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Utilising, developing and preserving forests: finding the balance.

Forests are both an economic and an environmental challenge, with different stakeholders defending their own interests. Can these divisions be overcome through sustainable forest resource management? How can the private sector be involved?

EDITORIAL BY ÉTIENNE VIARD *CHIEF EXECUTIVE OF PROPARCO*

Forests are important carbon sinks that play a vital role in maintaining the world's ecological balances. However, population growth and urbanisation are intensifying pressure on forested land in the southern hemisphere. The combined effects of agricultural development and overexploitation of fuel wood are causing nearly 13 million hectares of forest to disappear every year, particularly in the forest basins of the Amazon, Central Africa and Indonesia. Responsible for between 10% and 20% of greenhouse gas emissions, deforestation has not only contributed to climate change, but has also led to a loss of biodiversity and to soil degradation. Forests are seen as a means of subsistence, a cultural heritage, an ecosystem in need of protection, a land reserve and a resource to be exploited, so they draw together a large number of stakeholders with disparate interests.

An ever-increasing demand for timber and higher awareness of climate issues have turned forests into an ideological battlefield. Sustainable forest management, plantation development and agroforestry are all possible ways of bypassing these divides and reconciling economic exploitation of natural resources with environmental conservation. In the 1990s, new regulations led the private sector to play a new role with a greater focus on preserving resources. Forestry management plans in the Congo Basin, for instance, provide interesting examples of responsible contract-based approaches involving the private and public sectors.

Although restricted to larger corporations, the involvement of the private sector in sustainable forestry management is now a reality. A growing number of logging companies have some form of international certification, but they are still battling against a lack of market recognition for certified products, unfair competition from the informal sectors and the high costs associated with certification. The future of the forestry sector, particularly in sub-Saharan Africa, remains dependent on good public governance and greater market transparency: tough challenges that need to be met if private investors are to be attracted to assets with promising rates of return. Although the results of the Rio+20 summit raise numerous questions, it is more essential than ever to identify conditions that will encourage the long-term involvement of the private sector in sustainable forestry management. This is the focus of this 14th issue of Private Sector & Development. —

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GROUPE AGENCE FRANÇAISE DE DÉVELOPPEMENT

Utilising, developing and preserving forests: finding the balance.

Meeting the challenge of sustainable forest management

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.

Martin Perrier

Director of ONF International

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 countries[1] 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.

" The rate of deforestation fell by 20% in the 1990s , and just four countries account for more than half of the destroyed area."

MARTIN PERRIER

A graduate in civil, water and forestry engineering from AgroParisTech, Martin Perrier has worked in various positions in the forestry sector in France and other countries.
In particular, he has been responsible for ONF's forest and carbon department.
He has been Director of ONF International since 2008 and is involved in developing the organisation's activities, in particular in the area of carbon finance, the regulation of the timber trade, agroforestry investment and environmental monitoring tools.

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 Bra-

[1] *Brazil, Indonesia, Sudan and Malaysia.*

FOCUS

Established in 1997, ONF International runs the international activities of ONF, the French Forestry Commission. Through its network of branch offices, ONFI is active in around 50 countries, mainly in Africa and Latin America, and works for both public and private clients. ONF International is involved in all areas of sustainable ecosystem management: setting up and monitoring operations, socio-environmental monitoring of investments, and providing support for government policies.

zil 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 CO_2 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).

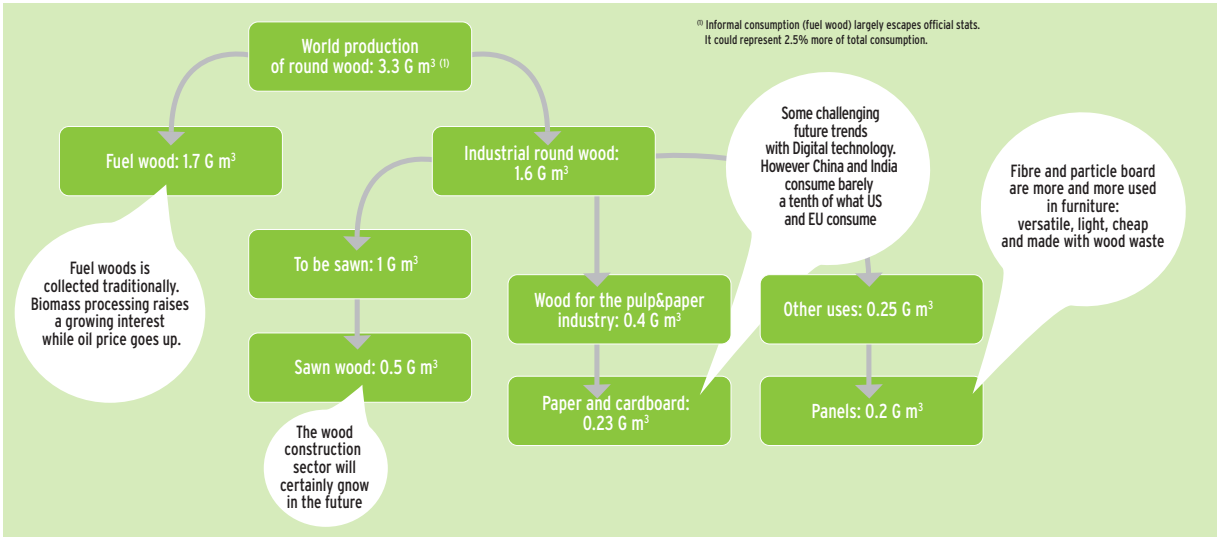
Forests also play a vital social role. The world's four billion hectares of forested land represent 31% of the total land area. 1.6 billion people depend on them for their subsistence. Forests are the main source of income for 80% of the world's poorest people. They are essentially public, but traditional 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.

"Food security issues will lead to pressure on forested land with agricultural potential."

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 ▶▶▶

FIGURE 1: USES OF WOOD



Sources: FAO, 2011 – ATIBT, 2009 – H. Bourguignon (Moringa Funds), 2012

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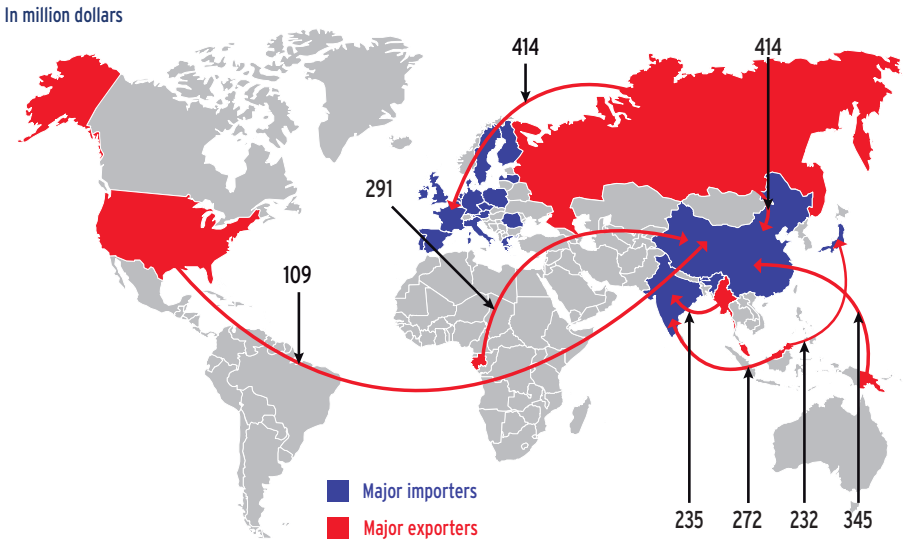
FIGURE 2: MAIN FLOWS OF HARDWOOD LOGS IN 2010



Source : Global Trade Atlas, 2010

▸▸▸ 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.

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.

"For investors, wood is (again) becoming a strategic resource."

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). 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 bioenergy 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 index[2] 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 States[3] (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.

[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.*

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.

"Massive plantation programmes will become essential to meet the increase in demand."

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.

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Forestry assets in Africa: promising returns

Solid biological growth rates, low establishment and maintenance costs, land availability, and demand for forestry products make Africa an attractive forestry option. Typical emerging market risks as well as environmental and social issues are involved. Local and international strategic partnerships are the means to success, driving economic development through direct job creation and providing an economic multiplier estimated to be as high as 20-1.

Ole C. Sand and Elizabeth M. Lewis

Managing Partner, GEF / Principal, GEF

The chief attribute of the forestry asset class is its superior historical risk-return profile relative to other asset classes. Investors have been drawn by its performance: its stability of returns and positive correlation with inflation, providing an effective inflation hedge. These investment strengths are supported by the most basic characteristic of these assets – the biological growth of trees. This growth is uncorrelated with financial markets: it continues as long as there is soil, water and sunlight. Furthermore, continued biological growth not only increases the marketable volume of timber, it can also increase the value of the forest, as larger-diameter logs yield a greater proportion of high-value products. Also, harvests can be accelerated or delayed based on the market prices for forest products, providing unique inventory flexibility that can mitigate the impact of downturns in business cycles.

Investors in mature market timberlands have achieved sizeable returns in the past two decades. Based on the National Council for Real Estate Investment Fiduciaries (NCREIF) index[1], an investment in a U.S. timberland in 1986 would have grown at a compound annual return of nearly 16% through 2008. Adjusted for inflation, the real rate of return for this period exceeds 12%, more than twice the real return one would have achieved investing in stocks or residential real estate during the same period, with low variance. Returns for the timberland asset class in developed markets have significantly outperformed all other major asset classes over the last twenty-two years (Bary 2009).

"Investors in mature market timberlands have achieved sizeable returns in the past two decades."

In developed markets, it is unlikely that the sizeable returns of the past two decades will continue, as this market is now fairly efficient and mature. The best timberland investments now usually rely on conversion to the highest and best use of land for their increases in value. For example, land can be sold for uses such as recreation and residential accommodation.

Emerging market timberlands, however, provide promise for investors. Tropical emerging markets, for example, provide higher producing growing sites and lower establishment and labour costs than the temperate forests of mature markets.

In emerging markets, investors such as GEF have found focusing on timber plantations instead of exploiting natural forest concessions to be an attractive strategy. Plantations are indeed more productive and less costly to run than natural forest concessions, whose exploitation involves high costs in order to comply with certification constraints. Furthermore, the market for wood products is evolving: in order to easily replicate sophisticated final products, the

OLE C. SAND

Ole Sand is head of GEF's Sustainable Forestry team. He has nearly 30 years of experience in international finance and investments, including multilateral development financing. From 1989 until joining GEF, he worked for the International Finance Corporation (IFC), as transaction leader for projects in many sectors and countries. He has held various positions in investment and commercial banking in his native country, Norway. He holds a PhD in International Business, an MBA in Finance, a BSc, and has studied law.

ELIZABETH M. LEWIS

Elizabeth Lewis is responsible for planning and development at GEF, working closely with the forestry team at developing its investment strategy. Before this, she provided analysis and support for sustainable energy with Booz Allen Hamilton. Previously, she was an analyst with the Massachusetts Energy Renewable Trust, focusing on financing for renewable energy firms, after having worked for American Senators Edward Kennedy and Max Baucus. She has an AB in Environmental Science and Public Policy, and an MBA.

[1] *http://www.ncreif.org/indices/timberland.phtml.*

furniture and building industries increasingly require raw materials with standard dimensions, which only plantations can offer.
A comparison in Brazil of wood residues from natural forest operations with those from plantations illustrates that plantations are a considerably more viable option. In natural forests, 60%-70% of the wood harvested is considered as waste, compared with 10-20% in plantations.
After processing, the final product from natural forests is 10-20% of the wood harvested, while for plantations, this figure is 30-40% (GEF, 2009). Logging residues account for 60-70% of lumber in natural forests, compared with 10 to 20% in plantations.

Why invest in forestry in Africa?

For plantation investments, Africa offers solid biological growth rates, with relatively low costs to establish and maintain plantations. Sub-Saharan Africa provides attractive growing conditions for species such as eucalyptus and pine. Due to the combination of soil conditions and rainfall, many countries in Africa have already exceeded or have the potential to exceed a mean annual increment (MAI) – a measure of rate of tree growth – of 20 cubic meters per hectare per year. This compares favourably with growth rates in most parts of the world, and is considerably higher than for mature markets in temperate regions.
Africa also offers among the lowest plantation establishment costs of any region in the world. This and the low maintenance costs position properly sited African forestry projects well to serve growing domestic demand as well as traditional European and North American markets.
Land limitations in other regions and increasing demand in Asia are expected to lead to new market opportunities for forest products originating in Eastern and Southern Africa. The tremendous availability of land in Africa – of the estimated 500 million hectares of degraded land (formerly forested tropical land not being used for agriculture, settlement, or other purposes) worldwide, 300 million hectares are found in Africa – makes the continent an attractive option for establishing plantations. The ability to site plantation projects on land without a competing use is critical to developing socially acceptable large-scale forestry projects in sub-Saharan Africa. Opportunities are available to invest in both existing and greenfield plantations, and a number of these have the potential for even higher yields on the land through integrating elements of agriculture and forestry.
Further, significant population growth and increasing demand for renewable biomass energy supports more investment into African forestry projects. Early entrants into this sector in Africa may benefit from the increased liquidity associated with a maturing of the sector in the coming years.

Investment constraints?

However, Africa has seen a limited amount of foreign direct investment in the forestry sector to date, because of several challenges.
In most African countries, it is not possible to buy 'fee simple', titled ownership – ownership that is absolute and unqualified, as is the standard in most common-law countries. The only way a company can 'own' land is through a long-term lease or a concession right. This makes it possible for rentals or concession payments to be increased over time, beyond the expectations of the investor, reducing the prospect of providing risk-adjusted returns.

Africa has seen a limited amount of foreign direct investment in the forestry sector to date."

Another consideration is the broad spectrum of sensitive environmental and social issues that investments in Africa involve. The large tracts of land necessary requires involvement of the communities. Care is also needed to mitigate any adverse impacts on natural ecosystems, especially due to road-building and harvesting. Institutional investors are responding by increasingly focusing on environmental stewardship, creating environmental and social safeguards that have become benchmarks (IFC, 2012). While the 'costs' of responsible governance more than pay off in the long run, they represents an entry-barrier for short-term profit seekers.
Also, in Africa it is not usually possible to outsource services and sell timber on the stump as traditional timberland investment management organisations (TIMOs) are able to do. This requires operators to perform all maintenance and processing functions 'in-house' to capture the full stumpage value (Merrill Lynch, 2007). Therefore, inves- ▶▶▶

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Global Environment Fund (GEF), is a Washington-based private equity firm investing globally in businesses that provide cost-effective solutions to pressing energy, resource and environmental challenges. Its experience results from investments in three markets: southern hemisphere timberlands and US and emerging market clean energy technology and services companies. It manages approximately 1 billion dollars in private equity investments for institutional investors.

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▶▶▶ tors need to be sure that they have solid management teams with a wide range of technical and operational skills. Developing the local industrial capacity to process timber, as well as the market for it has the potential to significantly impact success, with many African governments requiring domestic milling or providing incentives for investors to process wood domestically.

Additionally, investing in Africa involves a host of typical emerging market risks. These include a range of political and economic risks, as well as non-transparency and other corporate governance issues. Each African country has its unique policies and obstacles relating to operating a business. Licensing, taxes, exporting, investor protection, and employment regulations, among others, all need to be understood prior to making an investment decision.

UNLOCKING DEVELOPMENT AND FINANCIAL RETURNS

GEF has been investing in Africa for more than 10 years, and has drawn the following key factors of success from this experience.

The first success factor concerns human resources and local knowledge. The constraints for investors and the concerns of host African states are best dealt with through local and international strategic partnerships. Due to the small pool of experienced managers in Africa, partnering with experienced, capable management teams with the appropriate strategy – accessible through an organisation like GEF – can help mitigate risks for investors, providing timber operations with the necessary marketing and technology knowledge and networks. Partners also include local allies who can assist in navigating local regulations and processes. Both types of partners can become part of attractive exit options. Conservation and development NGOs too can serve as important allies, reducing reputational risks and improving the local standing of portfolio companies.

"While the costs of responsible governance more than pay off in the long run, they represent an entry-barrier for short-term profit seekers."

The integrated nature of the investment comprises the second success factor. For African states, having value added to resources locally so that local populations benefit is an important aspect of hosting investments. In much of Africa, a market for logs on the stump does not exist. Hence, it is usually necessary to own or build the manufacturing capacity to process raw logs into marketable value-added wood products. In areas with significant energy supply challenges, the use of biomass residues from forest thinning and sawmill operations to generate renewable electricity provides an opportunity to generate additional revenue while mitigating the unreliability of grid electricity supply. Supplying regional and international markets with wood pellets is often another profitable option for residual biomass.

The third success factor incorporates social, and local environmental issues. Social and cultural issues are particularly sensitive in Africa and a weak acceptance of the project by local communities can lead to its failure. Properly executed, African forestry investments drive economic development through direct job creation and provide an economic multiplier estimated to be as high as 20-1. Investors can add significant value by providing extensive training to employees at all levels of the business, and smart managers often seek to develop opportunities for community businesses. The relationships built in this process can pay off in various ways. For example, fire – most commonly started by humans – is one of the biggest risks in forestry investing. Having good relationships in a community is one way to mitigate this. For investors, social and environmental sustainability is the outcome of internal standards, active management, industry best practices and third-party certification. ●

BOX: FOREST INVESTMENT IN SOUTH AFRICA

In 2001, GEF invested in Global Forest Products (GFP), owner of approximately 65,000 hectares of productive pine plantations in Mpumalanga Province, South Africa. GEF made the investment as the result of an analysis indicating high productivity, the low cost of standing fiber, and mispriced country risk

GEF brought in North American forestry managers, who initiated an extensive capital expenditure investment program to modernise facilities and improve efficiency. In addition, .GFP also responded to other threats to its employees with education designed to keep employees healthy and responsible, and management led classes for GFP's 2,000 employees on personal financial management and credit awareness.

GFP operated in an environmentally sustainable way (GFP atteined the Forest Stewardship Council), while delivering financial results to employees and shareholders. GFP, under GEF's ownership, grew revenue by a compounded annual growth rate of 15%, and went from unprofitable to growing profits every year, until GEF's exit in 2007.

GEF's investment in GFP shows that the approach described above can yield both excellent financial returns to companies and their investors and benefits to the surrounding community, economy and environment.

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Developping the forestry sector with carbon markets

Forests are vital carbon sinks. Although forestry projects dominate the voluntary carbon markets, they still occupy a marginal position on the larger, compliance markets. This is mainly due to their ineligibility for the European Union Emissions Trading Scheme. New opportunities are emerging, however their impact may appear limited compared with the scale of the climate challenge.

Mariana Deheza and Valentin Bellassen

Research Fellow Carbon Offsets, Agriculture and Forestry– CDC Climat
Research Unit Manager - Carbon Offsets, Agriculture, Forestry– CDC Climat

The most recent scientific estimates put the forestry sector in fifth place for greenhouse gas (GHG) emissions: it produces 11% of global emissions, or 5.7 billion tonnes of CO_2 equivalent (van der Werf et al., 2009).
However, at a global level, the tremendous capacity of existing forests to absorb greenhouse gases makes this sector a real carbon sink. Biospheric carbon sequestration stores 19% of annual anthropogenic GHG emissions, or around 10 billion tonnes of CO_2 equivalent (Canadell et al., 2007). Most of it is stored in forests, which account for 80% of above-ground biomass and 50% of terrestrial photosynthesis (Dixon, 1994; Beer et al., 2010).

Thanks to this potential, there are a number of ways in which the forestry and wood sector can participate in the fight against global warming. Young and growing forests store large quantities of CO_2 in their above-ground and underground biomass, in the soil and in the litter layer. This carbon sink function can be improved through afforestation projects. Mature forests contain a significant stock of carbon. Improved Forest Management (IFM) projects, which involve a change to forestry management practices, make it possible to increase carbon stocks or to reduce the emissions linked to forest exploitation (conversion of an over-exploited forest into a protected forest, more productive species, etc.). Cleared forests emit greenhouse gases through combustion and decomposition of the initial carbon stock. These emissions can be reduced by implementing projects under Reducing Emissions from Deforestation and Forest Degradation scheme (REDD).[1] Finally, the use of wood – in place of fossil fuels to produce energy or in place of other materials for construction and furniture – also has a positive impact on the atmosphere, provided the wood comes from sustainably managed forests.
These projects can be part-financed through the carbon markets. Emission allowances and credits are the currency of this carbon finance. Each one represents one tonne of greenhouse gas, expressed as CO_2 equivalent. Carbon assets can be traded in order to achieve ▸▸▸

"Biospheric carbon sequestration stores 19% of annual anthropogenic GHG emissions."

MARIANA DEHEZA

Mariana Deheza is Research Fellow at CDC Climat. She works on project mechanisms linked to voluntary offsetting and forestry projects. She is also in charge of the Carbon Forest and Wood Club, which aims to facilitate access of forestry projects to the carbon markets. Mariana Deheza has a degree in engineering from the Catholic University of La Paz in Bolivia and a Master's degree in sustainable development, environmental and energy economics from ParisTech.

VALENTIN BELLASSEN

Valentin Bellassen is Research Unit Manager at CDC Climat (project mechanisms, agriculture and forestry). He has a PhD in environmental sciences, a Master's degree in water and forestry engineering and is a graduate of the École Normale Supérieure in Paris. He is also accredited by the United Nations Framework Convention on Climate Change to carry out audits of national greenhouse gas inventories. His research work focuses on carbon offsetting.

[1] *Built into these projects are conservation initiatives and activities such as reforestation for energy supply purposes, intensified agriculture, improving the energy efficiency of homes etc.*

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▶▶▶ compliance (within a government regulatory system) or for voluntary purposes. Emissions registers that record all carbon asset transactions ensure that the carbon markets function smoothly. Because of their natural capacities, forests can play a major role on these carbon markets. However, although forestry projects dominate the modest voluntary carbon market, they are almost non-existent on the compliance markets.

Marginal presence on compliance carbon markets

On the compliance markets, the supply of carbon credits is regulated by the Kyoto Protocol. The agreement imposes an obligation on the 38 most industrialised countries until the end of 2012 to reduce GHG emissions.[2] These countries can make use of two mechanisms to generate carbon credits: the Clean Development Mechanism (CDM) and Joint Implementation (JI). The CDM provides a means of supporting projects in developing countries while the JI mechanism supports projects in developed countries. For the first commitment period (2008–2012), the only forestry projects eligible under the CDM scheme are reforestation projects. These account for just under 1% of registered projects, and 1% of projects undergoing validation.[3] They are likely to represent only 0.2% of the credits expected for all CDM projects in 2013, according to the CDC Climat Research model (Cormier and Bellassen, 2012).

"The voluntary market is dozens of times smaller than the market for regulatory projects."

Demand for CDM and JI credits comes largely from the European Union, in particular from its Emissions Trading System (EU ETS), which covers the EU's high-emission industries. Manufacturers can in fact make use of carbon credits from Kyoto Protocol mechanisms to meet some of their compliance obligations. The EU ETS is, however, currently closed to all domestic and international forestry carbon credits because of the difficulty, for a regulator, of managing the temporary credits generated by CDM forestry projects. Moreover, the monitoring system in this sector is regarded as less robust.

The exclusion of forestry projects from the EU ETS explains in part their marginal presence on compliance carbon markets. It means that in order to be eligible for the CDM framework, projects have to find buyers outside the EU ETS. The Ibi-Bateké afforestation project is an example of this type of project. It involves planting 4 226 hectares of forest in the Democratic Republic of Congo. The main purchasers of the "temporary" credits from this project are the World Bank's BioCarbon Fund and Orbeo. Validation of the project by the CDM was one of the conditions of the contract with the BioCarbon Fund. However, in order to facilitate the sale of its carbon credits, the project is pursuing a second validation with the Verified Carbon Standard (VCS).[4] According to the project leader, the synergy between agroforestry revenues and the integration of carbon credits, which is a feature of this project, presents an exceptional benefit: the ability to participate in a global market that generates foreign currency, which is reinvested directly in concrete local projects (Chenost et al., 2010). Agroforestry on its own is not profitable enough and the return on investment time is long, which means it is not attractive to traditional investors.

FIGURE 1: CO_2 CREDIT TRANSACTION VOLUMES ON THE VOLUNTARY MARKETS

Source: Ecosystem Marketplace, Bloomberg New Energy Finance,2010

A privileged place on the voluntary markets

The voluntary markets sprang up in response to a demand from businesses, public bod-

[2] The 27 countries of the European Union (except Cyprus and Malta), Canada, Croatia,the United States, Russia, Iceland, Japan, Liechtenstein, Monaco, Norway, New Zealand, the UK and Northern Ireland, Switzerland and the Ukraine.
[3] Of the 77 projects registered and undergoing validation, 22 are based in Latin America (mainly in Costa Rica, Chile, Brazil and Argentina), 20 are in Africa (mainly in Kenya and Uganda, but also in the DRC, Ethiopia, Niger, Senegal, and Tanzania), 18 are in Asia and the Pacific (mainly in India, China and Indonesia) and only two are in Europe (Albania and Moldavia).
[4] The result of negotiations between manufacturers, NGOs and market experts, the Verified Carbon Standard (VCS) is a certification standard for voluntary offsets of greenhouse gas emissions. It was launched at the London Stock Exchange in 2007.

ies and individuals for carbon offsets. These entities are not subject to emissions reduction regulations, but offset their greenhouse gas emissions voluntarily. With a value of only €270 million and with 69 million tonnes of CO_2 equivalent traded in 2010, the voluntary market is dozens of times smaller than the market for regulatory projects (€14 billion and 1,120 million tonnes of CO_2 equivalent for the primary and secondary CDM and JI markets). Yet 40% (Figure 1) of the CO_2 credit transaction volumes on the voluntary market in 2010 came from forestry projects (Peters-Stanley et al., 2011).

This voluntary market is doubly attractive to investors in the forestry sector. Firstly, forestry projects that are eligible for voluntary certification are more diversified than those accepted by the CDM mechanism (which are effectively restricted to afforestation projects). Secondly, the positive impacts of a forestry project on the climate, on the environment and on the socio-economic situation of the populations that depend on the forest are easier to communicate to a broad public (the target audience for organisations engaged in voluntary offsetting activities).

Because the voluntary framework generally offers fewer incentives than the regulatory sector, the voluntary market is not as liquid or as deep. Nevertheless, it is growing rapidly. In fact, these projects generate considerable co-benefits: environmental (conservation of biodiversity, soil protection, etc.) and social (job creation, etc.). Higher demand is enabling the voluntary markets to attain high prices – close to the average prices observed on the compliance markets in 2010.[5] In some cases the voluntary market can even act as a "testing ground" for projects that may enter the compliance framework at a later date (Guigon, 2010). This applies in particular to REDD projects, which currently dominate the voluntary market. Kasigau Corridor is a REDD project that has been implemented in the semi-arid tropical forest in south-eastern Kenya. Validated by the VCS, it was the first REDD project to supply VCS credits. Carbon finance has enabled the project to expand its conservation areas. In addition, it has generated an alternative source of income for the rural Taita and Kamba communities, which have managed to set up an eco factory making organic cotton clothing and are involved in ecotourism activities. This project brings together a company called Wildlife Works with local communities and landowners. It is financed by Nedbank, a South African bank, PUMA and the Althelia fund of BNP Paribas.

Prospects for the forestry sector

Demand on the voluntary markets will almost certainly not be sufficient, however, to meet supply: a large influx of credits from voluntary projects is expected in the next few years, particularly from recently validated REDD projects. In the medium term, therefore, it is vital that we generate a compliance demand for these voluntary credits

There are a number of processes that aim to create this demand. International post-Kyoto Protocol negotiations now give priority to combating deforestation and forest degradation in global climate matters. Even if 2020, the year announced for a new international carbon market, is a long way off, the methodological agreements reached on monitoring, notification and verification of the REDD+ programme[6] could serve as a common metric for the various regional markets that will determine the price of carbon between now and 2020. As far as the CDM is concerned, the negotiators are currently assessing the possibility of including other forestry activities in the mechanism alongside afforestation projects. We also need to develop alternative approaches for temporary credits that make it possible to manage the risk of non-permanence associated with forestry projects.

"In the medium term it is vital that we generate a compliance demand for voluntary credits."

Since the EU ETS market (the main outlet for compliance credits) will not include ▸▸▸

[5] *The sharp fall in prices on the compliance markets at the end of 2011 – which has not yet been documented – appears to have pulled down the price of voluntary offset credits as well.*

[6] *REDD+ is a programme that takes account of conservation of forests and sustainable forest management – in addition to the fight against deforestation and forest degradation – while attempting to increase forest carbon stocks.*

FOCUS

CDC Climat is a subsidiary of Caisse des Dépôts, a public group that provides long-term investment for France's economic development, and was set up in February 2010 to combat climate change. Its mission is to develop services for the climate and carbon markets and to promote investment in carbon assets, while carrying out research into climate change economics. The CDC Climat research team produces independent, unbiased analyses for public authorities, market players and the general public.

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▶▶▶ forestry credits in the short term, other markets are emerging that offer opportunities for the forestry sector.

California has validated its mandatory emissions trading system, which will impose an emissions cap on certain industrial players from 1st January 2013. Offset credits are authorised up to 8% of the allowance, *i.e.* 232 million for the 2012–2020 period. The system applies to sectorial REDD projects arising from regional initiatives in developing countries, and to credits from agricultural and industrial projects implemented in the United States, Mexico and Canada. In Australia, a law passed on 8th November 2011 (Clean Energy Bill, 2011) sets a price on carbon which will be imposed as a tax from 2012 to 2015, with an emissions trading system coming into force thereafter. Those liable to pay the tax can cover 5% of their obligations with domestic agricultural and forestry credits certified by the Carbon Farming Initiative (CFI)[7]. This limit will be lifted in the future and extended to include international credits for up to 50% of emissions.

These new opportunities will no doubt enable the economic instruments used to combat global warming to take greater account of forests. More and more of the world's emerging compliance markets are integrating forest-related projects. International negotiations within the United Nations Framework Convention on Climate Change (UNFCCC) could also lead to regulations on monitoring, notification and verification of REDD+, the benchmark for new compliance markets. In particular, these rules could specify the type of instrument to be used (satellite image of a certain resolution, forestry inventories with a specified sampling density, etc.), the review process for the benchmark scenarios (for example, conducted by a team of experts accredited by the UNFCCC), etc. It remains to be seen how soon these opportunities will materialise. Greater integration of the forestry sector into compliance carbon markets will make it possible to increase visibility and incentives for investors. New private capital flows could, therefore, be directed towards forests, provided the prices of credits on the compliance markets recover. ●

"More and more of the world's emerging compliance markets are integrating forest-related projects."

[7] *The Carbon Farming Initiative (CFI) is a carbon offsets scheme set up by the Australian government to provide new economic opportunities for farmers and foresters.*

THE CARBON MARKETS

Carbon markets are one of the three main economic instruments, alongside taxes and regulations, used to reduce emissions. They can be split into two types: emissions allowance trading systems ("cap and trade") and carbon offset mechanisms that generate credits. The emissions trading system covers entire sectors of the economy. Each installation must surrender sufficient allowances to account for its GHG emissions. To achieve this, installations that have surplus allowances may sell them to installations with an allowance shortfall.

Offsetting involves defining on an ad hoc basis the boundaries of a project aiming to reduce emissions. Emissions within these boundaries are compared against a benchmark scenario (business as usual or BAU) and the difference can be translated into carbon credits. This arrangement enables stakeholders in a sector not included in an emissions trading system to place a value on their emissions reductions if they wish. The label used to certify emissions reductions – and therefore carbon credits – determines the market on which the reductions can be traded. CDM and JI are the two labels that have historically been used on the compliance markets, the primary market here being the European Emissions Trading System (EU ETS). These markets are larger, more liquid and in general credits reach higher prices than those in the voluntary markets. All the other labels are recognised only by the voluntary markets, where businesses, public bodies, individuals, etc. can purchase credits to achieve a voluntary emissions reduction target. This diverse range of labels makes the voluntary markets more flexible, responsive and innovative than the compliance markets.

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Forest management by community forest enterprises

For conservation to be synonymous with development, local populations need to be involved in forest management. Traditional community-based forest management is, however, not without its drawbacks. The community forest enterprise approach promotes direct management of forests as assets that require protection. The future of this approach depends in particular on a change in attitudes both at a political level and within the local communities.

Jean Bakouma and Juan Sève

Head of the Forest Programme at WWF France
Consultant at WWF USA

According to the Central African Forests Commission (COMIFAC), nearly 40 million people are directly dependent on forests for their food, medicines, construction materials and energy requirements. Since the Rio Summit of 1992 and the UN Declaration on the Rights of Indigenous Peoples of 2007, the vital role played by indigenous peoples and local communities in managing the environment and developing forest resources has been widely recognised.

The participation of local communities in forest management raises the question of the relationship between forest conservation and development. The governments respond to this issue by imposing obligations on logging companies to pay for infrastructure, in the form of social investment (schools and clinics) or roads. However, these benefits are not sufficient to raise local communities out of poverty. In fact, they suffer from practices that minimise their economic impact (poor governance, the strategy of certain logging companies, etc.) and from the conflicts characteristic of these arrangements (revenue sharing, leadership problems, etc.). These internal and external factors combined do not lead to prosperity or forest biodiversity.

In addition, the divergent interests of governments, NGOs and development organisations prevent them from coming to an agreement that really benefits local communities. These different perspectives are reflected today in a tendency to see development and the conservation of forest resources as opposing forces[1]. Because of this complex situation, WWF has focused on promoting community enterprise initiatives, particularly in Cameroon – a pioneer when it comes to including local communities in forestry policies. This approach seeks to bypass the traditional divide that pits conservation against development and aims to turn conservation into a development factor.

"The divergent interests of governments, NGOs and development organisations prevent them from coming to an agreement that really benefits local communities."

Traditional community-based forestry: progress with variable benefits

Forestry legislation in most Central African countries contains provisions for a percen-tage of forestry fees or taxes to be allocated to local authorities and local communities. Cameroon became a pioneer in this area in 1994 when it integrated decentralised governance into its forestry policy in order to "increase the involvement of local populations in the conservation and management of forests".The new forestry legislation represented remarkable advances in the fight against rural poverty. Decentralised forest management in Cameroon is based on community forestry, defined ▶▶▶

[1] *Development organisations, governments and the private sector have focused largely on improving the economic value of forest resources. For their part, conservation NGOs have focused on conserving resources rather than on industrial exploitation, which, because of a lack of transparent redistribution mechanisms, does not benefit local communities.*

JEAN BAKOUMA

Jean Bakouma has a PhD in economics and is a specialist in the global wood markets. As a former consultant of the World Bank, the FAO, the European Union and the International Tropical Timber Organization, he lectures on wood trafficking at the French national police investigation training centre in Fontainebleau and teaches on the bioresources Master's degree course at the University of Paris XII. Jean Bakouma is head of WWF France's Forest Programme.

JUAN SÈVE

Juan Sève is a Senior Programme Officer at WWF USA in charge of WWF's activities in the east of the Democratic Republic of Congo. A graduate in forest engineering and economics, he has worked in the field of forestry, forestry industries and the natural resources economy for over 35 years. He is an expert on Africa, Asia and Latin America.

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▶▶▶ as the entire range of dynamic processes involved in giving rural communities responsibility for the management of forest resources (Bigombé, 2001). A community forest is therefore governed by a management agreement between a village community and the administrative body responsible for forests. A community forest is allocated first and foremost to the closest local populations and covers a maximum area of 5000 hectares. The populations are required to form a legal entity (a development association, a common initiative group, or a cooperative) to acquire and manage the forest area. By 2000 there were around 457 initiatives of this type at different stages of development.

Nevertheless, the benefits of community forestry for local populations vary. In some cases, the social projects set up for the communities have visible impacts (increase in school enrolment rates, improved road infrastructure, etc.). In other places, however, the funding has not improved the living conditions or income of the forest communities. In many cases, it is external economic operators who operate the forests to supply the international market, while the village communities end up being de facto employees of the logging companies. They have great difficulty monitoring and controlling the volumes of wood declared and felled (Cuny, 2011). Most of the illegal wood – which is much more competitive than the wood from community forests – supplies the domestic market (Nzoyem Maffo et al., 2010), but this kind of logging creates more limited benefits for the local populations.

"Local populations do not always have the capacity to seize the opportunities that could improve their living conditions."

It should be pointed out that 78.2% of people in rural areas have not received any education at all or have not progressed beyond primary school. This figure is as high as 92.3% in rural populations in the savannah (Nembot Ndeffo, 2009). As a result, local populations do not always have the capacity to seize the opportunities that could improve their living conditions. The decision to create a community forest does not always come from the local populations: other agents (logging companies, NGOs, donor organisations, elites, external operators, etc.) are often the real decision-makers. The low level of involvement and ownership by local communities gives rise to a series of anomalies that manifest themselves in, for example, the sale of illegal wood, in logging companies failing to respect agreements, etc. In this sense, the community does not carry out the monitoring and control functions that are vital for any social, responsible forestry initiative. WWF's approach attempts to respond to this situation by promoting community forest enterprises.

Community forest enterprises: an inclusive approach

There have been plenty of failures among the technical assistance projects designed to benefit community forests, despite the financial resources invested in them (Dourojeanni, M.J., 2008). In view of this, WWF decided to support communities by specifically focusing its assistance on community forest enterprise initiatives. This approach has been successful in Panama, Bolivia and Papua New Guinea. The aim is to ensure the autonomy and effectiveness of communities in their sustainable forest management activities by building their entrepreneurial capacity. Unlike traditional community forest management, the enterprise approach makes it possible to promote project ownership by local populations – a key factor for success. This means that the forest, which is now a business asset, becomes a resource to be conserved.

A community forest enterprise (CFE) is a small for-profit entity managed by local communities responsible for the production, processing and sale of timber and non-wood forest products. The village communities are no longer paid employees of an external logging company and become instead operators themselves. Since 2007, WWF has restructured 30 projects in Cameroon, turning them into CFEs, most of them in two major forest regions: in the south-east of the country (Jengi project) and in the south-west in Campo-Maan. The jobs linked to traditional conservation projects (forest inventory officers, environmental monitors and eco-tourism guides) have evolved into enterprise management jobs linked to forestry conservation. Job creation determines the success of community projects and, ultimately, is a deciding factor in the protection and conservation of forest resources.

WWF supports local communities in the process of acquiring community forests, helps them develop the technical, managerial and organisational capacity required to set up and run an enterprise and provides access to com-

FOCUS

WWF works with all stakeholders to find technical, economic and social solutions that promote sustainable development. As the world's leading conservation organisation, with 5 million members, WWF has permanent offices in around 100 countries. Since it was first set up in 1973, WWF France has been working with international institutions, governments and businesses to bring about real change.

petitive markets[2]. Finally, the programme also provides micro-credit arrangements and revolving loan funds for subsistence activity initiatives (crop farming, animal husbandry etc.). Technical assistance certainly plays the biggest role when it comes to turning conservation into a development factor, particularly during the early phases in the life of a CFE. This is because setting up and developing a CFE involves major socio-economic change: a move from a subsistence-based economy to the integration of rural (and very traditional) communities into local, and even international, market economies. WWF therefore takes particular care to build the capacity of those involved through training programmes. In addition, WWF promotes multi-stakeholder dialogue, which is very useful in many situations, and particularly when it comes to integrated resource management. Finally, WWF helps improve the legal and institutional framework relating to community forests.

Chalenges and future prospects

Designed to provide more effective means of combating poverty within communities, a CFE generates an average income estimated at between CFA 18,000 and CFA 48,200 (€27 to €73) per cubic metre[3] – whereas income from state-controlled community forests varies between CFA 6,000 and CFA 22,000 (€9 to €34) per cubic metre (Hoyle, D. Sonne, N., 2011). Other factors to be taken into account include non-market household income and other environmental services – carbon sequestration, the impact on soil fertility and biodiversity conservation – for which valuation is currently under discussion.

The community forest enterprise approach has several obstacles to overcome, including some that are clearly cultural in nature. All too often, policy-makers and leaders of NGOs still see conservation and development as opposing forces. Viewed from this perspective, any commercial exploitation must be detrimental to the forest. For their part, a large number of commercial players believe that forest conservation reduces the availability of resources for commercial exploitation. At the same time, an inclusive approach relies on the capacity of rural and indigenous societies to develop an entrepreneurial spirit. A great deal of effort needs to be invested in developing dialogue between the local communities and public authorities. The authorities have an educational role to play, since the technical assistance provided by WWF is not intended to be permanent. Priority should be given to the acquisition of new skills. Strengthening the capacity of local communities will help empower them as part of this process. It is the contrary of an assistance approach. And this implies a real culture change to achieve long-lasting results.

Overcoming these obstacles therefore involves a new approach and mindset, both at a political level and within the local communities. The future of CFEs also depends on the institutional and legal situation: the stability of institutions, the quality and predictability of the legal framework, etc. The general climate needs to be conducive to the community forest enterprises' commercial and economic development, and must be accompanied by specific interventions (technical assistance and business environment). Finally, nothing can be achieved without the participation of the local populations in discussion platforms and without their involvement in improving the way in which enterprises are managed.

"Policy-makers and leaders of NGOs still see conservation and development as opposing forces."

The approach developed by WWF, based on the community forest enterprise, takes a long-term view and attempts to combine sustainable forest management with economic management. It makes it possible to combine the economic efficiency of community forest enterprises, improved social welfare within communities and forest conservation. The enterprise approach focuses on the motivation of the stakeholders to satisfy their needs by becoming involved in value-creation activities. These aspirations at the community level have been ignored for a long time. They do exist, however, and explain in part the support that programmes proposed by WWF enjoy within local communities. Finally, poverty reduction in local communities depends on wealth creation. Enterprises in general, and CFEs in particular, are wealth-creation environments. If communities see the forest as a valuable asset, they will play an active part in its conservation. •

[2] In particular by organising business meetings like Racewood, an international forum for organisations involved in the timber industry.
[3] These sums should also increase as the trade in illegal wood disappears, since this trade creates unfair competition on the domestic market.

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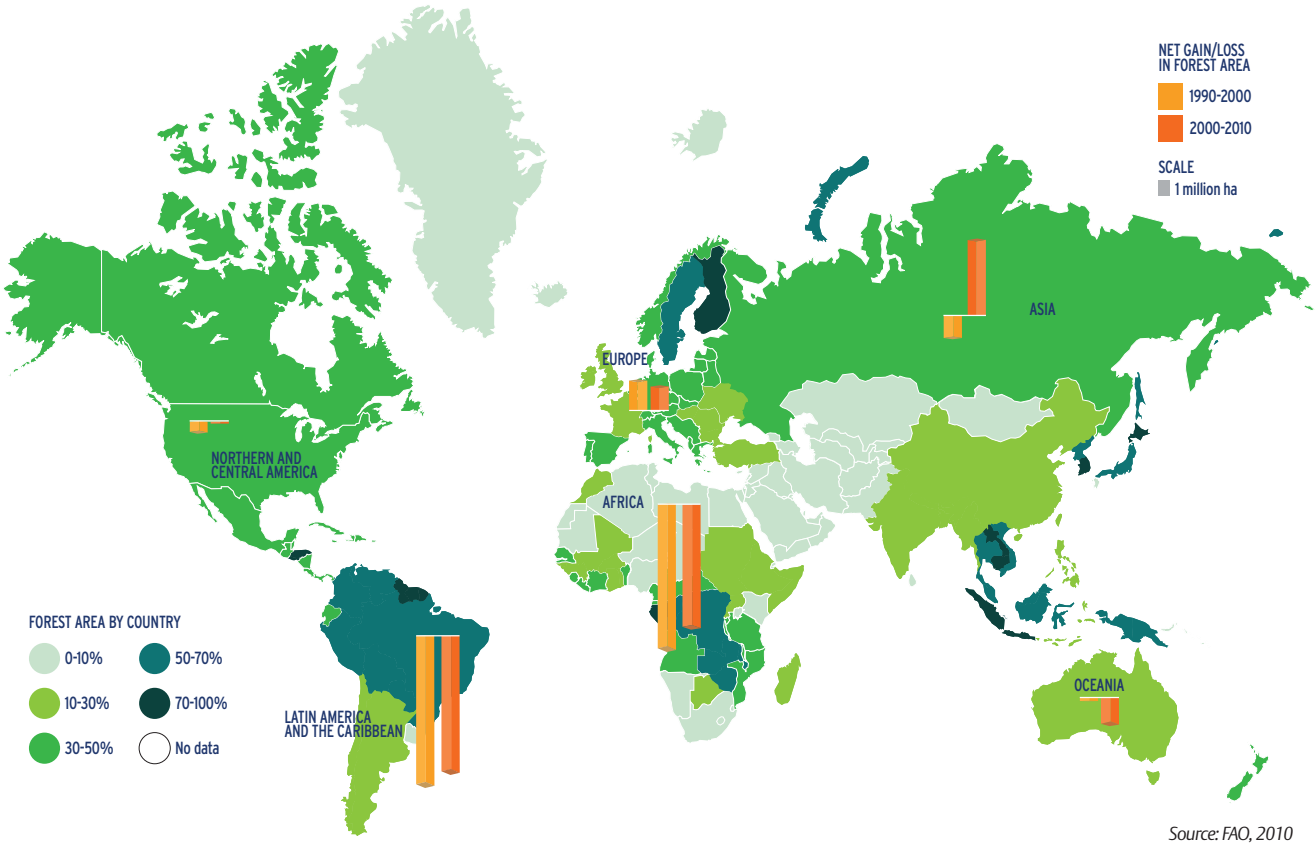
Nearly 13 million hectares of forest disappear each year, mainly in the southern hemisphere. The growing demand for industrial timber and the lack of alternatives to fuel wood are exacerbating the pressure on these forestry resources. A move towards sustainable forest management and the development of plantations will help meeting this dual challenge of exploiting and preserving forests.

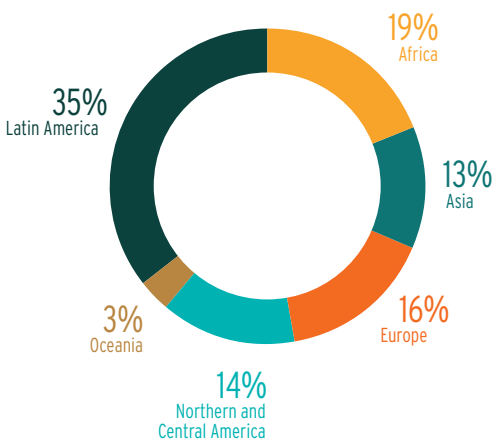
Change in global forestry resources, 1990-2010



Source: FAO, 2010

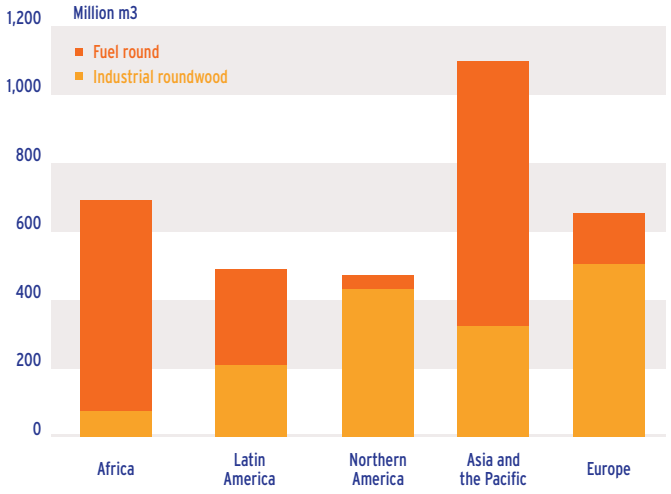
Carbon stocks in forest biomass, 2010

(% of Gt)



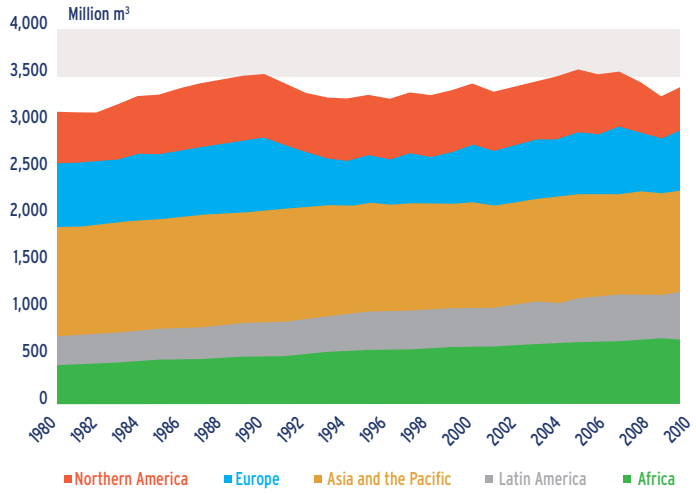
Source: FAO, 2010

Wood removals by use, 2010



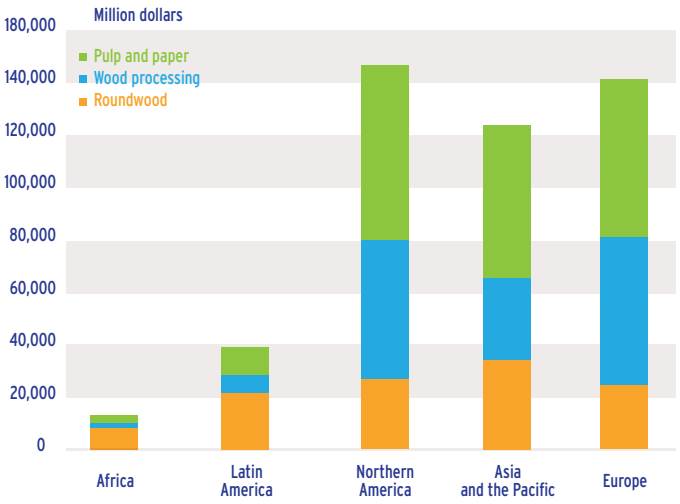
Source: FAOSTAT, 2010

Trend in wood removals, 1980-2010



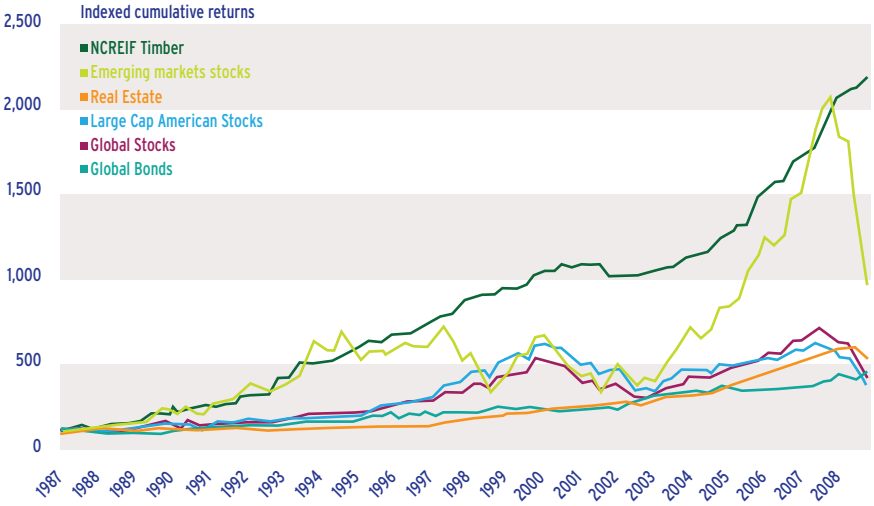
Source : FAOSTAT, 2010

Breakdown of wood added value by product, 2010



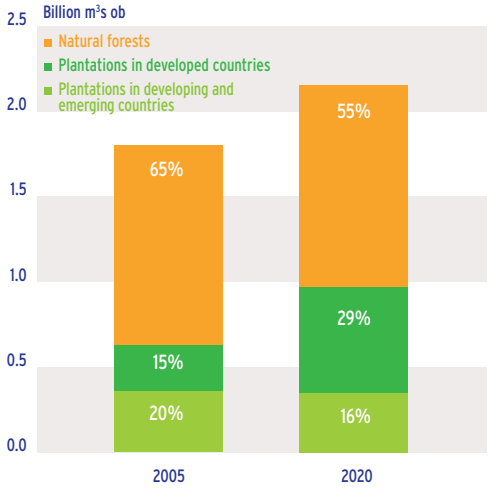
Source : FAO, 2010

Returns on forest assets, 1987-2008



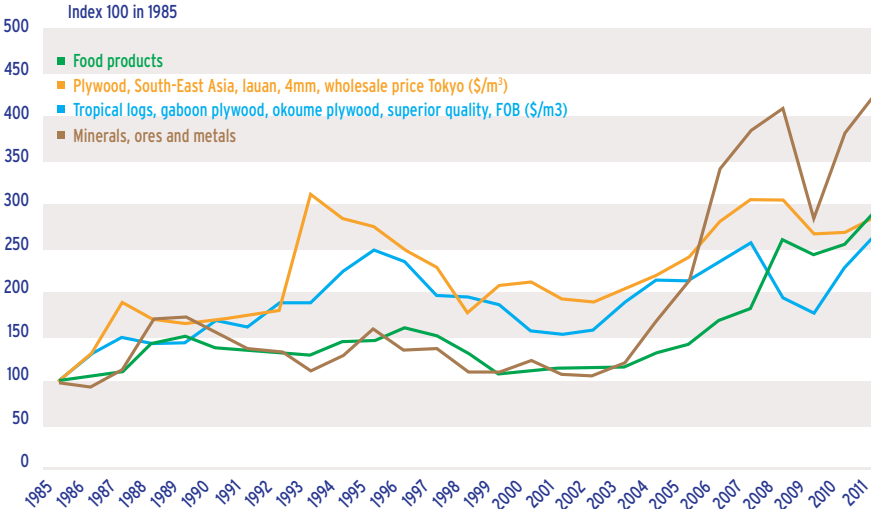
Source: IWC, 2009

Plantations in forestry areas, 2005-2020



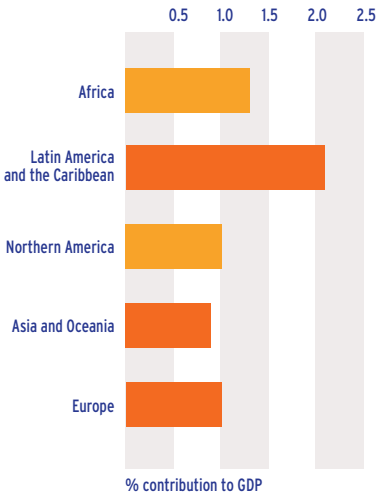
Source: Pöyry

Price of industrial wood compared with other raw materials, 1990-2011



Source: UNCTAD, 2011

Contribution of forestry sector to GDP



Source: FAO, 2010

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Forest Management Plans in the Congo Basin – their strengths and weaknesses

More than half the forests in the Congo Basin have been allocated as concessions, and most are covered by Forest Management Plans (FMPs). The introduction of these plans – supported by French cooperation – brought an end to uncontrolled exploitation. Yet these developments are still overly concentrated on a few major groups. Introducing FMPs more widely and strengthening the state's capacity in the forestry sector remain key challenges for the future.

Constance Corbier-Barthaux

Agence Française de Développement

The forest of the Congo Basin – extending mainly across Democratic Republic of the Congo (DRC), Equatorial Guinea, Gabon, Cameroon, the Central African Republic (CAR), and the Republic of Congo – is the world's second-largest area of tropical forest after the Amazon rainforest, covering more than 200 million hectares (out of DRC). In Cameroon, the forestry sector accounts for 6% of GDP, representing nearly 41 billion CFA francs (around €62.5 million) of tax revenues and 13,000 jobs in the formal sector.

CONSTANCE CORBIER-BARTHAUX

Constance Corbier-Barthaux is an agro-economist and environmentalist who worked for development aid organisations (including the FAO) and then at the French Ministry of the Environment before joining AFD in 2000. Since 3 years she is in charge, at the AFD Evaluation Unit, to develop an evaluation on investment programme for the AFD's interventions in the sphere of biodiversity conservation and the sustainable management of natural resources.

In the CAR, despite the low proportion of forest being exploited, the sector accounted for around 6.3% of GDP in 2007 and represents between 40% and 80% of export revenues, the proportion varying from year to year.

Overall, Gabon, Cameroon, the CAR and the Republic of Congo, the four countries in the scope of this paper, present a broadly similar forest environment, with forest resources of a similar character: dense forests, mainly closed-canopy, partly primary and partly secondary.

The deforestation rate is relatively low, at around 0.1% in the densely forested areas.

At the beginning of the 1990s, none of the forest was as yet under management; the first Forest Management Plans (Box 1) were just being introduced. The institutional situations were fairly similar at this time; harvesting was generally undertaken with volume-based timber licences. All these countries subsequently underwent broadly similar changes, with the adoption of forest laws and codes, and then standards incorporating the system of concessions and management obligations. Finally, economic and fiscal measures were introduced to reform the forestry sector – supported, in particular, by the World Bank.

"31 million hectares have been allocated in the form of forestry concessions, i.e. 51.3% of the major forest areas"

Today, for the four countries at stake, 31 million hectares have been allocated in the form of forestry concessions, *i.e.* 51.3% of the major forest areas recorded in these countries. Nearly 20 million hectares are covered by management plans, of which 4.4 million hectares are certified as "sustainably managed" by the Forest Stewardship Council (FSC). In other words major progress has been achieved in the past twenty years. The AFD has contributed to this progress, building a fund of expertise which it can draw on now to undertake an overall analysis of how FMPs are working in the Congo Basin countries.

French cooperation – supporting the forestry sector

For twenty years, French assistance in the Congo Basin has pursued a markedly dif-

[1] *NB: this article draws on a retrospective external survey published in September 2011, entitled "Secteur forestier dans les pays du Bassin du Congo : 20 ans d'interventions de l'AFD " [The forest sector in the Congo Basin countries: 20 years of AFD intervention], by Jean-Marie Samyn and James Gasagna (Intercooperation, Switzerland), and Emmanuel and Fabien Pousse (Institutions et Développement, France) on behalf of the AFD. Please refer to this publication for more detailed information.*

ferent strategy from that of other donors in delivering sustained support for the forestry sector. The various French cooperation stakeholders have developed complementary approaches: the Ministry of Foreign and European Affairs (MAEE) focused on institutional support to governments; the AFD Group provided support to private concession holders; and the French Global Environment Facility (Fonds Français pour l'Environnement Mondial, FFEM) concentrated on biodiversity issues. All French cooperation support has been determined by a common objective of supporting sustainable forest management, with the AFD specifically providing substantial support for the preparation of Forest Management Plans in the Congo Basin region.

During the 1990s, French cooperation in the sector was delivered mainly via Proparco, which supported private industrial investment. Significant investments were leveraged, benefiting the private sector and focused on a few major companies like Rougier and Pasquet, mainly in Cameroon (€5.5 million) and Gabon (€4.2 million). Alongside Proparco's initial investments, pilot projects were launched in forest management, by the MAEE in Cameroon and by the AFD. In the late 1990s, the AFD provided financial support for major concession holders committing to FMPs. At the time, the operators most receptive to these loans – which were subject to conditions – were the major European concession holders. Gradually the AFD and Proparco expanded their support, including La Congolaise Industrielle des Bois, Pallisco in Cameroon or La Compagnie Équatoriale des Bois in Gabon. The AFD subsequently became involved in projects which allowed it to provide indirect support (*via* government loans or subsidies) to small and medium-sized private operators preparing FMPs. In particular, these projects enabled companies to externalise and mutualise the costs of preparing FMPs. In parallel, the MAEE provided institutional support to the ministries responsible for forests and forestry research. These responsibilities were transferred to the AFD from 2009. During the 2000s, the FMP concept expanded to incorporate social and environmental components. The imperative of preserving biodiversity became a priority of French cooperation, prompting a wave of subsidies from the FFEM linked with AFD loans for FMPs (from 1999 to 2003). More recently, the AFD has opened up new spheres of intervention: conservation, the role of forests in carbon dioxide capture and storage, and involvement in mechanisms such as Reducing Emissions from Deforestation and Degradation (REDD).

"The support provided by French cooperation has been determined by a common objective of supporting sustainable forest management"

Overall, during this twenty-year period, French cooperation has committed more than €120 million to the forestry sector in the Congo Basin. FMPs supported by the AFD represent 5.5 million hectares, *i.e.* 17% of the allocated forest area. Its loans have provided a benchmark for establishing standards and developing legislation. The AFD has accumulated a fund of expertise relating to the Congo Basin forestry sector; the group's involvement in preparing and implementing FMPs gives it a clear view to measure the progress achieved in recent years.

Positive impacts observed

The development of the FMP as a tool, combining forest exploitation with the imperatives of sustainable management, has effected a break with the mining-style exploitation practices of the past. FMPs have allowed major operators to progressively participate in the change in practice. Management teams have now been established, and sustainable management is integrated in these businesses. FMPs have strengthened the companies' operational systems by facilitating a better awareness of the resources available, ▶▶▶

BOX 1: FOREST MANAGEMENT PLAN (FMP)

The FMP is a tool for planning and sustainably managing a forest resource. Originally developed for the artificial forests of the northern hemisphere, it has been adapted for use in tropical forests. It is a contractual agreement between the concession holder and the state, designed to facilitate the transition from mining-type exploitation to sustainable exploitation, guaranteeing the renewal of natural capital, the preservation of biodiversity and the socio-economic development of neighbouring populations. One of the principles of Forest Management is to develop a more in-depth knowledge of the forest resources available in order to plan their management. The concession is divided into felling areas, only a proportion of which are exploited over a 25-30 year cycle, in a rotation system. This allows the forest resource to regenerate by the time the first felling areas are revisited. No trees are felled without checking their diameter, so that young trees can continue to grow.

At the same time, the Management Plan concept has been expanded, incorporating a social component – designed to protect the associated economic activities of neighbouring populations – as well as taking into account the protection of biodiversity, including the preservation of existing wildlife.

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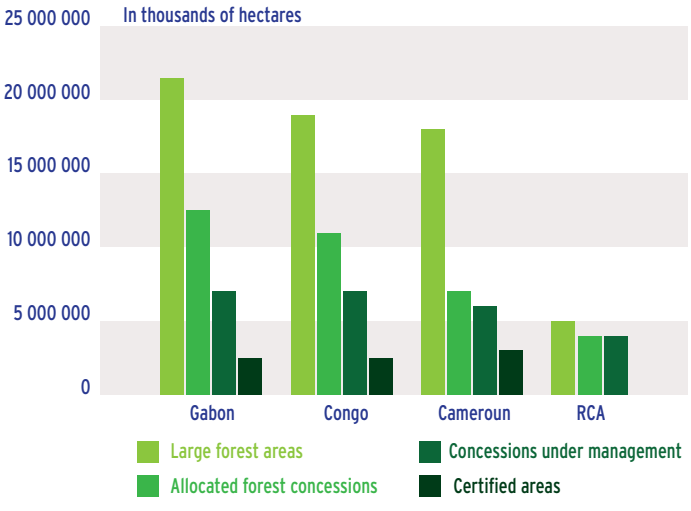
▶▶▶ allowing production to be planned more efficiently. The company knows the location of the species it plans to harvest, how these species are distributed by diameter category, and the quality of the trees surveyed. Harvesting is more efficient and less expensive as a result. FMPs have also helped these companies maintain their position in European markets and to access new markets, and enabled them to respond to criticisms from international NGOs in the years between 1990 and 2000.

As a result, new relationships have evolved between private operators and the international NGOs. Initially taking opposing stances, now they have come as far as setting up concrete partnerships in the field, primarily relating to the design and implementation of biodiversity and social programmes. Today the forest is no longer solely the concern of the state, which grants concessions to the private sector. The major concession holders pay genuine attention to their employees' living conditions. Companies with certification have also put prudential anti-poaching measures in place: with controlled access to the concession, the closure of traditional trails and the supervision of logging trucks to prevent the transportation of meat. The big-game population has stabilised as a result.

"A broader dialogue – between the state, private operators and NGOs – is now ongoing"

The legal, regulatory and standards environment has developed alongside FMP implementation. The system for allocating forestry concessions has become more transparent and objective. State/operator contracts are long-term agreements, which help to ensure secure supplies and to stabilise the timber sector as a whole. In addition, private operators have further diversified the range of species they harvest – and therefore the range of species processed. Today, out of the forests under concession (*i.e.* 31 million hectares), 20 million hectares are covered by high-quality management plans (Figure 1). The capabilities of private operators and the forestry administration have been enhanced, management standards have been established, technical manuals have been published, and a broader dialogue – between the state, private operators and NGOs – is now ongoing. Practices have started to change. Even if they have significantly improved the initial situation, FMPs come up against a number of limitations – which can at times even threaten to compromise their goals.

FIGURE 1: FOREST MANAGEMENT IN THE CONGO BASIN IN 2010



Source: OFAC, "State of the Forests in 2008"

Limitations observed

Although the FMP has now become a well-established instrument, the changes that have taken place remain confined to a few major groups. The majority of small and medium-sized concession holders continue to operate a strategy of intensive exploitation. These operators, after all, face various constraints: making changes in an organisation limited by its size and by traditional (or even family-based) management methods, as well as finding the investment to acquire the necessary forest management expertise. Moreover, setting up an FMP involves substantial costs which these companies cannot easily absorb – especially as the amortisation period for the expenses often covers a timescale exceeding their own economic reference timeframe.

Even among the large concession-holders questions remain regarding the genuine use of the FMP from a sustainable management perspective. According to a study by Germany's Agency for Technical Cooperation (Vandenhaute, M., Doucet, J.-L., 2006) covering the implementation of around 20 of the best FMPs in Cameroon, 75% of the management plans do not fulfil half of the criterias required by sustainability certification schemes. Among the major concession holders supported by the AFD, however, the results are more positive: 50% of the land area they cover is now certified, and according to observation of African Timber Organisation the level of criterias met stands at 75–80% (Larat, P., Lemelle, J.P., 2010). On the financing side, the role and commitment of the banks can also be questioned. The banks in the Congo Basin have excess liquidity – the problem is not therefore accessing primary capital but the banks' willingness to take risks

in the forestry sector or their lack of knowledge in this field.

Governance in the forestry sector today is a major – if not the main – impediment to the success of sustainable forest management. While the state has conceded public resources it has not yet developed a genuine long-term vision, or neither requirement for visible results and outcomes monitoring. The agreements between the state and the private operators are sometimes regarded merely as the documentation required in order to proceed with harvesting. Regulatory provisions are not always followed – time-schedules for drawing up FMPs or specifications are not always observed, for example – and infringements are not adequately penalised by the administration. Moreover, although an improved knowledge of the resources is a clear benefit of FMPs, this knowledge is barely disseminated at all beyond the companies themselves and the research agencies involved. Administrations do not make use of this information themselves. The research, moreover, tends to concentrate on identifying the resources available and pays little attention to how these resources will evolve in the future. In more general terms, there is no evidence of any real reflection on the FMP model itself at government level – the impression is that this remains an imported model. The battle against illegal logging is far from won. A recent study undertaken in Cameroon (Pye-Smith, C., 2011) showed that the informal or illegal sector accounted for nearly 50% of timber production in this market. Furthermore substantial progress still needs to be made to improve observance of the social dimension of FMPs – and their biodiversity component, too.

"Governance in the forestry sector today is a major – if not the major – impediment to the success of sustainable forest management"

FMPs have proved themselves to be an effective tool – yet the management and development model they propose clearly has limitations in several respects, too. In the Congo Basin the forest is still regarded by some simply as a resource to be exploited. In order to become more widespread, FMPs would benefit from being adapted, and simplified, to suit different situations and changing socio-economic circumstances. Additional sources of financing need to be found, especially to improve the plans' biodiversity and social impact components. Finally, governance in the countries involved needs to be improved; more effective monitoring and genuine buy-in on the part of governments is the key to making FMPs more effective.

At present there is a gap between the preparation of FMPs and their effective application in practice. Even so they are replicable, flexible tool – that has become an established feature of the forestry scene, and forestry legislation, in various countries, and that is helping to bring about changes in forestry practice. What is required now is to define strategies for supporting their effective implementation. Development agencies like AFD have a key role to play in supporting this process. •

BOX 2: COMPARING FOREST MANAGEMENT CONCEPT OF BRAZIL AND AFRICA

Brazil has set up a system of timber concessions for its public forests based on a sustainable resource management model. Although the concessions granted so far cover an area of less than 100,000 hectares, a further one million hectares are in the process of being allocated. The stated target is around ten million hectares. One of the big specificity of forestry management as practised in Brazil, compared with Africa, is the way forests are broken up into annual harvesting sites of equivalent area (without any prior evaluation of the resources available on the site), and the renewal conditions. The equivolume principle of annual harvesting sites is not applied, nor are management parameters (rotation periods, minimum exploitable diameter) set to ensure the renewal of forest resources. Some people see this approach as a major risk that could lead to unsustainability of the resource in the long term. Moreover Brazil follows the concept of reduced-impact forest exploitation that is also used in the tropical forests of Africa. Brazil also goes further in its annual planning and appears to be further advanced than the countries of the Congo Basin when it comes to social and environmental aspects. Moreover, Brazil's forestry sector has the advantage of effective national institutions to support its forestry management policies.

FOCUS

The AFD Group has been supporting the forestry sector for more than twenty years, with loans and credit lines for major concession holders and technical and financial support for small operations. It invests in projects covering a wide range of areas: conservation, carbon funds, REDD mechanisms, etc. With its expertise in this sector the AFD is well placed to analyse the impact of forest management policies, especially in Africa.

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Preliminary feedback on FSC™ certification from an operator's point of view

In 2008, Rougier embarked on the process of securing FSC certification for its Gabon concessions and for its traceability chain (FSC-C017653). The decision was essentially a leap of faith: at that time, the absence of any longterm perspective made a purely economic reasoning impossible. The process has proved nothing less than a cultural revolution, allowing Rougier to adopt the best forestry management practices, to retain its marketshare and build a fund of experience that will be valuable for the future.

Francis Rougier and Mickael Clément

Vice-President and Chief Executive of Rougier SA
Associate Director of Azao Conseil

While the management plan is a regulatory tool for organising a sustainable forestry operation, certification is voluntarily implemented by the producer and has a wider remit, taking account of both environmental and social factors in a more comprehensive way.

The Rougier Group has been operating in Central Africa since 1952 and currently manages more than 2 million hectares of forestry concessions in Gabon, Cameroon and the Republic of Congo. The forestry concessions in the Congo basin belong to the state; they are allocated to a forestry operator by a tender process, for a period lasting between 15 and 30 years depending on the region and the land area involved. Once the concession has been granted, the forestry operator generally has three years to prepare and submit its management plan. The plan effectively defines in detail how the concession will be managed during the years ahead. The Rougier Group is currently implementing approved management plans across all its forestry concessions.

"Certification can not be approached in a binary way"

Rougier embarked on the certification process after having implemented a sustainable forestry management policy from 1994. Moving beyond basic forestry management requirements to operate in accordance with best forestry management practices, Rougier set up internationally recognised certification and legality/traceability verification systems across all its concessions. In 2008 the group reached a significant landmark, achieving FSC[1] certification for 688,000 hectares of forestry concessions in Gabon. Certification

[1] *The FSC (Forest Stewardship Council) is an international NGO bringing together timber industry professionals, environmental groups, and representatives of indigenous community organisations. The FSC awards a label which certifies forests that are managed in a responsible and sustainable way.*

FRANCIS ROUGIER

Francis Rougier is Vice-President and Chief Executive of the Rougier Group. He joined the family company in 1971, after graduating in and obtaining a degree from Sciences Po (the Institute of Political Studies), and was appointed Chief Executive in 1983. He became Chairman of the Board in 2004, and has been Vice-President and Chief Executive of Rougier SA since June 2010. He also is a board member of a number of professional and employer organisations.

MICKAËL CLÉMENT

Mickaël Clément is a consultant specialising in social risks and stakeholder relations who has worked for various international consulting firms. He has also undertaken assignments for humanitarian NGOs in Africa and Afghanistan. Mickael Clément studied sociology and holds a degree in risk and crisis management; he is a lecturer in social risks at HEC Paris.

FOCUS

Rougier Group, established in 1923, is one of the market leaders for certified African tropical woods. With a workforce of 3,000, the group is active in the management of natural forests, industrial processing and international trade (Rougier Afrique International); in the import and distribution of timber products in France (Rougier Sylvaco and Rougier Panneaux); and in research, management and investment in industrial forestry plantations in Africa (Lignafrica).

can not be approached in a binary way. It is, by its nature, the result of a long process, with very specific milestones to be achieved along the way. For Rougier it is also the outcome of discussions – conflicts, even, at times – instigated by civil society.

Certification: origins and rationale

Historically, the management plans have been the first step towards certification. Yet the company already had an established forestry management culture derived from the pragmatic imperatives of economy and effective resource management. The principle of rotation in harvesting ensured that the same stock was standing at the end of the rotation cycle – with reference to the woods used for commercial purposes. From the 2000s onwards, management plans were subject to regulatory approval: this gave companies like Rougier the opportunity to develop their experience and their range of expertise. At this point the company considered various kinds of certification and labelling schemes. Initially it opted to move towards the Programme for the endorsement of forest certification schemes (PEFC), partly because a local organisation, Pan African Forest Certification System (PAFC) Gabon, had just been established. But it was going to take some time for the PAFC system to be fully developed and officially recognised by PEFC International. Looking at both this situation and the fact that Rougier's main competitors had definitely decided for the FSC – mainly because it was already operational, and supported by the major environmental NGOs – in the end the company decided for the FSC.

No-one could honestly deny today that this move towards certification in the mid-2000s was primarily driven by pressure from civil society regarding the trade in tropical woods. The NGOs in particular, who played a major role in raising consumer awareness, considered guarantees supplied by the operators themselves to be inadequate, judging that only the FSC label could provide reliable guarantees of good forestry resource management and proper consideration of local populations. The commitment to FSC certification at this time cannot therefore be explained as the result of an economic calculation. There was no business plan: at that stage, in the years 2005–2006, no figures were available to plan the costs and amortisation schedules involved. Rougier, after all, was one of the very first companies in the Congo Basin to embark on the process. Moreover any projections would have been complicated by the frequent regulatory changes in the countries where the company operates – such as when Gabon applied a log export ban with effect from 1st January 2010.

"The move towards certification was still largely a leap of faith – a decision based on intuition."

So although there were many reasons for choosing the FSC, the move towards certification was still largely a leap of faith – a decision based on intuition.

The next step was to make it happen. The first FSC certification in Gabon came through in 2008 – but this had required three years of preparation and maturation. Internally those three years saw moments of doubt about the strategy, because of the high costs involved – costs that were multiplied in Gabon due to the geographic fragmentation of the company's operations – and the cultural revolution it entailed. The failure of the first audit can be partly explained by the fact that local employees had not yet fully bought into the strategy. It is important to look beyond the technical criteria and take into account the time period required for major changes in habits and working practices to be assimilated on the ground (Box).

Higher value for certified products?

One of Rougier's leading FSC-labelled products is its 100% okoume plywood.[2] The product has a very short marketing chain (a low number of intermediaries) and it is a finished product, ready to be sold. Nearly all the group's plywoods now have FSC certification. These products are not necessarily sold to customers at a higher price, but the presence of the label on the products helps Rougier to maintain its market share where other producers have experienced significant declines. With respect to sawn timber from Gabon – the raw product from the initial log processing stage – the FSC label does not automatically add value in the same way as for plywoods, although this can vary widely according to the specific type of wood involved. Here the marketing chain is longer: the sawn timber will be processed several times before being used for a given purpose by the end customer. Whatever the product, the Rougier Group has not found that FSC-labelled products attract an automatic price premium. Yet certification does represent a definite competitive advantage, especially when it comes to maintaining a current market position or breaking into new markets. Manufacturers highlight specific labels and certificates in accordance with the prevailing awareness levels in each particular target market. In the US, for example, the Lacey Act was ▶▶▶

[2] *Okoume is by far the main tree species harvested in Gabon (65% of the total volume). It regenerates very well in open surroundings like village plantations or large forest clearings, but less effectively in a natural forest environment.*

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▶▶▶ recently extended to include plant products, requiring importers to verify the legality of the products they import. In this market, Rougier focuses therefore on its TLTV certification (Timber Legality and Traceability Verification) – based on the assumption that this will reassure the market and that demand will grow as a result.

Much progress still needs to be made, however, in terms of raising awareness of the FSC among buyers and the general public. The picture still varies enormously from one market to another. In Switzerland, 68% of consumers recognise the FSC label, but the recognition level is no more than 10% in Spain, and less than 20% in the US and in France (FSC, 2012). Awareness is growing significantly, however, in markets like the UK and Belgium. Variations between different types of wood must be taken into account, too. Demand for okoume sawn timber is high in the Middle East and in southern European markets – in other words in markets where awareness of the FSC label is low. By contrast, other hardwood species also produced in Gabon are in great demand in northern European markets where the FSC label attracts a premium.

As for the costs of certification, excluding initial investments, in Gabon these amount to more than €1 million a year: around 30% for dedicated management, 10% for environmental monitoring and the lion's share, 60%, for social initiatives (housing, healthcare, sanitation, education, etc.). While the return on investment in Gabon is still very limited, the growing interest in some markets could offer interesting opportunities in the medium term.

Any assessment of the switch to FSC accreditation must also take the non-economic benefits into account. The process literally transforms the company's entire culture. From the first-aid kit in all vehicles to the hydrocarbon decanters/separators, and including accommodation standards for employees: at Rougier the improvement in working conditions has been enormous. Nonetheless it should be noted that accreditation has a major impact on resource management: the lower extraction rate means that operators need to expand their management plans and extend their concessions in order to harvest the same volume of wood as before.

"Much progress still needs to be made, however, in terms of raising awareness of the FSC mong buyers and the general public."

The company also benefits from a far better image. The work undertaken as part of the certification process definitely helped to build more constructive relations with local civil society. Participatory mapping was used across the board, for example: local communities were invited to participate in mapping each concession or plot and drawing up an inventory of the trees (identifying, for example, the trees they regarded as sacred). This process substantially improved relations and the quality of dialogue with local populations.

No feedback report on certification can exclude a dispassionate look at the challenges the process involves. For example, in many non-mature markets (as regards responsible forestry resource management) the few operators who have opted for certification suffer persistent competition from wood with dubious origins and production methods. Even so, for a company like Rougier, turning back the clock would be unthinkable at this stage, given the progress achieved to date. The key is to maintain a long-term view when confronted with these immediate challenges. Rougier is therefore looking to finalise FSC certification for all its Congo Basin concessions. The company now has a valuable fund of experience to draw on – and a clearer view of the economic prospects, too. ●

BOX: ACTIONS TAKEN TO OBTAIN FSC CERTIFICATION

Forest Management (FM) certification from the FSC is based on ten principles which include compliance with applicable laws, social factors (indigenous people's rights, workers' wellbeing, etc.), and various environmental requirements (conservation, stock renewal, etc.). The process has many stages, starting with a written application to a certification body accredited by the ASI (Accreditation Service International).[3] Rougier's forest management system was already geared to resource preservation and so the new investments required to obtain FSC FM certification in Gabon mainly related to the social criteria. Where industrial sites are located in an isolated rural environment, the group is responsible for its employees' accommodation and welfare, guaranteeing access to all basic services. The group is therefore undertaking social initiatives in the areas of safety, hygiene, housing, education, food and healthcare. Occupational health and safety programmes have been set up and personal protection equipment has been issued to all workers. Access to drinking water is ensured; this involves drilling wells and making the water safe for drinking. Organic, metal and plastic waste is sorted and toxic or pollutant materials are stored in purpose-built locations. Information sessions are provided to ensure that staff are kept up to date with all these measures. Rougier compensates for the absence of healthcare infrastructures by financing the construction of medical centres and dispensaries, and recruiting nurses and even doctors. Medical visits and vaccination/STD awareness campaigns are organised on a regular basis. Continuing education is vital: an investment that also serves to build local capacity. The group is also funding the establishment of schools. Finally, in order to comply with FSC principles relating to intensive engagement with the needs of local populations, Rougier involves sociologists to prevent any conflict with local people and to reach consensus on the division of the areas under management.

[3] *The ASI is the sole accreditation body for FSC and MSC certifications.*

RÉFÉRENCES / **FSC, 2012,** Newsletter n° 12, France, available at https://docs.google.com/document/d/1VFiFqZkXtaASvOiT3WQagSivE6qVfHKxWYRyzUsAMiQ/edit?pli=1#

Stimulating private investment in the forestry sector

Deforestation has devastating effects in developing countries. Managed sustainably, forestry projects provide solutions to economic, environmental and social problems by creating jobs, developing infrastructure, etc. Through the financing of forestry projects, development finance institutions can have a favourable impact on local legislation, as well as providing reassurance to investors.

Hanna Skelly

Associate Director, Finnfund

Natural forests are disappearing fast globally. Every year global forest cover reduces by some 10 million hectares. The majority of this occurs in the Southern hemisphere and in developing countries.

Forests serve as a natural carbon storage area – as a tree grows, it sequesters carbon. Deforestation is one of the key contributors to climate change, and has far-reaching implications for the environment in several ways – deforested areas are prone to drought, as the vegetative cover protecting water sources is removed. They are also prone to erosion and depletion of soil minerals and significant losses of biodiversity and ecosystem services. Deforested areas suffer more easily from other catastrophes such as flooding and landslides, and in the longer term, deforested areas can undergo desertification, no longer being able to provide livelihoods for local people. Measures to reduce deforestation have a positive impact in the fight against climate change. Beside climate change has already demonstrated devastating impacts in developing countries. Most are located in the tropical and subtropical regions where even small changes in climatic conditions have large consequences. The people in these countries are poor and highly dependent on natural resources, agriculture and other such sectors that are sensitive to climatic changes.

In developing countries, especially in Africa, a major contributor to deforestation is demand for firewood, as well as shifting agricultural practices. Protecting existing forests alone is not sufficient to fight deforestation. If alternative sources of firewood (or charcoal) and inputs needed for improved agricultural practices are not provided, the protection efforts may become futile, as the people will move to another location where protection is not enforced, and the deforestation will continue.

"A major contributor to deforestation is demand for firewood, as well as shifting agricultural practices."

Promoting the sustainable management and use of forests by providing education and technical support as well as developing new forest resources are equally important as conservation. Depending on the end use, new resources can be developed through rehabilitating degraded or badly managed forests or by planting new forests. While plantation forestry may in some stakeholders' minds have a negative connotation, it can yield significant positive environmental and development effects when implemented appropriately. Forestry projects take time to develop though, and the attached community and social development issues require close monitoring, time, support and effort.

In developing countries where political and country risk issues limit the appetite of private sector investors and financiers, the long-term commitment required in these projects may further reduce the attractiveness of the sector. Further, infrastructure challenges in these countries make these projects more expensive, lowering the yield. Thus, there is a clear need for development finance institutions and multinationals to participate in this sector, as catalysts to other funding. ▶▶▶

HANNA SKELLY

Hanna Skelly, Associate Director at Finnfund Ltd, leads an investment team specialised in forestry, renewable energy, energy efficiency and clean technologies with business development responsibilities including origination and structuring. In addition, she is responsible for the management of a dedicated portfolio of non-investment-grade emerging market investments (equity, mezzanine and loan). She has over 10 years of experience in emerging markets and forest industry sectors. Prior to joining Finnfund, she was based in Singapore as a senior consultant with Pöyry Forest Industry Consulting, the leading global forest industry consulting company, and with Nordea Bank's Singapore office project finance team.

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▶▶▶ Forestry is one of Finland's development policy themes, and regarding the sustainable use and protection of forests, Finland and the developing countries share the same goals. Forestry offers economic opportunities and social and environmental benefits. By providing a framework for sustainable forestry, equitable economic growth is created, poverty is reduced, and threats to the environment are prevented. Finnfund is one of the instruments for implementing Finland's development policy, and it has established a dedicated team to review opportunities in this area.

Forestry and development impacts

Development finance institutions such as Finnfund require their investments to be both profitable and to generate measurable development impacts in the project country. In addition to effectively mitigating climate change, forestry projects also provide a wide range of these development impacts. Forestry projects tend to be located in rural areas where formal employment opportunities are few, they are labour intensive – a large project easily employs thousands of people – and many tasks are manual. Employment requirements range from the performance of simple tasks to more demanding positions. Women are equally easily employable. This large employee base supports the development of additional economic activities, providing livelihoods for even more people. This potentially improves resilience and supports adaptation to the effects of climate change.

Forestry projects require infrastructure, both in their immediate area and from the project site to markets, and most projects invest heavily in developing and maintaining it. As the project sites tend to be very large, the whole region generally benefits from this.

While the land use and tenure regulations of the relevant country determine whether forestry projects will be based on land ownership or other types of tenure, they typically make some form of payment either to the government or to local agencies or communities for the use of the land and wood. The projects also contribute to the local economy through direct and indirect taxes and in other ways. Wood products often have significant export value, have well-developed global markets, and can provide significant export revenues to the country.

Well-managed, legally operating plantation forestry projects help battle illegal logging. They contribute to the development of official and legal wood product markets, and meet the demand that illegal logging attempts to satisfy. They help officials and governments as well as local people to understand the benefits of legally operating projects, and thus make the operations of illegal loggers more difficult and less profitable.

Properly implemented plantation forestry projects set an example of good governance and may help host countries to develop sustainable forestry policies.

In Finnfund's experience, forestry projects have provided the significant development impacts expected of them. As an example, Finnfund has been an investor in a teak project in Tanzania for more than ten years. This company supports the people within its area in many ways. For example, it has financed schools and health care, and now provides jobs for several hundred people in one of the poorest areas in Tanzania. When harvesting and processing get into full swing, several thousand jobs will be generated directly and indirectly. When the wood trade and processing are established, teak looks set to become an important crop plant for the area and a major export product for Tanzania, providing over 130 million dollars of export revenues over a ten-year period.

"There is a clear need for development finance institutions and multinationals to participate in this sector, as catalysts to other funding."

Unfortunately, where a business fails, the developmental impacts are largely lost as well. During its history of forestry projects, Finnfund has experienced one such failed project. In that case, the failure was mainly caused by changes in the political and operating environment that made it impossible to have staff on the ground and to continue to develop the project. In some other projects where the business has developed slower than expected, significant values are still captured in the growing biological assets, and while the overall returns of the project will be negatively impacted, the developmental impacts are still significant.

Finnfund's investment criteria in forestry and forestry-related projects

Due to the significance of the forestry sector for Finland's economy[1], its technical know-how[2] and the expected development and environmental benefits delivered by the sector, it follows that this is also one of the focus sectors for Finnfund. Forestry projects to the end of 2011 accounted for some 20 % of Finnfund's portfolio.

Finnfund's investment criteria for forestry projects do not, as a framework, differ from

those of other sectors. Key criteria include profitability, private sector participation, environmental and social sustainability, development impacts, good governance and the integrity of other project parties. However, in forestry projects and in projects which have similar land use issues (such as biomass projects), certain aspects of the project receive in-depth scrutiny in due diligence and on-going monitoring, due to their complex and sensitive nature. Typically, the due diligence follows the requirements set out in the IFC Performance Standards and forestry certification, and preferably the Forest Stewardship Council criteria.

Land procurement and land use plans and practices receive especially detailed and in-depth analysis."

Especially in new, greenfield plantation forestry projects, economic sustainability requirements may, for example, entail that land use permits, be they concession agreements or other such permits, be valid for a long enough period, and always cater for the replanting of the areas after the wood resource has been harvested. A forest management plan that is based on the sustainable development and use of the resource is also required. Social sustainability, on the other hand, may require the project to provide alternative sources for firewood, charcoal or other ecosystem products and services, or education and technical assistance in developing agriculture practices that will eventually provide the community with an alternative to, for example, slash-and-burn practices.

Land procurement and land use plans and practices receive especially detailed and in-depth analysis. This includes legal due diligence of the land procurement and use but also an analysis of the overall land tenure issues, from a legal but also cultural and customary points of view. Land use is also assessed from an alternative land use point of view, to make sure that the project will not jeopardise or restrict food production and food security, or otherwise negatively impact it, *e.g.* in water use. Especially in greenfield projects that are located in less-developed countries with complex land tenure issues (*e.g.* many African countries), increasing emphasis is given to community consultation and NGO co-operation. The underlying goal is to ensure that the projects are designed to respect areas and resources that are important for communities.

While the environmental and social aspects of the project assessment tie closely in with land use issues, conservation should be highlighted separately. The assessment includes identifying and maintaining environmental and social values that are considered to be highly significant or critically important (defined as high conservation-value forests in the IFC performance standards). Finally, projects are assessed from the point of view of the equitable use and sharing of benefits.

Finnfund has participated in both direct and indirect forestry investments in 15 countries. The average size of the investment in the forestry sector varies from 7 to 10 million dollars. Direct investments have been in both existing projects and greenfield developments as well as in the industrial components of the business, largely in frontier markets (at least as defined at the time of making the investment), where purely commercial funding is not readily available and the regulatory framework is still being developed.

Finnfund strongly believes that it is a key part of the role of development finance institutions to go into situations where the regulatory framework has not been finalised and to help improve them, both through interaction with regulators and by showing the potential of responsible long-term private-sector investments for various stakeholders. This is particularly true in forestry. •

[1] *In the past couple of years, it has contributed 4-5 % of Finland's GDP, which is very high for the EU. More important, it generates some 18 % of Finland's export revenue.*

[2] *Finland has state-of-the-art scientific and technological knowhow in forestry, and is home to many large multinational companies in the industry. The players in the sector, including research institutes, universities and the large corporations, have been busy developing new technologies and products catering for new markets (bioenergy, other wood-based products) which will generate half of the sector's additional value created by 2030.*

FOCUS

Finnfund is the Finnish development finance institution, majority owned by the Finnish state. Its mandate is to provide long-term risk capital for private sector projects in developing countries, with an emphasis on the poorer countries. It seeks to promote investments that are profitable and environmentally and socially sound, and focuses on certain sectors, including renewable energy, forestry and the environment. Apart from co-investing with Finnish companies Finnfund can finance ventures that use Finnish technology, cooperate with Finnish partners on a long-term basis or generate major environmental or social benefits. Finnfund also co-invests with other similar development finance institutions.

Lessons learned from this issue

BY JULIEN LEFILLEUR, EDITOR IN CHIEF

Forests cover a third of the world's land area and, with almost half of forested land located in the tropics, they are of key importance to many developing countries. Forests are in fact the main source of income for 80% of the world's poorest people and nearly 60 million people are entirely dependent on them, mostly in Africa. Forestry's contribution to GDP is highest in South America and Africa, despite considerable unexploited potential (in Africa, only 10% of harvested timber produces commercial benefits). Moreover, the environmental issues are crucial, since forests provide the main refuge for biodiversity on earth and are a key regulator in the carbon and water cycles. Being vulnerable to climate shocks and heavily dependent on agricultural resources, developing countries are very exposed to changes in the ecological balance. Yet it is precisely in these regions, particularly in the Congo, Amazon and South-East Asian forest basins, that deforestation is greatest.

Conserving forests while benefiting from forest resources is, however, a difficult challenge, since it is an issue that concerns a number of different stakeholders (governments, local communities, logging companies, donors, civil society and researchers), some with conflicting interests. It was in response to this challenge that forestry management plans started to be introduced in the 1990s, followed ten years later by certification processes. Although the former responded primarily to a need to conserve forestry resources, the latter were aimed at taking greater account of the social and environmental aspects of forest exploitation. At the same time, a number of community management projects were developed to enable local communities to share in the commercial benefits generated from forestry resources. The lessons learned in the Congo basin show that this evolution in forestry practices around the world has permitted a healthier, more sustainable, more transparent, better planned and more lucrative form of forest exploitation (at least for the governments and local communities), while improving conservation prospects. Although the logging companies have not seen direct financial benefits, these practices have enabled them to manage their resources, to improve their image in society and in the local communities and, as a result, to secure their markets. Nevertheless, although management plans (often imposed by legislation) are now the norm and are implemented for the majority of legal logging operations, logging companies embarking on certification (still a voluntary process) remain the exception: only 7% of forested areas in tropical regions have been certified to sustainable forestry management standards. The cost and complexity of the certification processes makes them feasible only for a certain size of operation.

Certification programmes and the forestry sector in general still face financing problems. Whereas until now the sector has largely been supported by public investment and donors, private investment in developing countries has been relatively limited. The considerable exposure of the forestry sector to environmental and social problems, its heavy dependence on the local institutional set-up and the lengthy pay-back periods are all obstacles to investment. However, forestry assets are more profitable than any other type of asset and have the advantage of fairly stable, predictable prices that are only loosely correlated with the markets. In addition, exploitation costs are relatively low in developing countries, tree growth rates are excellent, there is a great deal of land available (especially in Africa) and the biomass can easily be used locally. With global demand driven by emerging nations and resources drying up in developed countries, wood prices are likely to continue rising and the sector could become an attractive market for investors as well as an additional source of income for developing countries. —

In our next issue

Waste: The challenges facing developing countries

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