1.6 Increasing the competitiveness of the Brazilian forest sector

IVAN TOMASELLI, SOFIA R. HIRAKURI
and GABRIEL PENNO SARAIVA

Introduction
The Brazilian Development Bank (Banco Nacional de Desenvolvimento Econômico e Social do Brasil, or BNDES) was established in 1952. It is a public financial institution under the Ministry of Industry and Commerce and is the main financing institution for long-term investments and support of development policies in the country. In 2010, its disbursements totalled US$ 94 billion, up 23% from US$ 77 billion in 2009 (BNDES 2011). Over the last decades BNDES has been critical to forest-related projects in Brazil and forest industry development. Between 2006 and 2012, BNDES invested a total of US$ 901 million directly into forest-related projects, equivalent to US$ 162 million per year (Tomaselli 2012).

Context
In many tropical countries forests are increasingly threatened by unsustainable logging practices. In the 1970s and 80s forest harvesting in Brazil was by and large unsustainable. To remedy this situation, the Brazilian government made efforts to improve forest regulations and control, and to promote sustainable forest management (SFM). In spite of these measures, illegal predatory logging continued to proliferate in the Amazon throughout the 1990s (Hirakuri 2003).

Brazil has a total land area of 833 million hectares (ha), 520 million ha (62%) of which are covered with forests (FAO 2010). Of the total forest area, 512.6 million ha (98.7%) are natural forests and 7.4 million ha (1.3%) are plantations (Figure 1). Although the planted forest area increased 49% between 1990 and 2010, the natural forest area decreased 10% during the same period.

In 2001, the total production of sawlogs and veneer logs in Brazil was 49 million m³, 41% of which came from natural forests (IBGE 2012). In 2010, the total sawlog and veneer production was 59 million m³, but the share from natural forests decreased to 22%. The

Ivan Tomaselli is President of STCP Engenharia de Projetos Ltda., Curitiba, Brazil; Sofia R. Hirakuri is Senior Consultant with STCP; and Gabriel Penno Saraiva is a Consultant with STCP.
reduction was mainly a result of the increased control over log production, which reduced illegal logging.

Most of the illegal logging practices in the Brazilian Amazon are related to the lack of clear tenure over land and forest. In some regions more than 80% of forest land has no title; this limits the legal supply of logs. Timber from legal sources in the region has become increasingly scarce since 2001, when the Brazilian government started increasing law enforcement. This scarcity led to a 356% increase in log prices from natural forests, which decreased the competitiveness of the regional wood industries. The increase in log prices had an impact on the Amazon timber industry and many mills closed (IMAZON 2010).

Timber companies in the region were forced to adjust to the new government requirements in order to continue to operate. This included complying with several existing government requirements regarding private forest-related businesses in Brazil. The most critical requirement was the need to have a steady source of timber supply from a legal origin; one way for companies to guarantee this was to be self-sufficient by buying titled land.

Experience and administration skills are also key to keeping companies competitive. With the high price of logs, one alternative was to add value by producing flooring and other products. The increase in wood flooring production required a large investment in new technology and manufacturing facilities. Financial resources came, in most cases, from BNDES, an organization strongly committed to SFM. The move towards value-added products — together with SFM — provided opportunities to adjust to new realities by increasing the resilience of the wood industry.

Credit lines
The Brazilian Development Bank (BNDES) has credit lines for forestry and wood industries. Its main credit line for forestry is called Florestal. This provides support to management investments in natural and planted forests, both for commercial and conservation purposes. It finances silviculture, harvesting, transport and commercialization. The line of credit also includes services such as consulting, research and
development, forest inventory, land titling, environmental licensing and training. It also supports infrastructure such as nurseries and machinery and equipment. The minimum loan is US$ 500,000, with a maximum payment period of 15 years at an annual interest rate of 9%. This is low by Brazilian standards, where inflation averages 4.5% per year. BNDES provides up to 100% of the investment for an initiative (BNDES 2012a).

Its financing line for the wood industry is called the Production Capacity (Capacidade Produtiva). This credit line provides support for new industrial investments. For investments in the Brazilian Amazon, the minimum loan is US$ 5 million at an interest rate of 9.4% per year. BNDES provides up to 90% of the financing. For both the forest and industrial investment lines, the maximum loan amount depends on the repayment potential (BNDES 2012b).

**Guavirá**

*Guavirá Industrial e Agroflorestal Ltda* was established in 1986 in the state of Mato Grosso in the Amazon region of Brazil. The company has about 250 employees working in both industrial and forestry activities. Guavirá manages 79,000 ha of natural forests in the municipality of Nova Maringa; its sawmill is located about 100 km south of the forest site in the municipality of São José do Rio Claro. The company has an annual production capacity of 25,000 m³, producing sawnwood, edge-glued panels, frames, flooring and decks for the domestic and international markets.

The natural forest in the region is a transitional zone between tropical moist forests and tropical seasonal forests and savanna (cerrado). Guavirá carries out SFM in about 58,000 ha (73%) of the total area. The remaining 21,000 ha are protected forest areas (permanent preservation areas and legal reserve areas required by Brazilian forest law), forest plantations, agricultural land and infrastructure sites.

In 2001, Guavirá, with the support of STCP (a consulting and engineering company) invested around US$ 12 million to expand its mill to increase annual production capacity to 54,000 m³/year and for secondary processing. BNDES provided 50% of the financing. This was the first financing by BNDES for a timber industry based on tropical timber in the Amazon.

The company plants about 500 ha of forests per year, and currently has around 3,000 ha of planted forests: 77% are teak (*Tectona grandis*); 16% eucalypt (*Eucalyptus urograndis*); and 7% African mahogany (*Khaya ivorensis*; Figure 2).
In 2003, the natural forest area under sustainable management by Guavirá was certified by the Forest Stewardship Council (FSC). In 2008 the company began the certification process for its plantation forests; it is now selling certified teak flooring from the second and third thinnings. All forestry operations — including silviculture, harvesting, road building and transportation — are carried out with their own equipment and personnel. The forest roads can be used even during the rainy season. This allows year-round access to the forests, giving the company a very important competitive advantage over their regional competitors (Guavirá 2012).

Guavirá has also committed to social responsibility. It contributes to improve the quality of life of employees, their families and the community by providing housing, better education and improved health care. Part of the investments financed by BNDES will support reforestation of degraded areas and a social programme that addresses housing, education and health. The company’s sawmill has a chain-of-custody certificate; this allows increased production of certified high value-added products destined for international markets. In addition, ongoing employee training on reduced impact logging (RIL) techniques have benefited SFM.

**Manoa**

Manoa is part of the *Triangulo Pisos e Paineis Ltda* group. The company began operating in 1972 as a plywood producer in the municipality of Curitiba in the state of Parana in southern Brazil. In 1983, the company purchased 73,000 ha of natural forests in the municipality of Cujubim in the state of Rondonia in the Amazon region. About 56,000 ha of the property (77%) were destined for SFM; the remaining 17,000 ha were intended for conservation and infrastructure.

In 1986, the Brazilian Institute of Colonization and Agrarian Reform carried out a land title programme in the Cujubim region to regularize Manoa forest land use and tenure rights (Manoa 2008). These legally recognized land tenure rights protected the Manoa’s forest land against encroachment, invasions and settlements, which are the main causes of deforestation in the region (SmartWood 2005).

In 1997 a wood processing plant was established in Cujubim. The plant could produce about 20,000 m³ per year of veneer and sawnwood. At the same time the company started
to implement sustainable management practices; Manoa is one of the pioneers in the adoption of SFM practices in Brazil. In 2002, after a US$16 million loan from the BNDES, Triangulo started producing engineered wood flooring in Curitiba, mostly using timber produced by Manoa (Manoa 2008).

Since 2002, Manoa has explored ways to improve its forestry administration, focusing on how to bring its business within the new legal guidelines and how to increase efficiency in industrial processing. The company began an employee training programme and purchased new forest machinery and industrial equipment to build new supporting infrastructure. Training provided in forestry operations and logging practices and in industrial equipment operations improved efficiency and reduced waste in its wood processing mills and forest management activities. As a result of its efforts, Manoa was certified by FSC in 2005.

In 2005, Manoa began a partnership with the National Timber Producers Association and the International Tropical Timber Organization to develop a natural forest certification scheme under the Brazilian Programme of Forest Certification (CERFLOR). As a result, in 2006 CERFLOR was recognized by the Programme for the Endorsement of Forest Certification Schemes, and Manoa became the first company in Brazil to be certified under the scheme (Manoa 2008).

In 2009, the Food and Agricultural Organization (FAO) cited Manoa as an example of how to achieve SFM (FAO 2009). The company is important to local socio-economic sustainability; it generates about 400 direct jobs in its forestry and industrial operations. Adopting sustainable management, including RIL and production of value-added wood products, allowed Manoa to make forest management economically feasible and make forestry sustainable.

Critical ingredients
Attracting responsible private investment in Brazil depends on several factors, such as legality aspects, including forest-related law compliance, business administration expertise to cope with changing environment and diversification of wood products.

Legality aspects
Forestry-related activities are highly regulated in Brazil; many legal instruments and associated administrative procedures govern these activities. Complying with forest laws to promote SFM is expensive for private entrepreneurs, and in many cases they also lack experience and administrative skills. As a result of the high transaction costs and complexity of forest governance, most companies operating in the Amazon find it difficult to fully comply with forestry legislation.
Legal instruments related to land rights are extremely important and have a direct impact on forest activities. Tenure rights are vital to attracting private investment and promoting SFM; they affect access to and decision making about land and forest resources. Lack of land title is the most common legal problem in the Amazon region. Secure land tenure (Box 1) is not only essential to attracting investment; in Brazil, and in most countries, is a legal prerequisite for an approved Sustainable Forest Management Plan.

The BNDES forestry financing line also provides support for regularizing land title. This has been important in allowing the forest industry to ensure a sustainable supply of logs from legal sources.

**Box 1. Making forest tenure more secure**

The government has proposed policies and measures to make forest tenure more secure. The process requires private land owners to georeference their land parcels. The government monitors and supervises the georeferencing process, which results in land title being granted.

**Business administration expertise**

The lack of administrative expertise of most forestry and timber companies operating in the Amazon affects the sustainability of their operations. They lack experience in legal issues/compliance, productivity and strategic planning. This has become critical in recent years, since changes in government requirements have been more frequent.

Several wood companies in the Amazon region are operating far below their full capacity because of a lack of legal log supply. It is difficult for companies to be economically viable running at less than half of their capacity; most companies in the region operate at only 30% of their installed capacity. This situation is gradually reducing forest operations in the region and is not sustainable.

Access to forest financing is critical, especially for companies with management teams who have sound business administrative experience and can continuously adjust to new situations. Some companies are learning and adopting innovations to cope with the changes.

The forest-based/timber industry is not static; changes can be rapid and include log supply and demand, markets, products and consumer needs. Companies must be able to adjust to rapid change. Guavirá and Manoa are examples of companies that were able to make the necessary adjustments to comply with new legal requirements, including the use of logs from sustainable sources. They were also able to diversify and expand their forest products by focusing on value-added products to increase their profits; this provided them with a competitive advantage.
**Diversification of wood products**

Before getting BNDES financing, Guavirá and Manoa produced wood flooring on a small scale. In the late 1990s, both companies realized that there was a strong demand for wood flooring products in the international market, and that a number of Brazilian timber species were widely accepted in the wood flooring market. Some were even considered high-end.

Since the 1970s, Brazil has imposed restriction on the export of logs from native forests in order to promote domestic processing. In spite of this and other efforts, most wood companies in the Amazon region focus on producing and exporting green or/and air-dried sawnwood. This exported sawnwood is processed abroad into value-added wood products, including wood flooring and decks. Guavirá and Manoa recognized the market opportunities of value-added wood products in the international market and decided to expand and modernize their wood flooring plants by investing in new equipment and technology. The investments were significant; the forest products sector is capital-intensive. The BNDES loan was important in allowing the companies to increase production and quality.

In addition, FSC certification ensured the market that wood sources were sustainable and legal. The certification of value-added products was fundamental to increasing profit margins.

**Lessons learned**

Land tenure is one of the most important factors affecting investments and financing in Brazil. The lack of forest tenure is a major impediment to investment in forestry, and securing land tenure will foster forestry development and investments. Land is a primary source of guarantee for obtaining credit from institutional providers, and land tenure security provides a foundation for forestry development. Secure property rights are the foundation of competitiveness; having a steady source of timber supply from a legal origin allowed Guavirá and Manoa to overcome the difficulties of competing with large-scale operations and illegal timber.

In Brazil, land titling is a legal requirement to obtain environmental permits for forest operations (Law 6.938/81). The requirement is binding on all projects or activities that may cause degradation to the environment. Most forest land-owners in the Amazon region have only land possession rights, which are given to people who demonstrate long-term forest use on the land.

Under the current laws and regulations, possession rights to forest lands are not sufficient to obtain an approved a forest management plan, have a legal forest operation or obtain forest financing. This type of land is usually more subject to invasions, because it is not backed by legal land title. Forest land-owners without legal land title cannot prosecute to enforce their rights.
Since 2010 BNDES has required environmental permits before granting loans for investments. Guavirá and Manoa helped BNDES shape its forest-related financing programme for companies operating on natural forest lands. The Florestal credit line finances SFM, forest plantations and industrial processing.

Land tenure increases access to existing forest financing programmes. Secure property rights also support investment and SFM.

Guavirá is expanding its forest plantation area, partly through financing from BNDES. The company has enough titled land to plant 10,000 ha of forests. This will be sufficient to supply a new plant with a production capacity over 50,000 m³ per year of value-added products and will support the sustainability of the operations.

Manoa may also start planting forests to further expand its operations. Several introduced species have had good results for the solid wood industry in Brazil, such as teak, eucalypt and African mahogany. Manoa anticipates that the opportunity for enhanced training — made possible through BNDES funds — will help increase the productivity and competitiveness of its operation.

References


