

Chapter 8

Conserving Tropical Forests: Reforming
the tropical forest products trade
towards sustainable consumption and
production

Chapter 8

Conserving Tropical Forests: Reforming the tropical forest products trade towards sustainable consumption and production

Henry Scheyvens, Federico López-Casero, Enrique Ibarra Gené, Kimihiko Hyakumura

1. Introduction

A fundamental problem of global forest management is that forests are being cleared and degraded at very high rates in many developing countries, even those where the national policy is to retain most of the forested area under forest cover. Global forest loss was estimated at an annual rate of 13 million hectares (ha) from 2000-2005 (FAO 2006) and some of the highest national rates of forest loss are found in the Asia-Pacific region. Indonesia alone lost 1.2 million ha of forest per year during this period (MoFor 2009).

Consumption decisions, sometimes made thousands of kilometres from the forests that are being destroyed, are part of the problem. Whether it is a wooden table, a house constructed with wooden framing, a ream of paper, or a bar of soap made with palm oil, remote consumer decisions send signals to forest and land managers that impact the health of forest ecosystems. When consumer choices for products containing wood materials are not informed or governed by sustainability concerns, the signal to forest managers, traders, manufacturers, house builders, retailers and others who use and handle wood materials is that they can continue with their current practices, no matter how environmentally destructive some of these might be.

Chapter Highlights

Consumption of agricultural and forest products is one of many factors driving global deforestation, one of the major environmental problems of our time. Consumption patterns are associated with the loss of natural forests in the tropics. This chapter explores the relationships between consumption and demand, production, and policy options for SCP and conserving tropic forests.

- Sustainable consumption and production is defined in the context of forest products.
- Voluntary and regulatory actions in consumer economies can support producer countries in their sustainable forest management; these include decisions by end consumers in addition to a policy mix.
- Actions by consumer economies should be coordinated with efforts to assist forest managers in the tropics to improve forest management practices and the security of supply chains to increase supplies of verified legal and certified sustainable timber.
- Unilateral action by some consumer countries to promote the consumption of sustainable wood could result in the movement of unsustainable wood supplies to countries that have not taken action. Research is now required to identify options for promoting sustainable consumption in the “new” wood consumer economies of the Asia-Pacific region.

Forest destruction is driven by many interwoven factors, of which market demand for natural forest resources, such as timber and pulp from plantations of fast growing timber species, and agricultural products, such as palm oil, soya and beef, is one.

Under such market conditions and context, greater short-term economic returns for logging companies can be achieved by harvesting beyond sustainable levels and avoiding the costs of measures to reduce logging impacts. It is also economically logical for logging operations to extract as much timber as quickly as possible in situations where there is political uncertainty or conflict over forest rights allocation, which is often the case in tropical developing countries.¹

Businesses that use wood materials and consumers benefit in the short-term through lower prices, greater volume, and greater diversity of wood species available in the market place, but globally these short-term gains have both immediate and long-term consequences.

Not only is the consumption of many wood products unsustainable, but the loss of forests that it is associated with has serious environmental and social impacts from local to global levels. Forest loss in tropical countries is of particular concern because of their rich biodiversity as well as their contribution to soil conservation and stabilisation of river morphology and hydrology, which are particularly critical ecosystem services in the tropics where rainfall intensity is high. Global forest loss also threatens the wellbeing of up to 90% of the people in developing countries who live in extreme poverty as they depend upon forests for food, medicines and construction materials, for resources that they can process and sell, and as a safety net in times of economic crisis (Scheer et al. 2003). Moreover, deforestation is now acknowledged as the second largest source of anthropogenic greenhouse gas (GHG) emissions and can no longer be ignored in the global effort to mitigate climate change.² Elimination of tropical deforestation might help to buy time for other climate change mitigation measures to take effect.

There is increasing recognition that actions in tropical developing countries to improve forest management need to be supported by actions in countries that import and consume tropical forest products. However, understanding of precisely what actions are likely to be most effective is lacking. It is tempting to draw quick conclusions about what types of policy are needed, but deeper consideration reveals that their implementation may not be so straightforward and that in some cases it could lead to perverse outcomes. For example, applying the concept of reduce, reuse and recycle (the 3Rs) to wood consumption seems to make good sense, but if done uncritically could result in increased consumption of wood substitutes that have heavier environmental footprints. Conducting campaigns to raise public awareness of forest destruction also seems a good idea, but they could be very expensive and getting through to consumers could be challenging given the myriad other messages presented to them by advertisers, campaigners and others (as discussed in chapter 1). Providing credible information on environmental performance at the point of sale would help consumers make more informed decisions, but could be difficult for wood products which sometimes contain materials from more than one forest and may be harvested, processed and sold in different countries, making it challenging to trace wood materials back to the forest from which they originated. Paying for the ecosystem services provided by forests is another option, but motivating individuals or governments to pay for services that they previously received free of charge could prove challenging. A strong policy measure would be to ban the import of wood materials from unsustainable forestry operations, but if not designed with sufficient care this could lead to trade disputes and difficulties for importers to distinguish between sustainable and unsustainable sources.

The forest products sector has been grappling with these issues for several decades. Various instruments and strategies have been devised that hold some promise for contributing to reforming the trade and consumption of tropical forest products. They mostly take as a basic assumption that their strategies need to bridge sustainable consumption and production (SCP) by combining measures in both consumer and producer countries. Merely increasing demand for sustainable forest products does not mean that suppliers can provide such products, and this is a particularly difficult problem to overcome in tropical countries where forest management practices are often well below sustainability requirements.³

This chapter focuses on consumption in developed countries (consumer countries) of forest products sourced from tropical developing countries (producer countries). The objective is to extract lessons from several instruments and initiatives that IGES is researching by assessing their designs and impacts. These are forest certification, public procurement policies, and regulations to curb the import of illegal wood. Private sector procurement policies and consumer campaigns have not been a major focus of IGES research on forest conservation, but we use Japan to illustrate some positive initiatives in these areas, and also the challenges that must be faced to achieve significant impact.

This paper begins with an attempt to conceptualise what SCP of forest products means, then reviews each policy instrument/initiative, and concludes with lessons from the review and identifies further areas for research.

2. What is sustainable consumption of forest products?

Sustainable consumption is defined in the introduction of this White Paper as “the use of services and related products which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life-cycle so as not to jeopardize the needs of future generations.” The concept of sustainable production is well advanced in the forestry sector, but the concept of sustainable consumption has received less attention. Drawing on the definition above, questions that need to be answered before we embark on a review of policy instruments and initiatives are: How do we define sustainable consumption of forest products? Who are the consumers?

2.1 Proposal for a definition of sustainable consumption of forest products

Sustainable consumption of forest products may be defined as:

Consumption of products from forestry operations that are managed according to the principles of sustainable forest management to achieve desirable environmental, social and economic outcomes; forestry operations that comply with all relevant laws; and consumption that is informed by the environmental impacts of forest products and their substitutes throughout their life-cycles, so as not to jeopardize the needs of future generations.

Criterion 1: Consumption of forest products from forests managed according to broad sustainable forest management principles to ensure desirable environmental, social and economic outcomes

Minimising the use of natural resources, as a criterion for sustainable consumption, could be interpreted as implying that the consumption of forest products should be reduced, and, indeed, some environmental non-governmental organisations (NGOs) have been

calling for such reductions. However, life-cycle analysis suggests that products from well-managed forests might have lower environmental footprints than their substitutes, such as steel and aluminium (Table 8.1), as the annual growth increment is a renewable resource, although this is an area that requires deeper research (Puettmann and Wilson 2005). Therefore, rather than viewing sustainable consumption of forest products solely in terms of minimising their use, the aim should also be to ensure that forest products are from well-managed forests. A nuanced interpretation of sustainable consumption for forest products would promote initiatives to minimise the consumption of products from poorly-managed forests and to increase their consumption from well-managed forests when they provide a more environmentally-friendly alternative to their substitutes. Reuse and recycling of wood products should also be promoted to achieve sustainable consumption, although these practices have not been studied in detail by the IGES Forest Conservation Project and are thus not covered in this chapter.

Table 8.1 Process energy requirements (PER) for some common building materials

Material	Embodied energy (MJ/kg)
Air dried sawn hardwood	0.5
Kiln dried sawn hardwood	2.0
Kiln dried sawn softwood	3.4
Particleboard	8.0
Plywood	10.4
Glue-laminated timber	11.0
Laminated veneer timber	11.0
Medium density fibreboard	11.3
Glass	12.7
Mild steel	34.0
Galvanised mild steel	38.0
Zinc	51.0
Acrylic paint	61.5
PVC	80.0
Plastics (general)	90.0
Copper	100.0
Aluminium	170.0

Source: Lawson (1996)

The introduction to this White Paper also explains that sustainable consumption, by definition, should lead to sustainable production, as someone concerned with sustainable consumption would not willingly consume an item that was produced unsustainably. What then is the sustainable production of forest products?

Forests provide both wood and non-wood products and a basic definition of sustainable production is that these should be extracted in volumes and rates that allow sufficient time for their regeneration. This notion of sustainable production is deeply imbedded in forestry theory and has its roots in the concept of sustained-yield management, which can be defined as “the scientific production of timber, based on the regulated management (including forest regeneration and the monitoring of stocks and their growth), of even-aged cohorts of trees” (Burton et al. 2003, 9) to provide a sustainable flow of fibre. The concept

was “exported” from Europe to the colonies, where it was elaborated for natural tropical forests by applying the practice of selective felling, ostensibly taking no more than the mean annual increment of tree growth. In natural production forest management the estimated maximum sustainable timber yield is often referred to as the annual allowable cut.

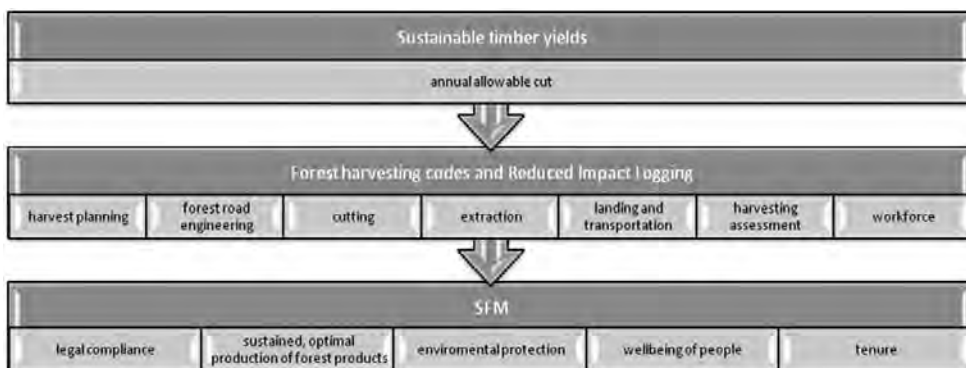
A number of studies from the 1950s onwards observed that as more powerful machinery is used in mechanised harvesting operations in tropical forests, the damage to soils and residual vegetation rises proportionally (Dykstra 2002). The understanding that minimising environmental impacts of timber harvesting is required for sustainable yields led to the publication of the *Model Code of Forest Harvesting Practice* by the Food and Agriculture Organisation of the United Nations (FAO) in 1996.⁴ Another tool, the concept of reduced impact logging (RIL) as a systematic approach to planning, implementing, monitoring and evaluating forest harvesting, evolved over several decades and is strongly promoted by the FAO, the International Tropical Timber Organisation (ITTO) and others (*ibid*).

The concept of sustainable forest management (SFM) broadened the approach to forestry beyond sustainable yields and RIL to include a wide range of social issues (Figure 8.1). In the 1970s and 1980s, activists championing the rights of forest-dependent communities pointed out that forestry operations in tropical developing countries were undermining the livelihood base of these communities as well as denying the practice of the indigenous customary institutions for forest management and use. Conflicts between logging companies and indigenous peoples drew international attention.

The United Nations Conference on Environment and Development (UNCED, also known as the “Earth Summit”) in 1992 provided further momentum for the SFM concept. While the Forest Principles it produced are non-legally binding, they position forestry within the broader objective of sustainable development by including a host of issues beyond yields and environmental impacts, such as the need for national forest policies to “recognise and duly support the identity, culture and the rights of indigenous people, their communities and other communities and forest dwellers” (UNCED 1992).⁵ There is no internationally agreed definition of SFM, but the following provides an illustration of the broad scope of the SFM concept:

[SFM is] stewardship and use of forests and forest lands in such a way, and at a rate, that maintains their productivity, regeneration capacity, vitality and their potential to fulfil now and in the future, relevant ecological, economic, and social functions, at local, national, and global levels, and that does not cause damage to other ecosystem (Ministerial Conference on the Protection of Forests in Europe 1993).

Figure 8.1 From sustainable timber yields to SFM



Source: Authors

The SFM concept builds on the experience that unless forest-dependent communities (indigenous peoples and migrants) feel that their rights and needs are reflected in formal forest tenure and management frameworks, there will be conflict between these groups, loggers, forest police and others, which makes forest management over the long term very difficult.⁶ For consumption of forest products to be considered sustainable, it is not enough that they are sourced from forests where the current rate of harvesting does not exceed the rate of regeneration. Rather, sustainable consumption occurs when forest products are sourced from forests that are managed according to broad SFM principles to ensure desirable environmental, social and economic outcomes. This perspective is in line with the broader definition of sustainable consumption used by this White Paper which requires that the use of services and products should “bring a better quality of life.” The concept of SFM requires that consumption should not only provide for a better quality of life of the consumer, but for all groups that are impacted by forestry operations, including forestry workers and forest-dependent communities.

Criterion 2: Consumption of forest products from legal forest operations

Interpreting the concept of sustainable consumption for the forest products sector requires consideration of the issue of legality. Although product legality is not mentioned in the definition of sustainable consumption used in this White Paper, it cannot be ignored in the forest products sector. Illegal forest operations, i.e., logging without a permit, are thought to be widespread in many developing countries with large forest cover, to the extent that the volumes of wood extracted illegally across some countries are believed to exceed that of their legal operations (World Bank 2006). Because illegal logging does not enter into official records, it is not possible to provide precise estimates of the volume of illegal timber that enters consumer countries. A general impression is provided by Seneca Creek Associates/Wood Resources International (2004) who suggested that as much as 23% of global plywood exports are “suspicious” and that up to 17% of roundwood on the international market could have been harvested illegally.

The concern over illegal logging is due not only to the volumes of timber involved, but also because of its wide ranging detrimental impacts. At its worst, illegal logging and the consequent trade in illegal timber may be associated with money laundering, drug trafficking, and corruption in the public sector (FAO 2006). A recent study conducted by the International Criminal Police Organisation (INTERPOL) on global illegal logging entitled “*Project Chainsaw*” concluded:

The work done to date on Project Chainsaw largely confirms the widely held belief that illegal logging and timber trafficking is, and continues to be, a significant global criminal problem, with links to other criminal problems, including use of violence, murder, corruption, money laundering and tax evasion. The project has also shown links to the financing of armed conflict (Peter Younger, Interpol).⁷

Based on these observations, consumption of forest products clearly cannot be considered sustainable if they are sourced from illegal forest operations. That a forest product is legal, however, does not guarantee that it is sustainable—forest products can be sourced legally from authorised conversion of forests to other land uses, and there may be some cases where forest laws are inadequate to ensure sustainable timber operations—although better legal compliance would likely move many forest operations in Asia-Pacific tropical countries closer towards sustainability.

Criterion 3: Consumption of forest products informed by life-cycle analysis, so as not to jeopardise the needs of future generations

The definition of sustainable consumption used in this White Paper makes an important statement about the need to consider the life-cycle of products, which has not received much attention in the global discourse on forests. This is to some degree understandable as improving forest management in tropical developing countries has proved difficult enough, without taking on the additional challenge of estimating the environmental impacts of processes associated with forest products throughout their life-cycle: harvesting, transportation, processing, use, recycling and disposal. However, the urgent need to move towards low-carbon societies now requires this analysis, which could be very instructive for identifying new and more effective policies. For example, little policy attention has been directed to the disposal of wood, perhaps because it is biodegradable, yet national volumes of waste wood can be considerable and there could be significant environmental benefits for making use of this wood. For example, it is estimated that 10 million tonnes of waste wood is produced each year in the UK, most of which is landfilled, and the Department for Environment, Food and Rural Affairs (DEFRA) (2007) suggests that 2,600 GWh of electricity could be generated from two million tonnes of this waste, saving 1.15 million tonnes of CO₂ emissions.

2.2 Who are the consumers?

Forest products take many forms and are used by a variety of groups for many purposes, requiring that policies to achieve sustainable consumption are well-targeted. That forest products are consumed as a final product in the form of furniture, paper, etc., is most obvious, but wood can also be part of a product which is viewed more as an investment than as an item of consumption, for example, housing. Wood products are also used in processes to create something else, which is then consumed or used, e.g., wood used as framing for the pouring of concrete in construction and later discarded. Consumers can be individuals as well as groups—civil society organisations, businesses, etc. There are also the “first” consumers of wood products, such as when a house is built using new wood, as well as second- and third-tier consumers that emerge when wood products are recycled or resold. Adding further complexity, the number of actors that handle wood products between the time that wood materials leave the forest and end up in the hands of consumers is considerable. Only some are consumers, yet all can be targeted by policies to promote sustainable consumption.

For the purposes of the review in this chapter, we distinguish between private individuals who consume for their own satisfaction; businesses, trade associations and other groups; public consumers (ministries, local governments, schools, etc.); and intermediaries (importers, processors, retailers, etc.).

3. Forest certification: Linking sustainable consumption with sustainable production

For the “hopeful” hypothesis that sustainable consumption will drive sustainable production to be realised, consumers must want to purchase sustainable products and be provided with information that helps them identify these products (Unless, of course, market entry for unsustainable products is stopped through regulatory measures, such as choice editing.) Eco-labelling is one of many ways of providing product information

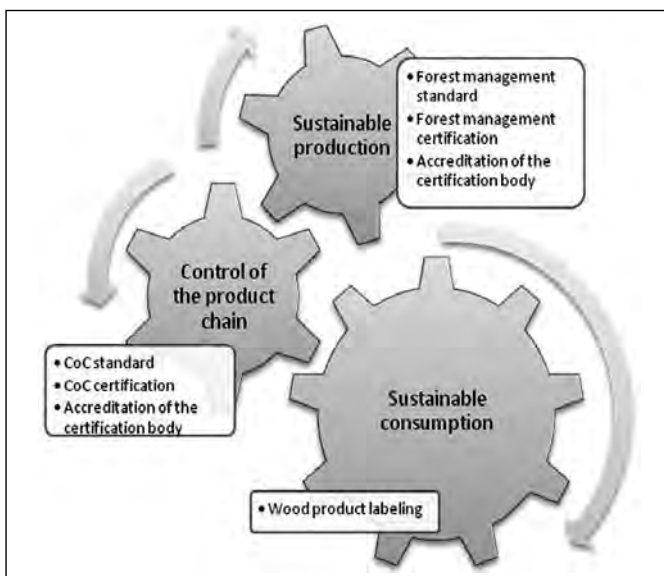
For the “hopeful” hypothesis that sustainable consumption will drive sustainable production to be realised, consumers must want to purchase sustainable products and be provided with information that helps them identify these products – unless market entry for unsustainable products is stopped through regulatory measures, such as choice editing.

on environmental performance and has the advantage of having the information affixed to the products. Eco-labelling can include first, second and third party claims of assurance that the product is sustainable, and in the forest products sector it is the latter that are considered most credible.

Third party sustainability claims for forest products are made through forest certification, which is an example of an instrument that combines measures in both producer and consumer countries to achieve sustainable consumption and production. Forest certification is a voluntary, market-based instrument to identify products with wood materials sourced from forests managed according to a set of minimum sustainability standards.

It is a complex instrument consisting of two distinct sets of certification processes, in addition to product labelling (see Figure 8.2). Both forest management and chain of custody (CoC) are certified against standards by accredited certification bodies. CoC certification is required to ensure that no uncontrolled mixing of wood materials takes place after harvesting. If the forest management or CoC audit is successful, the certification body issues a certificate that enables the holder to use the scheme's logos on its product.

Figure 8.2 Elements of forest certification



Source: Authors

Forest certification is a unique instrument with a number of strengths (see Table 8.2). Standards for sustainable forest management that include environmental, social, and economic criteria are used and accreditation ensures that the bodies responsible for the certification have the required expertise and have no vested interest in the forest or CoC they are auditing. The certification process involves not only document reviews, but also field observations of forest management and of critical control points (i.e., points where uncontrolled mixing could occur) within the product chain. Good forest certification schemes employ multi-stakeholder processes in setting standards and include processes for adequate public consultation in the certification decision.

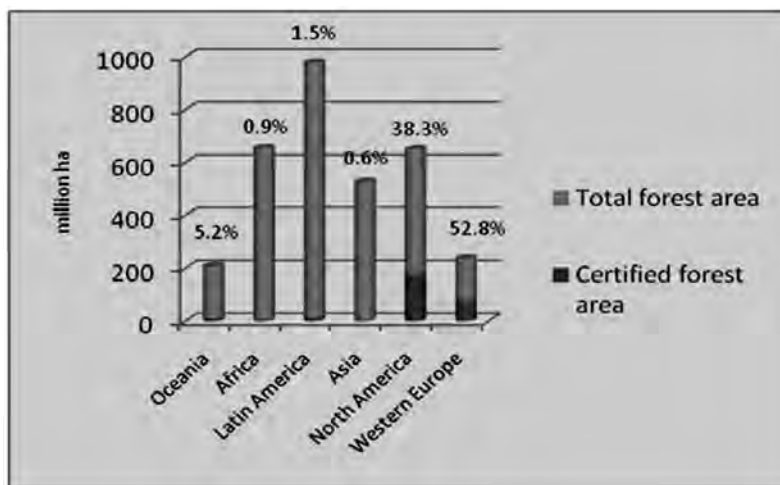
Table 8.2 Potential benefits for actors using forest certification

Actors		Benefits
Forest managers	Companies	Demonstrating expertise in forest management; market access
	Community and indigenous people's groups	Securing land tenure; local employment opportunities; forest management with reduced environmental impacts
Manufacturers and suppliers		Green credentials; product differentiation; improved product chain management
Producer country governments		Encouraging legal compliance
Consumers		Assurance that wood materials are from well-managed forests

Source: Authors

Despite these strengths, on the consumption side, forest certification has achieved limited acceptance by private and public sector consumers, and intermediaries, while on the production side, forest certification has proved difficult to implement in developing tropical countries. By May 2008, 320 million ha of forest area had been certified worldwide, accounting for 8% of total forest cover and an estimated 26.2% of global roundwood production, and in 2009, the number of CoC certifications issued worldwide leapt by 41% to reach 17,800 (UNECE/FAO 2009). However, while 53% and 38% of total forest area in Western Europe and North America, respectively, is certified, Africa, Asia and Latin America each only have about 1% of their forests certified (*ibid*, Figure 8.3). The obstacles to the certification of natural tropical forests are many and include: (i) weak forest policy formulation and forest law enforcement which means that current forestry operations are likely to be well below certification standards; (ii) inadequate treatment of customary rights in forest laws; and (iii) disputes over forest tenure.

The assumption underlying the forest certification concept that consumers would be prepared to pay price premiums for products certified as sustainable, and, in turn, that the higher market prices for certified forest products would encourage forest managers to improve their forest management and have it certified, has largely not been met. Market signals in the form of either improved access or premiums for certified products are mostly too weak. Market surveys have reported premiums in some European markets, especially for hardwoods, but there is little indication of premiums from Asian markets. A market survey on demand for independently certified and verified legal products in Belgium, Denmark, France, Germany, Italy, Netherlands, Spain and the UK found that premiums mostly only exist in parts of the hardwood sector and to some extent in the specialty softwood sector, with the highest premiums of 20% to 50% being asked for Forest Stewardship Council (FSC) certified tropical sawn hardwood from Africa and Brazil (UNECE/FAO 2009). A survey in Japan of 33 companies and three wood-related associations found little commitment to purchasing certified timber.⁹

Figure 8.3 Certified forest area in different regions

Source: UNECE/FAO 2009

While certification has not lived up to early expectations, there are some positive signals from the consumption side that new life may be injected into forest certification, including:

- Public procurement policies, discussed below, in a number of countries now use forest certification as a means of verifying the legality and sustainability of wood products.
- Increasingly, private businesses are requesting their suppliers to provide evidence of legality and sustainability (although further research is required to estimate how much of market share this accounts for on a county-by-county basis). For example, in January 2009, Bunnings, the largest “do it yourself” (DIY) chain in Australia, with over 100 outlets, and the largest timber importer, established a policy requiring verification of legal origin for decking.⁹
- Demand for certified wood products may further increase as “green building” is becoming part of corporate responsibility programmes and governments are promoting green buildings in line with their energy efficiency targets (UNECE/FAO 2009). In Japan, an initiative is underway to design “Life Cycle Carbon Minus” (LCCM) houses with units to be built and assessed for carbon reductions in 2011 (ITTO 2009a). Certified wood could be targeted as a building material.
- The growing international concern over GHG emissions from deforestation and forest degradation and the possibility of a global deal that would reward developing countries for reducing these emissions could provide further recognition of the value of forest certification as a tool to guide and to audit natural production forest management.
- The revision to the Lacey Act, discussed below, which makes it a criminal offense in the U.S. to import and handle plant materials associated with illegalities in the country of origin, could provide further impetus for the uptake of forest certification.

Some encouraging initiatives and progress can also be found on the production side:

- The number of national and international certification schemes operating in the region is growing¹⁰ and some strengthening of their standards and processes can be observed.¹¹
- New schemes to verify legality involving standards and third party audits have recently been developed or are under development. For example, *Société Générale*

de Surveillance (SGS) offers a timber legality and traceability verification service, which it recently introduced into Papua New Guinea because of requests from buyers, particularly from the Australian market.¹²

- Stepwise or phased approaches have been developed to increase the accessibility of certification to forest managers. Under these, timber producers commit to specific performance targets within set time frames and are rewarded through more secure market access.¹³
- The area of certified forests in the region is growing, albeit slowly, with a doubling of certified forest cover from 2007-2009 (UNECE/FAO 2009).

Returning to the consumption side, there are now a number of forest certification schemes, some of which are national in scope and two of which have global application, reflecting the fact that these are voluntary initiatives, rather than the results of a single intergovernmental process. Concerns have been raised that consumers may be confused by the various labels of these schemes when making product choices, yet there appears no simple solution as the schemes are effectively competing with each other in the market place. Means of harmonising certification schemes have been proposed to ensure they all meet minimum standards and some progress towards this end has been made, but not all schemes agree with this idea.¹⁴

4. Public timber procurement policies for legal and sustainable wood products

One positive measure that consumer countries can take to promote more sustainable consumption is to require the use of legal and sustainable wood products as part of their public procurement policies. Public agencies purchase a variety of wood-based products such as paper and furniture, and wood is also used in public works, such as the construction and refurbishment of buildings. Public procurement can account for a significant volume of the national consumption of wood products, though it is difficult to produce precise estimates.¹⁵

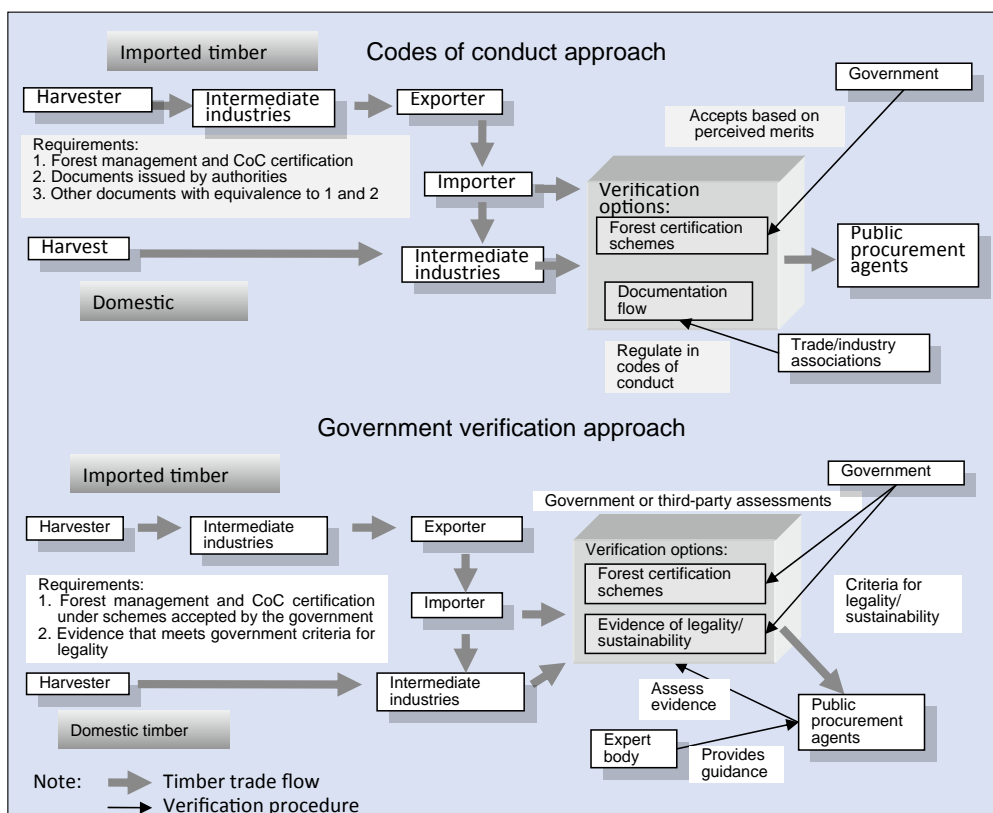
Countries that have developed public timber procurement policies include Japan, the Netherlands, Germany, Denmark, the UK, France, Spain, Belgium, Norway and New Zealand. All of these policies are crafted within broader public purchasing policies favouring environmentally preferable products and—except the first Dutch policy dating back to 1997—all have been introduced within the past 10 years.

Four policies in the Netherlands, France, UK, and Japan were assessed by IGES as part of its research on this topic (Lopez-Casero and Scheyvens 2008). A number of commonalities and differences were observed. All of the policies distinguish between verified legal and certified sustainable timber. All of the policies use forest certification for assurance of both legality and sustainability. Except for the Dutch policy, which from the onset focused on procurement of sustainable timber, the three other policies set the verification of legality as a policy requirement and view sustainability as an additional objective. In March 2007, the UK revised its procurement policy to require verified legal and sustainable timber from 2009, and from 2015, only certified sustainable wood and wood products can be procured by central government agents. Japan and France essentially accept all forest certification schemes as evidence of sustainability, whereas the Netherlands and UK require the assessment of forest certification schemes against sets of process and performance criteria before they are accepted. All policies include alternative modalities to certification schemes for verification of legality/sustainability, which in part is a reflection of the small volume of certified timber in some market sectors.

Despite the similarities of these policies, two fundamentally different approaches can be distinguished (Figure 8.4). For alternative verification modalities, Japan and France rely on measures adopted by their private industry/trade sectors (codes of conduct approach), whereas the Netherlands and the UK give the main responsibility for verification to government procurement agents (government verification approach). The former is less reliable as it depends upon all actors in the supply chain making a written declaration that they are not supplying illegal wood products or materials, and to pass documentation that attests to the product's legality on to the next actor in the chain. While self-regulation in the private sector can be more flexible and less costly than government intervention, there are clearly risks with relying on self-declarations and legal documentation such as timber removal passes, as they generally do not involve any auditing or independent verification.¹⁶

A limitation of procurement policies is that if they are only introduced by a small number of countries, illegal forest products could simply be sold elsewhere. Another risk is that if more fundamental measures are not in place to improve production forest management in developing countries, then the policies will result in a shift towards procurement of products from developed countries with a longer history of forest management and even to wood substitutes. While impacts on the industry in consumer countries and on forest certification schemes have been noted, impacts on forest management are less clear.

Figure 8.4 Two approaches to verification of legality under public procurement policies



Source: Authors

Despite their limitations, public timber procurement policies are important. They can encourage action by the private sector, promote demand for and improvement of existing legal and sustainability verification schemes,¹⁷ and, more generally, raise awareness of the illegal logging issue. For example, Fripp (2005) found that in the UK the government's timber procurement policy had encouraged some companies to create and revise their environmental codes of conduct. Moreover, the UK experience found that if certified wood is required by major customers in the public sector and enough certified raw material is available, suppliers may find it simpler to switch to 100% certified production (Brack 2008; ITTO 2009b).

5. Legality assurance through export licensing: EU Voluntary Partnership Agreements

The EU Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan, adopted by the EU in October 2003, has developed an approach to combat illegal logging and the resultant trade in illegal timber that, like forest certification, bridges sustainable consumption and production.¹⁸ The FLEGT Action Plan sets out a range of measures to increase the capacity of producer countries to control illegal logging, while reducing the trade in illegal timber products between these countries and the EU. These include:

- support for improved governance and capacity building in the forest sector of producer countries;
- development of legality standards through a participatory multi-stakeholder process within individual producer countries;
- establishment of a timber legality assurance and licensing scheme;
- efforts to discourage investments by EU institutions that may encourage illegal logging; and
- support for private sector initiatives aimed at combating the trade in illegally harvested timber and timber products (European Commission 2004).

The principal instruments to implement the Action Plan are bilateral Voluntary Partnership Agreements (VPA) between EU member states and producer countries. VPAs are bilateral legal commitments to trade only in timber which is verified as being produced in compliance with a mutually recognised national standard of legality.¹⁹ The main objectives of the VPAs are to strengthen the ability of producer countries to control their forest sectors and to curb the import of illegal timber products into the EU.

Although the VPA approach focuses on legal compliance, it can be expected to contribute to sustainable consumption of forest products in the EU and sustainable production in producer countries. VPA negotiations and agreements address systemic governance issues which undermine any possibility of sustainable development in the producer country, e.g., corruption in resource allocation, lack of participation in sectoral decision making bodies or dysfunctional judicial arrangements.

Under the VPAs, each partner country implements a timber legality assurance system that contains a definition of legal timber and that guarantees that timber exports to the EU have been legally produced by means of a licensing procedure (European Commission 2005). The issuance of FLEGT licences requires credible evidence that the products in question were produced in compliance with the specified laws of the partner country. Once the timber licensing scheme is established, the EU member states' customs agencies will only allow imports of FLEGT-licensed timber products from FLEGT partner countries. The basic elements of the timber legality assurance schemes are depicted in Figure 8.5.

The intended timber legality assurance schemes have a number of strengths. The multi-stakeholder processes to decide the national legality definitions used in the schemes have potential to win broad stakeholder support for this approach, while independent monitoring, a verification system, and a CoC provide confidence in claims that wood materials are sourced from legal operations. During the process of defining legality standards, shortcomings in the existing legal framework may be identified, for example, gaps in legislation or over-complicated or unfair procedures. In such cases, VPAs could lead to law reforms in supplier countries (EFI 2009). The legality assurance systems also aim to contribute to good forest governance through increased compliance with forest laws, independent auditing, and increased transparency.²⁰

Figure 8.5 Elements of the timber legality assurance schemes under VPAs



Source: Authors

The VPA approach to allowing only licensed timber to be imported from partner countries illustrates the need to develop ways of effectively linking action in consumer countries with action in producer countries. However, as with the other policy instruments discussed in this review, the VPA approach has its limitations. One risk is “circumvention,” whereby unlicensed products originating from a producer country that has signed a VPA enters the EU through a non-signatory country. The trend towards import-process-export that can be observed in China, Viet Nam, Malaysia and elsewhere (UNECE/FAO 2009) makes this a particularly serious risk. The EU is attempting to minimise this risk by developing a regulation that will require all business that put timber from all countries on the EU market for the first time to exercise due diligence in checking the legality of their products (see following section for further explanation).²¹

6. Legislation in consumer countries to prohibit the import of illegal timber

Another regulatory demand-side measure that could make an important contribution to reforming the trade in tropical forest products, and one long called for by many NGOs, is legislation to stop the import of illegal forest products. One recent groundbreaking initiative is the decision of the U.S. to include a broader range of plant and plant materials under the Lacey Act, while the EU is also considering a legislative measure.

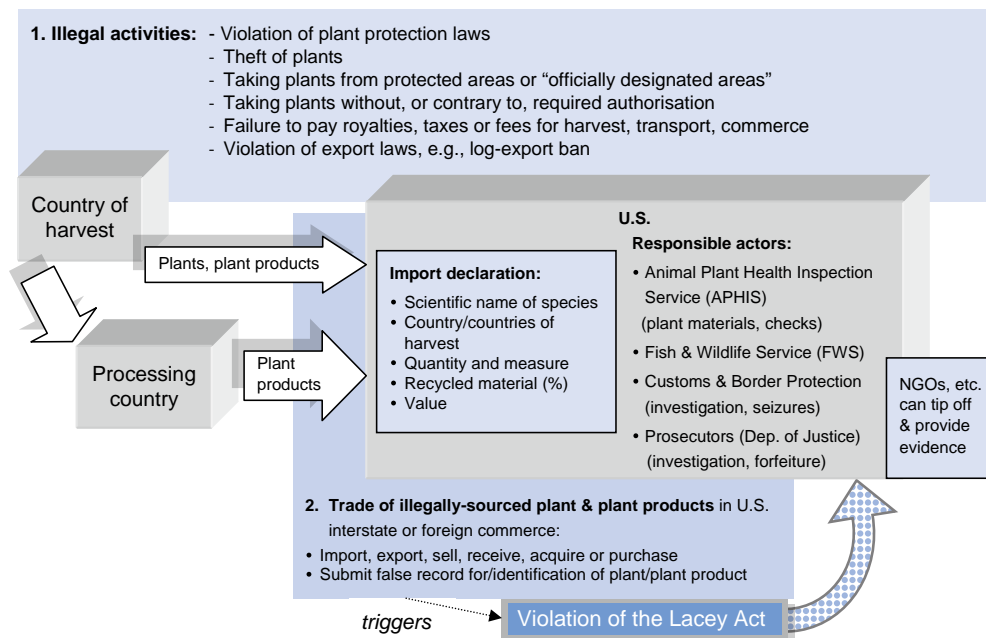
6.1 Amended Lacey Act

Through a recent revision to the Lacey Act, the U.S. has become the first country to prohibit the import, trade and sale of wood and wood products harvested in contravention of the laws of the country of origin. The Lacey Act, enacted in 1900, makes it unlawful to import, export, transport, sell, receive, acquire, or purchase in interstate or foreign commerce fish and wildlife taken in violation of U.S. laws or of any foreign laws. In May 2008, the Farm Bill (Food, Conservation, and Energy Act of 2008) extended the Act to a broader set of plants and plant products (including lumber, furniture and paper) in an effort to combat the trade in illegal timber (Figure 8.6).

The Act applies to products derived from illegal harvesting in the country of origin, including products manufactured in countries other than the country where the illegal harvesting took place. The amendments require U.S. importers to submit a “plant import declaration” with every shipment of plants or plant products. The declaration must state the country of origin/harvest and the species name of all plants contained in the goods, though no document to verify legality is required. The amendments also establish penalties for violation of the Act, including forfeiture of goods and vessels, fines and imprisonment (Gregg and Porges 2008).

A violation of the Act is triggered when a person or enterprise trades illegally sourced wood in U.S. interstate or foreign commerce. Any suspect plants or plant products may be seized and anyone who imports illegally harvested plants or products made from illegally harvested plants, or who exports, transports, sells, receives, acquires or purchases such products in the U.S., may be prosecuted. A violation of the Act can also lead to charges of smuggling or money laundering. Individuals and companies regardless of whether they are aware of illegalities in the sourcing of their wood can face prosecution, though the potential for significant penalties or imprisonment increases with the degree to which someone knows, or should have known, about the illegalities.

U.S. government officers from the Department of Homeland Security’s Customs and Border Patrol (CBP), the Fish and Wildlife Service’s Office of Law Enforcement (OLE), the Department of Justice (DOJ) and the Department of Agriculture’s Animal Plant Health Inspection Service (APHIS) are enforcing the Lacey Act provisions. Trained officers stationed in ports and warehouses regularly inspect timber shipments and prosecutors investigate cases of illegal timber trade, with support from environmental watchdog organizations, which routinely gather and make public information on cases of illegal timber trade. The first timber-related enforcement action under the revised Lacey Act occurred in November 2009 (Environmental Investigation Agency 2010). The U.S. has also signed bilateral agreements with selected consumer countries, such as Indonesia and Peru, that allow for request of information or even U.S. participation in the investigation of suspected shipments in the country of origin.

Figure 8.6 How the Lacey Act seeks to curb illegal forest product imports

Source: Authors

6.2 Proposed EU due diligence regulation

In October 2008, the European Commission proposed draft legislation that aims to put in place a new risk-based approach to tackling the trade in illegal timber by "laying down the obligations of operators who place timber and timber products on the market" (European Commission 2008). Once ratified by the European Parliament and Council of Ministers, the proposed legislation will require operators placing timber or timber products on the EU market for the first time to "exercise due diligence to ascertain to their best ability that the timber and timber products they place on the Community market were legally harvested" (European Commission 2008). The European Commission views the proposed regulation as complementary to the VPAs, as it guarantees access to wood and wood products with FLEGT licences as proof of legality from countries having concluded VPAs with the EU (European Commission 2007).²²

The due diligence system would require operators to (i) provide access to information on wood and wood products placed on the markets, (ii) develop a risk management procedure, and (iii) allow audits to ensure effective application of the due diligence system. The proposed legislation has provisions on monitoring organisations and measures, and leaves the decision on penalties for infringements up to member states. In April 2009, under the first reading of the proposed regulation, the European Parliament adopted with an overwhelming majority a legislative resolution requiring amendments to the proposal, including a prohibition of trade in illegal timber. The amendments would significantly strengthen the draft regulation, but it is uncertain whether the EU Council of Ministers will sanction them. The draft regulation provides a two-year period for implementation to commence after the regulation's passage by the EU Council of Ministers, which seeks to grant member states sufficient time to enact national executing regulations. However, the national legislative processes could be significantly shortened

if the draft EU regulation included further specification and details, which would have the additional advantage of ensuring basic standards for the due diligence systems throughout the EU.

6.3 Comparing the U.S. and EU approaches

A shortcoming of the amended Lacey Act is that the import declaration does not require evidence of legality; therefore, the only time that prosecution for materials originating outside the U.S. is likely is when evidence of illegalities comes to the attention of U.S. Customs or prosecutors. Nevertheless, NGOs are likely to seize the opportunity it offers them to be involved in bringing suspect timber to the attention of the U.S. authorities, and test cases will provide insight into how the amendments can be applied.

In contrast, the proposed EU regulation requires the establishment of due diligence systems that require evidence of legal compliance for wood and wood products brought into the EU, if they are deemed to be from “high risk” sources. In its current draft, the EU legislation is clearly weaker than the revised Lacey Act as it does not prohibit trade in illegal timber and timber products. In addition, no formal process is prescribed for NGOs and other informants to notify authorities of suspect timber shipments. Moreover, as the draft regulation depends on national implementing regulations of EU member states, there could be considerable discrepancies in the effectiveness of the draft legislation from state to state. Enforcement procedures differ between the Lacey Act, which relies on prosecution of suspect cases, and the EU, which would rely on monitoring, with the monitoring frequency determined by member state regulation. The penalties under the Lacey Act appear appropriate and severe enough to deter violations,²³ whereas the EU proposal leaves the regulation of penalties to its member states, which could again cause significant inconsistency, as timber imports could move to the states with the lowest penalties.

Both regulatory initiatives have relative strengths and weaknesses, but most importantly, they send messages from the demand side to governments, forest managers and suppliers of forest products in tropical developing countries that previously did not exist; specifically, that some of the major consumer countries are prepared to take strong action to curb illegal wood imports. Moreover, they could be instrumental in raising consumer awareness of forest management issues in the tropics and influencing consumption choices. In November 2009, Federal agents from the U.S. Fish and Wildlife Service raided the iconic Gibson Guitar factory over concerns that the company had been using illegally harvested wood from Madagascar (Lind 2009), and the impacts of such action on consumer awareness could be substantial.

6.4 Potential for adoption of legislative measures by other consumer countries

The potential for other importer countries to introduce this type of legislative instrument was not reviewed in detail, but it is clear that some countries do not favour regulation to curb illegal forest product imports. Australia seems unlikely to introduce legalisation (Centre for International Economics 2009, 73) and there appears to be no interest in Japan for a regulatory measure, which would benefit Japanese timber producers but harm importers, and does not appear suited to Japan’s non-confrontational approach to foreign policy. New Zealand has also decided against this option, with a 2006 Cabinet Paper concluding that “as New Zealand’s wood products market is very small, and relatively unaffected by the import of illegally logged products, domestic measures on the sale of such products in New Zealand will not have a significant direct effect on illegal logging practices in other countries” (New Zealand Government 2008, 6).

7. Consumer awareness campaigns and private sector procurement policies

In this section we describe actions that can be taken to raise consumer awareness of the need for sustainable consumption of forest products as well as private sector procurement policies. Examples from Japan, where IGES has been working closely with the government and NGOs on wood legality and sustainability issues, are provided. This section is primarily used for illustrative purposes as there is a lack of analysis on the impacts of the initiatives that we describe. Further research on policy options to promote sustainable consumption in Japan, where wood materials are used mostly by the pulp and paper sector and for the construction of wood-frame houses, is clearly important as Japan is the world's third largest wood importer after China and the U.S.

NGO-led initiatives: Fairwood Partners

One NGO-led initiative that is implemented by Friends of the Earth Japan and the Global Environmental Forum, and which IGES supports through analytical and other inputs, is Fairwood Partners. Fairwood Partners promotes the use of "fairwood," which it defines as wood and wood products sourced in a manner that takes into account the conditions of the forest environment and the local communities where the logging is taking place. Fairwood can include repaired and restored wood products, wood products using second-hand and waste materials, verified legal wood, wood from local forests, forests managed by local communities, and wood certified by a reliable third party (Fairwood Partners 2009).

Fairwood Partners provides consulting services to companies in both Japan and producer countries for fairwood supply and procurement. Through its services, home builders Sekisui House Ltd. and Tokyu Homes Corporation established wood procurement policies, as did furniture makers Okamura Corporation, WISE WISE, and G-Project Inc. (*Chikyū no Me* in Japanese). Sekisui House ranks second and Tokyu Homes 13th, in terms of total annual house sales in Japan, so these are significant achievements. More recently, Fairwood Partners has been working with communities in Papua New Guinea who are producing FSC certified timber, assisting their representatives to discuss supply potential with wood users in Japan.

Fairwood Partners also uses a range of media and forums to raise consumer awareness on forest issues. Along with other environmental NGOs, such as the World Wide Fund for Nature Japan, Fairwood Partners has conducted regular seminars on imported wood from high risk countries, bringing suppliers of certified wood from developing tropical countries to these events. At large public environment-related events in Japan, Fairwood Partners has operated a "Fairwood Café," providing a venue for discussion on forest issues as well as providing certified organic coffee in cups made from domestic wood materials. As a tool to assist wood users and consumers in making sustainable purchases, Fairwood Partners has created a wood selection guide that is available on its website.²⁴ The tool's search engine includes tree species and their uses, and production regions and it provides information on transport, environmental impact, and the risk of species extinction. To increase consumer awareness, Fairwood Partners also supported the production and screening of the documentary "Ways of Experiencing Wood," which describes the under-management of planted forests in Japan in the face of cheaper wood imports, and its environmental, social and economic consequences.

Government initiatives

In 2008, Japan's Ministry of Environment conducted an awareness campaign targeting the general public and end users of wood, employing a variety of media, such as posters

and pamphlets. The posters were displayed at major subway stations in the Tokyo area, and posters and pamphlets were used at show home centres. Responding to requests, the Ministry organised over 50 presentations on illegal logging and procurement to companies, consumer groups, public administrations and schools. In 2008 and 2009, the Ministry also sought to raise public awareness on the contribution of illegal logging to forest destruction through four television programmes. Environmental NGOs participated in many of these activities.

Together with the Japan Federation of Wood Industry Associations (JFWIA), the Forestry Agency is conducting a campaign to promote *goho* (legal) wood. *Goho* wood is essentially wood defined as legal using the verification processes of the public procurement policy. The concept of *goho* wood is being promoted to both domestic and international audiences through a website²⁵ and seminars/workshops, though proposals to promote the concept at show home centres was rejected by some industry representatives who felt that any product not promoted as *goho* would be viewed by end users as illegal.

Initiatives of industry and timber trade associations

In one survey of forest product trading companies in Japan, 77% of the 132 respondents stated that they had sold certified forest products in 2004, though only 10% reported a price premium for their certified products (Owari and Sawanobori 2007). Unfortunately, this survey does not indicate whether certified products were targeted by the trading companies, but there are examples of initiatives within industry to move towards the procurement, use and trading of verified sustainable products, two of which are presented in Box 8.1.

Box 8.1 Industry initiatives in Japan

Sekisui House

With support of Fairwood Partners, Sekisui House's wood procurement policy was established as a set of guidelines consisting of 10 principles covering a wide range of issues from legality to biodiversity and the well-being of local residents. Sekisui House categorises timber into four levels: S, A, B, C, with level S timber being the most sustainable, and reported that in 2007, it increased the share of S and A level timber to just under 60% of the total 374,000 m³ it procured (Fairwood Partners 2009b). Sekisui House's wood procurement policy was selected as one of eight "outstanding performance" prize winners for the first "Biodiversity Japan Award" organised by the AEON Environmental Foundation and the Ministry of Environment.

Sumitomo

Sumitomo Forestry Corporation is involved in the management of mountain forests, the trade of roundwood, processed wood products, wood chips, plywood, home equipment, construction materials, and interior products, as well as the construction of houses, apartments and buildings. It is ranked as the largest trader in Japan for wood building materials and the largest company building wooden houses to order. As part of its environmental policy, Sumitomo has established a timber procurement policy which covers procurement of legal and sustainable timber, establishment of traceability in its supply chains, reducing environmental impact throughout the product life-cycle, and stakeholder interaction (Sumitomo Forest Co., Ltd. 2009). Sumitomo has worked towards the certification of its forest holdings and supply chains in Japan and is now using certified wood material for house construction.

Source: Authors

Through their extensive membership, timber trade associations could be influential in encouraging private sector procurement policies for legal and/or sustainable wood. The membership of the Japan Federation of Wood Industry Associations (JFWIA), the umbrella organisation for wood processing and trading associations and members in Japan, for example, includes 47 prefecture-based associations and 17 national associations organised separately by the type of wood related businesses.

In Japan, actions taken by timber trade associations have mostly been a reaction to the public procurement policy and its requirement for legality verification. JFWIA, for example, established a code of conduct to meet the requirements of the public procurement policy in March 2006, and most of its member associations used this to develop their own codes. The Japan Lumber Importers Association, whose member companies represent around 40% of timber importers in Japan, was somewhat more progressive, introducing a code of conduct before Japan established its timber procurement policy.

While government, progressive companies and their associations, and environmental NGOs in Japan have promoted various measures to increase the use of verified legal and sustainable wood products, there is little research on their impacts and cost-effectiveness. Nevertheless, examples of collaboration between government and NGOs, and businesses and NGOs are encouraging, as these relationships have historically been fairly antagonistic. Seminars and workshops are somewhat more conventional approaches that are used in Japan to raise public awareness on wood consumption issues, but newer approaches using film documentaries and posters in highly visible locations are being trialled that could hold considerable promise, but will need to be well funded to be effective.²⁶

8. Discussion and conclusion

Forest destruction is a major global environmental problem in terms of scale and consequences, including irreversible loss of biodiversity and global warming, and with serious social and economic implications, such as increased poverty and vulnerability of millions of poor people. Consumption decisions by individuals, businesses and countries, even when made far from the forests, can contribute to their destruction. The documentary “Ways of Experiencing Wood,” produced with the support of Japanese environmental NGOs, provides the salient message that “we have lost our way of living with wood.”

In this chapter we have reviewed a range of innovative approaches—voluntary sustainability certification schemes, procurement policies, consumer awareness campaigns, and legislation banning the import of illegal timber or requiring checks on legality by importers—that have potential to lead towards a more sustainable tropical forest products trade (Table 8.3). Some of these initiatives are very new and their full impacts on forest management and the production of wood products are as yet unclear. Some positive impacts can be observed, nevertheless. Anecdotal evidence indicates that public procurement policies have led some suppliers in producer countries to tighten up their supply chains, while the increasing demand for wood legality verification from both the private and public sectors has prompted some forest managers to have their forests certified against legality standards.

Table 8.3 Major features of the reviewed instruments

	Type of instrument	Year	Actors responsible for development	Targeted actors	Objective
1. Forest certification	Voluntary	1st global scheme, 1993; many competing schemes thereafter	Environmental and social NGOs, forest industry	Consumers, forest owners & managers, producers and traders	SFM
2. Public procurement policies	Command and control	1st policy, 1997; others thereafter	Central and/or local governments	Directly: government suppliers Indirectly: producers and traders	Use of legal and sustainable wood
3. Export licensing (VPA)	Command and control	2008 (First VPA signed)	EU and selected producer countries; multi-stakeholder processes	Producers and traders	Consumption of legal wood in EU; forest governance
4. Legislative measures	Command and control	2008 (U.S. Lacey Act amended); EU Due Diligence Regulation still draft	U.S. and EU institutions	Directly: traders Indirectly: producers	Restricting import of illegal wood in U.S.

Source: Authors

A recurring message of this chapter is that there needs to be a well coordinated set of actions in producer and consumer countries to increase demand and supply of sustainable forest products, and to stop the supply of unsustainable products. The

There needs to be a well coordinated set of actions in producer and consumer countries to increase demand and supply of sustainable forest products, and to stop the supply of unsustainable products.

combination of a due diligence regulation for traders that place wood products on the EU market with support for the development of timber legality licensing schemes in producer countries under the EU FLEGT Action Plan, provides a strong example. Forest certification also illustrates this need, combining the auditing of forest management plans for sustainability with labelling of products from certified forests, enabling consumers to make more informed choices.

Both the EU Action Plan and forest certification illustrate a key point: that the sustainable consumption of forest products requires good forest governance to provide sustainable products, which is only achieved when all forest stakeholders have the opportunity to decide how forests should be managed and how benefits should be shared.²⁷ This explains why the EU Action Plan is not only interested in ensuring that all exported timber from partner countries is licensed as legal, but that a broad group of stakeholders in each producer country comes to an agreement on exactly how legal wood should be defined. Similarly, forest certification schemes use multi-stakeholder processes to decide how sustainable forest management will be defined and include processes for public input into the certification decision.²⁸

These observations bring us to the definition of sustainable forest product consumption presented in this chapter, which argues that sustainable consumption cannot be achieved

if production systems focus solely on the concept of sustainable timber yields. Rather, to achieve sustainable consumption, forest management plans must reflect the broader array of principles required to achieve sustainable production over the long-term, such as secure and equitable tenure arrangements, and respect for the rights and needs of forest dwelling and forest fringe communities. When these principles are not reflected in forest management, long-term investment in forestry is not attractive because of the stakeholder conflict that invariably arises.

To achieve sustainable consumption, forest management plans must reflect the broader array of principles required to achieve sustainable production over the long-term, such as secure and equitable tenure arrangements, and respect for the rights and needs of forest dwelling and forest fringe communities.

The instruments and initiatives reviewed in this chapter are mutually reinforcing. For example, the U.S. Lacey Act has large potential to raise public awareness of consumption as one driver of forest destruction through high profile investigations: the current investigation of Gibson Guitars is the first. Increased public awareness, in turn, could raise demand for ecolabels on wood products, for which forest certification provides the most credible option.

Nevertheless, the risk remains that action by only some countries to curb the import of illegal timber, and the inherent limitation of forest certification as a voluntary instrument, could merely lead to a shift in the consumption of unsustainable timber from one individual, company or country, to another. This issue is particularly pertinent for China, which is now the world's largest importer and exporter of forest products,²⁹ along with India, Malaysia, Indonesia and several other countries in the Asia-Pacific emerging as major wood consumers (ITTO 2008). Initiatives to reform the trade in forest products have mostly come from outside the region, but the increased consumption of wood products in Asia-Pacific countries means that attention now needs to be directed at generating sustainable consumption within the region. Thus far, most attention towards the "new" consumer countries of the Asia-Pacific region has focused on their roles as importers of raw wood materials for processing and export to final markets in the U.S., EU and Japan (UNECE/FAO 2009). There is much less study of their domestic consumption of wood products.

Another area where research is lacking is life-cycle analysis of wood products to identify effective policies for moving towards low-carbon societies. In Japan, the recycling of wood materials, the use of domestic timber, and the use of timber from the thinning of planted forests is being promoted by the government and environmental NGOs. Life-cycle analysis would contribute to a better understanding of how environmental implications of these policies match up against, for example, using imported timber from certified tropical forests, or using timber substitutes.

This review of policy instruments and initiatives shows that the concept of sustainable consumption for forest products is not well developed and there are clearly a number of issues that require deeper research to provide informed policy prescriptions. Research is needed on:

- the impacts of public procurement policies and legislation to restrict the import of illegal timber on supply chains and forest management;
- the impacts of campaigns to raise awareness on global forest destruction on consumer choices, as well as the relative effectiveness of different awareness raising strategies;
- environmental impacts throughout the life-cycle of forest products and their substitutes; and

- consumption patterns in the “new” consumer countries of the region, particularly China and India.

A further issue that requires close monitoring is the impact of Reducing Emissions from Deforestation and forest Degradation (REDD) on the production and consumption of forest products. REDD is currently being negotiated by Parties to the UNFCCC and looks likely to be part of a future global climate framework.³⁰ It is possible to foresee carbon credits from protected natural forests becoming a new type of forest product to be produced, traded and consumed, and this could lead to a large reduction in the supply of wood products as the main conventional forest yield, which would lead to a considerable increase in the price of wood products. Whether this price signal contributes to sustainable consumption by disincentivising wasteful usage or encourages production from illegal and unsustainable sources will need to be monitored closely.

Notes

1. In Papua New Guinea, for example, the average life of concessions between 1993 and 2000 was just 11 years, far below the legally required 40-year cutting cycle (Forest Trends 2006, 6).
2. CO₂ emissions from deforestation account for about 17% of total global anthropogenic emissions (IPCC 2007) and during the 1990s were equivalent to 15-35% of annual fossil fuel emissions (Houghton 2005).
3. For examples from one tropical country, see Forest Trends (2006).
4. The Code covers harvest planning, forest road engineering, cutting, extraction, landing and transport operations, harvesting assessment, and the harvesting workforce.
5. The SFM concept has evolved further through standards-based approaches to forest management, with the standards consisting of elaborate sets of principles, criteria and indicators. Intergovernmental initiatives to develop criteria and indicators for SFM include the Helsinki Process (39 European countries), the Montreal Process (12 non-European countries in the temperate and boreal zones), and the Tarapoto Process (covering the eight countries in the Amazonian Cooperation Treaty). Other initiatives include ITTO's criteria and indicators for the sustainable management of natural forests and the criteria and indicators for sustainable forest management developed by the Centre for International Forestry Research.
6. Andy White, Coordinator of the Rights and Resources Initiative, has pointed out that in the past 20 years, 30 countries in the tropical regions have been affected by serious conflict in their forested areas, finding that this is often a product of limited human, civil and property rights (presentation at Rights and Resources Initiative side event, ITTC 41st Session, 2006, Yokohama).
7. Presentation at Asia Forest Partnership Dialogue *REDD and Combating Illegal Logging*, May 2009, Bali, Indonesia.
8. The survey was conducted by Friends of the Earth Japan, Global Environmental Forum and IGES under ITTO Project PD 391/06 “Promoting and Creating Market Demand for Certified Tropical Wood and Verified Legal Tropical Wood.”
9. Interview, Bruce Telfer, Manager, Asia/Pacific, SGS Forest Monitoring Services, June 2009. In 2006, Bunnings produced a statement on timber and wood products purchasing that can be accessed at <http://www.bunnings.com.au>.
10. Papua New Guinea, Viet Nam, New Zealand, China, Australia and Japan have FSC national working groups and Papua New Guinea has an FSC endorsed national standard. Two national schemes, the Australian Forestry Standard and the Malaysian Timber Certification Scheme, have mutual recognition under the global Programme for Endorsement of Forest Certification (PEFC). Other national schemes are managed by the Sustainable Green Ecosystem Council (SGEC) in Japan and the Indonesian Ecolabeling Institute in Indonesia. The Association for Southeast Asian Nations (ASEAN) established the Pan-ASEAN Timber Certification Initiative in 2002 and is encouraging its member states to develop national forest certification schemes using the ASEAN Guideline on Phased-approaches to Forest Certification developed by the Initiative. In 2009, the State Forest Administration of China established the *Zhong Lin Tian He* (Beijing) Forest Certification Centre.
11. For example, the Indonesian Ecolabeling Institute progressed from an independent national foundation to a national constituent body, providing for wider stakeholder participation, while the Malaysian Timber Certification Council was reinvented as the Malaysian Timber Certification Scheme in 2009 to achieve PEFC endorsement.
12. Interview, Bruce Telfer, June 2009.
13. An example is the World Wide Fund for Nature's Global Forest and Trade Network which creates and brings together buyer groups and producer groups under a stepwise approach leading to FSC certification.
14. The Programme for Endorsement of Forest Certification, as its title suggests, provides a system of mutual recognition for existing forest certification schemes, but the FSC appears generally opposed to harmonisation with non-FSC schemes.
15. Marron (2003) estimated that government procurement of products and services from private sector suppliers represented 9% of GDP for OECD countries during 1990–1997. Toyne et al. (2002) estimated that in China and the G8 members, public procurement of timber, wood chips, pulp, paper and wooden furniture as a percentage of gross domestic product (GDP) averaged 17.7%, while Simula (2006) estimated that the public sector market could account for 10 to 25% of national forest product consumption. However, all these estimates are extracted from total public sector consumption, which includes substantial expenditure on compensations for employees, such as salaries and pensions.

16. For example, Japan's procurement policy recognises the Forestry Industry Revitalization Agency (BRIK) system to verify legality of forestry product exports from Indonesia. The BRIK verification system uses forest product transportation permits (SKSHH), which are known to be vulnerable to forgery and sale (Casson et al. 2006).
17. Following assessments that were conducted for the UK public procurement policy in 2004, two certification schemes, the PEFC and the Sustainable Forest Initiative, made changes to meet the requirements of the policy.
18. EU member states, some of them major global importers of timber and timber products, and the European Commission had become aware that there was no practical mechanism for identifying and excluding illegal timber from the EU market.
19. After protracted preliminary discussions, negotiations for the first VPAs started at the end of 2006. Negotiations with Ghana were concluded in early September 2008 and with Congo Brazzaville in May 2009, while negotiations with Cameroon are at an advanced stage. In the Asia-Pacific, negotiations are ongoing with Indonesia and Malaysia, while technical FLEGT talks have started with Viet Nam and China. With the Ghana and Congo Brazzaville VPAs concluded, European Commission officials expect that the FLEGT licensing scheme in those countries will require about two years to become operational.
20. Comment by Hugh Speechly, UK Department for International Development, at Asia Forest Partnership "REDD and Illegal Logging Dialogue," Bali, 28-29 May 2009.
21. The effectiveness of the VPA approach would be enhanced by intermediary countries only accepting licensed products from VPA producer countries for further processing and onward export to the EU. To this end, the EU has recently established a FLEGT Technical Working Group with Viet Nam and has also established a Bilateral Coordination Mechanism against illegal logging with China.
22. These will exempt European traders or their suppliers in FLEGT partner countries from further administrative requirements.
23. The penalties range from a civil penalty fine for "unknowingly" engaging in prohibited conduct to a criminal felony fine of up to \$500,000 and a possible prison term of up to five years in cases of having "knowingly" violated the Lacey Act.
24. <http://www.fairwood.jp/woodguide/>
25. <http://www.goho-wood.jp/>
26. Funding constraints were a factor in deciding at which subway lines the posters created by the Ministry of Environment would be displayed.
27. Governance can be defined as "the process whereby societies or organisations make important decisions, determine whom they involve and how they render account" (Institute on Governance nd).
28. Cashore et al. (2006) notes that forest certification has "encouraged and promoted multi-stakeholder participation in the development of forest policy in what had been historically closed processes between businesses and governments."
29. The State Forestry Administration of China estimated that the annual consumption of forest products will reach 210-230 million m³ roundwood equivalent (RWE) in 2010 and 400-430 million m³ RWE in 2030 (SFA 2005).
30. In the Copenhagen Accord, which the Conference of Parties took "note of" on 18 December 2009 without formally adopting it, major parties for the first time recognise "the crucial role of reducing emission from deforestation and forest degradation and the need to enhance removals of greenhouse gas emission by forests and agree on the need to provide positive incentives to such actions through the immediate establishment of a mechanism including REDD-plus, to enable the mobilization of financial resources from developed countries."

References

- Brack, Duncan. 2008. *Controlling illegal logging using public procurement policy*. Briefing Paper. London: Royal Institute of International Affairs.
- Burton, Philip. G., Christian Messier, Gordon F. Weetman, Ellie E. Prepas, Wiktor L. Adamowicz, and Rebecca Tittler. 2003. The current state of boreal forestry and the drive for change. In *Towards the sustainable management of the boreal forest*, edited by P.G. Burton, C. Messier, D.W. Smith, and W.L. Adamowicz. 1-40. National Research Council of Canada.
- Cashore, Benjamin, Fred Gale, Errol Meidinger, and Deanna Newsom, eds. 2006. *Forest certification in developing and transitioning countries*. Yale School of Forestry and Environmental Studies. Report No. 8.
- Casson, Anne C., Agus Setyarso, Mario Boccucci, and David W. Brown. 2006. *A multi-stakeholder action plan to curb illegal logging and improve law enforcement in Indonesia*. WWF Indonesia, World Bank, DFID-Multi-stakeholder Forestry Program, Jakarta.
- Centre for International Economics. 2009. Regulatory Impact Statement. Proposed new policy on illegally logged timber. Canberra, Sydney. <http://www.thecie.com.au/content/news/Draft%20RIS%2013%20October%202009.pdf> (Accessed 18 October 2009).
- DEFRA (UK Department for Environment, Food and Rural Affairs). 2007. *Waste strategy for England 2007*. <http://www.defra.gov.uk/Environment/waste/strategy/strategy07/documents/waste07-strategy.pdf> (Accessed 20 December 2009).
- Dykstra, D.P. 2002. Reduced impact logging: Concepts and issues. In *Applying reduced impact logging to advance sustainable forest management*, edited by T. Enters, P.D. Durst, G. Applegate, P.C.S. Kho and G. Man. 9-17. RAP Publication 2002/14. Bangkok: FAO.
- Environmental Investigation Agency. 2010. Setting the story straight. The U.S. Lacey Act: Separating myth from reality.
- EFI (European Forest Institute). 2009. What is a Voluntary Partnership Agreement? - The European Union approach. EFI Policy Brief 3.
- European Commission. 2004. FLEGT Briefing Note Number 1: What is FLEGT?
- . 2005. FLEGT Briefing Note Number 9: A timber legality assurance system.
- Fairwood Partners. 2009a. Fairwood brochure. English version.
- . 2009b. Success Story 1 Wood Procurement Guidelines of Sekisui House. <http://www.fairwood.jp/eng/info/success.html> (Accessed 12 December 2009).
- FAO (Food and Agricultural Organisation of the United Nations). 2006. *Global forest resources assessment 2005: Progress towards sustainable forest management*. FAO Forestry Paper 147. Rome: FAO.
- Forest Trends. 2006. *Logging, legality and livelihoods in Papua New Guinea: Synthesis of official assessments of the large-scale logging industry*. Vol. 1. Washington, DC: Forest Trends.
- Fripp, Emily. 2005. *UK Government's timber procurement policy – What have the impacts been?* London: Royal Institute of International Affairs.
- Gregg, Juge and Amelia Porges. 2008. *Amendment to the U.S. Lacey Act: Implications for exporters of Malaysian forest products*. Washington, DC: Forest Trends and Sidley Austin LLP.
- Houghton, R. A. 2005. Tropical deforestation as a source of greenhouse gas emissions. In *Tropical deforestation and climate change*, edited by P. Moutinho and S. Schwartzman. 13-21. Amazon Institute for Environmental Research, Federal University of Pará (UFPA), Brazil.
- Institute on Governance. nd. What is governance? <http://www.iog.ca/page.asp?pageID=3&htmlarea=home> (Accessed 18 December 2009).
- ITTO (International Tropical Timber Organisation). 2008. *Annual review and assessment of the world timber situation 2008*. Yokohama: ITTO.
- . 2009a. *Tropical timber market report 14(19)*, 1-15 Oct. 2009. Yokohama: ITTO.
- . 2009b. *Tropical timber market report 14(10)*, May. 2009. Yokohama: ITTO.
- IPCC (Intergovernmental Panel on Climate Change). 2007. *Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Summary for policy makers*. Bangkok: Intergovernmental Panel on Climate Change.
- Lawson, Bill. 1996. *Building materials, energy and the environment: Towards ecologically sustainable development*. Australian Institute of Architects.
- Lind, J.R. 2009. Feds raid Gibson offices Iconic company investigated for illegal importation of Madagascar wood. Nashville Post. 17 November, online edition. http://www.nashvillepost.com/news/2009/11/17/gibson_guitars_raided_by_fbi (Accessed 2 March 2010).
- Lopez-Casero, Federico and Henry Scheyvens. 2008. *Public procurement policies for legal and sustainable timber: How to strengthen Japan's policy*. Policy Brief No. 7, March 2008. Hayama: Institute for Global Environmental Strategies.

- Marron, Donald. 2003. "Greener public purchasing as an environmental policy instrument." *OECD Journal on Budgeting* 3(4):71-105.
- Ministerial Conference on the Protection of Forests in Europe. 1993. *General guidelines for sustainable management of forests in Europe*. Resolution H1.
- MoFor (Ministry of Forestry, Indonesia). 2009. Indonesia R-Plan. Jakarta: Ministry of Forestry.
- New Zealand Government. 2008. *Illegal logging and associated trade: International and domestic action*. Cabinet paper, <http://www.maf.govt.nz/forestry/illegal-logging/cabinet-paper-illegal-logging-and-associated-trade/cabinet-paper-illegal-logging-and-associated-trade.pdf> (Accessed 18 December 2009).
- Owari, Toshiaki and Yoshihide Sawanobori. 2007. "Analysis of the certified forest products market in Japan." *European journal of wood and wood products* 65(2):113-120.
- Puettmann, Maureen E. and James B. Wilson. 2005. "Life-cycle analysis of wood products: Cradle-to-gate LCI of residential wood building materials." *Wood and Fibre Science* 37, Corrim Special Issue:18-29.
- Scherr, Sara, Andy White, Arvind Khare, Mira Inbar and Augusta Molnar. 2004. *Current status and future potential of markets for ecosystem services of tropical forests: An overview*. Yokohama: International Tropical Timber Council.
- Seneca Creek Associates/Wood Resources International. 2004. *Illegal logging and global wood markets: The competitive impacts on the US wood products industry*. Prepared for the American Forest and Paper Association. Washington, US: Wood Resources International.
- SFA (State Forestry Administration of China). 2005. *China forestry development report 2005*. China State Forestry Administration, Beijing.
- Simula, Markku. 2006. *Public procurement policies for forest products and their impacts*. Rome: FAO.
- Sumitomo Forestry Co., Ltd. 2009. Timber procurement. <http://sfc.jp/english/information/mokuzai> (Accessed 17 December 2009).
- Toyne, Paul, Cliona O'Brien, and Rod Nelson. 2002. *The timber footprint of the G8 and China: Making the case for green procurement by government*. Gland, Switzerland: WWF International.
- UNCED. 1992. Report of the United Nations Conference on Environment and Development. Annex III: Non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests.
- UNECE/FAO. 2009. *Forest products annual market review, 2008-2009*. Geneva and New York: United Nations.
- World Bank. 2006. *Strengthening forest law enforcement and governance: Strengthening a systemic constraint to sustainable development*. Report No. 36638-GLB. Washington, DC: The World Bank.