# 10 Certified forest products markets, 2011-2012

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### Highlights

- By May 2012, the global area of certified forest was 394 million hectares, a 4% increase since May 2011. Almost all the recent growth in certified area is in the CIS subregion, primarily in the Russian Federation. There was also growth in North America.
- Almost 92% of certified forests are in the northern hemisphere. Only 2% of tropical forests are certified.
- The potential supply of industrial roundwood from certified forests was estimated at 469 million m<sup>3</sup> in May 2012, about 27% of global roundwood production.
- The development of green-building codes in Europe, the US and Asia-Pacific continues and will have a significant impact on wood products, certified wood products and the selection of building materials that meet criteria for recycled content, bio-based and indigenous (local) sources.
- Forest-certification programmes continue to respond to and be reviewed within the context of the development of government programmes, including the due diligence systems of the Lacey Act in the United States and the EU Timber Regulation.
- The benefits of certification and other market-based systems for supporting forest sustainability may be improved through more active involvement by the forest products sector, governments, and associated interest groups.
- Certification programmes will face increasing competition and will need to define their niche in the light of the development of targeted standards that address specific market issues such as climate change policies, illegal logging controls and bio-based material assurances.

### 10.1 Introduction

This chapter reviews the market and trade in certified forest products (CFPs) and focuses on how market tools such as certification contribute to identifying and procuring sustainable wood products. It also examines policy-related aspects of certification.

CFPs carry labels demonstrating, in a manner verifiable by third-party independent bodies, that they come from forests that meet a standard of sustainable forest management (SFM). Consumers may find labels on products ranging from paper to furniture, while manufacturers can verify the source through the certification scheme's chain-of-custody (CoC) procedures.

This chapter takes account of national and international, independent third-party certification of forest management by organizations such as the American Tree Farm System (ATFS), the Canadian Standards Association (CSA), the Sustainable Forestry Initiative (SFI) and the Malaysian Timber Certification Council (MTCC). However, the graphs present data primarily for the Forest Stewardship Council (FSC), and the Programme for the Endorsement of Forest Certification (PEFC). Data for national systems that have since been endorsed by PEFC (ATFS, CSA, MTCS, SFI) have been amalgamated into the PEFC data and do not appear separately after the date of endorsement.

The authors' intent is to be impartial and objective. Certification and CFP markets are controversial within the forest sector. Their evaluation remains challenging because broadly organized data collection on CFP production and trade flows does not exist, so the overall picture has to be constructed from fragmented data. Section 4 of this chapter deals with topics such as the impact and awareness of certification, Green Building Initiatives (GBIs) and trade legislation related to certification and illegal logging. This chapter also examines one of the major objectives of certification: to provide a market-driven incentive for forest retention and responsible harvesting of forest resources.

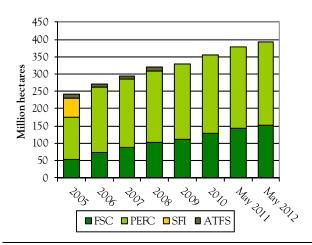
# 10.2 Development of forest certification

### 10.2.1 Overview

By at least one measure, third-party forest certification will be 20 years old in 2013. The Forest Stewardship Council (FSC) was formed in Toronto, Canada, in 1993 and the first FSC certificates were issued that year. The Programme for the Endorsement of Forest Certification (PEFC) was established in 1999 by national organizations from 11 countries and recognized the first national system in 2000. By May 2012, the global area of certified forest, endorsed by FSC and PEFC, amounted to 394 million hectares, up 4% (14.8 million hectares) since May 2011 (graph 10.2.1). There is an estimated overlap of roughly 6.5 million hectares (half of which is in Europe) due to double certification.

### GRAPH 10.2.1

Forest area certified by major certification schemes, 2005-2012



**Notes:** Data cover all FSC- and PEFC-certified forest land together with land certified under the following large national certification systems: Malaysian Timber Certification System (MTCS), American Tree Farm System (ATFS), Sustainable Forest Initiative (SFI) and Canadian Standards Association (CSA). Data for national systems subsequently endorsed by PEFC (MTCS, ATFS, SFI, CSA) are amalgamated into the PEFC data and not shown separately after the date of endorsement. The shown statistics are not adjusted to reflect an estimated overlap of roughly 6.5 million hectares in FSC and PEFC certification.

*Sources:* Individual certification systems, Certification Canada and authors' compilation, 2012.

The world's certified forest area is approaching 10%. At present rates of growth in certified forest area, it would take another 80 years before even half the world's forests became certified (assuming no overall change in the global forest area).

The certified area already exceeds 50% of the regional forest area in some parts of the world, such as in western Europe (table 10.2.1). Canada has certified nearly threequarters of its commercial forest land and some individual States in the United States have exceeded 50% certified managed forest lands. The greatest potential now for the expansion of forest certification lies in the tropical forests, where the certified area represents about 2% of total forest land. It is also the region where forest certification is needed the most.

The proportion of global industrial roundwood supply from certified forests was estimated at 26.5% (469 million m<sup>3</sup>) from May 2011 to May 2012, a slight increase from the previous 12-month period (table 10.2.1).

The FSC and PEFC programmes each saw their certified area increase by 3% between May 2011 and May 2012.

The FSC operates in 80 countries and, by May 2012, its certified forest area totalled 147.4 million hectares, compared with 143 million hectares in May 2011. Most FSC-certified forest lies in the northern hemisphere, mostly in North America, the CIS subregion and Europe.

The PEFC-certified forest area grew from 236 million hectares in May 2011, to 243 million hectares in May

2012. PEFC is the largest forest certification programme, representing slightly less than two-thirds of the globally certified forest area. The majority of PEFC-certified forest lies in North America and Europe (mainly Finland, Norway and Sweden).

Globally, the certified area is not evenly distributed. More than half (51%) is in North America, one quarter (25%) in the EU/EFTA region and 12% in other Europe and CIS countries. The remaining 13% is spread across the southern hemisphere (graph 10.2.2).

TABLE 10.2.1

Potential global and regional supply of roundwood from certified resources, 2010-2012	Potential global an	d regional suppl	v of roundwood from	m certified resources	,2010-2012
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Region	Total forest area (million ha)	Certified forest area (million ha)		Certified forest area (%)		Estimated industrial roundwood from certified forest (million m <sup>3</sup> )		Estimated proportion of total roundwood production from certified forests (%)					
		2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
North America	614.2	199.8	201.0	198.0	32.6	32.7	32.2	194.6	227.5	224.0	10.9	12.8	12.7
Western Europe	168.1	85.0	85.3	95.4	51.2	50.8	56.7	261.7	201.0	224.7	14.6	11.3	12.7
CIS	836.9	29.9	44.3	47.5	3.6	5.3	5.7	5.8	8.5	9.1	0.3	0.5	0.5
Oceania	191.4	11.6	12.3	13.2	5.6	6.4	6.9	2.8	3.5	3.8	0.2	0.2	0.2
Africa	674.4	7.3	7.6	7.3	1.2	1.1	1.1	0.8	0.8	0.8	0.0	0.0	0.0
Latin America	955.6	14.4	16.1	14.7	1.6	1.7	1.5	2.7	3.2	2.9	0.1	0.2	0.2
Asia	592.5	8.6	8.1	9.5	1.5	1.4	1.6	3.4	2.8	3.2	0.2	0.2	0.2
World total	4 033.1	356.7	374.9	385.5	9.0	9.3	9.6	471.8	447.3	468.6	26.4	25.3	26.5

**Notes:** The reference for forest area (excluding "other wooded land") and estimations for the industrial roundwood production from certified forests are based on FAO's *State of the World's Forests 2007 and Global Forest Resource Assessment 2010* data. The annual roundwood production from "forests available for wood supply" is multiplied by the percentage of the regions' certified forest area (i.e. it is assumed that the removals of industrial roundwood from each ha of certified forests are the same as the average for all forest available for wood supply). However, not all certified roundwood is sold with a label. 2012 covers May 2011 - May 2012, and 2010 and 2011 are also from May to May. "World" is not a simple total of the regions. The double certification has been taken into account.

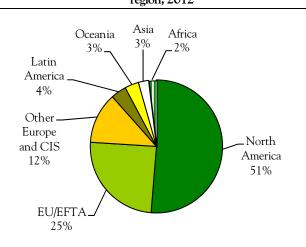
Sources: Individual certification systems, Forest Certification Watch, the Canadian Sustainable Forestry Certification Coalition, 2010; FAO, 2007 and 2010 and authors' compilation. Information valid at May 2012.



Source: UNECE/FAO, 2011

#### GRAPH 10.2.2

Relative shares of total global certified forest area by world region, 2012



**Note:** Overlaps due to double certifications are considered in this graph.

*Sources:* Individual certification systems, country correspondents, Forest Certification Watch, Certification Canada, authors' compilation, 2012.

The ranking of the five countries in the UNECE region with the largest certified forest areas has changed only slightly in recent years. Since 2004, North America has had the largest area of certified forest: Canada has 151.7 million hectares and the United States 49.2 million hectares (graph 10.2.3).

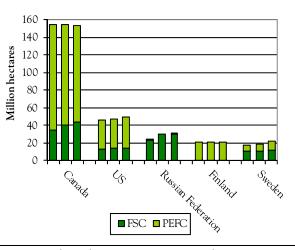
The Russian Federation ranks third within the UNECE region and, in the world, with a certified area that has increased from 29.7 million hectares in May 2011 to 30.5 million hectares in May 2012, an increase of just less than 5%. This area is entirely certified by FSC. The 180,000 hectares certified by PEFC in 2010 are no longer reported in the Russian statistics.

With less than 6% of its vast forest area currently certified, the CIS subregion has high potential for future growth in certification.

Sweden has overtaken Finland to rank fourth in the world. It has the largest absolute area of certified forest of any country in western Europe, with 21 million hectares of its 28.2 million hectares of forest certified. The certified area is growing very quickly, and has increased by 11% on average over each of the past three years.

Five countries' certified forest area, within the UNECE region, 2010-2012

GRAPH 10.2.3



**Notes:** Bars for each country represent years from 2010 to 2012. The shown statistics do not consider overlap from double certification. Information valid as of May 2012.

**Sources:** Individual certification systems, country correspondents, Forest Certification Watch, Canadian Sustainable Forestry, Certification Coalition, authors' compilation, 2012.

#### 10.2.2 Europe subregion

Between May 2011 and May 2012, the area of certified forest in the EU increased by 11%, from 85.3 million hectares to 95.3 million hectares. In other European countries (excluding the Russian Federation), it increased by 16%, from 14.6 million hectares to 17 million hectares. In both cases, this is a similar growth rate to that of the year before. The share of the EU/EFTA region in total globally certified forest area reached exactly one quarter. For the other European countries (excluding the Russian Federation), the share was 4.4%.

In the EU/EFTA region, Sweden is the country with the largest certified area (21 million hectares) (graph 10.2.3), showing stagnation in FSC certification since the last period (May 2011) and a relatively strong increase of PEFC certification of about 35% over the last year. This trend may also increase overlap due to double certification, which had reached an estimated 1.5 million hectares by May 2012.

Finland, where 95% of forests are certified by PEFC, has the second largest certified forest area in the EU/EFTA region at 20 million hectares (Forest.fi, 2012). There has been a modest increase in the area certified, which may be as little as 100,000 hectares, given that new estimates suggest an overlap of 900,000 hectares due to double certification. Belarus, Bosnia and Herzegovina, Serbia and Ukraine lead the ranking within the other European countries.

### 10.2.3 CIS subregion

Only 30.5 million hectares of forest in the Russian Federation (less than 6%) had been certified by May 2012. Currently, the only third-party certified forest management programme operating in that country is the FSC scheme. The Russian Federation represents the second largest area (after Canada) certified in one country by FSC (FSC Russia, 2012). It renewed its membership of PEFC in June 2011 and the first certificate for forest management should have been issued in December 2011 but does not appear yet in the official statistics (PEFC Russia, 2012; Russia Forest News, 2012).

The Belarusian national system of forest certification, which has been approved by PEFC, shows almost the entire forest area (8 million out of 8.6 million hectares) certified by PEFC. FSC certified 3.2 million hectares or about 30% of the forest area, suggesting much overlap due to double certification.

FSC has certified 1.37 million hectares or 14% of Ukraine's forest. This is a positive development for the market, given that Ukraine exports about 40% of its harvested wood (some \$1.8 billion in 2010), with a little over half of this exported to the EU.

A regional FSC forest certification workshop in Batumi, Georgia, in May 2012 included representatives of Azerbaijan, Armenia, Georgia, the Russian Federation, Turkey and Ukraine. One outcome of this meeting was the organization of an initiative group to involve the Caucasian region in the FSC process. In most countries of the Caucasus, forest certification is non-existent (EU Neighbourhood Info Centre, 2012).

### 10.2.4 North America subregion

The rate of growth in forest certification in North America seems to have peaked. Most commercial forests in Canada have already been certified (72%) by at least one third-party standard, i.e. 151.7 million hectares of Canada's 210 million hectares of forest (allowing for an estimated 1.75 million hectares overlap due to double certification). Engaging the remaining forests in a certification programme is increasingly difficult as they are predominantly small forest holdings. More costeffective certification methods and improved technicalassistance programmes may be needed to engage these ownerships in third-party certification.

One of the most significant areas of North American forest that is not certified is the 78 million hectares of land managed by the US Forest Service. To date, this federal agency has decided not to seek certification of the forests it manages. Within these federal forests, there is more standing softwood timber volume than the combined total for private industrial and non-industrial forest land and yet, the National Forests supply only about 2% of US wood raw material. Management of the National Forests focuses on environmental principles and stakeholder concerns. These factors, together with the complexities of integrating certification procedures with the already complex process of federally mandated regulations and public opinion, contribute to the lack of a clear mandate to utilize an independent certification scheme for the National Forests. Additional barriers include a current FSC-US policy that defines unique thresholds that US federal lands must meet before they can be considered for FSC certification.

The FSC's US-National Initiative announced a review of their policy on federal land certification, providing recommendations in early 2012 that could result in a new impetus for certifying National Forests. Other than federal forests, most remaining non-certified ownerships in the US, are in small forest holdings.

### 10.2.5 Other regions

Outside the UNECE region, the ranking of certified area has not changed during the past three years among the top three countries – Australia (with 11.1 million hectares), Brazil (7.8 million hectares) and Malaysia (5.1 million hectares) (graph 10.2.4).

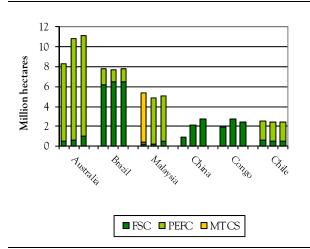
PEFC dominates in Australia, with 91% of the certified forest area; whereas in Brazil 84% of the certified forest area is under the FSC scheme.

Both Australia and Brazil have shown almost no increase in certified area in recent years. Malaysia showed an increase of some 5% or 0.3 million hectares – mainly due to first-time FSC certification. However, 90% of the country's certified area is by MTCS, which was fully endorsed by the umbrella of PEFC two years ago and the recent FSC certification overlaps these already certified areas.



Source: UNECE/FAO, 2010

### GRAPH 10.2.4 Certified forest area in six countries outside the UNECE region, 2010-2012



**Notes:** Bars for each country represent years from 2010 to 2012. The graph contains some overlap from double certification. Information valid as of May 2012.

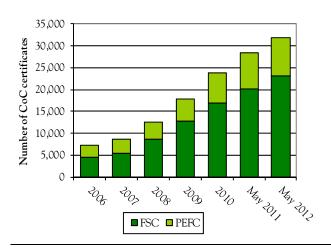
**Sources:** Individual certification systems, country correspondents, Forest Certification Watch, Canadian Sustainable Forestry Certification Coalition and authors' compilation, 2012.

The most notable change in certified forest area outside the UNECE region from May 2011 to May 2012 occurred within the countries ranked behind the top three. China has recorded a consistent rate of increase in the order of 30% in each of the past three years. It now ranks fourth, with a certified forest area of 2.7 million hectares. After China comes the Congo, the only African country in the displayed ranking, with 2.5 million hectares of certified forest. However, the certified area in the Congo decreased approximately 10% over the past year. In African, South American and Asian countries higher fluctuations seem to be relatively frequent. This usually takes place after an audit when the certified forest does not meet the requirements of the certificate, and thus loses the certificate. Chile dropped from fourth to sixth place, as its certified area stagnated at 2.4 million hectares.

# 10.3 Growth of chain-of-custody certification

The growth of chain-of-custody (CoC) certification has slowed to 12% between May 2011 and May 2012 from earlier recorded rates of increase of over 20%. Between May 2011 and May 2012, the total of PEFC and FSC CoC certificates issued worldwide increased to 31,924 (graph 10.3.1).

The US has issued 4,040 certificates, followed by the UK (3,465), Germany (3,059), France (2,758), and Italy (1,778).

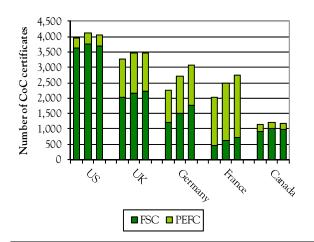


**Notes:** The numbers denote CoC certificates irrespective of the size of the individual companies or of volume of production or trade. Information valid as of May 2012. **Sources:** FSC and PEFC, 2012.

While FSC issues the majority of CoC certificates in North America, PEFC tends to be more dominant in the leading European countries (graph 10.3.2).

### GRAPH 10.3.2

Chain-of-custody certificates in five countries within the UNECE region, 2010-2012



**Notes:** Bars for each country represent years from 2010 to 2012. The numbers denote CoC certificates irrespective of the size of the individual companies as of May 2012.

Sources: FSC, PEFC and authors' compilation, 2012.

Outside the UNECE region, FSC is by far the major issuer of CoC certificates (graph 10.3.3). Latest trends show that PEFC has increased the number of CoCs issued by roughly 70% in the past two years, starting from a low base.

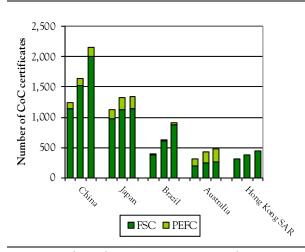
GRAPH 10.3.1

Chain-of-custody certified trends worldwide, 2006-2012

China is the leading country in terms of CoC certificates issued in 2012, with 2,160. Growth in the number of certificates in China has continued at a very fast pace from 2008 to 2010.

#### GRAPH 10.3.3

Chain-of-custody certificates in five countries outside the UNECE region, 2010-2012



**Notes:** Bars for each country represent years from 2010 to 2012. The numbers denote CoC certificates irrespective of the size of the individual companies as of May 2012.

Sources: FSC, PEFC and authors' compilation, 2012.

### 10.4 Key forest certification issues

# 10.4.1 Mutual recognition between certification schemes

For more than a decade, there has been discussion about possible mutual recognition as a method for reducing barriers and inefficiencies in forest certification. Even though competition between certification programmes has led to some innovations and improvements, it also creates additional costs for land managers and companies that find it necessary to be certified under multiple programmes to meet customers' interests. The competing programmes and marketing campaigns can also create confusion in the marketplace.

It seems clear from the different structures and policies of the two principal programmes, FSC and PEFC, that mutual recognition is unlikely. In the light of the lack of readiness of the programmes themselves to explore harmonization as a method of reducing confusion and improving efficiencies, there is a real prospect of other organizations taking on the responsibility of clarifying the role of certified products in the marketplace. By recommending (or requiring) procurement policies that include certification, green-building advocates and regional and federal governments are playing the role of evaluating standards and their equivalency or adequacy in meeting baseline expectations. The criteria for evaluation include legality ability and/or the suitability of certification schemes for meeting environmental purchasing goals or green-building codes. This involvement of government organizations and other stakeholders may lead to insights and innovations in approaches to accountability and traceability.

### 10.4.2 Costs of certification

The costs of certification vary greatly, with research suggesting that the direct costs of a certification assessment may vary from \$2 to \$60 per hectare (Hansen, 1998). A later study found the cost of assessment to range from \$1.33 to \$22.93 per hectare (Cubbage et al., 2003). Using the extreme estimates, it is likely that some amount between \$499 million and \$22.5 billion has been spent on the direct costs of certification assessments to achieve the currently certified forest area. Using the average of \$21.56 provides an estimated cost of \$8.5 billion. The true total costs are actually much higher because some certified lands have had multiple five-year re-assessments and these figures do not include either the costs of annual audits or any increase in operating expenses. To put this into perspective, in 2011, EU imports of roundwood and sawnwood had a total value of approximately \$16 billion.

Annual audit costs are in addition to the direct cost of a full assessment and may vary between \$0.10 per hectare for large parcels to \$40 per hectare for smaller areas (Hansen, 1998). Based on these estimates, the direct cost of maintaining the certification of currently certified forest is between \$37.5 million and \$1.5 billion per year.

These wide-ranging estimates reflect the lack of available information about the actual costs associated with certification. The estimates also only address the direct costs of assessments and audits. They do not include the operating costs for the certification programmes or the indirect costs associated with management changes and actions required to comply with the certification standard. Neither do they include lost revenue due to changes in harvesting practices to address certification standards. One study estimates an average revenue loss of \$3.05 per hectare due to these implementation costs (Brown and Zhang, 2005).

The chain-of-custody (CoC) system itself adds cost to the marketplace, with anecdotal evidence suggesting that CoC assessments appear to start at roughly \$3,500 per certificate in North America, with annual audits costing around \$1,800. Thus, the overall cost of chain-of-custody certification for a company would appear to be at least \$10,700 per five-year period (one year of the assessment costs and four years of annual audit costs). Research in North and South America found that forest management certification costs do not vary greatly between systems or countries (Moore, 2012). If the same cost relationships hold for CoC, the global five-year costs for the current number of certificates are approximately \$300 million, equivalent to \$60 million annually.

### 10.4.3 Green building and certification

Green building continues to move from voluntary programmes to integration into formal building codes. In March 2012, the International Green Construction Code (IgCC) was released. The code addresses all forms of commercial construction and also influences residential construction. It has already been adopted by several States and cities in the US and offers flexibility that should aid rapid uptake. The IgCC was developed by the International Code Council (ICC), along with many stakeholders. The ICC is a non-profit organization dedicated to developing uniform and comprehensive building codes for US territories. These building codes have been adopted by many government jurisdictions.

The materials and resource section of the code could potentially have a significant impact on wood and other building materials, with the emphasis on using materials that are recyclable or reusable and bio-based. The code encourages the use of certified wood products and recognizes all the major certification programmes. It also recognizes the desirability of using locally sourced materials, defining local as within 500 miles when road transport is used or up to 2,000 miles when rail or water is used. Its energy requirements could affect wood products, including incentives for on-site generation of renewable energy or purchasing agreements; and biomass energy could be utilized to meet these requirements.

The overall impact of the IgCC could include significant growth in green building, more consistency in green-building definitions and increased pressure for improved recycling and other changes in building material manufacturing.

Voluntary programmes are still the main driver behind green building. In 2005, the EU initiated the European Green Building Programme, which is strictly a voluntary programme designed to advance environment-friendly construction. When comparing new certified buildings in Europe from 2012 to 2011, the number of certified buildings has increased roughly by 20%. (RICS, 2012) Even though the figure for certified construction is promising, the share of certified buildings is small compared to total construction. There are no statistics measuring the share of certified buildings in total construction and research on green certified buildings has revealed that wood is often just a small component of the building materials used. This does not mean that voluntary green building is not having an effect on the use of certified forest products. Two very recent high profile examples of green building are the new Olympic structures for the 2010 Vancouver winter games, which were built with Green building standards and extensive use of wood, and the London 2012 Olympic Games. The London games also used certified green buildings and have taken the additional step of using two different certificates (PEFC and FSC), and by this commitment the games are the first of their kind, showcasing wood that is 100% certified (Sustainable Timber Action, 2012).

While the direct contribution of voluntary green building certification towards consumption of certified forest products is small, the indirect contribution of displaying the use of certified wood in such high profile green building projects, such as those for the Vancouver and London games, helps to raise the profile of certified forest products.

### 10.4.4 Impact of trade legislation on certification

Measures introduced to control illegal wood might be expected to help boost interest in certification, since certification is generally regarded as a pathway for addressing legality requirements. The knowledge and experience gained by certification organizations over the past 20 years may also help in developing and implementing systems to ensure legality.

In May 2012, the Due Care Standard for the Lacey Act addressing illegally logged wood was approved in the United States. This standard provides pathways for meeting the mandate of the Lacey Act using FSC, PEFC or an alternative approach developed by the American Hardwood Export Council for their members. The EU Timber Regulation also has a due diligence system that recognizes the FSC and PEFC programmes.

### 10.4.5 Contribution of certification to the production of sustainable forest products

Certified wood has become synonymous with sustainable wood. However, to combat illegal logging, and despite the certification programmes, governments have had to draw up additional regulations, including tracking and enforcement measures. Prevention of deforestation in the tropics was among the main reasons for introducing forest certification but this is the area where the least progress has been made.

After 20 years, still only roughly 2% of tropical forest has been certified and, during that same period, more than 290 million hectares have been destroyed and converted to non-forest uses (FAO, 2010). The certification programmes have also not been able to provide standards that adequately address emerging issues such as climate change and biofuels. Additional enforcement and standard-setting measures have been needed.

Certification cannot address all forestry concerns and it is likely that government regulations and other measures will continue to be necessary to address highrisk situations. While recognizing the limits of voluntary certification and the role of government policy, making progress on the production of sustainable forest products will require a better integration of these roles if tropical deforestation is to be prevented.

In terms of sustainable forest products, recent research has shown that there are areas of need and opportunity that may provide significant environmental benefits but that are neither well researched nor addressed in voluntary or regulatory programmes. Following a review of 208 published studies on forest operations efficiency and environmental improvements, researchers identified great potential for improved biomass harvesting and transport logistics (Lang and Mendell, 2012).

Improvements in biomass harvesting could bring about significant cost savings, which could reduce fuel costs and make wildfire prevention efforts more affordable. It could also provide environmental and wildlife habitat benefits, as well as social and economic services. Adopting different raw material hauling systems to reduce fuel consumption and the distances covered could reduce costs as well as carbon emissions.

While certification programmes provide a detailed and comprehensive structure for evaluating the full spectrum of forest management, it is difficult for them to focus on few key indicators of sustainability.

Key indicators, including legality, responsible bioenergy and fuel efficiency are examples of areas where government standards may provide better tools for ensuring sustainability. The benefits of certification and other market-based systems for supporting forest sustainability may be improved through more active involvement of the forest products sector, governments, and associated interest groups.

Forest certification and the production of sustainable forest products will continue to be influenced by the development of government programmes, including the Lacey Act in the United States and the EU Timber Regulation. Voluntary labelling programmes are also emerging, such as the United States Department of Agriculture (USDA) BioPreferred® Program for certified bio-based products. The auditing of the products for that programme began in March 2012, and wood-based products included in the BioPreferred® Catalog include thermally-modified wood building materials, composite panels with recycled and recovered wood fibres, and textiles made with a blend of fibres. We may expect significant impacts on the forest sector and the production of sustainable forest products as such programmes continue to develop.

# 10.4.6 Impact of competition between certification schemes

The various certification schemes continue to compete. The situation in the United States between FSC and SFI is a good example of the pros and cons of such competition. On the one hand, this competition has been constructive in motivating each scheme to make strategic improvements in their structures. Over the years, SFI has established independent governance, a chain-ofcustody standard and international recognition through PEFC. Recently, FSC in the US moved from nine regional standards to a single national standard.

On the other hand, this competition can have drawbacks. It could be perceived to have only diverted attention and resources to addressing programmatic and bureaucratic interests, with limited benefit to the overall programmes. The result has been missed opportunities to increase engagement in sustainable forestry. There is a clear cost to spending time and money on competitive activities.

An additional cost arises from confusion and frustration about forest certification in several segments of the marketplace. Certificate holders, including forest managers, as well as chain-of-custody firms, can be confused and frustrated by frequent changes in policies and standards. And consumers of wood products are also confused by unclear differentiation between varying systems and the lack of information to determine a responsible choice when it comes to buying wood products. It is possible that the forest certification programmes have paid too much attention to each other and too little to promoting sustainable forestry and sustainable forest products.

As forest certification enters the next 20 years of activity, it will face renewed pressure to meet the interests of the marketplace and clarify the benefits of its programmes and services. Certification programmes are likely to face increased competition from new approaches and will be challenged to define their niche as more targeted standards are developed that address specific market issues such as climate change policies, illegal logging controls, and bio-based material assurances.

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