Possibilities and constraints for the development of the forestry sector in Madang Province, Papua New Guinea

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Abstract

The article is based on data collected on successive field trips on industrial training organized by the forestry department of unitech. The contribution of the forestry sector to the economic development of the province is significant; however, difficulties to access capital and knowledge, frequent landowners' disconformities regarding the distribution of benefits, and inefficient regulations on logging and forest management hinder a sustainable planning of land use in the long term for the province. The sector potential and constraints are analyzed from a description of the current situation within the national and international contexts and trends.

Keywords: Forestry development, logging, nature conservation, Madang province.

Background

The province is located at the northern coast of Papua New Guinea, with an area of 28,732 km^2. More than half of the province is unoccupied. The forests (2.8 million ha) are richly diverse, 880,000 ha (30%) have a potential for logging. Over 170 languages are spoken by over 365,000 people. The Madang Provincial Government gained its full provincial government status in 1980 and like other provincial governments, has power to legislate provincial laws on wide range of activities. Madang is the country's third leading producer of cocoa and copra and second producer of cattle. Ramu Sugar and Jant/Gogol woodchip mill are amongst PNG's biggest employers. Most areas are still far from transport and undeveloped. Non-agricultural sources of income in the province come from Ramu Sugar estates, the new Ramu nickel mine and the Gogol and Josephstaal forestry operations. While the main determinant for the future of the PNG forest sector lies with the extent to which the industry manages to make a profit and maintain market confidence, in societal terms the importance of the forest sector in PNG lies in its development potential of bringing incomes, jobs, infrastructure and services to remote rural areas. Its contribution to Government revenue is limited and likely to decline in coming years. The timber industry provides jobs to some 9,000 people [3], mostly located in remote areas.

The industrial potential and conservation plans should be planned with an overview of sustainability, which is defined as “sustainable options” or “maintaining in perpetuity, options for all different uses of forest resources, market and non market, consumptive and non-consumptive, known and unknown”. Policies that are detrimental to the rural poor may have the greatest negative influences on sustainability and the control of deforestation. By other side, the World Bank has noted that one of the main costs that results from a lack of transparency and government control over the forest sector is the loss of revenue [8]. A recent article in *The Australian* of 20 July 2006 suggested that the losses due to underreporting could amount to A$100 million per year**.**

Figures 1 and 2 show that Madang province is a representative region of the country forestry condition in terms of forested areas, volumes produced and deforestation rates. Figure 1shows that the rate of forested areas is comparatively high in Madang province; although as in the whole country, it has been decreasing over time.

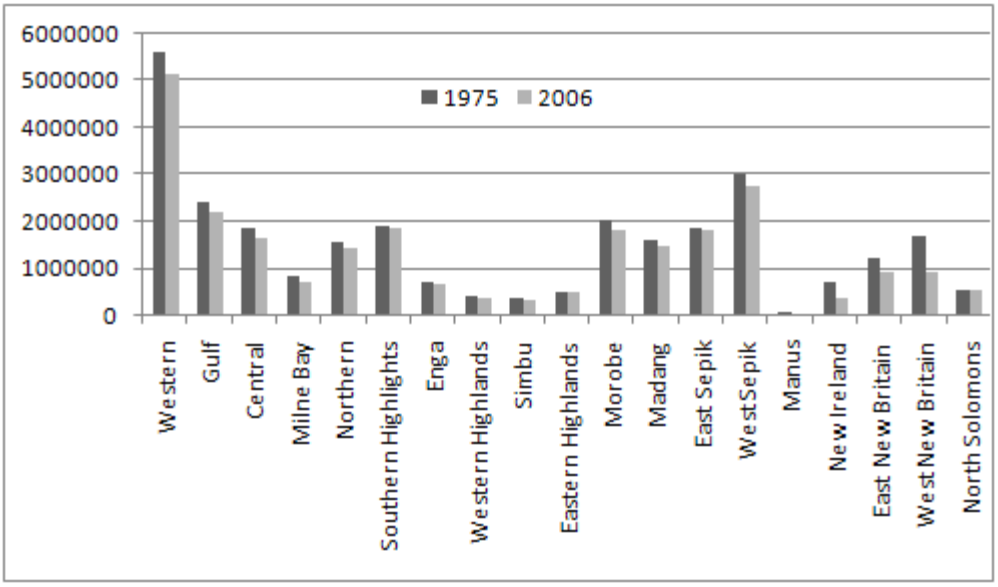

Figure 1: National Adjusted Forest Areas (Gross Forest Area minus disturbed areas) [8].

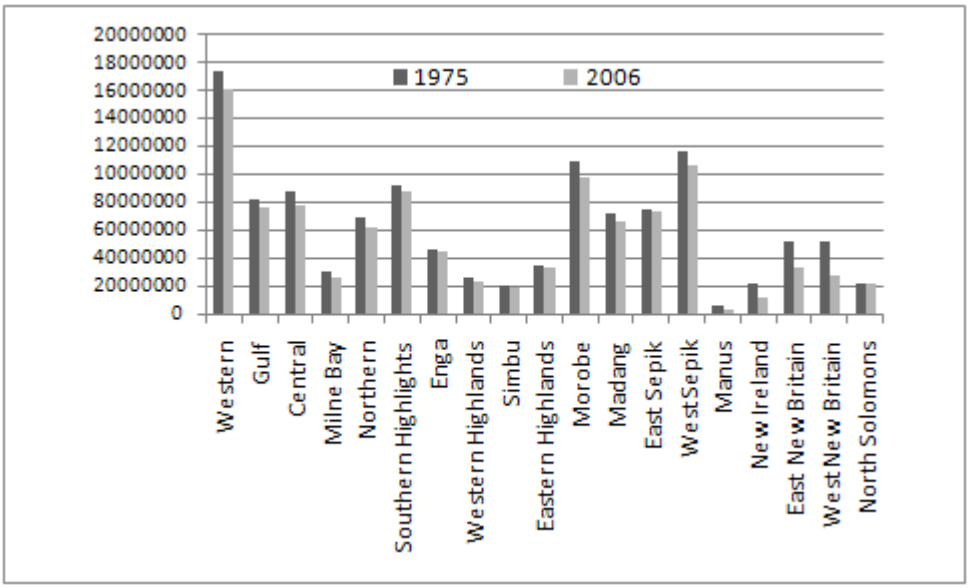

Figure 2: National Gross Timber Volumes, 1995-2006 [8].

The new trends influencing forest policy in the province are:

- Global concerns superpose national and local demands
- Internationalization of nature conservation
- Land reformation

- Participation of landowners and the public
- Influence of NGOs
- Diversification of society's demand for forest goods and services
- The real cost of forest conservation must be recognized and consensus built for sharing of costs
- Greater recognition and incentives should be provided to the private sector.
- Dependencies of local people on forests need to be recognized and people need to be involved in forest management decision-making.

Ecotourism and Nature Conservation

With the construction of a new road in the next year the best coastal staging area for treks into the highlands will be available. World-class scuba diving at 10-minute boat ride from the shore. Logical base for canoe trips through the rain forest flanking Ramu River, an alternative to the commercial boat trips on Sepik River. In the Adelbert Mountain north of Madang, the Nature Conservancy negotiated with local clans the pioneering of *Conservation Covenants* (long term land leases in exchange for sustainable development benefits such as roads and schools. Until now 5,400ha of land are under strict conservation status. The program work on conservation awareness with the locals, conducts biological surveys, and monitors the status of selected species.

Jant Ltd. Woodchip Mill

It is the only chip mill in PNG, equally owned by JANT and the central government. Utilizes raw material from 52,265ha planted mainly with Acacia mangium. Other species that were tried: Eucalyptus deglupta, Terminalia brassi, Ochroma lagopus (these three sp: 436ha already harvested), Gmelina arborea, Luceana, Pinus sp. The company is focusing on efficiency and have shorten the cutting cycles from 7-8 years to only 3-4 years, employing locals under subcontracts with immediate payout on log delivery. Jant developed an out grower scheme in which selected individuals grow acacia on nine hectares of customary owned land, harvesting one hectare every year on a nine year cycle. They plan to extend the system to other provinces.

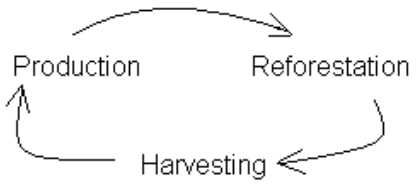

Figure 2: Production cycle at Jant Ltd.

The allowable cut is of 90-180,000 m^3/year. The company leads a *Tree Farming Program* with landowners, where seedlings (100,000, 15% mortality) are freely supplied. The landowners get 20% of the profits (K30/tn). However still there are unsolved problems like: Low rent for the land (K7-8/ha/year), insufficient royalties on timber harvested (K10/m^3), and long lease periods (30 years) without additional gains during that period. Landowners who provide access to their land for plantation activities do not benefit from the 8 kina/m^3 log export development levy, thus also reducing the incentive for plantation development [8]. At a discount rate of 15%, under the assumption that there is no export tax on the final product, subsidized eco-forestry is much less attractive than the interest gained from investing the logging royalties into interest bearing deposits. Oil palm beats both, with a net present value three times that of logging. Where oil palm follows logging, the net present value is the combined value of both, providing 8.5 times the benefits derived from donor sponsored community-forestry.

Table 1: Financial benefits to a community with 1,000ha of forest [6]

Alternative	Net Present Value (US$/ha)
Unsubsidised community-forestry	7
Subsidized community-forestry	72
Logging proceeds invested	147
Oil palm	464
Logging followed by oil palm	611

Landowners that started agro forestry practices did not have enough capital to acquire agro chemicals and contract laborers, also faced difficulties to obtain bank loans and manage large areas. This lack of capital may only reflect a lack of individual/collective saving [1].

Concrete benefits to the society are the 50 km of road network in Transgogol, 10 permanent bridges, 50 culvert crossings, 10 Aid posts, classrooms, a teachers house, APO House, church buildings, and funding to sports events.

Timbers PNG Ltd.

A subsidiary of *Ramunan Hijau* company. Has been allocated 30,917ha where selective logging is practiced on trees of more than 50cm diameter. The preferred timber (with 80% of the demand) is *Kwila* (*Intia bijuga*), with market prices ranging from K1000-1500/m^3; other hardwoods are *Taun* (*Pometia pinnata*), *Rosewood* (*Pterocarpus indica*), and *Mersawa* (*Anisoptera thurifera*), with prices going from K600-800/m^3. The setting up of a sawmill for down processing is planned after four years of logging. Downstream processing is rapidly gaining in importance, now constituting almost 25% of total timber export value [8].

Logging and Certification

Logging companies seek areas with primary forests because rotations of 30 years do not lead to climax biomass unless just 10% is removed [7]. According to UPNG (2008), the longer the concession is allowed to operate the larger the area to be permanently converted to other uses. There are 300 small scale sawmill industries in the province that cannot be properly monitored; they extract less than 5000m^3/year and work under an issued Timber Authority (TA). The requirements for Timber Authorities are much less stringent than those for large log exports projects.

Under the current system, irrespective of the free on board (FOB) price of round export logs (K220/m^3), landowners only receive K10-25/m^3. The sawn timber produced by resource owners could fetch up to K500/m^3 (domestic market) and up to K1500/m^3 (overseas market) [4]; but training on proper felling techniques, maintenance, scaling and grading are needed, together with the development of timber certification (the assurance from an independent authority that forest products originate from sustainably managed forests). The objective of a 'landowner company' (LOC) is to increase national participation in forestry. However, mismanagement and in-fighting between different landowner factions are common. The Madang Forest Resource Owners Association (MFROA) with the advice of the Foundation for People and Community Development, Inc. (FPCD) already exported 70m^3 of Eco-timber. However, at a discount rate of 15%, under the assumption that there is no export tax on the final product, subsidized eco-forestry is much less attractive than the interest gained from investing the logging royalties into interest bearing deposits. Oil palm beats both, with a net present value three times that of logging. Where oil palm follows logging, the net present value is the combined value of both, providing 8.5 times the benefits derived from donor sponsored community-forestry.

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The main causes of failure of producer marketing groups and cooperatives in the Pacific are lack of initial business planning, heavy reliance on a few committed people, dependency on donor subsidies and project staff, no evaluation of the long term viability of the business, internal member conflicts over expected profits, financial mismanagement, fluctuations in world market commodity prices, most sawmill enterprises operate in isolation, banks do not give loans for sawmilling businesses in the country and lack of priority on developing markets.

Santy Forestry Ltd.

A Thai sawmilling company with 300 employees. Mainly processes *Intsia bijuga (Kwila)* and *Tectona grandis (Teak).* The main markets are Thailand and Korea (N/S). Some of the innovations are the employment of horizontal and vertical slice saws, circular saws, wood drying (kiln/steam), wood treatment with BFCA/CCA. In a Saw Shop knives are carved in a moulding machine according to a design given by the customer.

Conclusions and Recommendations

The physical characteristics of the province and its diversity on natural resources define the importance of the forestry sector as one of the most promising activities. The forestry sector has a significant impact in the economic development of the country in terms of employment generation, royalties, and infrastructure and services development; however it cannot reach its full potential because of interlinked problems rooted on ambiguous policies, weak administration, low economic incentives for landowners and non coordinated planning with other economic sectors. Benefits do not reach the majorities still engaged on subsistence agriculture. Financial mechanisms that promote the development of small scale industries linked to the regional production of raw materials should be promoted from the central government. Intensive agriculture should be emphasized to slowly replace shifting cultivation. Agro forestry programs should integrate fast growing with high value species. Nature conservation programs should be linked with private investments on tourism; effective nature conservation goes together with industrial development (massive employment to reduce human pressure on land and firewood extraction). Other recommendations are:

- Manage forests for multiple uses.
- Link supply & demand for NTFP and Environmental Services.
- Invest in technology & infrastructure.
- Balance small & large-scale enterprises through vertical integration.
- Improve marketing of certified products.
- Incorporate social responsibility principles.
- Develop risk insurance mechanisms.
- Consider new financial mechanisms (REDD).
- Recognize the real cost of forest conservation and a consensus built for sharing of costs must be built.
- Policies should promote stability and be consistent with national policies and guidelines regulating other sectors.
- Policy objectives and goals must be specific, measurable, clearly identified and consistent with local forest conditions.

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