The Chinese policy document lists nine companies for processed wood products, ten for wooden flooring and four for furniture.

34 Lundmark Jensen, C., Coordinator of International Forest Policy, Ministry of Environment, Forest Policy Division, Denmark, pers. comm., 2009.

particular system but refers to certificates issued by competent bodies registered by the Ministry of Environment, Natural Resources and Tourism. Voluntary forest certification in the country has been carried out only under the FSC system, but the Mexican forest law also makes provision for preventive technical audits by independent registered bodies. It is unclear which sustainability criteria would be applied in Mexico to make certificates acceptable for products procured by government agencies.

The differing sets of criteria for certification systems at the national level are a cause of concern for the timber trade. Several attempts have been made to develop common approaches but these have not been adopted beyond the organizations that promoted them. Examples include the Confederation of the European Paper Industries and, in 2006, the World Bank/WWF Alliance for Forest Conservation and Sustainable Use; the latter has not been taken up because it was devised in such a way that, at present, it can lead to the acceptance only of the FSC.

Differences in the acceptability of certification systems in national public-sector TPPs is also a cause of concern for the timber trade because it has created confusion among trading partners and stakeholders. In practice, the situation is moving towards a situation in which the two international certification schemes dominate and are broadly accepted. This will reduce the importance of differences in assessment criteria because, as pointed out by Brack (2009a), certificates of the two systems will be the main means for proving legal compliance and sustainability. However, friction is likely to arise if only one of the two international schemes (i.e. the FSC) is accepted. There are strong NGO pressures towards such an outcome, particularly in the Netherlands and Denmark. This would have significant market implications in those countries because FSC-certified timber is insufficiently available to meet market demand.

Other evidence

Since EU procurement rules do not allow the use of references to specific certification schemes, the possibility of other evidence must be allowed. This approach has also been adopted by Japan, New Zealand and, in a way, Switzerland. There are different approaches to defining acceptable alternative evidence.

The Belgian policy makes provision for 'equivalent certification' carried out by an independent organization applying internationally recognized criteria that ensure that the timber is derived from sustainably managed forests. The equivalence of such certification systems is established by an expert committee when all the criteria of the federal-government circular are met.

Germany has a similar approach but equivalence is required with FSC or PEFC standards in the country of origin. This is likely to be problematic in those tropical-timber-producing countries that have no national forest certification standards endorsed by the FSC or the PEFC. In such cases, the generic FSC standard should be used as the basis of interpretation by the body certifying the FMU in question.[35]

In Denmark it is recommended that alternative documentation be submitted for independent third-party assessment. This may include other certification schemes, export permits, certificates of origin and other declarations by government authorities, concession agreements, eco-management system documents, standards and guidelines used in forest management and respective criteria and indicators, and documentation on the compliance monitoring system. No case has tried to make use of this option.

The UK TPP accepts FLEGT licences as proof of legality. Evidence other than that of recognized forest certificates is classed as Category B evidence, for which an extensive checklist has been developed covering information on forest resources and their management, the supply chain, legal compliance and sustainability. The criteria for these individual elements are largely the same as for certification systems (Category A evidence). Category B is applicable in situations where there is no certificate or a broken chain of custody and can be used for proving legal origin in countries with low risk. The risk of illegal (or unsustainable) timber entering the supply chain determines the level of verification requirements – i.e. whether first-party, second-party or third-party verification is needed. The guidance refers to a number of private schemes offering verification of legality, which are evaluated on a case-by-case basis (Tind Nielsen 2008). The Netherlands will prepare its own rules for the

35 See Purbawiyatna and Simula (2008) for a discussion of FSC generic standards.

Table 3.2 Certification systems referred to in national public-sector TPPs

Country	FSC	PEFC	SFI	CSA	ATFS	MTCS	LEI	Other
Belgium	X	X[a]						
China								Chinese ecolabelling scheme
Denmark[b]	X	X	X	X		X		
France[c]	X	X						
Germany[d]	X	X						
Japan	X	X	X	X		X	X	SGEC (national scheme)
Netherlands[e]	X	X						
New Zealand[f]	X	X	X	X	X	X		Eco-timber
Switzerland	X	X						Q-Swiss Quality
UK[g]	X	X	X	X		X		

ATFS = American Tree Farm System; CSA = Canadian Standards Association; FSC = Forest Stewardship Council; LEI = Lembaga Ekolabel Indonesia (Indonesian National Forest Certification and Labeling System); MTCS = Malaysian Timber Certification Scheme; PEFC = Programme for the Endorsement of Forest Certification schemes; SFI = Sustainable Forestry Initiative.

a Originally only PEFC Belgium was recognized and other PEFC certificates were acceptable provided that their national certification systems fulfilled the criteria of a highly developed social dialogue and respect for the rights of Indigenous peoples. This has resulted in two positive PEFC lists: (1) Austria, Czech Republic, Chile, Denmark, Germany, France, Italy, Lithuania, Luxembourg, Norway, Portugal, Slovakia, Spain, Switzerland and the UK; and (2) Australia, Brazil, Canada, Finland, Sweden and the US. If two equivalent tenders have been submitted, preference should be given to the FSC, PEFC Belgium or the PEFC systems of the countries in list 1. This has created confusion among buyers and the substantive basis of the differences between national PEFC systems in terms of Belgian criteria for certification systems is unclear (Proforest 2007c).

b In 2003 the FSC was identified as evidence of SFM and the MTCC (now the MTCS) as progressing towards SFM. The list was expanded when the policy expanded to cover all types of timber, and CSA, FSC, MTCC, PEFC and SFI certificates were considered adequate evidence of legality. In 2008, temporary guidelines were adopted that specify that both FSC and PEFC certificates are adequate evidence of legal and sustainable timber.

c All major international certification schemes are accepted. The Advice Note Circular states that all certification schemes 'mentioned' by ITTO and the African Timber Organization are acceptable for tropical timber. However, neither of these organizations has recognized or endorsed forest certification systems and the International Tropical Timber Council has specifically concluded that ITTO cannot endorse or be perceived to endorse any particular forest certification scheme.

d Originally SFI, CSA and ATFS were also mentioned, but as these schemes have been endorsed by the PEFC there is no longer a need to identify them. The acceptance of LEI certificates in Germany is pending an assessment of equivalence with FSC and PEFC requirements, the costs of which must be borne by the applicant Indonesian supplier of such timber products, putting that company at a disadvantage compared to others holding FSC or PEFC certificates.

e Since September 2009 the Netherlands has accepted FSC International, PEFC Germany, PEFC Finland and PEFC Sweden as certification schemes that supply sustainably produced timber. The MTCS, PEFC International, PEFC Belgium and PEFC Austria are being assessed.

f These are mentioned in the policy as possible means of evidence but are not formally endorsed.

g MTCS certificates have been accepted as evidence of legality and the other schemes as evidence of sustainability. In a 2008 assessment (CPET 2008b) it was concluded that the MTCS could be accepted as evidence of legality and sustainability once two key requirements were fully implemented: (i) all certified FMUs are certified against the certification standard, the Malaysian Criteria and Indicators for Sustainable Forest Management (MC&I) (2002); and (ii) there are revised institutional arrangements for certification and accreditation whereby forest management and chain-of-custody certificates are issued only by certification bodies that have been accredited under the specific accreditation program for MTCS certification. The MTCS has recently been endorsed by the PEFC.

acceptance of evidence other than that provided by the recognized forest certification schemes.

In France, alternative evidence for Category I products (logs, sawnwood, veneer and plywood) includes an independently verified legality licence, substantiation of a management plan, compliance with an industry or trade association's code of conduct, and customs documents attesting to legal or sustainable products. The latter foreshadows the use of FLEGT licences as proof of legality in the country. For Category II products (all other products based on wood), 'eco-labels' are accepted. This apparently refers to such schemes as EU Flower and national eco-labels, but it is unclear whether this can also refer to the single-issue labels of national forest certification schemes such as LEI that have not been endorsed by the PEFC.

As alternative evidence the Japanese policy identifies compliance with the voluntary codes of conduct of industry associations (if mandatory for

membership), including on the verification of legality and sustainability and on chain of custody, for which a number of requirements have been identified. In this case verification is made by private enterprises authorized by the respective industry association. In addition, the policy accepts companies' own procedures (self-verification) if they cover the same features as the voluntary codes of conduct. All these options may be used to declare products as 'Goho-wood' – i.e. that they meet the requirements of the government's green procurement policy. The Japanese policy does not require the third-party verification of alternative evidence, although this is a baseline requirement elsewhere. This approach has led to the fairly rapid adoption of the scheme, even though central-government public procurement is estimated to account for only 2–3% of total national consumption of wood and wood products (Ohashi 2009), which is considerably less than in, for example, most European countries. Reportedly, 80% of the plywood imported by the members of the Japan Lumber Importers Association is already compliant with the requirements of the policy and 7,400 companies are involved in its implementation.

The New Zealand policy accepts: proof of certification from a stepwise certification scheme (such as the Forest Trust) together with chain-of-custody information showing the origin (which should be a legally harvested and managed forest); a proof-of-legality verification scheme (e.g. Société Générale de Surveillance – SGS); and a supplier declaration of legal compliance in the supply sources (evidence to verify this declaration must be provided upon request).

There is considerable variation between national TPPs on the provision of alternative evidence. In the UK, the Netherlands, Belgium and Germany the requirements cover the same elements as those for certification systems, which means that meeting them would be difficult for tropical-timber producers; therefore, these options have rarely been used in practice. If the alternative documentation route is to be offered it should be a realistic, practical option and not merely a way of circumventing international trade rules. At present, this does not seem to be the case and the only option for tropical-timber producers appears to be to use certification (or independently verified legality) to comply with procurement criteria.

France, New Zealand and Japan have provided more flexibility. The flexibility of the Japanese policy has allowed its rapid adoption. This success should provide a good basis for further development of the policy because the industry is already broadly engaged in handling legality-verified timber and timber products in compliance with the government TPP.

The above review mostly concerns documentary evidence of sustainability. Apart from FLEGT licences there are no standardized tools to provide evidence of legality. Several private-sector organizations (Appendix 3) have started to provide services for the verification of legality (legal origin and legal compliance). These services (often offered by the same companies that provide forest certification services) have a wider scope than the verification of legality as part of SFM certification. Legality verification can include compliance with a range of specified laws, documentary requirements under national regulations, identification and controls in the field, the traceability of the roundwood and products, and data registration and the compilation of reports. There are, however, no common rules for what should be considered 'recognized' timber-legality verification.

The international forest certification systems have provisions in their requirements aimed at preventing illegal timber from entering certified supply chains. The FSC has developed standards for controlled wood[36] and its certification bodies provide related auditing services. In the PEFC system, a company using the percentage-based or mass-balance model must have in place a mechanism to ensure that non-certified raw material does not originate from controversial sources, defined as 'illegal forest practices'. Such a mechanism covers requirements for suppliers' self-declaration and a risk assessment resulting in the classification of sources into 'high-risk' and 'low-risk' categories. For high-risk sources, the company must implement a second-party or third-party verification program.

In conclusion, the private sector is pursuing initiatives to meet customer demand for verified documentary evidence of timber legality. However, there is a lack of a common framework for these

36 FSC Standard for Forest Management Enterprises Supplying Controlled Wood (FSC-STD-30-010) and FSC Standard for Company Evaluation of Controlled Wood (FSC-STD-40-005).

efforts that could facilitate the implementation of TPPs worldwide. The FLEGT VPA licence will be a targeted instrument for demonstrating legality in those countries that enter into a VPA with the EU. The availability of other instruments is still an evolving issue.

Local-government policies

Tropical-timber-consuming countries

In addition to national-level TPPs, many regional and local governments have established their own, often more restrictive rules for their own procurement contracts. Such initiatives focusing on tropical timber were particularly active in the 1990s in the US and some European countries. They were driven by civil-society and media campaigns based on the public perception that restrictions would be effective in combating deforestation in developing countries. In the US there is probably less interest now in developing new local-government TPPs due to possible conflicts with state-level general procurement rules; attention has shifted to other instruments, like green building initiatives. In addition to general TPPs at the local level, specific efforts have emerged to limit the consumption of tropical timber in public works. An illustrative example of these efforts, which, from the perspective of tropical-timber producers, are worrying, is the New York City's Tropical Hardwood Reduction Plan (Box 3.3).

Box 3.3 The New York City Tropical Hardwood Reduction Plan

New York City uses large amounts of tropical hardwoods in boardwalks, benches, ferry piers, marine transfer stations and the Brooklyn Bridge promenade: the annual expenditure on tropical hardwoods in large-scale projects and infrastructure amounts to about US$1 million. Concerns related to tropical timber led to trials with alternative materials and, in 2008, a reduction plan was designed with the aim of achieving an immediate 20% reduction in tropical timber consumption and, in the long term, to eliminate its use entirely.

The New York State Finance Law 165 already prohibits the use of some tropical hardwood species, such as teak and ebony. The law allows a number of exceptions, including ones based on cost and the absence of acceptable alternatives. The main species are ipe, cumaru, greenheart and garapa, but some jatoba, Spanish cedar and mahogany are also used; all are sourced from South or Central America.

The identified alternatives include recycled plastic lumber, domestic and other non-tropical hardwoods and softwoods, bamboo, steel, concrete, and clay stone pavers, none of which can easily substitute for tropical hardwoods in specific applications.

The City has found that certified woods (such as those certified under the FSC) are subject to availability and supply issues and cost 20–30% more than non-certified products. Specifying certified wood is not possible according to New York State General Municipal Law 103, which has been interpreted as prohibiting municipalities from using the procurement process to advance 'social goals'.

The New York City Tropical Hardwood Reduction Plan is based on a detailed analysis of each end-use of tropical hardwoods including the evaluation of alternative designs and materials, the identification of short-term measures, a long-term plan, and an analysis of cost implications. However, due to a lack of adequate information the cost analysis appears to focus on savings obtained by not procuring tropical hardwoods without considering the full life-cycle cost of alternatives. Further studies and piloting with alternatives to tropical timber are part of the Plan.

Source: Aggarwala (2008).

Italy has no central-government TPP, but several regional and local governments have been active in this field. Their policies are strongly influenced by environmental campaigns and focus on sourcing FSC-certified wood (Oliver 2009).

Typically, public-sector TPPs refer to central-government departments, agencies or institutions, but several encourage local governments to apply the same principles. The French TPP, for example, makes a specific reference to the encouragement of local authorities (*collectivités locales*) to implement the same procedures. In Denmark, the federations of regional and local governments have made an agreement with the Ministry of Environment to develop green procurement policies and to collaborate in their implementation; these also concern timber procurement. In Belgium, the organizations designated to implement the policy include the federal public service, federal programming services, and public-interest organizations. In the future such a broad approach may be considered by other countries as well.

The policies of local governments have often been created under local pressures driven by environmental groups and they are not bound by considerations related to international trade rules. Local-level policies, therefore, have not always fully considered what is being applied by the country's central government, leading to differences between national and local procurement policies. In the longer run, it can be expected, however, that national and local policies will converge. In Germany, for example, the federal states of Baden Wuerttenberg and Bavaria, the city government of Hamburg, the state railway company Deutsche Bahn, and the Federal Agency for Technical Relief, as well as several municipal governments and public institutions, have aligned their policies with the national TPP. Harmonization between national, state and municipal-level criteria is expected to continue in Germany and such a process would be desirable in other countries as well.

Local-government initiatives in the US have mainly been implemented through legislative instruments. Most of these have focused on rules and regulations related to building and construction and they are therefore discussed in Chapter 5.

At the local level it is easy for advocacy groups to insist on a high level of standards because the market implications may appear to be limited. The diversity of forest situations and the full implications and limitations of the proposed policies are usually not fully considered, resulting in well-intentioned initiatives with overly ambitious or restrictive standards. The effectiveness of such sub-national-level public-sector TPPs is often undermined by their lack of coherence with national requirements, creating confusion among both suppliers and purchasing agents.

Tropical-timber-producing countries

Local-government efforts to promote legal and sustainable products are not limited to tropical-timber-consuming countries. In Brazil, for example, there is considerable consumer awareness – particularly in the southern part of the country – of the problems of deforestation and illegal logging in the Amazon. The first initiatives there to influence trade and consumption were taken by NGOs and progressive private companies. More recently, state governments and individual public agencies have taken action through procurement policies (Box 3.4).

Box 3.4 Public-sector timber-procurement and financing policies in Brazil

In Brazil, some federal-government financing agencies are requiring evidence of timber legality for project financing. Since January 2009, Caixa Econômica Federal (CEF), a major government bank oriented to sustainable development, requires the real-estate sector (mainly construction companies) to provide proof of the legality of the timber to be used in buildings before financing can be approved. A specific clause in contracts makes it mandatory to provide 'forest-origin' documents for timber to be used in CEF-financed building projects.

Some state governments and municipalities have adhered to an initiative called Rede Amigos da Amazônia, coordinated by Escola de Administração de Empresas de São Paulo of Fundação Getúlio Vargas, which aims to establish a public-sector/private-sector network aimed at eliminating the consumption of timber from illegal logging. It has three specific programs: Cidade Amiga da Amazônia ('city friend of the Amazon'); Estado Amigo da Amazônia ('state friend of the Amazon'); and Empresa Amiga da Amazônia ('company friend of the Amazon'). Nine states and 37 cities have committed to this initiative. The cities are issuing local laws to eliminate illegal timber from their public purchases and the states are controlling and checking the flow and trade of timber from native forests. For example, the São Paulo state government has enacted specific legislation on timber procurement, including a (2005) decree establishing environmental control over the use of timber products and by-products originating from native forests in civil works contracted by the state government. The municipal government of the city of São Paulo simultaneously issued a similar decree.

The state of São Paulo is the main destination of native woods from the Amazon region and further measures have been deemed necessary there. In June 2008 the state government issued a decree establishing Cadmadeira, a platform involving several forest-sector associations and stakeholders. The decree specifies that, after July 2009, timber suppliers may only participate as bidders for government construction projects if they join Cadmadeira, which also means that their operations are subject to local audits. The supplier register of Cadmadeira is designed to provide information and submit evidence on the legal or certified origin of forest products and by-products from Brazilian native forests that are traded and used in civil works and building construction by the São Paulo state government. The main purposes of the register are: to make public which companies are trading forest products and by-products from Brazilian native forests, especially those to be used in civil works and public building construction; to improve the effectiveness of the control of São Paulo state on the origin of forest products and by-products traded in the state; and to guide and regulate the actions of the state government in the implementation of its public procurement policy. A 'legal wood' label will be awarded by the state's environmental secretary to the registered companies in order to distinguish them from others and also to inform consumers.

Sources: Garlipp, R., Director, Sociedad Brasileira de Silvicultura, pers. comm.; www.caixa.gov.br/imprensa; www.ces.fgvsp.br; www.raa.org.br; www.sigam.ambiente.sp.gov.br/Sigam2/Default.aspx?idPagina=1317.

4. REGULATORY MEASURES ON ILLEGAL TRADE

European Union

Voluntary partnership agreements

VPAs are being established between the EU and timber-producing countries where illegal logging is a problem. A key feature of such agreements is a timber-licensing scheme, under which each country that enters a voluntary agreement (a 'partner country') will implement a system to verify that its wood-product exports to the EU have been legally produced. The EU's border-control authorities will allow imports only of licensed products from partner countries. For partner countries, two elements are necessary: to reach a common interpretation of 'legality' (under the country's prevailing laws and policies) in timber production and trade; and the existence of an adequate timber-legality-assurance system (TLAS[37]) to provide credible evidence that the products in question have been produced in compliance with the specified laws. The basic elements of a TLAS are:

- a definition of legally produced timber that sets out all the laws and regulations that must be complied with in the production process
- a secure chain of custody that tracks timber from the forest in which it was harvested through different owners and stages in processing to the point of export
- a verification system to provide reasonable assurance that the requirements of the definition have been met for each export consignment
- the issuance of licences to validate the results of legality verification and the chain of custody
- independent monitoring of the whole system to assure its credibility and to provide transparency.

Under a VPA, continuous legality-verification auditing is to be carried out by the partner country's designated state authorities or by appropriately qualified verification organizations. FLEGT licences will be issued on the basis of evidence that all the requirements of the partner country's legality definition have been met for a consignment of timber. Such evidence will typically be provided through regular audits of activities in FMUs and, where the definition requires it, at processing facilities. Verification is also needed to ensure that timber products or components from unverified, and possibly illegal, operations are not issued with licences.

FLEGT licences are to be issued by a designated state authority on the basis of evidence provided through the verification of legal forest operations and the chain of custody. Independent monitoring aims to ensure the effectiveness and credibility of the licensing scheme by introducing a third party to monitor and report on its implementation.

An essential element of VPAs is financial and technical support to help partner countries to improve forest governance, policy reform, capacity building and community-based forest management.

FLEGT licences issued under VPAs will be a tool to provide proof of the legality of tropical-timber supplies. Three countries (Cameroon, Congo and Ghana) have signed VPAs, six more countries (Indonesia, Malaysia, Vietnam, Central African Republic, Gabon and Liberia) are negotiating them or are in pre-negotiation consultations with the EU[38], and several others have signalled their interest. The impact of VPAs is broader than on exports to the EU market alone – for example, the TLASs in countries that have concluded VPAs with the EU will cover all timber production. FLEGT licences are already referred to in the UK and French TPPs, and their specifications are likely to be used in the TPPs of other EU countries in the future.

The key concerns of tropical-timber producers about VPAs have been uncertain market benefits, continuing competition with illegal timber from non-VPA countries, additional costs (for both the government and the private sector), limited product scope (logs, sawnwood, plywood and veneer), unrealistically tight time-schedules, and the limited effectiveness of TLAS implementation in reducing illegal logging and thereby unfair competition. As explained below, the inclusion of FLEGT-licensed

37 TLAS was developed as a term in the context of EU FLEGT VPAs. It is used here as a generic term for government-implemented control and supervision systems to demonstrate legality.

38 As of June 2009 (http://ec.europa.eu/development/policies/9interventionareas/environment/forest/flegt_en.cfm).

timber in the minimum requirements of the central-government TPPs of two EU countries may provide only a temporary market benefit for tropical-timber-producing VPA countries if legality becomes a regulatory requirement.

Due-diligence regulation

Since not all timber-supplying countries will find it feasible to sign a VPA, and progress in combating illegal logging and trade at the multilateral level has been relatively slow, the EU is planning to adopt additional measures to fight illegal logging at the global level, including legislation aimed at preventing the import of illegally harvested timber into the EU. This is targeted at timber suppliers in countries that have not signed VPAs but also covers domestic timber production in the EU member states. The current legislative proposal (CEC 2008b) is based on the due-diligence principle requiring operators to apply a system (a 'due-diligence' system) that minimizes the risk of placing illegally harvested timber and timber products on the EU market. The due-diligence system should include measures and procedures to enable operators to track their timber and timber products; access information concerning compliance with applicable legislation; and manage the related risk.

Due-diligence systems aim to deter operators from supplying timber and timber products without reasonable assurance regarding their legality[39], and they place the burden of proof on the operator for the first-time placement of timber on the EU market. 'First-time placement', in this context, covers the act of importation or the act of first sale of domestically produced timber. Due-diligence systems also provide buyers and consumers with the assurance that by buying timber and timber products they do not contribute to the problem of illegal logging and associated trade.

If the draft regulation is approved, suppliers and buyers will be required by law to be proactive in demonstrating prudence, judgment and positive action in ascertaining the legality of the timber and timber products that enter their supply chain in order to minimize the risk of placing illegally harvested timber and timber products on the EU market. Timber and timber products covered by a FLEGT licence or a CITES permit are considered to have been legally harvested: i.e. no due diligence would be required.

Member states are to ensure that infringements of the regulation (should it be approved) are punished by effective, proportionate and dissuasive penalties. The EC would be empowered to adopt detailed rules for the application of the due-diligence system and, in particular, criteria for assessing the risk of placing illegally harvested timber and timber products on the market. Criteria for the recognition of due-diligence systems used by monitoring organizations still need to be developed.

The mandatory due-diligence system is planned to provide:

- access to the following information on timber and timber products placed on the market by the operator: product description; country of harvest; volume and/or weight; where applicable, name and address of the operator who supplied the timber or timber products; and information on compliance with the requirements of the applicable legislation
- a risk management procedure
- audits to ensure the effective application of the due-diligence system.

Competent authorities would recognize monitoring organizations based on the following criteria: existence of a due-diligence system that contains the elements set out in the regulation; obligation of certified operators to use due-diligence systems; the existence of a monitoring mechanism to ensure that due-diligence systems are used by operators; and provisions for appropriate disciplinary measures against any failures by certified operators. Operators may develop their own systems or rely on a recognized due-diligence system that allows an element of flexibility in meeting the requirements of the regulation.

Both the VPAs and the due-diligence regulation (if approved) will have significant impacts on those tropical-timber-producing countries trading with the EU. Markets, supply, competitiveness, employment and equity will be affected (see Chapter 8). The due-diligence regulation expands the geographical scope of EU trade-policy instruments to all countries exporting timber to the EU. In addition, the regulation will cover the EU countries' domestic production because its

39 See the various definitions of legality in Box 3.1.

application would be mandatory for all the actors placing timber and timber products for the first time on the EU market.

For those EU countries that specify legality in the requirements of their TPPs, FLEGT licences and due-diligence requirements will likely serve as references for the verification of legality. For tropical-timber suppliers it will be necessary to have in place management and information systems that can provide information on the legality of their operations that their EU buyers will need for their due-diligence systems.

The regulation is still a draft and it has been criticized from different perspectives for being vague, failing to prohibit the entry of illegal timber to the EU market, having limited product coverage, lacking clear common sanctions to institute penalties, and leading to increased bureaucracy and unnecessary costs (e.g. EIA (undated)). Moreover, in several countries, where the processing industry uses imported raw materials, part of the problem may lie outside the national territory. If legality becomes a minimum requirement for selling timber in the EU then there would no longer be any point in stipulating legality in TPPs. This would be another factor in shifting the emphasis in TPPs towards sustainability.

US Lacey Act

As noted above (including in Box 3.1), a recent amendment to the Lacey Act in the US is aimed at combating illegal logging and expanding anti-trafficking protection to a broader set of plants and plant products. The Act makes it unlawful to import, export, transport, sell, receive, acquire, or purchase in interstate or foreign commerce any plants or products made from plants that were harvested or taken in violation of a domestic or foreign law. It gives the government the power to fine and jail individuals and companies that import timber products that were harvested, transported or sold in violation of the laws of the country in which the timber was originally harvested. In any prosecution, the burden of proof is on the government to demonstrate that the violators knew or should have known of the underlying violation. The Lacey Act extends the reach of foreign laws and regulations by making it a violation of US law to traffic in products made from wood that was harvested, transported or sold in violation of foreign laws. Unlike the proposed EU due-diligence regulation, the Lacey Act places the burden of proof of illegality on the US government, and it covers all types of wood-based products (including pulp, paper and furniture).

The amended Act includes new import-declaration requirements for information on:

- the scientific name of any plant (including the genus and species names) contained in the importation
- the value of the importation and the quantity, including the unit of measure, of the plant
- the name of the country from which the plant was taken.

If the species of plant used to produce the plant product that is the subject of the importation varies, and the species used to produce the plant product is unknown, the name of each species of plant that may have been used to produce the plant product must be supplied. If the product is composed of parts taken from more than one country, and the country from which the plant was taken and used to produce the plant product is unknown, the name of each country from which the plant may have been taken must be supplied. If specific information is unavailable the law allows, at least initially, exporters to list multiple likely countries of origin and/or possible species of the wood. Shipments of wood products that are unaccompanied by the required declaration at the time of entry into the US will be deemed inadmissible.

Importers must seek the above information from their suppliers and encourage the use of methods that provide assurance that, when buying tropical timber products, importers will not be at risk of prosecution. In order to provide the necessary information on a regular basis, suppliers will need to have adequate management systems, and external verification may also be required to provide assurance to buyers. Significant penalties can be imposed on individuals and companies who have not understood that their wood is 'tainted'. Penalties include civil administrative penalties, the forfeiture of the trafficked goods, criminal fines and imprisonment. A violation of the Lacey Act may also trigger charges of smuggling or money-laundering. The Act affects all tropical-timber suppliers to the US market, covering, as it does, all types of timber and timber products.

The implementation of the declaration requirement is being phased in by product group, as follows: logs, sawnwood, and builders´ joinery by 30 September 2009; wood-based panels and packing cases by 31 March 2010; and furniture by 30 September 2010.[40]

Prosecution under the Lacey Act requires proof of two violations – an 'underlying' violation and an 'overlying' violation. An underlying violation would be a breach of a foreign or US state law that regulates the taking, possession, importation, exportation, transportation, or sale of fish, wildlife or plants. An overlying violation would be a breach of the Lacey Act ban on the import, export, transportation, sale, acquisition or purchase of such 'tainted' goods. The prosecution must take place within five years of the violation. The penalties for a trafficking violation under the Lacey Act depend on the defendant's knowledge regarding the underlying violation of a foreign law: higher penalties will be imposed the more the actor knows or should have known about the illegalities involved in sourcing the timber and timber products.

The new legislative measures in the EU and the US, and a number of similar instruments currently under discussion in countries such as Switzerland, Norway and New Zealand, will provide a robust incentive for tropical-timber producers and exporters to stamp out illegal practices in forest management and timber trade and encourage them to make rapid progress towards the demonstration of legal compliance. The EU and US regulations constitute different approaches but are likely to have similar impacts on exporters to these markets. Tropical-timber producers will need to institute management systems and means of proof that enable buyers to adequately assess the risk of and avoid possible penalties for buying illegal products. The EU and US regulations set clear baselines for legal timber and it can be questioned whether, in these two markets, TPPs need to refer to legality any more.

As part of due-diligence systems, risk analysis will be applied as one tool to assist in ensuring that the requirements of TPPs are met. The private sector in the US has already carried out a risk analysis of the likelihood of illegal domestic timber in the supply chain. Some NGOs are reported to have started work on categorizing the supplier countries of wood and wood products in terms of their level of risk of illegal-timber sourcing. Such risk ratings would have implications for individual tropical-timber-producing countries, where the burden of evidence of low risk is greater than in developed countries. There is a need to consider appropriate, common tools for risk analysis through cooperative efforts rather than through individual initiatives that may be driven partly by specific agendas.

40 See APHIS (2009) for detailed listing of customs codes.

5. GREEN BUILDING STANDARDS AND RELATED INITIATIVES

In several countries, green building initiatives have been under active development for a number of years. The aims of such initiatives are to minimize construction impacts on the environment; use fewer resources, particularly energy; and minimize waste for the full life-cycle of the building. In most countries, energy efficiency has been the main focus of green building initiatives, while climate-change mitigation is a closely related new driver (Spirandelli 2008).

Targeted schemes are reported in nine countries and several international initiatives are also ongoing, some by intergovernmental organizations and others by the private sector and civil-society organizations (Box 5.1). The situation in the US and the UK is reviewed below because these two countries have pioneered specific initiatives. Several other countries have also developed green building standards or initiatives specific to tropical timber, while many others have mainstreamed improved practices in the construction sector.

In the US, state and local governments have been actively introducing legislation, incentives and programs to promote green building, with a focus on energy efficiency and environmental protection. Based on an internet search, there are an estimated 150 public-sector initiatives at various stages of development. The most common policy instruments are tax credits for households or businesses; rules for government building construction and renovation work; the implementation of standards, rating systems and

Box 5.1 Selected green building initiatives

National

Australia	Green Star, Green Building Council of Australia
Austria	ECOPASS
Canada	LEED, SBTool
France	Démarche HQE, Maisons de Qualité, Habitat et Environnement, EFFIENERGIE
Germany	Passivhaus Green Building Programme
Japan	Comprehensive Assessment System for Building Environmental Efficiency
Spain	Verde
Switzerland	MINERGIE ECO and P
UK	Building Research Establishment Environmental Assessment Method (BREEAM)
US	Leadership in Energy & Environmental Design of the USGBC, Green Building Initiative, Green Globes (American National Standards Institute – ANSI – Standard), Energy Star

International

ISO	Standardization of Sustainable Construction, Standards for Intelligent and Sustainable Buildings
UNEP	Sustainable Buildings and Construction Initiative
WBCSD	Energy Efficiency in Buildings
WWF	One Planet Living
Earth Day Network	Green Schools

Sources: Joyce (2008), IUCN (2008).

rules; grants and low-interest loans; support for the design costs of green buildings; and the expedited processing of applications for green building permits. Some or these initiatives are small and may even apply to a single building, while others may be state-wide mandatory rules for public building construction.

Two-thirds of US public-sector initiatives refer to the building standards of the Leadership in Energy and Environmental Design (LEED) Green Building Rating System of the US Green Building Council (USGBC), 30% to the Green Globe standards, and about 10% to standards that are equivalent to one or both of those systems. A few initiatives apply the Energy Star rating system, National Green Building Program standards or EarthCraft, while four states (Florida, Michigan, Minnesota and Texas) refer to their own state-level standards. Examples of state-level policies with specific provisions for timber and timber products are given in Box 5.2.[41]

LEED appears to be becoming the *de facto* standard for 'smart' building and environmentally responsible design and construction in the US; the number of LEED-registered projects already exceeds 30,000 (both commercial and residential). Under LEED, environmental performance includes energy efficiency and materials selection. The system has a set of minimum requirements and performance benchmarks, against which credits are accounted (Box 5.3). For a variety of reasons, particularly the limited availability of FSC-certified wood and the lack of recognition of alternative schemes, LEED is considering a revision of its policy on acceptable forest certification systems and on how to deal with non-certified wood (Yale Program on Forest Policy and Governance 2008). Forest certification has no specific role in demonstrating the outstanding or innovative use of wood because the sustainability of forest management (being an issue of production method) has no direct link with the quality of wood.

The Green Globes environmental assessment includes, among other things, energy, resources and environmental management. The environmental areas of a project are assessed on a 1000-point scale. Wood usage is considered within the area of resources and building materials which, as a whole, counts for 10% of the total score, and 1–4 points may be granted depending on the score. Wood usage could score points under the criteria that deal with the proportion of bio-based materials, such as green insulation, natural fibres and natural structural materials; and the proportion of solid-lumber and timber-panel products that originate from sustainable sources that are third-party-certified. The Green Globes system has a broader acceptance of certification systems than LEED, recognizing SFI, CSA, FSC and ATFS.

CHPS is a partnership to promote the high-performance environmental design, construction and operation of schools in the US. To earn one credit point (the maximum allowable total is 85 credit points, and the minimum is 32) the CHPS criteria specify that 50% of the wood used must be certified (http://www.chps.net/manual/index.htm#score). The CHPS criteria have already been adapted for use in the states of Washington, Massachusetts, New York and New England. Texas and Colorado have developed them further in regard to the acceptability of certification systems (Box 5.2).

Despite the large number of individual initiatives, the market impacts of US green building initiatives other than LEED have been fairly limited. This may change in the longer run, however, when experience is accumulated, climate-change mitigation becomes a more important objective, and constraints in the policy rules are removed. For instance, the limited supply of FSC-certified timber is a constraint to the broader application of LEED to wood usage in construction.

Green building standards are increasingly being used in the UK. The Building Research Establishment (BRE) has developed an environmental assessment method (BREEAM) that has become the *de facto* national measure for describing a building's environmental performance and is also being used internationally. The recently approved BREEAM Code for Sustainable Homes (2007) will be used in assessing all homes for the issuance of certificates, which must be supplied to buyers (Box 5.4).[42]

41 At the national level a national green building standard for all residential construction work in the US, including single-family homes, apartments and condos, land development and remodelling and renovation, was approved recently by ANSI. It is the first green building rating system approved by ANSI, making it the benchmark for the sector (http://www.nahbgreen.org/Guidelines/ansistandard.aspx).

42 If an assessment has not been done, the home is assumed to have a zero rating.

Box 5.2 US state-level green building regulations and legislative initiatives with specific reference to wood products

Minnesota

A legislative initiative (MN S.B. 2078) has been in process since May 2009 which would authorize bonds for green building projects. To qualify, green building projects must have at least 75% of the square footage of commercial buildings registered with a recognized green building rating system, including Minnesota's b3 standards, the USGBC's LEED certification or, in the case of residential buildings, the Minnesota Green Star rating, and must be reasonably expected to receive the certification.

The Minnesota Green Star standard specifies the following:

Remodelling work: all imported hardwood and softwood, except from Canada, must have full FSC certification

New buildings: depending on the share of FSC-certified products in each timber product group, different scores are obtained in the rating system. The product categories are: (i) plywood, oriented strandboard or other sheathing; (ii) framing lumber; (iii) roof sheathing; and (iv) roof framing lumber. The FSC-certified share may be 50–89% or 90% or more in the other product groups, except in the first group, where panel products must be 90% or more FSC-certified (only).

https://www.revisor.leg.state.mn.us/bin/bldbill.php?bill=S2078.4.html&session=ls86.

New Jersey

A legislative initiative (NJ S.B. 1077) has been in process since 2008 that would provide tax credits for the design and construction of a green building. The Act would require the Department of Community Affairs, in consultation with the Department of Environmental Protection, to adopt green building standards, which would be based on the LEED Green Building Rating System, the LEED Residential Green Building Rating System and the Energy Star program. The Act would also specify requirements to minimize wood use in wood-framed houses and prohibit the use of old-growth timber and tropical hardwoods.

http://www.njleg.state.nj.us/bills/BillView.asp.

New York State

A legislative initiative (NY S.B. 4991) has been in process since April 2009 which would create the New York Healthy and Green Procurement Act to provide criteria for sustainable resource-procurement practices. It would also require all state-funded building projects costing over US$2 million to be constructed in compliance with USGBS's LEED silver standard.

http://open.nysenate.gov/openleg/api/html/bill/S4991.

Texas

A legislative initiative (TX H.B. 2337) has been in process since March 2009 which would provide increased funding for school construction or renovation that is highly rated under an approved environmental efficiency rating system, such as LEED, Green Globes or the Texas Collaborative for High Performance Schools (TCHPS).

The TCHPS specifies the use of a minimum of 50% of wood-based materials certified in accordance with FSC or SFI guidelines for wood building components, including, but not limited to, framing, flooring, finishes and built-in cabinetry.

http://www.statesurge.com/bills/511564-hb-2337-texas.

Colorado

Colorado has adopted Collaborative for High Performance Schools (CHPS) criteria for school-building which give credits for wood as follows:

use of a minimum of 50% of wood-based materials certified in accordance with the FSC, CSA, SFI, ATFS or PEFC certification programs, including, but not limited to, framing, flooring, finishes and built-in cabinetry (1 credit point).

the use of a minimum of 25% of blue-stained wood (1 credit point).

The latter requirement is targeted at promoting demand for timber from forests infested by mountain beetles.

http://www.chps.net/manual/documents/Criteria/TX_CHPS_Criteria_2009.pdf.

Virginia

The state law (VA S.B. 174), in force since July 2008, classifies energy-efficient buildings as a separate class of real property for tax purposes. The law defines an energy-efficient building as one that meets Green Globes standards, the LEED standard or the EarthCraft House Program, or is Energy-Star certified.

http://leg1.state.va.us/cgi-bin/legp504.exe?081+sum+SB174.

According to the EarthCraft House Guidelines, houses are to be constructed of at least 50% lumber that meets criteria for sustainable harvesting as set by the FSC. The lumber should come from forests that are managed to maintain ecological health and biodiversity. Builders must present documentation that the lumber meets the criteria of a sustainable harvest.

http://www.earthcrafthouse.com

Under the various US systems and BREEAM, the responsible sourcing of materials is claimed to be based on the fundamental principles of life-cycle stewardship. However, in the case of timber and timber products, apart from recycled timber use, which plays a marginal role in products other than reconstituted wood-based panels, the focus is on the procurement of legal and sustainable wood. There is no consideration of, for example, the renewability of the timber products.[43]

From the perspective of timber usage this is of major concern because few green building standards and initiatives adequately consider life-cycle analysis results in material specification. This puts timber at a disadvantage: the carbon-storage role of wood is not considered, the renewability of forests as a source of timber is not recognized, and legality and sustainability criteria are not applied to other materials.[44] Another issue is that current credits systems may offer an insufficient incentive for the increased consumption of wood. Limiting credit points to timber certified under a particular system is another constraint limiting the effectiveness of green building initiatives in promoting legally and sustainably produced timber products.

A comprehensive review of existing green building standards is beyond the scope of this study. The chosen examples show that there is a common element in many of them – the use of forest certification as proof of sustainability (it is not usually a mandatory element but it contributes to credit points). Legality is not always a minimum requirement in the US, as it is in the UK, but it is likely to become more broadly applied over time. There is, therefore, a high degree of convergence between public-sector TPPs and green building

43 In Canada two provinces (Quebec and British Columbia) have implemented pro-wood procurement policies/strategies but they do not specify forest certification or legality as requirements. These pro-wood procurement policies promote the use of wood as the green building material of choice in public buildings in order to mitigate greenhouse gas emissions. A number of other countries have similar strategies or programs.

44 See Eastin (2008).

standards. The main difference appears to be in the acceptance of individual certification systems as proof of sustainability and legality. Further convergence would therefore be desirable, particularly within countries with differing local-government rules. In Europe, European Committee for Standardization (CEN) Technical Committee 350 on the sustainability of buildings is developing a harmonized framework for product declarations and assessment which has the potential to contribute to a more consistent approach among European countries.[45]

Box 5.3 LEED requirements and rating system for certified wood

Intent

To encourage environmentally responsible forest management.

Requirements

Use of a minimum of 50% (based on cost) of wood-based materials and products that are certified in accordance with the FSC's principles and criteria, for wood building components. These components include, at a minimum, structural framing and general dimensional framing, flooring, sub-flooring, wood doors and finishes.

Only materials permanently installed in the project are included. At the discretion of the project team, wood products purchased for temporary use on the project (e.g. formwork, bracing, scaffolding, sidewalk protection, and guard rails) may be included in the calculation. If any such materials are included in the calculation, all such materials must be included. If such materials are purchased for use on multiple projects, the applicant, at its discretion, may include these materials for only one project. Furniture may be included if consistent with other provisions of the LEED requirements.

Rating system

Projects are awarded Certified, Silver, Gold, or Platinum certification depending on the number of credits (maximum 100). Wood usage can earn LEED credits from the use of wood products that were grown and harvested in an environmentally and socially responsible manner (1 credit point); and the demonstration of innovation in the design, construction, operations and maintenance of a building project. In the LEED system, forest certification can provide evidence of environmentally and socially responsible wood production; be used to demonstrate that the wood used is a 'renewable' material; and help identify outstanding and innovative wood use. At present the FSC is the only certification system recognized for LEED forest certification credits.

Source: USGBC (2008).

45 http://www.cen.eu/CENORM/Sectors/TechnicalCommitteesWorkshops/CENTechnicalCommittees/WP.asp?param=481830&title=CEN/TC+350.

Box 5.4 BREAAM Code for Sustainable Homes (UK)

The Code for Sustainable Homes provides a comprehensive measure of the sustainability of new homes resulting in real improvements in key areas such as carbon-dioxide emissions and water use. The UK Government's ambition for the Code is that it becomes the single national standard for the design and construction of sustainable homes and that it drives improvements in home building practice.

The Code has a scoring system of six levels. The various levels are attained by achieving both the appropriate mandatory minimum standards and a proportion of the 'flexible' standards. Apart from the minimum requirements, the Code is completely flexible; developers may choose which and how many standards they implement to obtain credits in order to achieve a higher sustainability rating.

Requirements for timber are given under the group 'use of materials', for which two main aspects are identified: environmental impact of materials, and responsible sourcing. There are no mandatory elements. There are four levels for timber (in descending order):

1. Legality and responsible sourcing (3 credit points), with evidence assessed by certification schemes. Compliant schemes include FSC, CSA, SFI (with chain of custody), PEFC, Reused Materials, and schemes independently certified against BES (BRE Environmental and Sustainability) 6001:2008 standard (or similar) with excellent/very good performance ratings.
2. Legality and responsible sourcing (2 credit points), with evidence assessed by certification schemes. Compliant schemes are independently certified against BES 6001:2008 standard (or similar) with good and pass ratings.
3. Legality and responsible sourcing (1.5 credit points), with evidence assessed by a certification scheme/environmental management system; MTCC, Verified, SGS, Forest Trust
4. Legality and responsible sourcing (1 credit point), with evidence assessed by a certified environmental management system for key processes.

There is a strong incentive in the system to apply forest certification as a proof because more points are gained for certified products. However, a timber product with 50% recycled timber and 50% legally sourced new timber (for example) does not comply with the criteria and is not awarded any credit points.

Source: Department for Communities and Local Government (2009).

6. PRIVATE-SECTOR PROCUREMENT POLICIES

Corporate policies

In 2009 the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) reviewed selected corporate purchasing policies and standards referring to wood products as part of a joint effort to assist public-sector and private-sector customers to understand, select and use relevant existing responsible procurement approaches. The WRI/WBCSD sustainable procurement guide for wood and paper-based products focuses on ten key issues (Box 6.1).[46]

The WRI/WBCSD review revealed that, in many cases, procurement practices aimed at promoting sustainability were determined by a company's general business practices, codes, values, principles and standards (WRI/WBCSD 2009). It also found that many purchasing policies did not single out wood and paper-based products, but several companies operating in the forestry sector, and sectors that are major users or traders of forest products, did apply specific principles or criteria to wood and wood-based products. The following elements were present in these requirements (see also Appendix 4):

- the accuracy and credibility of information on timber supplies, often associated with third-party verification (96% of the 24 corporations in the sample)
- the sustainability of forest management (96%)
- the legality of production (79%)
- knowledge of the origin of products (75%).

Other frequently appearing elements were the protection of special places (including sensitive ecosystems, 50%) and addressing the needs of local communities and Indigenous peoples (42%). Other less-frequent elements included the appropriate use of recycled fibre and other resources, and climate change.

There were some differences between sectors: construction companies did not generally identify elements other than the origin of products, information accuracy[47], legality and sustainability. Forestry and retailing companies had the broadest scope in their requirements, covering all the above-mentioned elements to at least some extent. Furniture companies did not specifically identify climate change, environmental protection control, or local communities and Indigenous peoples in their policies. These may, however, have been covered by their concept of sustainability.

Detailed reviews of selected policies have shown that there are differences in how the various concepts are expressed, and detailed criteria also vary (Purbawiyatna & Simula 2008). This makes it difficult for tropical-timber producers to provide proof of performance if they are supplying several buyers who have different procurement criteria.

Timber-trade and timber-industry associations[48]

In at least twelve countries in Europe and North America, timber-trade and timber-industry associations ('trade and industry associations') and their federations are reported to have purchasing policies or codes of conduct related to wood supply. In most cases the principle of trading legality-verified timber, at a minimum, is inherent, with a preference for sustainable supplies whenever possible. Nine codes of conduct (those in Belgium, Canada, Denmark, France, Germany, the Netherlands, Spain and the UK, and, in the US, that of the American Forest and Paper Association) are binding for all members of the organization.

There is a clear trend, therefore, towards encouraging member companies to actively seek evidence of legal and sustainable product origin. Eleven associations have codes of conduct that have the common objective of members trading in legally obtained timber and progressing towards sustainable timber only. This raises the issue of how progress is to be demonstrated. An increasing number of codes specify continuous improvement by members towards verifiable legal and sustainable timber only, which requires effective monitoring mechanisms.

46 This guide is updated annually (www.SustainableForestProds.org).

47 This is often linked with certification or independent auditing.

48 The information in this section is based on Hentschel (2008).

Box 6.1 Key issues related to private-sector sustainable procurement of wood and paper

Sourcing and legality aspects

- Origin: where do the products come from?
- Information accuracy: is the information about the products credible?
- Legality: have the products been legally produced?

Environmental aspects

- Sustainability: have the forests been sustainably managed?
- Special places: have special places, including sensitive ecosystems, been protected?
- Climate change: have climate-change issues been addressed?
- Environmental protection: have appropriate environmental controls been applied?
- Recycled fibre: has recycled fibre been used appropriately?
- Other resources: have other resources been used appropriately?

Social aspects

- Local communities and Indigenous peoples: have the needs of local communities and Indigenous peoples been addressed?

Source: WRI/WBCSD (2009).

The Dutch and French associations have set time-bound targets for their members to comply with the objectives of the codes of conduct. In Belgium, members of the Fédération Belge du Commerce d'Importation de Bois require all suppliers to sign a statement affirming the legality of their products. Similar measures are applied In Canada, including the auditing of members complying with the purchasing policy.

Four purchasing policies (in Canada, France, the Netherlands and the UK) establish a mechanism for monitoring the compliance of members with the code of conduct, including third-party assessments. These policies all include performance-based indicators, and the French, Dutch and UK policies require continuous improvement towards the purchase of demonstrably sustainable timber only. The Canadian, French, Dutch and UK associations have established systematic approaches to the monitoring of members and the identification of 'bad performers'; the Italian association is also identifying and challenging 'bad performers'. The French and UK approaches apply a well-defined set of procedures and requirements.[49] In the UK a due-diligence process has become mandatory for membership.

Risk analysis is a common tool in codes of conduct. The UK approach is to gradually eliminate high-risk areas from the supply chain through rapid assessments. The Dutch association focuses on traceability, linking it with risk levels assigned to individual countries or regions. The French association considers the risk associated with all tropical sources to be so high that they should provide certificates of legality. This may be explained by the high reliance of French imports on Africa, which, as a region, is generally considered to be a high-risk source.

Most codes are evolving and are subject to periodic improvements. In some cases, change is induced by external influences, such as by changes in legislation and trade regulations (e.g. the Lacey Act in the US). In general, however, the continuous need for revision reflects the complexities associated with attempts by trade and industry associations to influence the behaviour of their members towards more transparent and verifiable supply chains.

49 Environmental Charter of Le Commerce Du Bois (French Timber Trade Federation), and the UK Timber Trade Federation's Responsible Purchasing Policy.

Few programs exist in producer countries to support companies seeking credible evidence of legal timber, although the EU Timber Trade Action Plan (TTAP) and the GFTN are providing guidance to the private sector on improving transparency and traceability throughout the supply chain.

The codes of conduct and purchasing policies of trade and industry associations are a powerful instrument: it is estimated that, depending on the country, members of such associations usually account for 60–80% of total national imports of timber and timber products. Even though such purchasing policies have common goals and similar basic approaches, there are significant differences between them in terms of the formulation of commitments, the degree of obligation, and the specific requirements for the operations of suppliers and member companies.

Trade and industry associations largely agree on the need to harmonize their purchasing policies. At present, the main mechanism towards this objective is an exchange of information and experience.[50] The mutual recognition of each other's policies would be another option, but it has received only limited interest. It is possible that regulatory requirements will harmonize some private-sector policy provisions in the EU and US, demonstrating the importance of the role of government in this issue.

50 Cooperation between North American and tropical-producer-country associations and federations has recently improved significantly and there is now a regular exchange of information via TTAP.

7. COSTS AND CAPACITY OF TROPICAL-TIMBER-PRODUCING COUNTRIES TO MEET TPP REQUIREMENTS

In general, most TPPs mean that, in the long run, suppliers in tropical-timber-producing countries will be expected to provide, through appropriate means, adequate evidence of the legal origin of their products, the legal compliance of their operations, and the sustainability of forest management in the areas in which the timber was harvested. There are two main, non-exclusive options for how such evidence can be provided:

Government-implemented assurance system for legality: this is likely to be applicable in countries where the size of the timber sector is sufficient to justify the necessary public investment in setting up such a system in the short to medium term.

Private-sector-implemented auditing/certification or other due-diligence systems, typically involving independent audits: this option is generally applicable to sustainability requirements but may also apply to legality verification in situations where the government-operated control and supervision system cannot (yet) provide the necessary assurance of legal compliance.

It appears that both systems will be applied in parallel in the short to medium term. In countries with a robust government-operated control system, the incidence of illegal timber entering the supply chain may be at such a low level that the system provides sufficient proof to meet TPP requirements on legality. However, initial experience in strengthening existing monitoring and control systems in countries that have signed or have entered a negotiation process to sign a VPA with the EU has shown that considerable effort is often needed before a national TLAS will be deemed adequate by trading partners. The following assessment of the cost and capacity implications of TPPs is based on country case studies in Cameroon, Malaysia and Peru as well as separate studies carried out in Ghana and Indonesia.

Public sector: enforcement systems and associated needs

The measures needed to strengthen national enforcement systems in tropical-timber-producing countries depend on the current level of performance. They vary widely, from relatively small improvements in control systems to major legal and institutional reforms that will be time-consuming and costly to implement. The need for institutional strengthening is not limited to the forestry sector: the effective elimination of illegal logging often requires improvement in the functioning of the judicial system as well.

The Peru case study included a detailed examination of the need to improve the existing forest-and timber control system. The country has recently introduced a series of changes aimed at improving the forest-sector legal framework and enforcement system to ensure the compliance of 584 forest concessions covering a total area of 7.6 million hectares (average size 13,000 hectares). At present, the forest authority is in the process of transferring to regional governments the management and administration of concessions and of harvesting permits in community forests. OSINFOR (*Organismo Supervisor de los Recursos Forestales y de Fauna Silvestre*), a national body reporting directly to the Ministry of the Presidency, supervises and controls the compliance of concession agreements and permits as well as CITES implementation.

In the past the country's administration and control systems have suffered from several problems, including the poor quality of FMU annual operational plans, the low quantity and quality of human resources in field-level inspections, the inadequate staffing of control posts in timber transportation, and the inadequate quality of information on timber usage by industrial plants. In 2008 the administrative cost of Peru's forest administration was US$7.4 million (equating to

US$2.10/m³). In 2005–2008 OSINFOR[51] was able to supervise 31% of the FMUs; at this rate, the approach would have taken 9.7 years to cover the entire production area under concessions. In 2008, OSINFOR's budget was only US$0.5 million, which did not allow its proper functioning.

The improved system – as implied by the new forest law and the Forestry Annex of the US-Peru Free Trade Agreement – include:

- a national information and control system (SNIC), covering the management and use of forest resources, primary and secondary transportation, industrial processing, and the commercialization of forest products
- an adequately equipped control institution (OSINFOR).

The investment cost of SNIC is estimated at US$14.3 million (including US$4.2 million for a forest inventory of new concessions) and its annual operational cost would be US$4.2 million. The system would produce, for the forestry administration and OSINFOR, digitized and geo-referenced information for the monitoring and control of the production chain up to the final destination (domestic or export market). The strengthening of OSINFOR would require an additional investment of about US$1.4 million and operational costs of US$2.7 million. Considering the share of OSINFOR and SNIC activities related to timber production, these figures would translate to about US$4.8/m³ for the initial investment and US$3.9/m³ for annual operational costs. Significant additional budgetary and staff resources would be required to improve the Peruvian enforcement system.

In Cameroon, the responsibility for forest law enforcement – including checking the legality of harvesting, transportation, processing and export of timber by private companies, individuals, municipal councils and forest communities – is vested in the Ministry of Forestry and Fauna (MINFOF). Monitoring is both routine and in response to requests by stakeholders. Internal auditing ensures the functioning of the system. Since 2000 an independent monitor has complemented, with donor support, the MINFOF verification function. The monitoring system relies on three computerized databases: the Forest Information System; a database of forest revenue and taxes; and a forest infractions and information management system. Improvements needed for an effective TLAS include an effective, integrated product-tracking system, which is not provided by the three existing non-integrated systems; improvement of the forest infractions information system; and associated capacity building to ensure the effective operation of the various components of the information system. The cost of the improved information system is estimated at US$1.47 million. New staff would not be required but training of existing officers would be necessary and is included in the estimate. The investment required in Cameroon is only 10% that required in Peru.

In Malaysia, the agencies responsible for implementing SFM are the state forestry departments in Peninsular Malaysia, Sabah and Sarawak and the Sarawak Forestry Corporation. TPPs emphasise the following three key aspects: that the forest manager limits harvesting within the forest's capacity to produce commercial timber (i.e. volume control); that there is consistency in determining the annual coupe (the extent of area allowed for felling each year) (i.e. area control); and that there is effective forest protection through regimented harvesting controls to maintain the viability of the forest to the next harvest.

In terms of compliance with the law, good operators far outnumber the bad. The main problem lies in the importation of illegal timber rather than in domestic illegal logging, and the 'cleaning up' process will be enhanced by enforcement measures under the renewed control system. Legality verification may take place at any stage of the production and product chain, from the felling of timber and its extraction and transportation to the mill, to the marketplace in the form of processed timber. The country's TLAS is founded on the existing system of collecting royalties and other forest charges; it draws on procedures for verifying the legality of logs and timber products at critical points along the supply chain, starting at the tree stump, through to the log yards in the licensed areas, to forest checking stations, and includes inspections during transit, in mill stock yards, and at export and import points for logs and processed products. All peninsular states use a paper-based control system with the routine overseeing of harvesting practice, the issuance of removal passes,

51 Then under the Ministry of Agriculture.

periodic auditing by district forest officers, and returns from licence-holders.

Sabah has committed to implementing a similar system, and trials in the use of radio-frequency-identification (RFID) technology have been initiated with the aim of ensuring the accountability of log-tracking from the stump to the processing mill or port. Sarawak has introduced conventional 100% tagging and set up a network system for asset-tracking at the key stages of the supply chain. This, however, is unlikely to offer a long-term solution to legality assurance.

Improvement of the TLAS in Malaysia is needed. There is a general move towards applying RFID technology with the attendant use of advanced database software and mobile technologies for practical tasks in the field. The system would provide a network of communication link-ups between the field and the office through the use of hand-held computers; between states; and between the states and Forest Department Headquarters in Peninsular Malaysia. The main need is the improved reconciliation of data on inflows and outflows of timber and products at key stages of the supply chain. By including geographic-positioning-system features and active RFID chips it may be possible to detect wayward logging in licensed areas by tracking the movement, in the forest, of machinery and equipment registered with the Forest Department.[52] Forest-harvesting rules require each licence-holder to register not only the workers they engage but also each piece of equipment or vehicle they use for logging within the licensed area. Logging licence-holders will be required to ensure that RFID chips fitted by the Department remains secured to each unit. Any departure from this would amount to a violation of the conditions of the licence. The costs of setting up the entire system at the national level will be large, but no estimate has yet been prepared.

A recent study of potential measures for preventing the importation or placing on the EU market of illegally harvested timber (Indufor 2008) included an assessment of the theoretical cost of setting up an adequate TLAS under specified country conditions[53]; it concluded that the additional cost of improving the existing government control system would be about US$0.30/m³ roundwood equivalent (rwe), but if state-of-the-art tracking technologies were used the cost would be about US$2.60/m³. In the latter case the government share of the cost would be about US$0.90/m³ rwe, while the bulk of the cost (US$1.70/m³) would be borne by the private sector. If an existing system was improved, the government share of the additional cost would be US$0.23/m³ and the private sector would bear the balance (US$0.07/m³).[54]

The above examples show that the challenge of improving existing TLASs in tropical-timber-producing countries is a complex, country-specific exercise requiring resources and time. Despite their higher apparent costs, advanced technologies (as Malaysia intends to introduce) have the potential advantage of eliminating the loopholes of paper-trail-based systems (which would not allow the easy reconciliation of data over the supply chain even if they were improved). In the short term, many countries are likely to opt for improving existing systems because of the difference in cost.

Private-sector and community forests

The case studies showed that the strategies and needs of the private sector differ between countries. In Cameroon, the estimated cost of legal compliance in FMUs would be US$4.7–5.2 per hectare (Table 7.1). The highest costs would be in municipal forests, which have the same legal requirements as large concessions but do not enjoy the same economies of scale (Appendix 5). The high cost in municipal forests is also partly due to the law, which requires double the sampling intensity in FMUs that are less than 50,000 hectares in size. The compliance costs are lowest in community forests because only simple management plans are required, but their auditing costs are highest (US$1.25 per hectare) due to their small size.

The largest individual expense is the preparation of the forest management plan, which in a typical FMU would cost about US$295,000 in a concession forest, US$144,000 in a municipal forest and US$12,000 in a community forest. Other compliance costs arise mainly from meeting the requirements of international conventions

52 Bar-coding is another possible technology for this purpose.

53 Log production of 3 million m3/year, 40 logging enterprises, 20 sawmills with a total output of 1.2 million m3/year and 20 further processing units.

54 These estimates are based on a government control system by consignment. Significant savings could be created for the government if the control system was to be based on operators.

ratified by Cameroon, which are not well known by FMUs. The regulations are targeted at promoting community forestry but they also clearly put municipal forests at a disadvantage compared to the other types of FMU.

The additional costs of SFM certification (including those associated with biodiversity studies, environmental impact assessments and social studies) due to compliance with the certification standard and auditing add another US$0.8–1.7 per hectare in concession forests (Table 7.2). Were community forests to be certified individually, their auditing costs would be very high (US$9.3 per hectare), putting them at a disadvantage compared to other FMU types. Approaches to group certification should be promoted with the aim of keeping direct auditing costs low because, in the absence of external support, they make it impossible for community forests to access certification.

In aggregate, it would cost Cameroon's timber producers about US$35.6 million to meet the legality requirements implied by the VPA and another US$17.3 million[55] to satisfy the sustainability requirements of the TPPs operating in export markets. About 80% of the total additional costs (US$53 million) would have to be borne by industrial enterprises managing concessions. It seems unlikely that local communities and municipal councils would be able to meet their costs (US$9.3 and US$1.3 million, respectively) given their weak financial capacities and the level of poverty in forest areas. External support is needed to enable these producers to continue and expand their roles in the international markets for tropical-timber products.

By way of comparison, the cost of the independent verification of legality can be much higher than indicated above if third-party verification is used. One of the companies offering such services, including the verification of the source, product-tracking with improved technology, and the control of the volume and quality of the product, quotes 2–6% of the free-on-board value of the product. Under Congo Basin conditions this would amount to US$5–15/m³ rwe in the case of sawnwood, representing a high transaction cost for the industry.[56]

In the Peruvian case study it was not deemed relevant to estimate the private-sector costs of legal compliance as it was assumed that the national TLAS could ensure that the legality requirements of the procurement policies are met and the analysis therefore focused on the cost of meeting sustainability requirements. In addition to the 584 private timber concessions there are about 100 community forests with an average size of 10,000 hectares covering a total area of about one million hectares. Unlike Cameroon, Peru has experience in the group certification of community forests through a common forest manager or a purchasing industry enterprise, which acts as the 'group manager' for certification.[57]

The cost assessment was based on three typical actual cases representing large, medium-sized and small FMUs for a period of five years, which is the validity period of forest certificates (Table 7.3). The total first-year costs were about US$93,000 for the large FMU, about US$64,000 for the medium-sized FMU, and about US$35,000 for the small FMU. The cumulative operational costs for the subsequent four-year period were about US$38,000, US$26,000, and US$11,000, respectively, suggesting strong economies of scale and a steep increase in costs when the FMU is smaller than about 10,000 hectares (Figure 7.1).

The total additional costs would be in the range of US$250,000 for large FMUs, US$170,000 for medium-sized FMUs, and US$80,000 for small FMUs. The unit costs during the five-year period would vary from US$5.3 to US$9.6 per hectare and from US$2.5 to US$4.8 per cubic metre. It should be noted, however, that these estimates refer to FMUs operating under special conditions – their social costs are very low as a result of good relations with local Indigenous communities, their involvement in joint ventures, and their accumulated experience in export marketing. It is estimated that 25% higher costs would accrue under 'average' Peruvian conditions due to the need for improvements in control and supervision within the FMU. Despite somewhat differing approaches to estimation, the total costs in different FMU classes in Peru appear to be in the same range as those in Cameroon.

55 Including US$16.8 million for forest certification and US$0.5 million for chain-of-custody certification for 93 industrial enterprises involved in timber-product exports.

56 Assuming an average sawnwood free-on-board price of US$530 per cubic metre.

57 The country has received extensive external support to promote SFM and its certification based on which the estimation of costs was carried out.

Table 7.1 Cost of legality compliance for average-sized FMU in Cameroon, by FMU type

FMU type	Unit cost (US$/ha)				Total cost for the FMU (US$)			
	Forest management plan	Other[a]	Independent verification	Total	Forest management plan	Other[a]	Independent verification	Total
Concessions	5.00	0.10	0.13	5.23	294 855	5 897	7 666	308 418
Municipal forests	6.25	0.11	0.25	6.61	143 750	2 530	5 750	152 030
Community forests	3.28	0.15	1.25	4.68	11 716	535	4 465	16 716

a. Cost of compliance with international agreements and conventions signed by Cameroon.

Source: Cameroon case study.

Table 7.2 Additional costs of forest certification for average-sized FMU in Cameroon, by type

FMU type	Unit cost (US$/ha)					Total cost for the FMU (US$)				
	Forest management planning[a]	Other compliance with certification standard[b]	Total compliance cost	Certification cost[c]	Total	Forest management	Other compliance with certification standard	Total compliance cost	Certification cost	Total
Concessions	0.50	0.34	0.84	0.83	1.67	29 485	20 050	49 535	48 945	98 481
Municipal forests	0.55	0.37	0.92	1.66	2.58	12 650	8 510	21 160	38 180	59 340
Community forests	0.40	0.37	0.77	9.26	10.03	1 428	1 321	2 750	35 827	38 577

a. e.g. additional biodiversity studies, environmental impact assessments, and additional social studies on Indigenous people.
b. e.g. establishment of permanent sample plots and additional support for community development.
c. Pre-audit and initial audit.

Source: Cameroon case study.

In Peru the main component of the compliance costs is forest and environmental management, which includes the preparation of the forest management plan and the enumeration of commercial trees, which represent more than one-third of total first-year costs. The specific problems faced in the management of large-scale concession forests include a lack of technical and economic capacity to implement SFM, the insufficient integration of Indigenous populations in the management of the forest enterprise, and the need for the revision of forest management plans and annual operational plans due to irregularities in the inventories. The same problems – but with compounded relative impacts – are also encountered in typical medium-sized and small FMUs. The former are often owned by private individuals with limited knowledge of systematic forest management and the latter are typically managed by communities with little experience in the formal procedures of production.

At the national level, the total cost of implementing SFM in all FMUs is estimated to be US$27.6 million over a five-year period, which, in practice, would be phased in over a longer period in accordance with the gradually increasing number of participating FMUs (Table 7.4). About US$23.4 million of the total would need to be met from

Table 7.3 Cost of certified SFM by FMU size, Peru

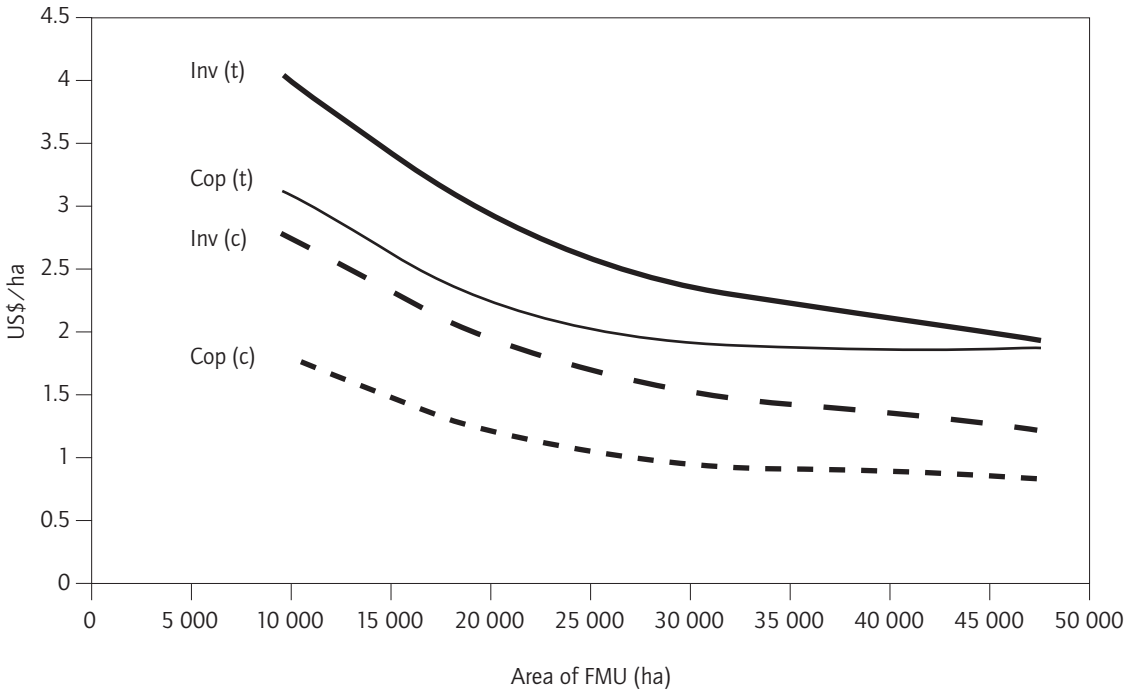
Component	Large FMU (47 580 ha)		Medium FMU (24 372 ha)		Small FMU (8 316 ha)	
	Investment[a]	Operational[b]	Investment[a]	Operational[b]	Investment[a]	Operational[b]
Compliance costs						
Forest and environmental management	60 380	27 620	39 680	16 710	20 550	6 620
Social aspects	6 000	3 370	3 500	2 070	3 000	1 570
Management systems	7 500	1 070	5 850	620	5 600	570
Sub-total	73 880	32 060	49 030	19 400	29 150	8 760
Direct costs of certification	18 900	6 400	14 900	6 400	5 580	2 060
Grand total	92 780	38 460	63 930	25 800	34 730	10 820
US$/ha	1.95	0.81	2.62	1.06	4.18	1.30
US$/$m^3$	4.69	1.94	5.09	2.05	10.39	3.24

a. Investment = first-year costs.

b. Annual operational = cost during the subsequent four years.

Source: Peru case study.

Figure 7.1 Unit costs of certified SFM as a function of the size of FMU, Peru



Note: Inv = investment costs; Cop = operational costs; (t) = total costs; (c) = cost excluding the cost of the forest management plan, the annual operational plan and the delimitation of the FMU.

Source: Peru case study.

Table 7.4 Additional national-level costs of certified SFM in Peru

Type of cost[a]	Forest concessions	Community forests	Total
	US$ million		
SFM implementation cost	18.5	3.3	21.8
Direct cost of certification	5.0	0.9	5.9
Total	23.4	4.2	27.6

a. Aggregated cost over five years to certify all non-certified forest concessions and community forests in Peru.

Source: Peru case study.

concession forests and US$4.2 million would fall to community forests. Compliance costs would account for 80% of the total and the rest (US$5.9 million) would be paid to certification bodies.[58]

The cost of chain-of-custody certification in a typical small-scale sawmill is estimated to be about US$150,000 over a five-year period (Table 7.5). For an annual production of 4,500 m³ of sawnwood the additional cost per m³ of sawnwood would be US$6.61, US$1.13 of which would be needed to meet the direct cost of certification, while the remainder would meet indirect costs associated with, for example, the additional staff needed for recording, monitoring and reporting, and the necessary improvement of information systems. Apart from the present 17 chain-of-custody-certified companies, few sawmills have management systems that would be adequate for certification requirements. The sawmill case shown in Table 7.5, therefore, does not represent the average situation, for which an additional 25% should be added to the cost of compliance. It is further estimated that a 10% price premium in sales prices would be needed to make an economic case for certification in Peruvian sawmills. Premiums lower than that tend to disappear in the supply chain and the primary processor of the rough-sawn lumber receives no benefit from them.

In Malaysia a comparison of the cost of compliance with the national certification standard (the MC&I) with a conventional management approach showed that SFM is two-thirds more expensive (Table 7.6). Higher costs are incurred under SFM due to higher standards of road construction, pre-felling activities and felling operations. Reduced impact logging (RIL) is imperative in the country, which means that it is a baseline requirement for all operators. The relatively high rate of taxation would act as an incentive for illegal logging in some countries but, thanks to improved enforcement and increased penalties, the rate of illegal logging is estimated to be low and decreasing in Malaysia. This gives producers in the country a strong competitive advantage in meeting the timber-procurement criteria of export markets.

The cost of auditing is considerably higher in Cameroon and Peru than in Malaysia, partly because of the large size of the certified Malaysian FMUs (and therefore their economies of scale) and partly because the auditing work is carried out by national bodies (Table 7.7). There is a strong need to develop group certification for small-scale FMUs in countries like Cameroon and local certification capacity in all timber-producing countries to keep auditing costs at a reasonable level. It is also critical that the market benefits are larger than the costs of SFM implementation and its certification.

Table 7.5 Costs of chain-of-custody certification of a sawmill in Peru

Type of cost (Mill capacity 4 500 m³/year)	First year	Years 2–5	Total
	US$		
Standard compliance implementation cost[a]	31 800	91 560	123 460
Direct cost of certification	6 200	19 200	25 400
Total	38 000	110 760	148 760

a. The main cost factor (73% of the total) is additional staff and organizational costs to meet the audit requirements of the chain-of-custody standard.

Source: Peru case study.

58 For the time being almost all certification in the country is carried out by SmartWood.

Table 7.6 Average costs of SFM in Malaysia

Activity	MC&I compliance		Conventional practices	
	US$/m^3	%	US$/m3	%
Management plan	0.33	0.59	0.07	0.21
Pre-felling activities	5.08	8.91	1.34	4.0
Road construction	9.65	16.9	1.11	3.30
Felling, transportation and related operations	22.6	39.6	15.8	47.1
Taxation	19.3	33.8	15.3	45.4
Additional training	0.08	0.15	-	-
Total	55.9	100	33.6	100

Note: totals might not tally due to rounding.

Source: Malaysia case study.

Table 7.7 Direct costs of forest certification in the case-study countries

Country	SFM certification (US$/ha)	chain-of-custody certification (US$/enterprise)
Cameroon	0.83–9.26	–
Malaysia	0.26	1 720
Peru	0.94–1.66	25 400

Source: Country case studies.

External support is needed in producer countries in several areas. In Malaysia, for example, three main areas have been identified: process support, including in institutional redevelopment, especially capacity building; research and technical assistance to help strengthen the security of the asset and other control (e.g. chain-of-custody auditing); and information and communication support to improve the marketability of Malaysian timber. The cost of short-term capacity-building has been estimated at US$1.6 million.[59] In addition, Forest Department Headquarters is planning institutional restructuring focused on law enforcement that would cost about US$4 million. Additional inputs would be required in the states to increase human resources and facilities for the law enforcement teams, as well as for the recruitment of forensic science specialists.

The EU provides substantial support packages to countries that will sign VPAs to assist with the strengthening of information systems, TLASs, forest governance and community forestry, among others. The US has also provided extensive support to countries to promote SFM and its certification. ITTO, together with other international organizations, particularly FAO, has supported the strengthening of forest governance, legal compliance, information systems, and market transparency, among others. The ITTO–CITES support program has laid down the basis of further improvement in monitoring systems in participating countries. As shown below, however, there is a need to scale up these programs through initiatives such as ITTO's Tropical Forest Law Enforcement, Governance and Trade Thematic Programme.

59 Related to the fulfilment of VPA requirements in the country.

8. IMPACTS OF TIMBER PROCUREMENT POLICIES

Market impacts

Demand

TPPs have a significant influence on demand for tropical-timber products, but the impact varies by type of instrument and market segment. For example:

- Public-sector TPPs create demand for legally and sustainably produced timber in government purchasing, which is estimated to amount to 3–20% of total timber consumption depending on the importing country and market segment. In most countries, central-government purchasing probably amounts to about 10% of gross domestic product; if local-government purchasing is included, the figure could be in the range of 15–20% depending on the country's administrative structure (see Brack 2008).
- Green building initiatives have the potential to influence a major part of timber consumption but, in most cases, they are still in the initial phases of implementation. Given the climate-change linkage, however, green building initiatives are likely to be mainstreamed in many countries, which will expand their impact on timber consumption, including in the private sector. The additional impact of these policies will be felt in the medium term (3–5 years) and, depending on the country, could add another 5–15% to the market share of products meeting the requirements for legality and sustainability.
- In many major markets, private-sector TPPs (those of both individual companies and trade and industry associations) already cover 60–80% of the total imports of tropical timber, although there is wide national variation. The full impact of these policies have not yet been seen because mostly they are being phased in. Such policies will be less effective among small and medium-sized enterprises than for large enterprises in importing countries and therefore their additional medium-term impact on the demand for legally and sustainably produced timber may be in the range of 10–20%.

Based on these rough guesstimates, a total of 25–40% (depending on the country) of the total demand for tropical timber in the major import markets might be expected to be subject to legality and sustainability verification in the medium term. For logistical reasons such a large market share would also have a significant leveraging impact on other purchasing. Most of the wood destined for end-users and buyers who required proof of legality and sustainability would be purchased by wholesalers, retailers, contractors and furniture manufacturers, who always aim to minimize their stocking costs and thereby the number of individual products stocked.[60]

The public sector is also a very large and diversified enterprise in developing countries and its purchasing policies can have a major impact on the domestic demand for timber: in Vietnam, for example, 45–65% of the government budget is spent on procurement. However, implementing a TPP in these countries is not a simple affair: a number of hurdles would need to be overcome, including the appropriateness of the legal framework, required changes in procurement practices, the capacity and resources of procurement agents, and the supply of acceptable products (Xuang Ty et al. 2009).

The public sector (together with progressive companies) acts as a standard-setter and example for the private sector. Initially, the direct impact of public-sector TPPs in the tropical-timber-consuming countries will be strongest on timber products used for office furniture, building construction and civil works, particularly in applications where tropical timber has an established position, such as marine construction (Simula 2006). The market segment least affected by public-sector TPPs is likely to be home furnishing. Private-sector TPPs have already had a major impact on imported garden furniture of tropical origin; to a significant extent, these products are already SFM-certified in Europe.

60 Parallel stocking of non-verified/non-certified and verified/certified products would add to their costs of working capital and increase the need for storage space, which would encourage traders and users to keep only one type of product (certified/verified) in stock although not all customers would specifically ask for it. This could be expected to change broader purchasing behaviour in the market, provided that such products can be made available at competitive prices.

In the EU-25 (i.e. the 25 countries in the 2004 enlargement of the EU), the total market for wood products from tropical sawlogs and veneer logs is estimated to be 10.3 million m³ rwe, while it also imports another 15.0 million m³ from countries with both tropical and non-tropical forests ('mixed zones') (Oliver 2009). The six EU countries with public-sector TPPs account for two-thirds (6.9 million m³) of total EU-25 wood-product imports derived from tropical sawlogs and veneer logs. Appendix 6 shows the size of the markets in the key EU countries.

The short-term demand for legal and sustainable tropical timber induced by the public-sector TPPs in the six EU countries is estimated to be 1.8–2.0 million m³ rwe per year.[61] This volume is expected to increase as more countries introduce TPPs and their implementation becomes more systematic.

The number of chain-of-custody certificates in major tropical-timber-importing countries serves as an indication of the location of demand for legally and sustainably produced timber by the private sector. These certificates[62] are heavily concentrated in a few countries, reflecting their market size and the intensity of market drivers (UNECE/FAO 2009). The main markets for certified products are the US, the UK, Germany, France, Japan, Canada and China; combined, these account for almost two-thirds of the total number of chain-of-custody certificates issued worldwide.

For the time being, the impact on demand of public-sector TPPs appears to be relatively modest, although there is a lack of reliable information.[63] The country survey conducted for this study revealed that TPPs have increased the awareness among procurement agents of the need to specify legality and sustainability. In Denmark, Switzerland and the UK it has become clear that the supply of at least temperate timber can respond to such demands. This is associated with the increasing share of certified timber products in the supply to the European market. The situation is different in the tropical-timber markets, where, in some countries and market segments, certified supply does not meet the demand.

The blunt regulatory measures aimed at eradicating illegal timber products from international trade will have a much broader impact on demand because non-complying actors will gradually be excluded from the supply chain. Present and planned regulations in the EU and the US will affect 49% of total imports of tropical timber and timber products[64] from ITTO producer countries and China combined (Appendix 8). They would also increase the effectiveness of targeted instruments such as the EU FLEGT VPAs, which, without this kind of accompanying trade regulation, would have a much more limited impact on trade flows. In the absence of such accompanying regulation, such targeted instruments would also risk adversely affecting the market share of VPA-partner countries in the EU due to competition from non-VPA-participating countries, which could still export illegal tropical timber to this market.

Supply

In the EU-25 market about 25% of timber imports is estimated to be certified for sustainability or verified for legality (Oliver 2009). In Japan more than 80% of plywood imports by the member companies of the Japan Lumber Importers Association have been reported as legality-verified, thereby meeting the minimum requirement of the country's public-sector TPP. Similar information on other markets is unavailable.

In May 2009 the global certified area was estimated at 321.2 million hectares, or almost the same as a year before (Appendix 7). The share of the global area in developing regions declined in 2009, however, from 7.2% to 6.1%, due to a reduction in Latin America (notwithstanding an almost doubling of the certified area in Africa, to 1.7 million hectares) (UNECE/FAO 2009). The three developing regions accounted for only 1% of the total global supply of roundwood from certified forests, their combined estimated output in 2009 being 4.1 million m³. This demonstrates the slow response from tropical-timber suppliers to the demand for certified products.

Based on global figures the certified production in developing countries appears to be sufficient to

61 Calculated based on: (i) 20% of total imports of Belgium, Denmark, Germany, France, Netherlands and the UK of wood products derived from sawlogs and veneer logs from tropical-timber-producing countries; and (ii) 6.7% of total imports from mixed zones (Appendix 6).

62 In May 2009 the total number of FSC and PEFC certificates was about 17,800 (UNECE/FAO 2009).

63 The UK has carried out a pilot study on the construction industry (CPET 2009), and France is in the process of carrying out a study on the volume of procured timber products. An earlier study was conducted in Denmark.

64 Logs, sawnwood, veneer, plywood, wood-based panels, joinery products and furniture.

meet the short-term demand for sustainably produced tropical timber and timber products induced by public-sector and private-sector TPPs. In practice, however, this is unlikely to be the case due to different product and geographic patterns between demand and supply, the complexity of supply chains, and the fact that part of the certified production is not sold as certified.

In the case of legality-verified products, no systematic information is available on the potential supply from tropical-timber-producing countries.[65] Several private commercial companies and a few non-profit organizations provide auditing or support services to tropical-timber producers, but systematic quantitative information on the forest area or volume of timber production has not been compiled. Box 8.1 summarizes the situation in key ITTO producer countries.

From the point of view of export market supply, national TLASs and private-sector forest certification and due-diligence systems will determine if the market requirements for legal tropical timber can be met. Several ITTO producer countries are in the process of strengthening their forest and timber control systems, but it is apparent that, in many cases, such efforts will be insufficient (in the short to medium term) to eliminate illegal logging and deliver proof of legality because of the extent and structural nature of the problem. The impact of TPPs on timber supply is likely to be less significant than that of the US Lacey Act and the planned EU due-diligence regulation, both of which will put strong pressure on tropical-timber producers, who will be the biggest market losers if their exports cannot comply with legality requirements. At least in the short run, losses in the market share of tropical timber appear likely.

Prices and trade

Available market information indicates that, for some tropical-timber species and products, verification/certification can produce significant price premiums. In Europe, for example, independently legality-verified timber from Asia may be sold at a 3–15% premium (UNECE/FAO 2009). High-end FSC-certified products from Africa and Brazil can attract 20–50% premiums, and certified temperate hardwood from the US can obtain 5–10% premiums (Oliver 2009). Price premiums of this magnitude appear to be mainly in niche markets and cannot be generalized. Moreover, how such price premiums are shared between the various stages of the supply chain is unclear. Interviews with suppliers in Africa for this study indicated only occasional price premiums for FSC-certified products in the range of 5–10%.

In Peru, certified FMUs do not generally receive any premium for certified products. In a few minor cases price increases of 5–10% have been obtained in the EU markets and of less than 5% in the US. The situation varies widely by importing country, control of the supply chain, market segment and individual customer.

Large, European-owned, integrated certified companies operating in Africa appear to have been successful in controlling the supply of certified tropical timber to Europe; the available supply is constrained intentionally, keeping premiums high (Oliver 2009). These companies provide certified products only when customers are prepared to pay a premium, while the rest of production is sold without reference to certification. This situation can last only as long as certified supply from other sources does not increase significantly.

Li et al. (2008) have estimated the volume and price impacts of a case in which there is no illegal logging in the world[66], which is the aim of the TPPs and regulatory trade measures in the EU and the US. With the gradual elimination of illegal logging, industrial roundwood production in developing countries would decrease by up to 8% between 2007 and 2020, and world prices would rise by 1.5–3.5% for industrial roundwood and by 0.5–2% for processed products. International trade would be affected more than production levels (3–5% depending on the country's initial rate of illegal logging).

Almost half of the estimated drop in developing-country production would take place in three Asian countries – China, Indonesia and Malaysia – and 38% would occur in Brazil, while the impact in Africa would be significantly less (only about 4% of

65 Beyond the information on certified areas, which are also assumed to be legal.

66 The analysis was based on the Global Forest Products Model, which is a dynamic spatial equilibrium model that predicts production, imports, exports and prices of the main forest products in 180 countries (Buongiorno et al. 2003).

the total projected reduction in developing-country production).[67]

The results by Li et al. (2008) demonstrate that the winners in such a case would be countries with already-low rates of illegal logging, mostly in the northern hemisphere, and the losers would be developing countries where the rate of illegal logging is high. A more nuanced analysis would be required to analyze the impacts on tropical timber and timber products by country, but the general results may be considered plausible.

It is also evident that timber prices would rise significantly if there was a concerted international move to eradicate illegal logging. Success in these efforts would mean eliminating from the market the trade in stolen timber and timber products and its associated price advantage due to the avoidance of compliance costs. Price increases would benefit most those tropical-timber-producing countries that already have effective controls in place.

Substitution

Substitution with other materials would be influenced by the general price increase in legally produced timber and by cross-price elasticities between tropical timber and competing materials. Insufficient information is available to make an assessment, but it is obvious that the impact on tropical timber demand would be negative. Moreover, it is possible that the hurdles in procuring timber posed by sustainability and legality requirements that are not faced by other materials are likely to have a stronger impact on substitution than cross-price elasticities.

On the other hand, in some tropical-timber-consuming countries there are expectations that, in the long run, wood may gain an advantageous position because it will be the only material for which credible systems to prove legality and sustainability have been established and therefore it will be the only material that demonstrably meets the corporate-social-responsibility requirements of the private sector. It may take significant time and effort for other sectors to reach the same status. Only time will tell whether such expectations are well-founded.

There will be substitution effects between tropical and other types of timber, particularly temperate hardwoods. The US temperate-hardwood sector has developed a successful, large-scale, globally operating export trade that largely furnishes the same market segments as tropical timber. A recent American Hardwood Export Council study (Seneca Creek 2008) found that the risk of illegal timber entering this supply chain is very low. It was further concluded that the need for traceability, an independent chain of custody and/or controlled-wood certification to demonstrate legality should not be a crucial consideration for the sourcing of US hardwood products. Buyers in the US and elsewhere would therefore have no reason to ask for specific proof of legality, as is often the case for tropical timber. The situation regarding sustainability would be different, however. In Europe, a large share of domestic hardwood production is already certified (mostly under the PEFC system), unlike in the US, where small-scale landowners are the mainstay of the hardwood log supply and their certification is still at initial stages. In the short term, therefore, US temperate hardwood suppliers may be unable to provide TPP markets with proof of SFM.

In the hardwood trade, public-sector TPPs that specify sustainability would provide a competitive advantage to European suppliers, who are likely to be winners thanks to their active participation in certification processes.[68] In the case of US suppliers the impact on substitution between temperate and tropical hardwoods would depend on the extent to which small-scale landowners can be certified. In the long run, however, tropical timber is likely to be a loser against both sources of temperate hardwoods due to the higher relative costs of achieving sustainability and its certification.

Trade impacts on ITTO producer countries

In addition to the extent of illegal logging (on which reliable data are lacking) and the cost of compliance with legality and sustainability requirements, the impacts on the trade of individual ITTO producer countries will depend on their:

- dependence on the total value of exports and the share of exports in production
- dependence on markets with TPPs and related instruments.

67 The analysis by Li et al. (2008) is based on rough estimates of illegal logging rates in individual countries and therefore detailed results need to be interpreted with care.

68 This is not the case, however, in all European countries.

Box 8.1 Supply situation of legality-verified and sustainability-verified tropical timber in selected countries, mid 2009

Congo Basin	The current FSC-certified area is 2.9 million hectares, which, according to the Interafrican Forest Industries Association, will reach 4.0 million by the end of 2009 and 10 million by 2012. With the recent endorsement of PEFC Gabon, additional areas may be certified under the PEFC. The legality-verified area is about 10 million hectares, which is projected to reach 15 million hectares by end of 2009; these are mainly concessions owned by European companies. National TLASs are being strengthened in the Republic of the Congo and Cameroon as part of VPA processes.
Ghana	There are no certified forests; the TLAS is being improved as part of VPA obligations.
Cambodia	Forest Crime Baseline Reassessment is being undertaken.
China	The current FSC-certified area is 1.2 million hectares. The national certification scheme is expected to become operational in the near future, with six pilot areas already audited. GFTN is supporting step-wise certification processes in companies covering 1.7 million hectares already considered to supply legality-verified timber. These efforts, however, have only a marginal impact on Chinese exports because 30–50% of the raw materials are imported, some from high-risk countries.
Malaysia	The forests of Peninsular Malaysia have been certified by the MTCS. Two concessions in Sarawak have been MTCS-certified (156,000 hectares) and one FMU in Sabah has been certified by the FSC. The national TLAS is being strengthened as part of the VPA process.
Indonesia	The FSC-certified area is about 900,000 hectares and the LEI-certified area is 1.5 million hectares (the areas partly overlap). A new national wood legality verification system (SVLK) is under preparation and should cover the whole country. SVLK will replace the earlier system, BRIK, which was accepted under the Japanese TPP as proof of legality.
Philippines	Multi-sectoral forest protection committees have been established to monitor illegal logging, complementing government enforcement.
Brazil	The certified area for timber production in the Amazon is 1.2 million hectares (under the FSC). The national timber control system is being strengthened. Certification is not a precondition for concession agreements in national forests, but if the concessionaire obtains certification for forest management under a recognized scheme the royalty to be paid to the government can be reduced.
Bolivia	Of the total production forest area of 7 million hectares, 2.3 million hectares have been certified by the FSC.
Peru	The area of FSC-certified forest is 713,380 hectares and the target by end 2009 is 919,000 hectares. The national TLAS is being strengthened as part of an ITTO-supported process to strengthen CITES compliance and the implementation of the US-Peru bilateral free trade agreement.
Guyana	The only forest certification (FSC) has been suspended.

Sources: Based on Oliver (2009); Brown et al. (2008); country case studies.

In primary products (logs, sawnwood, veneer and plywood), Thailand, Malaysia and PNG, followed by Cambodia, Côte d'Ivoire and Gabon, have the highest dependency on the export trade (Figure 8.1).[69]

In absolute terms, potentially the most-affected country among ITTO member countries with tropical forests is China, which accounts for 47% of the total combined exports of US$42.8 billion in logs, sawnwood, veneer and plywood, other wood-based panels, builders' woodwork and furniture (Figure 8.2). Other countries with a large share of this export trade are Malaysia (14%), Indonesia (10%), Brazil (8%), Thailand (4%), the

69 Note that the calculated share can be very high in countries that are large importers of logs, such as Thailand, and is not directly comparable with countries that rely more on their domestic raw-material supply.

Philippines (3%), Myanmar (2%) and Mexico (2%). These eight countries account for 91% of total exports (other ITTO producer countries have less than 1% each).

The dependency on TPP markets varies widely. In relative terms, countries that sell a large share of their total exports[70] into the EU market will be most affected (Figure 8.3)[71]; they include Liberia, Democratic Republic of the Congo, Côte d'Ivoire and Cameroon, followed by Brazil, Suriname, Republic of the Congo, Ghana and Indonesia. Significant impacts will also be felt in Malaysia, Thailand, Bolivia and Ecuador, while there would be marginal impacts in Peru, Guatemala and Honduras.

Countries with the greatest dependency on the US market (and therefore that are most subject to the potential impacts of the Lacey Act) are Mexico (for which 88% of total exports go to the US), Bolivia, Honduras, Guatemala, Peru, Ecuador, Brazil and Fiji (Figure 8.4). Significant but weaker impacts in relative terms would be felt in Ghana, Liberia and Côte d'Ivoire in Africa, by Malaysia, the Philippines, Thailand and Indonesia in Asia, and by Colombia, Guyana, Panama, Suriname and Venezuela in Latin America.

The Japanese TPP has the strongest relative impacts on the Philippines (82% of its total exports go to this market), Malaysia, Indonesia, Thailand and PNG.

The combined dependency on the EU, US and Japanese markets is illustrated in Figure 8.5, which shows the cumulative share that the three markets with TPPs have of the exports of selected ITTO producer countries and China (more than two-thirds of which, in total, go to 'sensitive' destinations). The highest dependency is in the Philippines and Mexico, followed by Liberia and Cameroon. Of particular interest is China's strong dependency on sensitive markets – such markets account for more than two-thirds of the country's total exports of timber products, particularly further-processed products and wood-based panels.

At a regional level, the TPPs in tropical-timber-consuming countries will have strongest direct impacts in Africa because of the high dependence there on exports to the EU (53% of the total for all ITTO producers in the region). Significant impacts will also be felt in Latin America; the US Lacey Act may have a larger effect there because the US share of total regional exports is higher (39%) than that of the EU (21%), and intra-regional trade is more important there than in Africa. In Asia, the US takes a quarter of total regional exports, followed by the EU (21%) and Japan (15%) (Appendix 8).

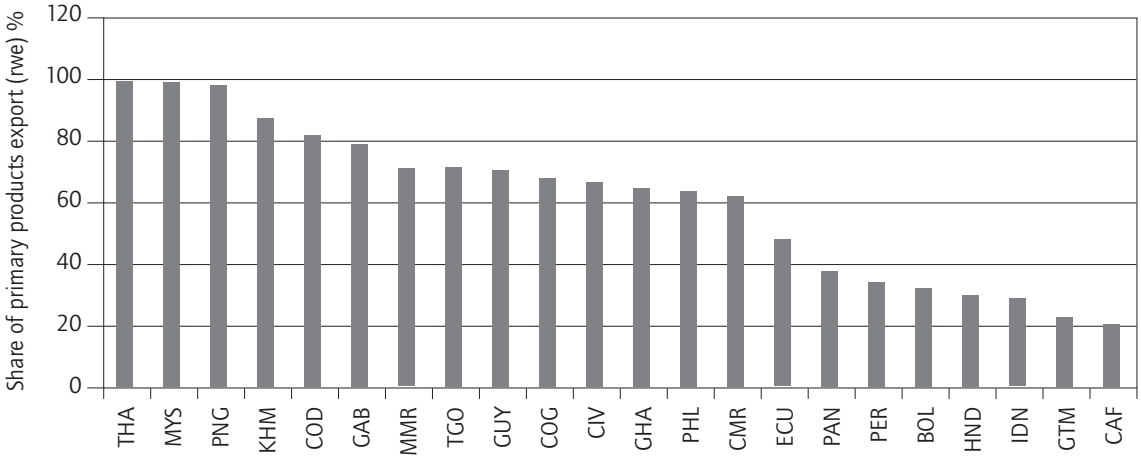
The export of tropical timber to countries (including within developing regions) where, for the time being, there is no TPP pressure is becoming increasingly important. The exports of Myanmar, PNG, Colombia, Peru, Trinidad and Tobago and Venezuela, for example, go almost exclusively (more than 80% of total exports) to such countries (Figure 8.6). Chinese imports in particular have affected the trade patterns of tropical timber. In fact, the trade impacts of TPPs will depend largely on how effectively their sustainability and legality requirements can be met by China and other in-transit producer countries.

Future country-level impacts will also be influenced by the perceived risk of illegal or unsustainable products entering the supply chain. Risk assessment will be an essential element of the due-diligence systems of tropical-timber importers. Suppliers in high-risk countries will therefore face a competitive disadvantage. To avoid biased results it is important that country risk assessments are made with the full participation of the countries involved and are based on clearly defined criteria, verifiable information, and transparent processes.

70 Including logs, sawnwood, veneer, and plywood, wood-based panels, joinery products and furniture.

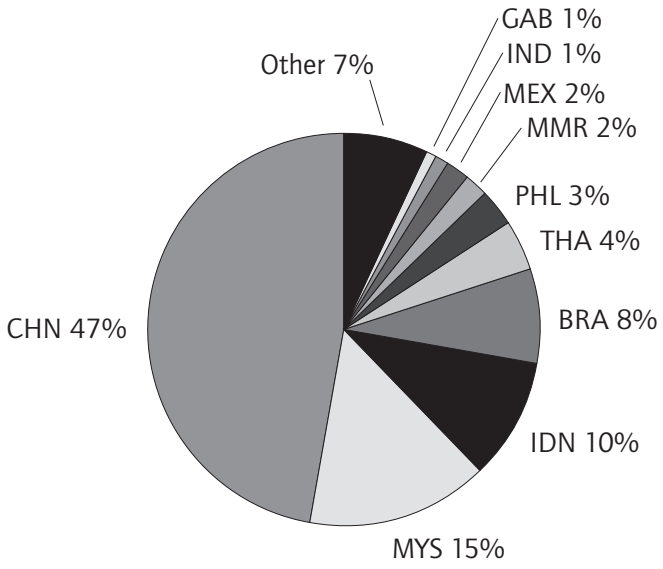
71 The EU market is taken here as a whole, even though, at present, only six countries have central-government public-sector TPPs, all of them being major tropical-timber importers. It is anticipated that more EU countries will develop their own TPPs. Private-sector TPPs have an impact on most EU countries, either directly or indirectly. If the due-diligence regulation is approved, the legality requirement would become relevant to all EU countries.

Figure 8.1 Export dependency of the primary-processing timber sector in ITTO producer countries



Note: Products covered are logs, sawnwood, veneer and plywood. See page 21 for key to country codes.
Source: Based on data in Appendix 8.

Figure 8.2 Main exporters of tropical timber and timber products among ITTO producer countries and China



Note: Products covered are logs, sawnwood, veneer and plywood, other wood-based panels, builders' woodwork and furniture.
See page 21 for key to country codes.
Source: Comtrade database.

Forest-sector impacts

The impacts of achieving a legal and sustainable timber trade within short target periods could be dramatic for tropical-timber-producing countries, even in cases where significant progress has already been made towards SFM. Ghana is a case in point: the timber harvest, industry turnover and employment could all be drastically reduced as a result of the rapid implementation of legality requirements in its exports (Box 8.2).

In countries where the *legal framework* is adequate and a sound institutional set-up is in place, there will be limited need for adjustment in order to demonstrate legality to foreign buyers. For instance, all three case-study countries have adequate legal frameworks to enable operators to achieve legal compliance. Problems arise in cases where there are inconsistent laws that potentially conflict with each other. This is a key issue for countries that have made incremental changes to individual laws without addressing their implications for other laws or regulations. The problem is not necessarily the forest law itself but more often the lack of instruments and resources to implement it.

Institutional strengthening for the implementation of an adequate TLAS appears to be necessary in almost all tropical-timber-producing countries. As the example of Peru (among others) has shown, it is crucial to separate the control and implementation functions of the forest administration during the decentralization process. This is not always easy due to the weak status of and limited resources assigned to forestry in government structures. In Peru, improvements to the TLAS are at risk due to budgetary constraints if the status of the sector's administration cannot be raised. An ITTO diagnostic mission to the country (ITTO 2003) listed the low political priority given to the forestry sector as a key constraint to SFM. Similar problems are found in other countries, often associated with strong vested interests.

Another critical issue in countries with a federal structure or a decentralized system is the level of *coordination and cooperation* between central-government and sub-national forestry institutions. Different parts of the country are likely to proceed at their own speed, as the Malaysian example has shown for certification. Failure to make progress in enforcement in one part of a national territory may put the entire country in jeopardy of being classified as a high-risk source.

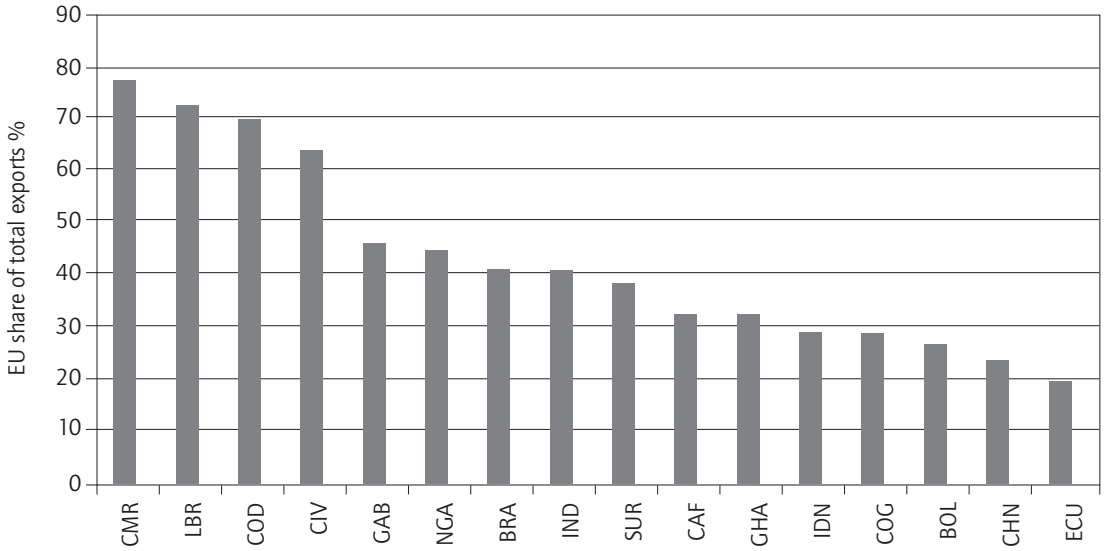
Voluntary certification is in the interest of governments because, for certified FMUs, it reduces the need for government control. A number of countries – including Bolivia, Brazil, Costa Rica, Guatemala, Peru and the Republic of South Africa – are, in one way or another, taking advantage of this (e.g. by reducing auditing, addressing the conditionalities of concession agreements, tax breaks, etc.; Purbawiyatna & Simula 2008).

In recent years there has been considerable progress towards SFM in the management of forest concessions. In Cameroon, for example, no forest concession was managed according to an approved forest management plan in 2003; in 2008, however, the number of concessions with approved forest management plans was 65, covering a forest area of 4.2 million hectares. Moreover, a number of logging enterprises selling their products to EU markets have applied voluntarily for FSC forest certification or legality verification. Interviews with government officials suggest that there has been a sharp decrease in the number of registered forest infractions, a trend that was confirmed by Cerutti and Fomete (2008). The Cameroon government has engaged in a number of initiatives to improve governance in the forest sector, including the appointment of international NGOs as independent monitors of forest law enforcement and the signing of a VPA.

Similar trends in illegal logging can be observed in Malaysia, presumably partly as a result of increasing sanctions. However, a bigger challenge lies in controlling the cross-border movement of stolen timber. While there are indications that unrecorded cross-border trade between Indonesia and Malaysia took place on a large scale during the 1990s, illegal logging and exports have dropped significantly as a result of increased Indonesian enforcement efforts. Nevertheless, as pointed out previously, Indonesia will need to make considerable investments in human resources, technical expertise and time to develop a fully effective monitoring and control system.

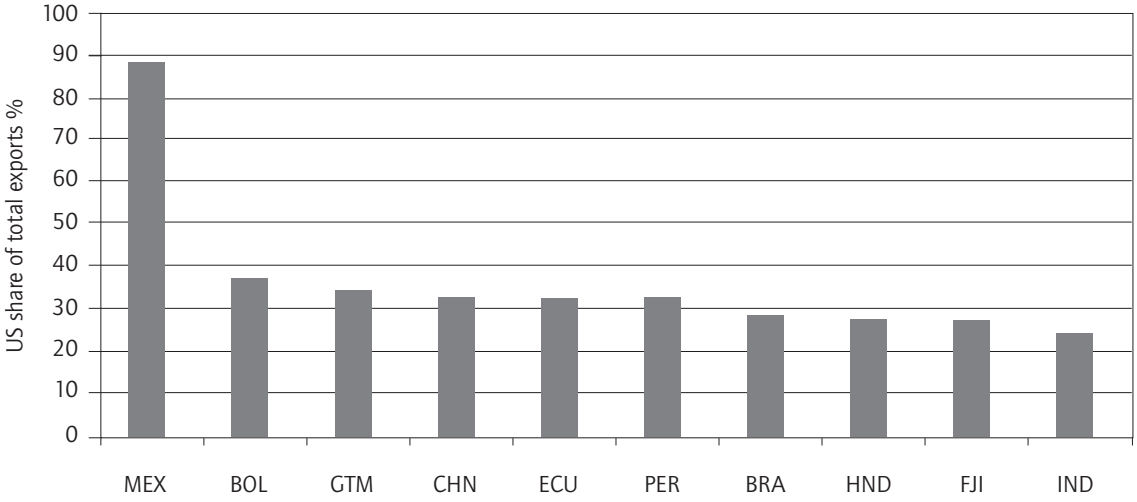
The impact on fiscal revenue will vary by country. The Government of Cameroon presently collects about US$52 million of forest taxes per year. Tax recovery has improved substantially since 2004 (World Bank 2008) as illegal activities decrease. Meeting the requirements of TPPs on either legality

Figure 8.3 Export dependency of selected ITTO producer countries and China on the EU market



Note: Products covered are logs, sawnwood, veneer and plywood, other wood-based panels, builders' woodwork and furniture.
See page 21 for key to country codes.
Source: Based on data in Appendix 8.

Figure 8.4 Export dependency of selected ITTO producer countries and China on the US market

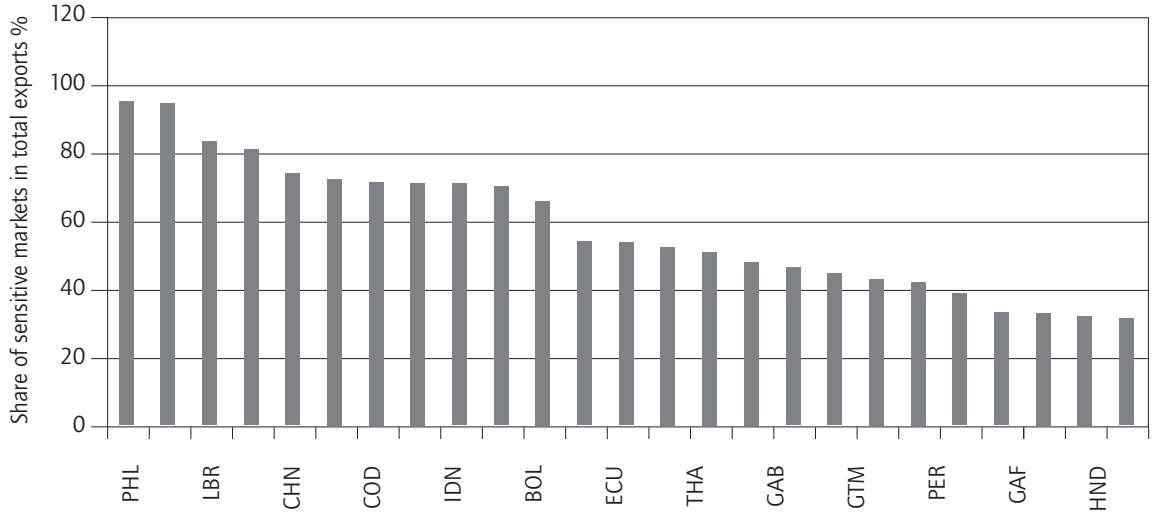


Note: Products covered are logs, sawnwood, veneer and plywood, other wood-based panels, builders' woodwork and furniture.

See page 21 for key to country codes.

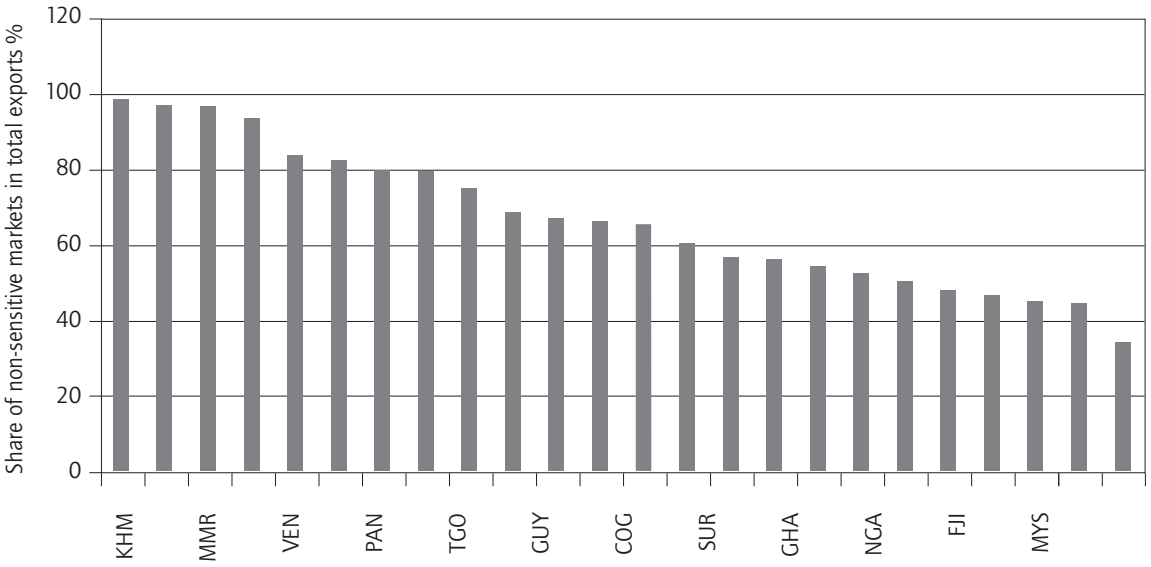
Source: Appendix 8.

Figure 8.5 Export dependency of selected ITTO producer countries and China on 'sensitive' markets with legality and sustainability requirements



Note: Products covered are logs, sawnwood, veneer and plywood, other wood-based panels, builders' woodwork and furniture.
See page 21 for key to country codes.
Source: Based on data in Appendix 8.

Figure 8.6 Export dependency of selected ITTO producer countries and China on 'non-sensitive' markets



Note: Products covered are logs, sawnwood, veneer and plywood, other wood-based panels, builders' woodwork and furniture.
See page 21 for key to country codes.
Source: Appendix 8.

Box 8.2 Assessment of the forest-sector impacts of legitimating timber exports in Ghana

As part of the VPA process in Ghana, an assessment of the potential impact on forest governance was carried out. It compared three scenarios: the current situation as a baseline; a 'legitimate timber' scenario; and a sector-reform scenario with a transition to improved forest governance. The comparison below between the first two of these scenarios is relevant here; the third scenario contains elements that are beyond the direct impacts of TPPs in exporting countries.

The main components of the legitimate-timber scenario were: a national legality standard; chain-of-custody system (wood-tracking); a verification-of-legality system (licensing by a new timber-validation entity); the piloting of the legal assurance system; and independent monitoring. A number of additional measures were included to make progress in governance, including: support for recognized chainsaw/mobile-mill groups; the off-reserve enumeration of trees, allocations and spot checks; domestic market monitoring; collaboration with export market monitoring; the establishment of a public-sector TPP; public disclosure of timber-rights holdings and performance; an awareness campaign; facilitated stakeholder engagement; the mitigation of some key negative impacts, and capacity-building.

The main findings of the assessment of the impacts of the legitimate-timber scenario were:

- The national timber harvest would drop by about 20% in the short run (by 2012) and still further by 2020 (by more than 50% compared to the present level).
- The share of the formal sector in the total harvest would increase.
- Forest industry turnover would drop by about half by 2012 and somewhat further by 2020.
- The collection of official forest fees and taxes would increase initially as a result of more-effective collection but would decrease in the longer term due to a decrease in output.
- The timber economic rent (full economic timber value of the growing stock) would reduce only slightly (by less than 10%).
- Employment in primary processing would drop by more than 50%.
- The cost–benefit impact of this scenario would imply a negative balance amounting to about US$20 million in 2020.

The assessment concluded that the inclusion in the legitimate-timber scenario of modest measures to avoid negative impacts would create a generally positive but fragile improvement in the long term compared to business-as-usual (which would lead to more radical negative impacts). Considerable expectations were placed on the capacity of broader sector reform to provide a 'soft landing' for Ghana's timber sector. Log imports, plantation development, the logging of submerged timber in the Lake Volta dam area and financing from reduced emissions from deforestation and forest degradation (REDD) were seen as additional, potential positive factors to generate the revenue that is projected to be lost with the 'legitimating' of Ghana's timber exports.

Source: Mayers et al. (2008).

or sustainability would consolidate and secure, for the government, the tax revenues obtained from the forestry sector.

> *On the other hand, the short-term impact on fiscal revenue of reduced illegal logging will be somewhat limited in Ghana and Indonesia because, in both countries, the volume of legal logging has been curtailed by regulations (Mayers et al. 2008; EU-Indonesia FLEGT Support Project 2008) and, for this reason, 'lost' illegal output cannot be compensated by legal production. The same limitation applies in many other tropical-timber-producing countries. In the long run, however, there is potential for the increased collection of forest taxes and royalties.*

Various forest-sector impact assessments – even though exploratory in nature – suggest that addressing legality requires more comprehensive measures, often including major sector reforms, to counteract the negative impacts of downsizing processing capacity. The problem with respect to TPP implementation is that many of the factors driving illegal activities are systemic and not limited to the forest sector. The 2008 EU-Indonesia VPA impact assessment (EU-Indonesia FLEGT Support Project 2008) states this clearly:

As free riders, the illegal loggers' activities could actually be controlled if firm and immediate actions were taken, because one of the characteristics of the free riders is that they have high capability in developing strategic alliances with parties they can influence if no action is taken against their free riding activities. The habit of overlooking such conducts in the past is now yielding its fruit that is the difficulty to eradicate illegal logging because the strategic alliances with law enforcement officials, politicians, bureaucrats, forestry officials, and even communities have been firmly established and deeply rooted. In the social life system, the strategic alliances developed by the illegal financial backers have damaged the social capital. It is often seen that the communities view the illegal financial backers as heroes (Robinhoodism phenomenon). The losses resulting from the damage to the social capital are actually of the same magnitude as the other losses from illegal logging.

Forest industry

While the forest industry will need to pay the costs of legal and SFM compliance and their independent verification/certification, depending on the situation, they may also receive benefits through: reduced costs via the more effective planning and control of their operations; continuous access to markets with TPPs and avoidance of loss of sales, including through organized networks searching for certified timber products; price premiums, depending on the demand–supply situation; opportunities offered by the branding of certified products under international schemes; an improved image; and improved risk management, which may facilitate access to and reduce the cost of external financing.

Supply-chain management is commonly practised in the forest industries of industrialized countries. Large concessionaires need to maintain good control of their supply chain in order to avoid timber losses through carelessness or pilferage. In Cameroon, enterprises engaged in certification have improved the efficiency of their field operations and have established internal auditing systems to monitor the entire production process.

In competitive production systems, managers need to know where their wood comes from, where it is at any point in time, where it is intended to go, and when it is scheduled to arrive there. To close the loop they also require information on whether the wood arrived at its intended destination, when it arrived, and its condition at the time of arrival. Although such information can prevent or expose log theft and can thwart efforts to add illegal logs to the wood mix, its primary use is to enable the cost-effective management of the supply chain itself. Forest managers require similar information to meet contractual obligations for wood supply and also to sustainably manage the forest itself (Dykstra et al. 2002). Improved information on forests, terrain conditions and harvestable trees has the potential to greatly improve the planning of forest roads and skidding trails and to significantly reduce harvesting costs. The benefits of systematic supply-chain management via electronic methods of monitoring and control include time-saving through computerized stocktaking and reductions in the loss of timber attributed to carelessness, errors in stock-keeping, and pilferage.[72]

72 This view is reported in the Malaysian case study to prevail among forest managers.

There are also other potential benefits for the industry. The importance of sales revenue is illustrated by a simulation in Peru (Table 8.1). The least remunerative markets for the country are the two largest export outlets, China and Mexico, while significantly higher prices are obtained from the US and the EU. If a part of the volume (23% in the example) exported to the low-priced markets had been directed to the EU in 2007 – currently a marginal market for Peruvian exports (due partly to concerns on legality and sustainability) – the country's timber export revenue would have increased by 16% (US$14.6 million). This is an overly simplistic result, since an increase in the Peruvian share of the EU market of this magnitude would also require strong marketing efforts, changes to companies' marketing strategies, and improved product quality and competitiveness. Nevertheless, the example is illustrative of the potential benefits of complying with the requirements of TPPs; each tropical-timber-producing country should consider alternative scenarios for its exports in terms of market distribution and value-adding.

Under the US Lacey Act or the planned EU due-diligence regulation, tropical-timber producers face a new type of risk – the loss of revenue due to the forfeiture of goods. Meeting legality and sustainability requirements – and providing credible proof of this – will contribute to the risk management of participating timber-industry companies and is likely to have a positive influence on their investment costs. Several financing institutions participating in the Equator Principles Financing Institutions initiative are already paying attention to legality and sustainability aspects, and the perceived risk influences access to, and the cost of, financing.[73]

The above discussion mainly concerns the impact of TPPs on the trade of primary products. The implications for further-processing are probably largely similar. Increasing further-processing in tropical-timber-producing countries will be an important strategy in the adjustment of production structures to counter the possible negative impacts of market requirements for legality and sustainability. In Ghana, for example, increased further-processing was identified (see Box 8.2) as a key element of the sector-reform scenario to counteract the impacts of the downsizing of the primary-processing industry (the capacity of which exceeds the supply potential of the country's permanent forest estate). A complementary element in the future will be the development of planted forests. Similar situations are found in many other ITTO producer countries.

Other development and social impacts

In many countries, the impacts of TPPs on poverty reduction can be negative in the short term but their long-term effects are likely to be positive if necessary sector reforms can be implemented (e.g. Mayers et al. 2008). The social costs are likely to be highest in countries where the primary-processing capacity must be downsized significantly; positive outcomes for the sector will depend on the potential for shifting to alternative raw materials, usually plantation wood, and building up a competitive further-processing sector.

In Cameroon the contribution of the forestry sector to tax revenues has increased since the commencement of legality verification. In 2007, for example, the central government transferred a total of US$13.3 million to local councils in the forest zone, which was 50% of the area-based forest tax

Table 8.1 Potential impact on export revenues of new market opportunities offered by meeting the requirements of TPPs – theoretical simulation with Peruvian exports in 2007

Market	Actual exports		Simulated exports	
	Volume (m^3)	Value (1000US$)	Volume (m^3)	Value (1000US$)
China	48 781	16 488	37 635	12 721
Mexico	90 000	46 710	69 436	36 038
US	35 961	29 164	35 961	29 164
EU	890	814	32 599	29 828
Total	175 632	93 176	175 632	107 751

Source: Peru case study.

73 http://www.equator-principles.com/principles.shtml.

collected. These funds are to be used directly for local development and poverty alleviation.

The Cameroon and Peru case studies showed that community forestry can benefit from legality and sustainability requirements if the necessary external support can be mobilized. In Cameroon, however, no impact on community forests has yet been observed as a result of TPPs because most of their products are sold into local markets. As they increase in number and their capacity builds, community forest enterprises should increasingly become participants in the timber export trade. In the short term, however, it is feared that, if TPPs are widely applied, many such enterprises will go out of business because the costs of legality verification and sustainability certification are too high.

It is estimated that the formal forestry sector employs about 13 000 people in Cameroon, about 8 000 of whom are located in the remotest parts of the country where the government is unable to open and maintain roads. In such regions, the salaries of forest-sector employees constitute the main financial resource for local economies. At the same time the contribution of forest enterprises to the maintenance of public roads is essential. If Cameroon does not implement its VPA, local development in these landlocked regions will receive a drastic setback.

The most worrying impacts concern the informal timber-products sector in Cameroon, which meets most of the national demand for timber products and employs an estimated 150 000 people (Lescuyer et al. 2009). About 20% of the total timber production of the informal sector comes from community forests but the remaining 80% come from other forest titles for which the administration has no effective monitoring capacity, and from unregulated/illegal sources such as trees felled on individual farms.

The informal sector's social benefits are significant, and 'legalizing' their operations is, in the short term, unrealistic and infeasible for political, economic and social reasons. In addition, the forestry administration is unable to monitor the activities of the informal sector. Currently in Cameroon, timber production in community forests is not monitored by the forestry administration and is part of the informal sector. Therefore, if community forests are abandoned because the costs related to legality verification are too high, more than 25 000 poor people could go jobless, and the domestic supply of construction timber would be constrained. It seems more realistic, therefore, to design procedures that would allow operators in the informal sector to progressively enter the formal sector and to temporarily exclude the national market from the VPA until at least 2015. Otherwise, the VPA may have the perverse effect of increasing poverty rather than reducing it.

Similar problems are expected elsewhere. In Indonesia, for example, legal operations employ about 118 300 people and illegal operations an estimated 123 000–177 000 (EU-Indonesia FLEGT Support Project 2008). If the latter become unemployed and alternatives cannot be offered in plantations, social forestry or other activities, significant social unrest could emerge in forest areas.

Adequate assistance for local communities attempting to meet VPA requirements would be required to help them cover their financial and capacity needs. Community forests seem to be the easiest part of the informal sector to monitor because the land allocation is already documented. But even though, in Cameroon, there are specific provisions in the legislation to promote community forestry, its economic viability is far from clear and TPP requirements are likely to put this segment at a disadvantage if sufficient external support cannot be provided. In the long term it is important that community forests are economically self-standing. There is potential for that, as shown in Table 8.2 for Peru, but a move to downstream timber-processing would be necessary. To build up technical and managerial capacity for timber-processing at the community level is an additional challenge, particularly if such processing is to go beyond rough-sawn air-dried lumber.

The certified community forests in Peru (16 FMUs) have all undergone a group certification process in which a 'forest manager' has acted as group organizer. Together with external aid[74], this has brought the necessary financial support and technical skills to bear as well as ensured markets for the products. In addition to the economic and employment benefits, certification has also effectively protected the FMU from external illegal encroachment, which is common in those areas.

74 In this case, from USAID and ITTO.

Table 8.2 Economic opportunities for community forests in Peru

Item	Unit	Stumpage sales	Log sales (delivered)	Sawnwood sales
Volume	m^3	17 809	17 809	9 759
Revenue	US$	28 053	770 018	2 462 620[a]
Net profit	US$	18 807	83 615	287 394
Revenue per capita	US$/year	63	281	964
Community employment	No. of workers	2	24	26[b]

a In the case of a community enterprise the average sales price is US$252/$m^3$. The average export free-on-board price in Peru in 2007 was US$915/$m^3$, the difference being explained by lower product quality, different species mixes, and, in the case of the community sawmill, the higher cost of transportation to export ports.

b Only two additional workers are needed for monitoring and control because sawmilling is contracted to a private sawmill.

Source: Peru case study.

Moreover, Indigenous communities have become organized for forest production, which has reduced the forest-use-related conflicts that have been common in Peru in the last few years. Strengthened community organization would also be necessary for entering the sawmilling business, which can result in significantly expanded economic benefits for community members, as shown in Table 8.2. This experience suggests that support programs for community forestry, at least in the case of Peru, would greatly benefit if SFM implementation and its certification is part of the support strategy. Joint ventures between forest communities and forest industry or private investors with experience in the international marketing of timber can result in significant benefits for all parties.

Environmental services

The beneficial impacts of sustainably managed tropical forests on biodiversity, soil and water as well as forest health and vitality are well known and do not need to be described here. Improved governance, demarcated FMUs, the borders of which are effectively protected, and systematic forest management within an SFM framework would bring significant positive environmental impacts. In addition, improved forest governance would provide the necessary preconditions for forest owners to participate in emerging payment mechanisms for environmental services, such as climate-change mitigation. The implementation of an effective TLAS and FMU legality verification/SFM certification may also reduce investor risk in forest carbon offsets and may therefore have a direct positive impact on potential carbon revenue (Elson 2009).

Compliance with SFM certification standards requires studies on forest fauna, the identification and monitoring of areas with special conservation values, the deployment of RIL, and good relationships with local populations. These factors bring intangible values to the certified FMU, which can open up opportunities for financing from global environmental initiatives related to climate change, biodiversity conservation and desertification. A study in the largest certified FMU in Peru, for example, revealed that the carbon stock of the area was 83 million tonnes of carbon (carbon-dioxide equivalent). This provided a basis for the development of a REDD project to raise funding for additional activities needed to effectively control the area, protect the endemic forest fauna and flora, and conserve special areas within the FMU.

9. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Despite the difficulties and obstacles faced by tropical-timber producers in meeting the emerging requirements of public-sector and private-sector TPPs in major import markets, it should be recognized that these instruments are 'soft' policy tools. The market pressure towards a legal and sustainable trade is strong, and the timber sector worldwide must adjust. TPPs can be viewed as a compromise between market pressure and a cooperative approach between producers and governments. Market pressure for sustainability is not new: it has been influencing the tropical-timber trade for almost 20 years. This pressure is expected to become even stronger in the future, not least because of the introduction of such 'hard' regulatory instruments as the US Lacey Act amendment and the planned EU due-diligence regulation. It is time for the timber sector at large to shift emphasis – from resistance to change towards proactive measures. The current situation shows that this can pay off.

The gloomy picture painted in this report on the possible impacts of TPPs on tropical-timber producers does not fully take into account the fact that many tropical-timber products have unique characteristics that give them an inherent market advantage over temperate wood. Increasingly, the sector's growth in the tropics will have to come from the development of further-processing and new, sustainable sources of raw materials. Eradicating illegal logging and trade is necessary not only for meeting current market requirements but also to enable the industry to adjust its operations domestically to sustainable levels.

This review of public-sector and private-sector sector TPPs revealed much scope for their improvement – in terms of their definitions of legality and sustainability, procurement criteria, time-schedules and implementation arrangements – in order to make them more effective in attaining their objectives. At least in the short term, the impacts of TPPs on tropical-timber-producing countries may be drastic and, if they lead to large job cuts, could create serious political problems for the governments of those countries. Such outcomes would not be in the interests of importing countries.

If the forest sector is to be socially acceptable in both tropical-timber-producing and tropical-timber-consuming countries, free riding by illegal loggers and traders cannot continue. Sustainable forest industries can only be viable if responsible operators are able to compete on a level playing-field.

Importing countries should take the necessary measures to help tropical-timber producers to meet the requirements of their public-sector and private-sector TPPs. Such measures should include, among others: facilitating the effective participation of tropical-timber producers in the design of their TPPs; giving due consideration to the impacts of their TPPs on their trading partners in the tropics (e.g. through *ex ante* impact assessments as already practised by, for example, the EU); avoiding the proliferation of TPP requirements (between and within importing countries); improving the clarity and consistency of TPP provisions; the adoption of realistic targets and time-schedules and the avoidance of constantly shifting (often unrealistic) goalposts; and significantly expanding technical assistance and financial support to tropical-timber-producing countries.

In order to meet the requirements of public-sector and private-sector TPPs, tropical-timber-producing countries must be prepared to accelerate their efforts to improve forest governance, TLAS, forest-sector information, and enterprise-level management and control systems. Of particular concern are community forests, small and medium-sized enterprises, and the informal sector, all of which are poorly equipped to meet the emerging requirements. There is a risk that these actors will be excluded from (export) markets that require legality and sustainability. Many countries, particularly those with excessive primary-processing capacity, should engage in sector-reform strategies that emphasize further-processing and the development of alternative raw materials through planted forests. The integration of the informal sector with regulated production is one of the most complex and politically sensitive issues to be addressed.

Recommendations

In order to enhance the positive impacts of TPPs in promoting legality and SFM in tropical-timber-producing countries and to mitigate their adverse effects on these countries, the following recommendations should be addressed:

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- To improve market transparency and to enable tropical-timber producers to plan their efforts based on adequate information, monitor the development of TPPs and the supply of and demand for legality-verified and SFM-certified timber and timber products, and the associated trade flows.
- To help tropical-timber suppliers to meet market requirements for their products, promote the convergence and comparability of procurement policies related to tropical timber and timber products through the enhanced exchange of information and lessons learned at the international level.
- Explore the feasibility of developing a common generic standard or set of guidelines for defining legality applicable in tropical-timber-producing forests, drawing on accumulated experience.
- Assist producer member countries to assess the implications of TPPs for their production, exports, employment, fiscal revenue and environment, and to develop appropriate sector-reform strategies.
- Provide support for capacity-building, particularly in forest information systems and training, to enable the planning and implementation of national TLASs.
- Support the development of community forestry through the analysis of the production chains of certified FMUs and their opportunities in international markets as well as the analysis of production and certification costs and ways in which these could be reduced and financed through market benefits.
- Facilitate the exchange of information and experience between member countries in building up information and verification systems including benchmarking in production and on the transaction costs of legal and sustainable timber to meet the requirements of TPPs.
- Develop tools for risk assessment and management to facilitate trade in legality-verified/SFM-certified tropical timber and timber products; such tools should be based on clearly defined criteria, verifiable information and transparent processes, with the full participation of the countries involved.

Governments in tropical-timber-producing countries

- To enhance the trade's positive impact on legal compliance and SFM, participate in consultative processes related to the development of TPPs in importing countries.
- Promote voluntary SFM certification and independent legality verification as complementary instruments to government supervision and enforcement and to reduce public-sector control costs.
- Build up reliable TLASs, including by strengthening forest information systems, the application of advanced technologies, inter-sectoral coordination and cooperation, and institutional improvements in enforcement.
- Recognize that paper-trail-based control systems tend to have loopholes and weaknesses and, therefore, embark on the piloting and introduction of improved technologies such as RFID for tracking and tracing products.
- Reduce transaction costs for legal production to minimize incentives for illegal operations.
- Where appropriate, review forestry and related legislation to detect and eliminate contradictions and to include new provisions that recognize the new technological environment characterized by digitized information systems.
- Implement national public-sector TPPs to promote domestic demand for legal and sustainably produced timber.
- Provide incentives for timber-producing community forests and small and medium-sized enterprises to overcome the barriers they face in complying with legality verification and SFM certification.
- Take proactive measures to gradually integrate the informal sector into the formal sector, avoiding the adverse socioeconomic impacts that would occur if legality and sustainability requirements were introduced abruptly into the timber supply.

Governments in tropical-timber-consuming countries

- Consider the implications of their TPP requirements for tropical-timber-producing countries and notify their trading partners of their intentions to introduce or amend their national public-sector TPPs.
- In developing and revising national public-sector TPPs, consider the need to avoid the unnecessary proliferation of requirements.
- Promote the adoption of central-government TPPs by sub-national and local governments to make them compatible with the agreed policy objective of achieving a legal and sustainable trade of tropical timber and specifically to avoid the outright banning of tropical timber use.
- Provide expanded support programs to tropical-timber-producing countries to help them meet TPP requirements and to mitigate the possible negative socioeconomic impacts of their implementation (e.g. through such mechanisms as ITTO's Tropical Forest Law Enforcement, Governance and Trade Thematic Programme).

Forest industry and timber trade

- Be prepared to provide transparent and verifiable information on the sourcing and production of tropical-timber products.
- Gain understanding of the risks and obstacles associated with the purchasing and supply of legally and sustainably produced tropical-timber products, be responsive in reducing these barriers, and carry out adequate risk assessment in sourcing tropical timber.
- Given that sustainability will become a baseline requirement in most TPPs in the future, engage in legality verification and forest certification, as appropriate in local conditions.
- Develop appropriate codes of conduct to promote legal compliance and sustainability in production and sourcing.
- Seek to harmonize private-sector TPP requirements with those of the public sector.
- Support and engage in the certification of community forests, smallholders and small and medium-sized enterprises through appropriate group-certification approaches.

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https://portal.health.fgov.be

Denmark

http://www.skovognatur.dk

France

http://www.ecologie.gouv.fr/IMG/

http://www.developpement-durable.gouv.fr/

http://www.legrenelle-environnement.fr/

Germany

http://www.bmelv.de

The Netherlands

http://international.vrom.nl/pagina.html?id=37479

http://www.tpac.smk.nl/

Norway

http://www.regjeringen.no/en/dep/md/

Sweden

http://www.msr.se/en/

Switzerland

http://www.bbl.admin.ch/index.html?lang=de

United Kingdom

http://www.defra.gov.uk/

www.ogc.gov.uk

http://www.proforest.net/cpet

Canada

http://www.cagbc.org/

http://www.housing.gov.bc.ca/building/wood_frame/

http://www.mrnf.gouv.qc.ca

Japan

http://www.env.go.jp/en/laws/policy/green/index.html

http://www.goho-wood.jp

New Zealand

http://www.maf.govt.nz/forestry/twpp/index.htm

Brazil

www.caixa.gov.br/imprensa

http://www.ces.fgvsp.br

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Appendix 1 Terms of reference

1. Preamble

Timber procurement policies are being considered and implemented by public agencies, trade associations, and private companies in many traditional tropical timber markets. These policies are being introduced principally to address public concerns about the environmental credentials of products by adding criteria other than price into the decision making process. Many purchasers are demanding that products come from sustainable, or at least legal, sources and that this be verifiable, in order to maintain credibility with public opinion. In the UK, for example, the Government announced that from April 2009 its central departments will purchase only timber and timber products that derive from sustainably managed forests or are licensed under the EU Forest Law Enforcement, Governance and Trade (FLEGT) regulation; from April 2015 only sustainably produced timber will be purchased. This policy is at present under consultation and may be modified. These types of policies have significant implications for tropical timber suppliers if fully implemented. As new developments are occurring rapidly, there is an urgent need for tropical wood product exporters to monitor these developments, assess their ability to meet these requirements if they are widely adopted, and to explore the market threats – and opportunities –presented by these developments.

2. Terms of Reference

The activity will:

1. Undertake a review of developments and progress regarding timber-procurement policies particularly in key tropical timber importing countries, including the identification of drivers and influencing factors as well as trends in policy requirements for the procurement of timber particularly tropical timber;
2. Assess the positive and negative impacts of timber-procurement policies on the international trade in tropical timber including, in particular, the comparative competitiveness of tropical timber, the tropical timber industry and the management of tropical forests;
3. Identify and analyse the main similarities and differences among timber-procurement policies and the attendant implications for the procurement of tropical timber;
4. Assess the extent to which suppliers in ITTO member countries are able to meet the requirements and costs of timber-procurement policies and have access to the opportunities and benefits generated by these policies;
5. Identify and analyse the key factors affecting the ability of suppliers in ITTO member countries in meeting the requirements and costs of timber-procurement policies and make concrete recommendations on how their ability could be enhanced to overcome the constraints and meet the requirements;
6. Examine and assess the need and desirability for and the practicality of promoting convergence, coordination and harmonization among timber-procurement policies as a means of facilitating the international trade in tropical timber;
7. Prepare and submit a preliminary report to the ITTO Secretariat not later than 30 June 2009;
8. Submit the final draft of the report prepared according to the ITTO Style Guide 2004, including an executive summary; recommendations to ITTO, ITTO member countries, trade, industry and other relevant parties; and a draft article for the Tropical Forest Update (TFU) not later than 31 August 2009. Where appropriate, take high resolution photographs of the assignment and provide 20 or more of these to the ITTO Secretariat along with data on each photo as per a proforma to be supplied by the ITTO Secretariat for this purpose;
9. Present the report at the Forty-third Session of the Committee on Economic Information and Market Intelligence to be convened from 9 to 14 November 2009 and finalise the report, taking due account of the comments made by the members of the Committee.

Appendix 2 Development and status of public-procurement policies related to forest products (August 2009)

Country	Development and status
Belgium	The Federal Plans for Sustainable Development (2000-2004 and 2004-2008) identified environment-friendly and selected social aspects (particularly employment conditions) to be considered in public purchasing. Ministerial Circular P&O/DD/1 (27 January 2005) identified a number of forest products for consideration in public tenders. Paper is included in these products. The products have to be in line with ecological and ethical guidelines. Guidance by the Federal Council for Sustainable Development on the proposed federal procurement policy for timber (8 July 2005). Ministerial Circular P&O/DD/2 (4 November 2005) defined the purchasing policy to promote procurement of timber from sustainably managed forests. Belgian timber-procurement policy (18 March 2006) recognizes FCS and the PEFC Belgium scheme and sets an expert committee to evaluate other national PEFC certification schemes. As a result two national PEFC lists were accepted as proof of sustainable (5 April 2006). Methodological guide for purchasing authorities was issued in July 2006. Procurement policy for timber and timber products has been under review since late 2007 by ProForest and decision on reorientation of the policy is expected by end of 2009.
Denmark	Parliament decision in 2001 was made on central government to adjust public procurement policies to ensure that purchases of tropical timber would be based on legal and sustainable sources. In 2003 the Ministry of Environment issued a tropical timber-procurement policy to promote public purchasing from legal and sustainable sources followed by an information campaign in 2004. The policy implementation was evaluated in 2005 (user survey, comparative analysis with national policies in four other countries, and legal study). The policy was revised in 2006 to cover all types of timber and a 9-point action plan was approved to make faster progress. Temporary guidance on the purchase of legal timber covering all kinds of timber was issued in September 2006. Temporary advice (February 2008) until 1 April 2009 for public buyers to accept, as proof of 'legal and sustainable' timber, either a certificate of FSC or PEFC was given by the Danish Ministry of the Environment. Draft Criteria for Legal and Sustainable Timber and Assessment of Certification Schemes was launched for public consultation and a further 2-day workshop for stakeholders was held in April 2008. The process of new guidelines on public procurement of legal and sustainable timber is under development and the 2008 temporary advice applies.
European Union	The FLEGT Action Plan (COM(2003)251) required that national governments develop public purchasing policies to ensure no illegal wood can be procured and called for trade associations to develop codes of conduct on environment timber procurement. Issuance of a new Directive (2004/18/EC) on public procurement to clarify the legal basis of consideration of environment aspects. In the interpretative document "A handbook on environmental public procurement" (SEC(2004)1050) specific guidance for timber purchase is provided. EU Sustainable Development Strategy (June 2006), states the policy objective for 2010 of bringing the average level of EU green public procurement up to the standard achieved by the best performing Member States in 2006. Communication on Public Procurement for Better Environment 2008 was adopted by the Commission including a proposal of a political target of 50 % green public procurement to be reached by the Member States by the year 2010 (July 2008). A process for setting common -voluntary- Green public procurement criteria recommendations for a series of priority product and service groups is underway.
Finland	A government resolution on promoting sustainable public procurement was passed in April 2009. No specific timber-procurement policy has been implemented in Finland however; the need for a specific policy on wood-based products is under consideration.

Country	Development and status
France	National sustainable development strategy (2003) made a recommendation to develop sustainable public procurement. Governmental Action plan in favor of tropical forests (April 2004) included a project to prepare Prime Minister's Advice Note ("circulaire") to public buyers. The objectives were set as 50% in 2007 and 100% in 2010 of timber and wood products bought by public buyers should come from legal and sustainably managed forests. The Advice Note which expanded the policy to cover all kinds of timber was approved and published in April, 2005. Evaluation of the objective of 50% in 2007 with a first assessment in 2006. The Governmental Action Plan policy objectives were reaffirmed in October 2007 during the Grenelle Environment Forum's national stakeholder consultation ("Grenelle de l'environnement"). The objective to buy only wood and derived products from legal and sustainable sources in 2010 was reiterated in a circular in 2008. Grenelle I law (23 July 2009) states that the government will define the modalities for the recognition of forest management certification schemes. Ongoing review (from April 2009 until the end of November 2009) to assess the fulfillment of the objective of 50% of wood and derived products public procurement from legal and sustainable sources and to give recommendations for the improvement of the current policy.
Germany	An administrative regulation was issued in 1996 which states that tropical timber should come from sustainable forestry, attended with a credible certification. The Government's coalition agreement (11 November 2005) states that the Federal Government will use only timber from certified forests. The first evaluation of existing certification schemes was launched in March 2005 and the second was issued in March 2006. Government departments agreed upon the wording of public procurement arrangement (6 July 2006). Joint instruction on the procurement of wood products (January 2007) accompanied by explanatory notes regarding the procurement of wood products, issued by the German Federal Government, states that wood products procured by the federal administration must demonstrably come from legal and sustainable forest management and as a poof FSC and PEFC or a comparable certification are accepted. The policy is valid until 2011 before which it will be evaluated.
The Netherlands	Minimum requirements for forest certification were issued in 1997. Proposal for a law on mandatory labeling of all timber (red and green) was made but withdrawn in 2002. Government Decision on Sustainable and Legal Timber Procurement (2 July 2004) requiring all national public institutions to procure verifiably sustainable timber, when possible, and public buyers to ensure legality of timber purchased. Cabinet Decision on Public Procurement of Timber was made in June 2005. National Assessment Guideline for the Certification of Sustainable Forest Management and Chain of Custody for Timber from Sustainably Managed Forests (BRL) was approved 12 October 2005 (an earlier version was elaborated in 2003 and in 2004 there was pilot testing). In 2006 Netherlands adopted the UK's criteria for legality. The Equivalence Assessment System (EAS) established by the Ministry of Housing, Spatial Planning and the Environment carried out an assessment on the certification schemes (2006-07) but none of the tested 6 certification systems passed the BRL-test. As a result an improved set of criteria has been under development since October 2007. The Timber Procurement Assessment Committee (TPAC) was established by the government to assess national certification schemes against the updated draft criteria (TPAS). The simplified criteria for sustainable timber, which include social criteria, were sent to the Parliament in June 2008.
Norway	The Norwegian Action Plan 2007 – 2010 on the sustainable public procurement policy was published in July 2007 and entered into force in the beginning of 2008. The voluntary policy emphasizes the overall environmental impact of government purchases and includes provision for prohibiting the use of tropical timber in public construction.
Spain	Proposal for the revision of the Forest Act to include provision on public procurement of timber (2006)

Country	Development and status
Sweden	Coordination of green purchasing initiatives by the establishment of EKU tool (internet-based data base for environmental procurement criteria) as a joint public-private owner company. The EKU criteria for paper products are under development; the requirements included provisions for forest management. The Swedish Government endorsed a general National Action Plan (NAP) for Green Public Procurement 2007-2009 in March 2007. However, a particular procurement policy concerning timber and timber products is not considered. The Swedish Environmental Management Council is planning to start an assessment in during August 2009 on verifying legality and non-controversial sources of any material or product.
Switzerland	Based on a motion submitted to the Swiss parliament a recommendation to all public purchasers was enacted regarding the sustainable public procurement of wood (Recommendation 2004/2). In July 2008 a recommendation regarding sustainable construction work, including a statement that timber and timber products must be sustainably produced, was issued (Recommendation 2008/1).
United Kingdom	In 1996 voluntary guidance was issued to advise government departments to purchase timber and timber products from sustainable and legal sources. The Minister for the Environment made in 2000 a Statement to the Parliament which defined a policy on the obligation of public agencies to actively seek to buy timber products from legal and sustainable sources. The Department for Environment, Food and Rural Affairs (DEFRA) issued Joint Note on Environmental Issues in Purchasing (October 2003). Procurement Framework for Sustainable Development on the Government Estate in October 2004 established an obligation to integrate environmental and sustainable development considerations. Timber Procurement Advice Note was issued in January 2004. Criteria for Evaluating Certification Schemes were issued 15 September 2004; second edition in February 2006. Central Point of Expertise on Timber (CPET) was established in August 2005 to give advice to public sector bodies and their suppliers on how to purchase legal and sustainable timber. The first assessment of five certification schemes was made by CPET in 2004-05 and CPET. helpline/website became operational in the second half of 2005. In 2006 and 2008 a further assessment on the five certification schemes concerning UK government requirements for legal and sustainable timber was carried out by CPET. Definitions of legal and sustainable were finalized in November 2005 and a revised definition was published in November 2006. Timber Procurement Advice Note from April 2009 states that that all timber and wood-derived products must be either from independently verifiable legal and sustainable sources or FLEGT-licensed or equivalent sources only. DEFRA carried out a review of the current legality and sustainability definition and inclusion of explicit social criteria. A public consultation on inclusion of social criteria will end in October 2009. The Building Research Establishment Environmental Assessment Method (BREEAM), an environmental assessment method for buildings, has adopted the CPET guidance on certification schemes for timber in its Ecohomes program criteria.
Canada	The Canadian federal government does not explicitly have a timber-procurement policy, however, a number of policies consider the environmental, social and economic aspects in the procurement of forest products The Quebec provincial government pro-wood procurement policy promotes the use of wood as the green building material of choice in public buildings The British Columbia provincial government approved a new Building Code requirements (January 2009) according to which the maximum height for wood-frame residential construction increased from four to six storeys. The Leadership in Energy and Environmental Design (LEED) Green Building Rating System is a third-party certification program, which originates from USA, has been operating in Canada since 2004.
United States	Many local and state governments have procurement policies on tropical wood. State and local governments have been actively introducing legislation, incentives and programs to promote green building. LEED (Leadership in Energy and Environmental Design), a green building certification system developed by the US Green Building Council has grown in popularity and several city, state and federal governments are pursing LEED certification.

Country	Development and status
China	The Chinese Government issued a government procurement policy related to timber products in October 2006, which is mainly aimed at environmentally sound production of timber products. The policy has been implemented since then.
Japan	Law concerning the Promotion of Eco-friendly Goods and Services by the State and Other Entities (2001) was complemented with an explanatory policy document with listing of products concerned (Designated procurement items). Guideline for verification on Legality and Sustainability of Wood and Wood Products was published by the Forest Agency (February 2006) Government Procurement Policy for Global Sustainable Forest Management took effect 1st April 2006 through the amendments of the Basic Policy on Promoting Green Purchasing. A Council for Tackling the Illegal Logging Issue was established by the Japanese Federation of Wood Industries Association (JFWIA) in May 2006 as part of the Forestry Agency's Project to Promote a Comprehensive Response to Illegal Logging.
New Zealand	Government sustainable procurement policy was issued 1 July 2001. Policy Guide for Public Purchasers was published by the Ministry of Economic Development in July 2002 which identified timber procurement from legal and sustainably managed sources as policy objective. Timber and Timber Products Procurement Policy Guidelines were issued in March 2004. An updated version of the Timber and Wood Products Procurement Policy was announced in December 2006. A review on the feasibility of making sustainable timber a mandatory provision of the policy in 2008.
Brazil	Development and implementation of Public Timber Procurement Policies in Brazil are at initial stages. An initiative Rede Amigos da Amazônia, coordinated by Escola de Administração de Empresas de São Paulo of Fundação Getúlio Vargas, has been joined by some state and municipal governments focusing on eliminating the consumption of products from illegal logging. An initiative "Rede Amigos da Amazônia" at a government state level and municipal level is focusing on eliminating the consumption of illegal logging. São Paulo State issued the decree (nr 5304) and established the Cadmadeira register (June 2008) to guide the actions of the state government on the implementation of its public procurement policy. Only registered timber suppliers are allowed to participate as bidders for government construction buildings and civil works (July 2009). A voluntary Agreement for Legal and Sustainable Timber (July 2008) was signed by some entrepreneur associations, public agencies and representatives of civil society.
Mexico	The law on Acquisition, Leasings and Services for the Public Sector includes public timber procurement regulation. The Official Federal Diary (5 September 2007) states the requirement of third-party certification of wood and wood products (including furniture and office supplies) in public procurement. A circular (The Official Federal Diary 31 September 2007) includes an outline for the sustainability aspects in public procurement decision making on wood and wood products.

Source: National policy documents, country responses.

Appendix 3 Timber-legality-verification service providers

Organization	Services	Coverage	Certificate	Type of organization	Geographic area	Source
Tropical Forest Foundation	Support to RIL and certification	Standards for legality and RIL Verification of compliance Training	Legal verified label RIL verified	Non-profit	Indonesia, Congo Basin, Brazil	www.tropicalforestfoundation.org
SGS	Timber Legality and Traceability Verification (TLTV) Forest certification	Legality verified (origin, Chain of custody) Legality of production (broad legal compliance) Forest certification	SGS TLTV	Commercial	Global	www.forestry.sgs.com
Certisource	Legality verification Support to sourcing	Verified legal (according to GFTN Guidelines)		Commercial		www.certisource.net
Eurocertification-BVQI	Trade facilitation Verification of legal origin and logging	Origin and legality of timber (OLB)	OLB certificate	Commercial	Global, francophone Africa	www.certification.bureauveritas.fr
Global Forestry Services Inc. (GFS)	Legal verification service Wood tracking program	Action plans Standard of certification of legal origin Forestry Support Program (phased certification)		Commercial	Collaboration with SmartWood	www.gfsinc.biz
Rainforest Alliance Smatwood	Certification services (FSC)	Smart step phased FSC certification with Verified Legal Origin (VLO) and Verified Legal Compliance (VLC)		Commercial/ non-profit	Global	www.rainforest-alliance.org/forestry.cfm.id=smart-step
GFTN	Phased certification (FSC) process and trade networks	Certification action plans Guidelines, training and communication services		Non-profit	30 producing and consuming countries	www.gftn.panda.org.
Forest Trust	Support to buyers in sourcing and suppliers in achieving FSC certification	Wood control systems to prevent illegal products in supply chains Certification action plans (phased approach) Training		Non-profit	Cameroon, Congo, Gabon, Indonesia, Laos, Malaysia, Vietnam,	www.tropicalforesttrust.com

Appendix 4 Elements of selected publicly available procurement policies of private corporations referring to wood products

Corporate sector	Construction	Forestry	Furnishing	Retailing	Total
Number of companies in the group	4	9	2	9	24
Policy element					
Knowledge of the origin of product	3	9	1	5	18
Accuracy and credibility of information	4	9	2	8	23
Legality of production	3	9	2	5	19
Sustainability of forest management	4	8	2	8	22
Protection of special places (incl. sensitive ecosystems)	-	7	2	3	12
Climate change	-	2	-	1	3
Appropriate controls of environmental protection	-	4	-	2	6
Appropriate use of recycled fiber	1	-	1	5	7
Appropriate use of other resources	-	2	1	4	7
Addressing needs of local communities and indigenous peoples	-	7	-	3	10

Source: Elaborated based on WRI/WBCSD (2009).

The following companies are included in the analysis:

April, Balfour Beatty Corporation, B&Q, Carrefour, Countryside Properties, DLH Group, FinnForest, Hubert, IKEA, Jewson (Saint Gobain). Lowes, Marks & Spencer, Metsäliitto, Mondi, Nippon Paper Group, Oji Paper Group, RONA, Skanska, Stora Enso, The Home Depot, and Wates

Appendix 5 Forest management units and timber production in Cameroon

FMU/Type	FMUs	Duration	FMU size		Area allocated	Forest Management Plans			Harvesting operating costs	Estimated annual production	Share of production
	Number	Years	Maximum 1000 ha	Average 1000 ha	1000 ha	Approved number	1000 ha	Type	Cost / US$ha	USD/m³	1,000 m³	%
Forest concession	103	15	200	59.0	6,074.0	65	4,207.9	Comprehensive	0.71	35.5	1,700	65.4
Municipal forests	6	15	N.a	23.0	141.0	4[2]	92.0	Comprehensive	..	..	210	8.1
Community forests	117	25	5	3.6	632.3	N.a	N.a	Simple	3.24	27.0	260	10.0
Other[1]	N.a	1	N.a	N.a	N.a	N.a	N.a	N.a	N.a	N.a	430	16.5
Total	226				6,647.2	69					2,540	100.0

1 Sales of standing volume, personal exploitation permits, timber exploitation permits, special products exploitation permits, fuelwood exploitation permits.
2 Four in production, two more have completed forest management plan.

Appendix 6 EU imports of wood products derived from sawlogs and veneer logs, 2007

Countries	From tropical countries	From mixed zones [1]	Sub-total	Total imports from outside EU	Share of tropical and mixed zones of total outside imports
	million m^3 rwe				%
Germany	0.9	1.8	2.7	7.0	38.6
France	1.7	1.5	3.2	4.9	65.3
United Kingdom	1.9	3.9	5.8	9.4	61.7
Netherlands	1.3	1.2	2.5	4.1	61.0
Belgium	0.9	1.5	2.4	3.4	70.6
Denmark	0.2	0.4	0.6	1.3	46.2
Sub-total TPP countries	6.9	10.3	18.2	30.1	60.5
Italy	1.5	1.0	2.5	6.3	39.7
Spain	0.8	1.6	2.4	3.9	61.5
Others	1.1	2.1	2.2	20.1	10.9
EU-25 total	10.3	15.0	25.3	60.4	41.9

1 Countries with both tropical and non-tropical forests.

Source: Elaborated based on Oliver (2009).

Appendix 7 Global supply of roundwood from certified forests, 2007–2009

Region	Total certified area (million ha)			Estimated certified roundwood production (million m^3)		
	2007	2008	2009	2007	2008	2009
Africa	2.6	3.0	5.6	0.3	0.3	0.6
Latin America	12.1	15.0	14.6	2.1	2.6	2.5
Asia	1.6	2.0	3.0	0.7	0.8	1.3
Sub-total	16.3	20.2	23.2	3.1	3.7	4.1
World total	291.8	319.9	321.2	385.7	416.4	411.3
						%
Africa	0.9	0.9	1.7	0.1	0.1	0.1
Latin America	4.1	6.7	4.5	0.5	0.6	0.6
Asia	0.5	0.6	0.9	0.2	0.2	0.3
Sub-total	5.5	8.2	7.1	0.8	0.9	1.0
World total	100.0	100.0	100.0	100.0	100.0	100.0

Source: UNECE/FAO 2009.

Appendix 8 Export market distribution of ITTO producer countries and China, 2007/2008

Country	Export market distribution (%)								
	EU	Japan	US	Canada	Australia	New Zealand	Sub-total	Others	Total export
Africa	**52.8**	**0.2**	**3.8**	**0.2**	**0.3**	**0.0**	**57.3**	**42.7**	**100**
Cameroon	77.8	0.1	2.6	0.1	0.0	0.0	80.6	19.4	100
Central African Republic	32.7	0.4	0.2	0.0	0.0	0.0	33.2	66.8	100
Congo, Dem. Rep.	69.6	0.3	1.9	0.3	0.0	0.0	72.3	27.7	100
Congo, Rep.	28.9	0.1	4.2	0.6	0.0	0.0	33.9	66.1	100
Côte d'Ivoire	64.3	0.0	6.2	0.3	0.0	0.0	70.8	29.2	100
Gabon	46.4	0.3	0.4	0.1	0.0	0.0	47.1	52.9	100
Ghana	32.7	0.1	10.1	0.4	1.9	0.1	45.1	54.9	100
Liberia	73.0	0.8	9.4	0.0	0.0	0.0	83.2	16.8	100
Nigeria	44.9	0.0	0.2	0.0	3.3	0.0	48.4	51.6	100
Togo	15.7	7.5	1.3	0.0	0.0	0.0	24.5	75.5	100
Asia-Pacific	**21.2**	**15.0**	**24.9**	**2.9**	**3.2**	**0.3**	**67.5**	**32.5**	**100**
Cambodia	0.6	0.0	0.0	0.0	0.1	0.0	0.8	99.2	100
China	23.0	9.7	33.6	4.1	3.1	0.3	73.9	26.1	100
Fiji	0.6	1.0	27.3	1.3	11.4	10.7	52.3	47.7	100
India	41.3	0.5	24.3	3.1	2.2	0.1	71.6	28.4	100
Indonesia	29.3	19.5	16.5	1.1	4.6	0.4	71.3	28.7	100
Malaysia	15.5	20.9	12.4	1.5	4.1	0.3	54.5	45.5	100
Myanmar	1.8	0.4	0.0	0.0	0.2	0.1	2.4	97.6	100
Papua New Guinea	1.0	12.0	0.1	1.3	4.5	0.7	19.7	80.3	100
Philippines	2.7	81.9	10.2	0.2	0.5	0.0	95.6	4.4	100
Thailand	17.2	14.3	15.8	1.5	1.8	0.2	50.8	49.2	100
Vanuatu	0.3	1.6	0.0	0.0	0.3	0.0	2.3	97.7	100
Latin America/ Caribbean	**29.5**	**0.4**	**38.7**	**2.0**	**0.3**	**0.1**	**70.8**	**29.2**	**100**
Bolivia	26.9	0.1	37.8	0.1	0.0	0.0	64.9	35.1	100
Brazil	41.5	0.6	28.5	1.7	0.4	0.0	72.7	27.3	100
Colombia	1.7	0.0	15.4	0.2	0.1	0.0	17.4	82.6	100
Ecuador	20.0	0.1	33.0	0.1	0.4	0.0	53.7	46.3	100
Guatemala	7.5	0.3	34.2	0.7	0.1	0.0	42.8	57.2	100
Guyana	15.5	0.0	13.6	0.1	0.2	3.5	32.8	67.2	100
Honduras	3.6	0.0	27.8	0.0	0.0	0.0	31.4	68.6	100
Mexico	1.4	0.1	88.0	4.8	0.0	0.0	94.2	5.8	100
Panama	12.4	0.0	5.8	1.3	0.0	0.0	19.4	80.6	100
Peru	5.4	0.0	33.0	0.4	0.2	0.4	39.4	60.6	100
Suriname	38.6	0.3	3.5	0.1	0.0	0.0	42.4	57.6	100
Trinidad and Tobago	4.4	0.0	1.5	0.2	0.0	0.0	6.1	93.9	100
Venezuela	3.8	0.1	7.9	3.4	0.1	0.0	15.4	84.6	100
Total ITTO Producers + China	23.8	12.5	25.5	2.6	2.7	0.3	67.4	32.6	100
Total ITTO Producers	24.4	15.0	18.2	1.3	2.4	0.2	61.5	38.5	100

Note: The data includes logs, sawnwood, veneer, plywood, other wood-based panels, joinery products and wood furniture.

Source: COMTRADE database.

INTERNATIONAL TROPICAL TIMBER ORGANIZATION
International Organizations Center, 5th Floor, Pacifico-Yokohama, 1-1-1, Minato-Mirai, Nishi-ku, Yokohama, 220-0012, Japan
Tel 81-45-223-1110 Fax 81-45-223-1111 Email itto@itto.int Web www.itto.int