# Re-energizing Nigeria's forest and wood products sector

***Nigeria needs to step up its program for plantation establishment if it is to reinvigorate its forest sector and avoid further forest degradation***

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**Manpower:** Operators push a horizontal bandsaw through a log. *Photo: V. Molinos*

The forest sector is important to Nigeria, but it has become seriously depressed. In September 2011, ITTO and Nigeria's Department of Forestry (FDF) conducted a study to identify ways to improve the efficiency of Nigeria's wood industry and to design a project—to be presented to ITTO for funding—to assist the process. This article shares some of the insights gained during the study.

## Background

Nigeria, a federation of 36 states (plus Abuja, its Federal Capital Territory), has been independent since 1960. Its population of about 170 million people is by far the largest in Africa. Nigeria has about 250 ethnic groups, many with their own languages and dialects. Its diverse and fast-growing population gives Nigeria its strength and entrepreneurial spirit and also poses major social and political challenges.

Nigeria was once well endowed with diverse forest types. Today, however, high forests cover less than 5% of the land area, and the northern states have been completely deforested. Of the publicly owned forestlands originally gazetted as "forest reserves", only 800 000 hectares (16%) still contained lowland rainforests in 1995. The remaining forests continue to be lost to a relentless and mutually reinforcing combination of forest degradation from repeated and selective wood harvests and clearing by poor settlers looking for land to establish cocoa, oil palm and other crops.

Constitutionally, all lands are owned in trust by the governor of each state. But the lands outside forest reserves, called "free areas", are claimed by traditional communities, local governments and elite families and individuals. Nigeria does not have land titling and registration systems like those common in western countries. A forest resources study (Beak Consultants, 1998) estimated that the closed forest remaining in the "free areas" totalled 905 000 hectares in 1995 (Table 1).

Trees in the "free areas" are usually sold by traditional communities and other claimants to interested loggers for a per-tree fee, roughly US$3-4 per m$^3$ of standing timber. This low market value is due in large measure to the extremely low stumpage fees that the states have charged historically for the standing timber in forest reserves, and it also reflects the increasing proportion of illegal harvesting. In 2005, stumpage fees were US$2–3 per m$^3$ (World Bank, 2005).

**Table 1. Estimated area of rainforest remaining in Nigeria**

| Tenure | Area (ha) |
|---|---|
| State forest reserves | 800 000 |
| Free areas | 905 000 |
| Total | 1 705 000 |

Sources: Beak Consultants, 1998; World Bank, 2005.

A total of 200 000 hectares of plantations (60% *Gmelina arborea*, 30% *Tectona grandis* and 10% *Nauclea diderrichii* and others) has been established by Nigerian states since the late 1970s with loans and technical assistance from international development banks. These plantations have not been managed and are being harvested, both legally and illegally. The area of private plantations is unknown but thought to be in the low thousands of hectares.

## The troubled wood industry

The colonial administration awarded large, long-term forest management concessions, with adequate silvicultural provisions and controls, to integrated forest operators. In the late 1970s, these concessions were terminated and most of the larger formal operators have now disappeared.

The state forestry departments, with few trained personnel and small, unpredictable budgets, have focused on generating revenues and political goodwill by giving out a proliferation of smaller, short-term wood-harvest permits with no silvicultural requirements. Often, these permits allow repeated entries to the same location, which destroys natural forest regeneration.

This type of fragmented and unpredictable log supply cannot sustain larger and more efficient primary operators or provide the level of supply security required by modern sawmills and panel plants. Production statistics for wood products are not commonly available in Nigeria, and there are no national wood industry associations.

Sawmills consume the vast majority of the industrial roundwood produced in Nigeria; it has been estimated that more than 1300 fixed sawmills operate in the country, although this estimate is old and unreliable. Most existing sawmills comprise old and poorly maintained horizontal bandsaws that are manually pushed against stationary logs (see photo). This technology is outdated—it is unsuitable for the smaller logs available today, its lumber recovery is estimated at only 40-45%, and it does not allow sawing for grade.

Nigeria's tropical forest is becoming increasingly fragmented and less accessible. A growing proportion of the wood harvest is illegal, and much of it involves highly inefficient chainsaw milling of lumber into flitches and planks at the felling site. In some of the wood markets visited near bigger cities during the study, over half the lumber for sale had been produced by chainsaw.

## The root causes of dwindling forests and industry decline

There are several root causes of forest decline in Nigeria, all of which stem from the fact that rural communities living in or near forests, and private firms using forests, do not have a stake in the ownership or management of, or decision-making about, those forests; nor do they help to enforce the rules regarding forest use. Specific causes of forest decline include the following:

- There is no federal or state legislation or technical support to establish longer-term sustainable natural forest management concessions. Federal forestry legislation has been prepared, however, and will be resubmitted in the foreseeable future.
- Forestry departments at the state and federal levels are disconnected from their primary stakeholders, civil society and each other.
- Forestry departments have insufficient political support, unreliable budgets and little accountability in developing and enforcing effective regulations.
- For decades, states have sold publicly owned standing timber ("stumpage") at very low prices. Coupled with growing illegal harvests, they have thereby enabled industry-wide inefficiencies.
- Nigeria's current sawlog stumpage market price for native hardwoods is 5–12 times lower than the stumpage market prices for fast-growing plantation species growing in the Atlantic watershed.
- The ban on exporting logs and lumber, either roughsawn or planed, further depresses stumpage prices for plantation roundwood. Low prices and the lack of secure land tenure have discouraged private investments in new plantations.

## Forestry, a misunderstood sector

Citizens and political leaders have not been greatly exposed to the present economic contributions of their forests. They have received even less information about the huge economic and employment potential of well-managed forests that are integrated with the wood-product, furniture and construction industries.

Officially, the forest sector contributed about 2.5% to Nigeria's gross domestic product in 2008, although the real contribution is likely to have been much higher because of the importance of forests, even in their highly degraded state, to the supply of domestic energy, food and medical supplies.[1] An estimated 48 million people depend significantly on forests for their livelihoods (Blaser et al. 2011).

From time to time, combating desertification and the need to dredge silt from rivers and ports because of upstream erosion have become visible issues, which have been addressed by large projects with tree-planting components. Often, however, such projects have been unable to induce the policy, regulatory or market changes needed for their mainstreaming and effective management of resulting plantations.

# Overcoming persistent challenges

Many challenges need to be overcome to allow Nigeria's forest to achieve their full potential contribution to the country's sustainable development. The following sections summarize some of the most important challenges to be overcome.

*Unintended consequences of low stumpage prices and export bans.* Price increases for public stumpage sales by the states and the removal of export bans of planted logs and roughsawn and planed flitches and boards were recommended by the World Bank in the 1980s and again in 2005, with the aim of encouraging industry efficiency and offering attractive prices to private planters and forest managers. The states' resistance to these measures was perhaps well intended but, after 30 years, there is clear

1 For example, Nigeria's forest sector contributes an estimated US$39 billion annually in foreign exchange by supplying woodfuel to meet 80% of the country's total energy needs (WRI 2003). In 2009, therefore, the forest sector could be said to have contributed 10.3% to Nigeria's total gross domestic product, while oil and gas accounted for 37% (www.state.gov). The commercial woodfuel value chain that supplies cities and towns generates over 300 000 fulltime jobs.

evidence that inaction has destroyed both the forest base and the industry that depended on it.

*Federal role in policy oversight and direction not backed with legal teeth or funding leverage.* In Nigeria, economic incentives are more effective than laws.

*Real stakeholders are not involved in steering the sector, making regulations or backing enforcement.* Accountability to, and support by, stakeholders are key organizational features in modern market economies. These tools are missing from Nigeria's public forest policy.

## Hopeful signals

Despite the challenges to be overcome, there are some grounds for optimism looking forward. Nigeria's approved national forest policy of 2006 defined "partnerships in governance as a guiding principle and a paradigm shift". This allows the establishment of a solid foundation to strengthen sectoral steering and funding mechanisms.

The current administration's Transformation Vision, featuring a goal of 25% forest cover, shows uncommon foresight. The investments recommended below to increase the woodfuel and industrial plantation estates are a key first step towards the Transformation Vision. Such investments will help to ensure that forest loss does not worsen.

In September 2011, the federal administration formed a partnership with the states and business to pursue the integrated development of agricultural crops along the value chain from farm to market. A similar approach was recommended by Molinos (2011) for forestry, in which private firms would be selected on a competitive basis to sustainably manage and harvest existing mature forest plantations, closely integrated with improvements in industry use and value-added production.

## Conserving remaining natural forest

Conserving the remaining natural production forests will require two complementary and synergistic strategies:

- Manage the remaining natural forests and regenerating those that have been partially degraded. A holistic and multiple-use perspective is crucial, and careful attention needs to be paid to issues related to landownership, social justice, gender, income and employment.
- Establish fast-growing plantations in fallow areas to fill the bulk of the demand for commercial woodfuel and industrial roundwood. Table 2 presents preliminary estimates showing that planting rates will have to be stepped up significantly to meet wood demand. Overall, an average of 50 000 hectares of new woodfuel plantations and 10 000 hectares of new industrial forest plantations would need to be established each year to 2030.

An expansion in the plantation estate of 60 000 hectares per year would be 12 times the historic average annual planting rate of about 5000 hectares. Economic incentives would be required for such an escalation, as would a range of other policy and governance improvements. For example, policies related to forestry, industry, trade and tariffs must ensure that private investments in the wood industry parallel the expansion of the managed forest base. Eventually, demand for higher-valued industrial roundwood must become the driving force behind the replanting and management of production forests (Molinos 2011).

**Table 2. Estimates of new forest plantations needed to address Nigeria's wood deficit**

| Source/type of demand | Forest area, 2005 | Theoretical sustainable production, 2010 | Estimated consumption, 2010 | Projected consumption, 2030 | New plantations needed to keep wood deficit static, 2030[b] |
|---|---|---|---|---|---|
| | ('000 ha) | (million $m^3$, roundwood equivalent/yr)[a] | | | ('000 ha) |
| Natural-forest industrial roundwood | 1800 | 1.4 | 4.8–6[c] | 1.4 | |
| Plantation industrial roundwood | 197 | 3.3 | 0.2 | 6.1–7.9 | 140–230 |
| Natural-forest+planted industrial roundwood | | 4.7 | 5–6.2 | 7.5–9.3 | |
| Planted/urban fuelwood | 0 | 0 | 15.5 | 23.2 | 1100 |

Notes: Estimates assume that all natural forests are placed under sustainable management and that there is no additional deforestation.

a. Assumes growth rates of 1 $m^3$/ha/yr for natural forests and 20 $m^3$/ha/yr for plantations.

b. Excludes reforestation of existing plantations.

c. Assumes 3% annual growth since 2005 and that the ratio of illegal-to-legal harvest is 1.5:1. This latter is probably an underestimate and requires field verification.

Source: based on estimates by Molinos 2011.

**Opportunity knocks:** A roadside door shop in Nigeria. The role of forests in Nigeria's economy has long been underestimated. *Photo: V. Molinos*

## Recommended actions to improve the wood industry

The actions listed below need to be applied as a package. If implemented, they would improve the predictability of the wood supply from well-managed forests and also lead to increases in price. The industry will need technical assistance and economic incentives to improve its efficiency.

- The Government of Nigeria should legalize plantation log exports and establish a gradually declining export tax. This could pay for a joint federal–state system of producer registration and wood consumption statistics. The program should be implemented by states with assistance from the FDF, periodic inspections by independent contractors and a census every five years.
- The FDF should assist committed states to establish model long-term sustainable plantation management concessions that would be allocated to competitively selected industrial users. Regional extension networks would assist concessionaires and their clients to improve their harvesting, processing and marketing.
- The FDF should fund regional in-plant sawmill improvements and value-added manufacturing and marketing programs, with a focus on forest concessionaires and their registered industrial clients.
- The FDF should publish a semi-annual price bulletin for logs, flitches, wood products and industry services. This would help market efficiency and introduce product standards to buyers and sellers.
- The Government of Nigeria should introduce equipment modernization incentives. Registered wood producers would be eligible for technical assistance, tariff reductions for machinery imports, promotional credit facilities and tax credits.

These recommended actions will require cooperation among government agencies, academia, research institutes, private firms and NGOs in the following areas (among others): developing strategic industries such as wood preserving, roof trusses and structural timbers and the domestic wood construction market; quality control and product grade stamping; and product development in glued composites, blockboard panels, fingerjointing and laminated beams.

## A potential pilot project

Molinos (2011) recommended several pilot projects for the FDF and technical cooperation agencies in order to implement the above recommendations. One of these, designed as an integrated model initiative, is currently being considered for submission to ITTO. It would assist competitively selected private firms to manage mature plantations and improve the efficiency and profitability of all actors along the chain, including value-added manufacturing and marketing. The following design criteria were used:

- provide land-tenure security and assistance to the private sector for investing and sustainably managing forests and related industries;
- give communities and private firms a real stake in the forest; and
- assist the federal government with effective mechanisms to deliver technical assistance and economic incentives to the states. These would be conditional on the states establishing public–private partnerships in governance that include sustainable forest management concessions and land-tenure security instruments.

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