

Meeting the challenge of sustainable forest management

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Forests serve ecological functions (they regulate the water cycle, sequester carbon and help preserve biodiversity), social functions (providing places to live, a means of subsistence) and economic functions (jobs linked to the timber industry). Growing demand is putting the forestry sector under intense pressure and although investors are increasingly interested in forests, we need to find a way of increasing production while conserving the forest environment.

The Food and Agriculture Organization (FAO) confirmed in its latest report on the state of the world's forests that there has been massive destruction of forest cover. No less than 13 million hectares of forest have disappeared in recent years as a result of the combined effects of the expansion of crop and animal farming, overexploitation of forests, savannah fires, soil degradation, urbanisation, etc. It is true that the rate of deforestation fell by 20% in the 1990s, and just four countries¹ account for over half of the destroyed area (FAO, 2011). In addition, certified forest areas are increasing all the time and a large number of countries are replanting trees - China plants 3 million hectares each year. Nevertheless, mass destruction of natural forests causes irreversible damage to the environment and threatens the way of life of the communities that depend on them.

In fact, forests play a vital role in maintaining important ecological balances because of the biological diversity they contain and their interactions with the atmosphere, water and soil. Moreover, the ways in which forests are used (hunting, gathering, habitation, religious purposes and leisure pursuits) and their heritage, historic and cultural aspects give them a social function as well. Lastly, forests play an important economic role through the production of goods and the creation and preservation of numerous jobs in forestry and downstream industries. Threatened by a number of imbalances, the world of forestry has been through several different phases that are now being combined: conservation and the establishment of protected areas, the artificialisation of forest environments through plantations, and sustainable management of natural forests. With the forestry sector under an unprecedented amount of pressure, each system is attempting to find a lasting solution to sustainable timber production and conservation of forest environments.

A multifunctional resource

Forest ecosystems are very diverse and range from equatorial forests and tropical rain forests to boreal forests. Most of the world's forest cover is in the northern hemisphere and in the three tropical basins (Amazon, Congo and Asia-Pacific basins). Russia, the United States of America, Canada and Brazil account for 50% of the world's forested area. In practice, little of this area is commercially exploited. Generally, the area of natural forest being exploited is falling noticeably. These days, the majority of deforestation takes place south of the tropics: forests here are shrinking by 0.6% per year and the phenomenon has been particularly marked over the past 25 years.

The Amazon forest - which is disappearing at an alarming rate, particularly as a result of animal farming and soya crops - and the forest in the Congo basin (which is better protected but suffers from logging for firewood, bush fires and slash-and-burn agriculture) are often described as the

“lungs of our planet”. The forests of South-East Asia are even more severely affected as a result of oil palm cultivation and unsustainable forest exploitation.

Forests perform three major environmental functions. Trees store large amounts of water which they release again as water vapour. The fewer trees there are, the less evaporation will occur and the less rain will fall, so there will be less water available generally. Forests also play a major role in the carbon cycle. While they are growing, trees absorb carbon dioxide and release oxygen through photosynthesis and sequester large amounts of carbon. But when wood decomposes or is burnt, the CO₂ is released back into the atmosphere.

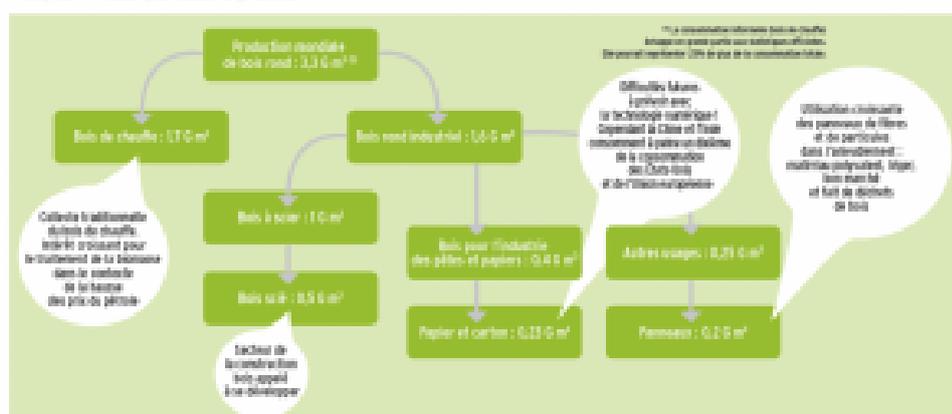
According to the Intergovernmental Panel on Climate Change (IPCC), even though deforestation and forest degradation could emit 12% to 20% of global greenhouse gas emissions, forests are still a global carbon pump mitigating climate change (Van der Werf et al. 2009). Finally, forests are a real biodiversity reservoir: at least two-thirds of all terrestrial animal and plant species live in forests. And tropical forests are the most diverse, being home to some 50% of all known vertebrates, 60% of plant species and possibly 90% of all species on the planet (Burley, 2002). These facts illustrate the conservation challenge very clearly. 12% of the world’s forested areas have been awarded protection status. The levels of conservation vary widely, ranging from heavily protected integral biological reserves to systems that are much more integrated socially and economically. Environmental impact studies have made an appearance in the legislation of numerous countries and environmental specifications are included in the major certification systems (PEFC, FSC).

Forests also play a vital social role. The world’s four billion hectares of forested land represent 31% of the total land area. 1.6 billion people depend on them for their subsistence. Forests are the main source of income for 80% of the world’s poorest people. They are essentially public, but traditional rights often blur this reality. Some of these rights form the subject of legal claims or conflicts between governments and indigenous peoples (Pygmies, Mapuche, etc.). Increasingly, programmes are being developed with the support of national governments to decentralise forest management or transfer it to local communities.

An environment under pressure

Global economic and population growth is of relevance to most of the countries with big tropical forests. This means that demand for paper and timber will continue to increase. Biomass energy will be increasingly sought-after. At the same time, there will be greater land-use competition between fuel crops and forests. Finally, food security issues will lead to pressure on forested land with agricultural potential.

FIGURE 1 : LES USAGES DU BOIS



Sources : FAO, 2006 - ABBE, 2004 - H. Bourguignon (Purdue-Montpellier) 2002

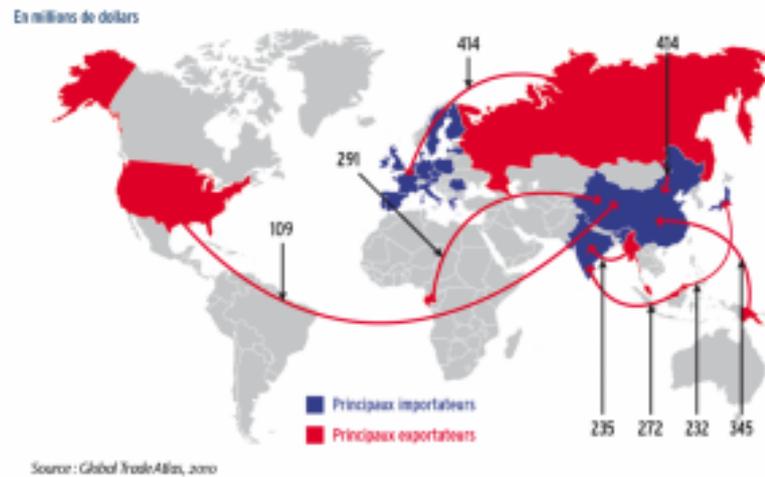
Tree plantations make up only 7% of forested areas, or 264 million hectares. Primarily located in Asia, only half of these areas are intended for production. Nevertheless, plantations account for 65% of the forest economy.

The timber industry represents a global trade volume of more than 200 billion dollars per year. It is largely focused on the primary products and raw materials markets, which represent 80% of annual

production (3.3 billion cubic metres). Because these products are highly standardised, producers have to concentrate on reducing costs to remain competitive.

The timber market was in decline for a long time, but wood is a widely available renewable material that can be used in place of energy-intensive materials such as plastic, concrete and aluminium. It offers an alternative to fossil fuels for generating heat, electricity, gas and fuel. The high demand for wood in China, India and Brazil is increasing the more traditional demand from the construction sectors in Europe and the United States (Figure 2).

FIGURE 2 : PRINCIPAUX FLUX DES GRUMES DE FEUILLUS EN 2010



In addition, domestic demand is rising in a large number of developing countries, particularly in Africa, leading many exporters to review their strategy. Finally, over the course of the coming decade the development of bio-energy markets will disrupt the markets for low-quality products. Tensions will rapidly emerge as supply is unable to keep pace with demand.

For investors, wood is (again) becoming a strategic resource. When prices are low, owners can delay logging to smooth prices and stabilise forest assets. In the United States, the NCREIF Timberland index² has seen one of the best performances on the market with an annual growth rate of 13% over 24 years.

However, the forestry market in developed countries is now fairly mature, and the internal rate of return (IRR) for Timber assets in Europe and the US is now in the range of 30% to 8%. On the contrary, in tropical areas, those rates reach 15% to 20% (Cubbage et al. 2007). According to Timberland Investment Resources, LLC (TIR), there is very little data available for Africa. While public investment continues to dominate the sector, private investment has been increasing over the past 20 years, particularly in North America and, to a lesser extent, in Brazil, Australia and New Zealand. Between USD 50 billion and USD 60 billion are thought to have been invested in 2010, particularly through Timber Investment Management Organizations in the United States³ (Fernholtz et al. 2007). Fund trends are currently boosting the attractiveness of this sector for investors in developing countries and in transition countries in tropical zones. However, investors are very mindful of the risks and are sometimes concerned about the length of investment, payback periods and low liquidity.

Reconciling the forest's different functions

Growth in demand and limited supply are creating a tension on the wood market that calls sustainable production management into question. This is a pressing issue in tropical regions and is the subject of debate between those in favour of market rules, those who support regulatory constraints and those who call for development financial institutions' support. In all cases, the weak link is governments' capacity to exercise their powers.

Multifunctional sustainable management aims to reconcile the different functions of a forest without

jeopardising the future of forest resources. The main points are recorded in a reference document: the forestry management plan. This is a technical, strategic and financial planning document. In the 1990s, the introduction of the main forestry certification schemes (FSC, PEFC, etc.) encouraged a more in-depth look at the criteria, and indicators of sustainable management and the different functions of the forest were integrated. According to the International Tropical Timber Organisation (ITTO), it is estimated that less than 7% of the forested area in tropical regions is sustainably managed. The technical aspects of this approach and the growing list of criteria mean that this form of certification is confined to an elite.

In 2003 the European Union adopted the Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan aiming to reduce the volumes of illegal wood entering the EU and reinforce governance in producing countries. The FLEGT Regulation adopted in 2010 sets out obligations for operators importing wood products in Europe. The proposed system makes it possible to include a larger number of operators. It also makes governments face up to their responsibilities.

The artificialisation of forest areas is perceived as an unattractive alternative by a large number of NGOs. Some of them criticise the introduction of exotic species chosen for their rapid growth traits; others highlight the negative impacts of activities on local communities. Without denying the problems that plantations can cause, timber crops can be a substitute for logging in natural forests. Plantations already play a vital role in the timber trade and massive plantation programmes will become essential to meet the increase in demand. As the projects in which ONFI is involved show, it is perfectly possible in this context to reconcile safeguarding the environment and social aims.

Finally, the benefits provided by forests are rarely converted into economic benefits. There are now plenty of initiatives attempting to place a value on the external effects of forests. The forest carbon markets are a step in this direction, despite their fragmentation and low liquidity levels. However, none of these complementary sources of income can provide an answer if the bases of forestry revenues (wood and energy) are not safeguarded.

The forest has become an unparalleled object of desire and ideological battlefield. Whether it is seen as a biodiversity reserve under threat, a reserved area, a piece of cultural heritage, a speculative investment or a development tool, every stakeholder needs to respect and understand the underlying arguments. In this debate, most of the answers are to be found outside the forests and outside forestry circles. These answers will need to respond to the pressures and challenges posed by agriculture, food security, population growth and national development. Instead of being seen as a threat, a constraint or a risk, the forestry sector can offer fantastic opportunities for development, for dialogue, for new alternatives and new responses to tomorrow's challenges.

Agroforestry: a model for the future?

Combining timber and agricultural crops, agroforestry is a way of creating biological and economic synergies between species, environmental benefits (reducing the use of agricultural inputs, combating deforestation, promoting biodiversity, etc.) and social benefits while sustainably increasing global yields per unit area.

ONF International has been involved in a number of large-scale agroforestry projects in Africa and Latin America since the 1990s. The diversification of assets within one project makes it possible to combine complementary needs and investment models. In Colombia, the Proyecto de Reforestación Comercial has brought together institutional and private investors for a project combining tree plantations (*Gmelina arborea*, *Tectona grandis* and *Ceiba roja*), intensification of animal farming and the commercialisation of carbon assets. The farmers participate in the investment by making their land available, without giving up ownership of it. A massive project in the Democratic Republic of Congo combines cassava production and acacia plantations on degraded savannah. The project supplies one of Africa's biggest megalopolises with firewood and food while restoring the fertility of the soil.

Footnotes

¹ Brazil, Indonesia, Sudan and Malaysia.

² The NCREIF Timberland index measures quarterly returns for a large portfolio of forest properties acquired for investment purposes.

³ Examples: Plum Creek Timber Co. Inc, Hancock Timber Resource Group, Forest Capital Partners and Rayonier.

References / ATIBT, 2009. Spécial Plantations en zones tropicales. ATIBT Letter - Special issue. December. / **Blaser, J., Sarre, A., Poore, D. et alii, 2011.** Status of tropical forest management 2011. ITTO Technical Series 38, International Tropical Timber Organization, Yokohama. / **Burley J., 2002.** Forest Biological Diversity: an Overview. Rome. FAO. Unasylva 209, Vol. 53, 2002/2 / **Cubbage, F., et alii, 2007.** Timber investment returns for selected plantations and native forests in South America and the Southern United States. *New Forests*, 33(3), 237-255. / **FAO, 2011.** State of the World's Forests 2011. FAO. Rome. // **FAO, 2011.** Database / **Fernholtz, K., et alii, 2007.** TIMOs and REITs: What, why and how they might impact sustainable forestry. Minneapolis, MN: Dovetail Partners, Inc. / **Global Trade Atlas, 2010.** Database (available online at: www.gtis.com/gta/) / **Van der Werf et alii, 2009.** Estimates of fire emissions from an active deforestation region in the southern Amazon based on satellite data and biogeochemical modelling. *Biogeosciences* 6 (2), 235-249.

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