

MASTERS OF A DOMAIN OR PROPERTY OWNERS: AN ANALYSIS OF FOREST USE IN PAPUA NEW GUINEA

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Abstract

A time will come when the forest resources in Papua New Guinea (PNG) will become scarce as there are pressures from the government and resource owners, including timber industry to exploit the forest for economic gains. Outside pressures from such organisations as the United Nations, and the World Bank, are also mounting for actions to achieve patterns of economic and social development that are ecologically sound. Considering that the forest resource - timber is customarily owned, a better understanding of the interaction between the people and forests is crucial. Without a clear understanding of what 'property rights' each party has in terms of the ownership of the timber, this paper is sceptical on the PNG governments' forest policy objectives where it calls for the 'management and protection of the nation's forest resources as a renewable natural asset' and its 'utilisation to achieve economic growth, employment creation, greater Papua New Guinea participation in industry and increased viable onshore processing' (Ministry of Forests, 1991:2).

Introduction

Governments, citizens, and scientists are increasingly concerned about the role of forests in global environmental change. Evidence is mounting from multiple studies that humans at an aggregate level are exploiting forests at unsustainable rates in tropical regions¹. While some deforestation can be attributed to rational and sustainable transfers of land to agricultural and other valuable uses, unplanned deforestation can generate significant externalities: loss of biodiversity, elevated risk of erosion, floods and lowered water tables, and increased release of carbon into the atmosphere... Deforestation can also decrease the welfare of forest users by eliminating habitat for game species, altering local climates and watersheds, and destroying critical stocks of fuel, fodder, food, and building materials (Gibson *et al.*, 2000:1)

Why is there increasing concern about the role of forests? With this concern are also disagreements about the most important factors that cause deforestation (Gibson *et al.*, 2000). Westoby (1989) asserts that two third of the destruction of tropical moist forest² is from logging activities. What are the significance of this concern at the local, the national, and the global level? Current literature (Gibson *et al.*, 2000) highlight that the role of people at the local level is crucial, because these people live with forests, and are the primary users of the forest products. How do they interact with the forests for their own daily sustenance when at the same time, there are ‘outsiders³’ for example, developer (logging company) and the government also using the forests for economic purposes through such activities as commercial logging?

In the case of Papua New Guinea (PNG), this paper will argue that there is not much interaction between the people that live with the forests and the ‘outsiders’ and calls for better interaction in order for some form of forest management in accordance with the main objectives of the 1991 Forest Policy.

¹ In contrast, the area and volume of forest resources are growing in most temperate regions.

² Includes the closed high forests lying in the tropical belt where there is either year-round rainfall, or only a short dry season of not more than 4 months. It includes both wet rainforest and dryland forest formations, monsoon forests, mountain rain and cloud forests, and mangroves, all of which consist of broadleaved species – with coniferous forests accounting for less than 3 %.

³ The ‘others’ include the government, non-governmental groups, and multinational and bilateral aid agencies.

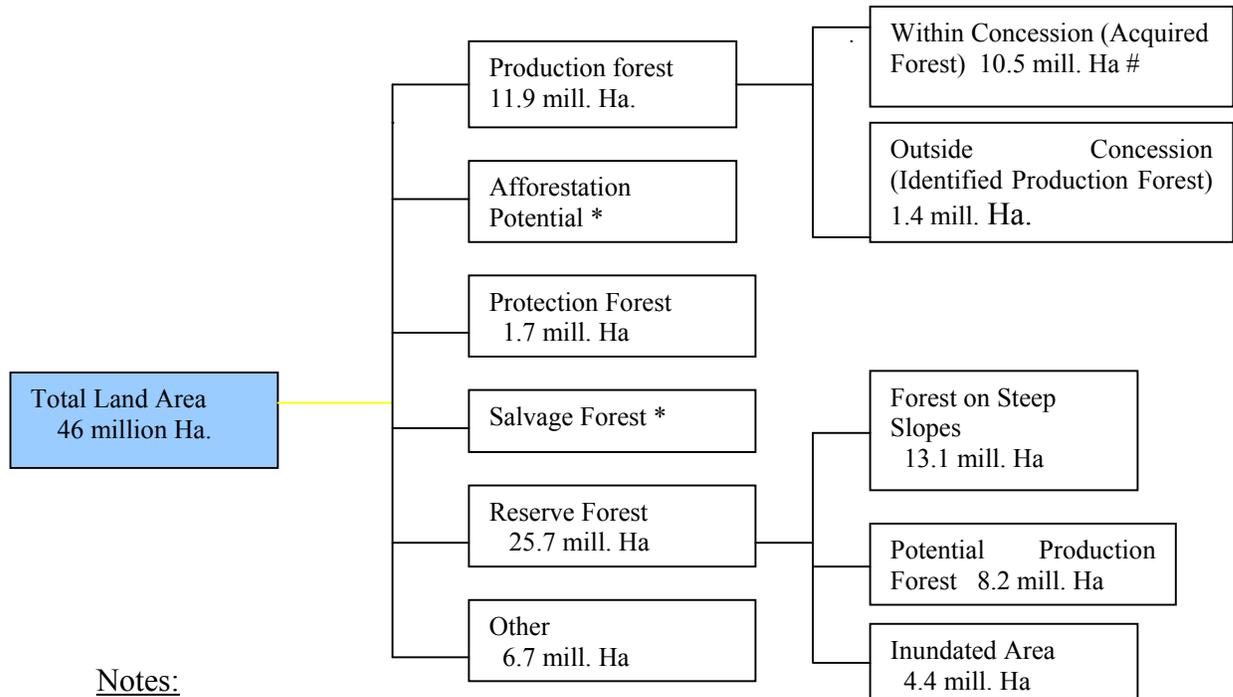
Forest Resources of PNG

The forest⁴ of PNG is said to contain a rich biological diversity (Filer with Sekhran, 1998) with many attributes (goods and services) that are useful to man. Many of these goods and services have existed for centuries and were in balance with demand. Unfortunately, this balance is being affected by the activities of human with their new technology, and the ensuing economic and population pressures (Yadav and Yadav, 1998). The forest under discussion in this paper are the trees that are subjected to commercial logging.

The current PNG government forest policy is more about trees for ‘timber’ and less about the other goods and services available in a forest. The policy calls for ‘management and protection of the nation’s forest resources as a renewable natural asset and its utilisation to achieve economic growth, employment creation, greater PNG participation in industry and increased viable onshore processing’ (Ministry of Forests, 1991). While more forest areas have been acquired and utilised for the purposes as intended in the policy, unfortunately, the aspect relating to the forest being managed as a renewable natural asset appeared to have gone by the way side. An indication of the size of the total forested areas in PNG is seen in Figure 1, Table 1 and Map 1. The main areas that have been or are subjected to commercial logging are shaded in green (Map 1) and numbered in Map 2 – seen more clearly as bounded by little polygons.

⁴ Forest is defined as ‘a complex community of plants and animals in which trees are the most conspicuous members’.

Figure 1: General Forest Classification



Notes:

- # Some forest areas under forest management agreement do not show/indicate all constraints to logging.
- * Areas of salvage forest and areas suitable for afforestation have yet to be identified.

Source: Remodified from the General Forest Classification published in the National Forest Plan, 1996, and the Forest Resource Acquisition General Information, 1998 .

Table 1: Summary of Forest Areas Allocated by Provinces

Region/ Province	Land Area (000 Ha.)	Production Forest Area			Total Production Forest Area (000 Ha.)	Potential Production Forest Area (000 Ha.)	Acquired Forest Area (000 Ha.)	Identified Forest Production Area (000 Ha.)	Number of Acquired Forest Area	Total Areas Allocated by Type			
		Acquired Operable (000 Ha.)	Acquired Inoperable (000 Ha.)	Future Production Forest (000 Ha.)						Number of TRP	Number of LFA	Number of FMA	Area in Ha. (000 Ha.)
Western	9,785.80	799.90	602.07	553.27	1,955.24	3793.2	2,028.31	-73.07	9	5	0	0	738.91
Gulf	3,384.70	384.00	472.48	532.30	1,388.78	117.6	2,535.67	-1,146.89	12	3	0	5	2,400.60
Central	2,995.40	239.70	358.56	137.30	735.56	417.6	482.98	252.58	15	3	0	2	239.74
MBay	1,421.20	171.30	159.27	155.30	485.87	289.3	202.10	283.77	5	1	0	0	87.53
Oro	2,251.00	67.40	273.98	139.00	480.38	436.1	358.10	122.28	6	2	1	0	101.88
WSepik	3,601.00	336.00	345.00	274.90	955.90	1116.6	681.26	274.65	9	2	1	0	325.93
ESepik	4,372.00	80.00	617.39	278.00	975.39	219.3	630.95	344.44	6	0	2	0	79.98
Madang	2,873.10	214.60	329.25	327.00	870.85	270	384.07	486.78	10	5	0	0	255.49
Morobe	3,352.50	226.60	484.20	51.40	762.20	232.8	276.57	485.63	14	4	0	2	119.69
WNB'tain	2,075.30	336.03	227.01	97.30	660.34	127.4	1,507.01	-846.67	57	13	12	0	1,106.05
ENB'tain	1,510.90	441.80	112.76	302.60	857.16	139.2	567.52	289.64	26	14	0	0	375.37
NIreland	961.50	375.30	52.37	73.10	500.77	182.6	562.34	-61.57	17	5	0	0	223.07
Manus	209.80	51.70	4.16	114.00	169.86	24.9	51.73	118.13	2	1	1	0	51.73
NSolom.	932.90	-	99.10	-	99.10	0	96.66	2.44	11	0	0	0	0.00
Southern	2,568.90	-	370.50	49.90	420.40	557.6	39.24	381.16	10	6	0	0	37.07
Eastern	1,100.60	-	167.84	-	167.84	107.8	0.00	167.84	0	0	0	0	0.00
Western	850.00	-	73.35	66.00	139.35	22	83.13	56.22	13	0	0	0	0.00
Simbu	602.20	-	84.44	55.10	139.54	91.7	0.00	139.54	0	0	0	0	0.00
Enga	1,183.90	-	194.97	13.00	207.97	80.2	42.77	165.20	6	0	0	0	0.00
					-			0.00					
TOTAL	46,032.70	3,724.33	4,833.73	3,206.47	11,764.53	8145.7	10,530.39	1,234.14	228	64	17	9	6,143

Source:

Table drawn on the basis of data from the Forest Authority as presented in:

- 1) The National Forest Plan, 1996;
- 2) The Forest Resource Acquisition General Information, November, 1998;
- 3) Current Projects, 18 May 2000; and
- 4) Status of Forest Working Plans and Annual Logging Plans for Timber Projects as at 31 March 2000.

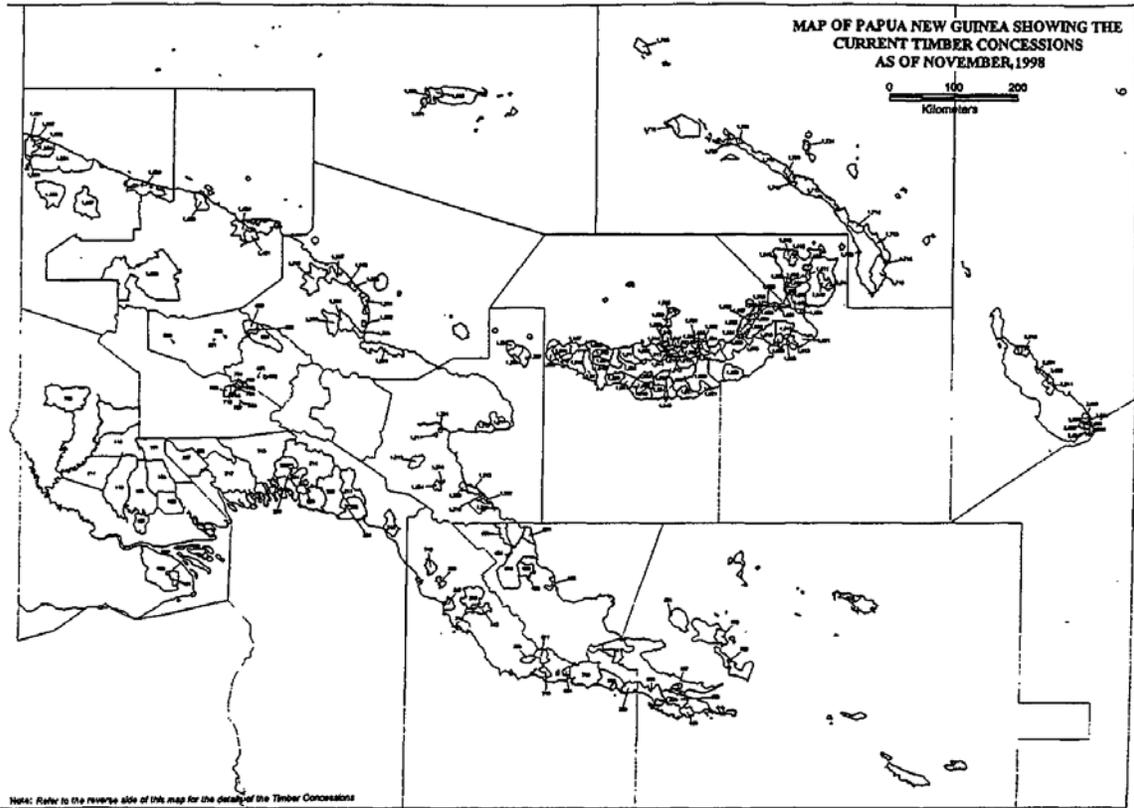
MAP 1: FOREST RESOURCES OF PAPUA NEW GUINEA



Legend

-  Dry seasonal forest
-  Lowland hill forest
-  Lower montane forest
-  Mangrove
-  Non forested areas
-  Lower plains forest

Map 2: Current Timber Concessions as of November, 1998



Ownership of trees and its appropriation

Because the trees grow on customarily owned land - almost 99 % of the land area in PNG, it is customarily owned. The PNG Constitution recognises the social structure of it people, including recognition over the ownership of land and resources on the land – trees being one. At the same time the Constitution gave the mandate for the management of the natural resources on the State - Independent State of PNG (Independent State of PNG, 1980).

In order for the PNG government to have access to the trees and manage it as enshrined under the Constitution, it enters into an agreement with the customary owners for the ‘timber rights’. This is through the process of entering into a forest management agreement (FMA)⁵ where the State will supposedly manage the forests over a 50 year term, with provisions for extending the FMA after the first 25 years. Under this cycle of management, the State tenders out the forest area for potential loggers to express an interest in managing it. If the State is satisfied with the logger’s expression of interest, it negotiates a project agreement with the logger and then issues a timber permit (TP) to the logger to log the area over a 35 year term under specific terms and conditions that could range from the normal rate of annual harvest and proportions for round log export to road construction. The degree and form of forest management in regards to ensuring the sustainability of the forest resources is not clearly specified in the TP.

Many writers have suggested that PNG has not been able to manage its forest to any level where it can say that it is able to meet the needs of the timber industry, while at the same time meeting the needs of the people that own the timber (World Bank, 1990; Turia, 1995; 1996; Filer, 1997a; Montagu, 1997; Taylor, 1997). Two fundamental causes are always given to this inability by the State to manage the forest. The first is the land tenure system, and the second is the diversity of tree species for timber production. Both of these causes have made it difficult (not impossible) for the State to apply any form of forest management in PNG.

The situation as in practice in PNG is one where forest management is conceived by the State to mean ensuring that the timber industry has sufficient timber volume to sustain its operation (Montagu, 1997). In its perceived role of ensuring that there is an adequate timber supply to maintain the industrial base of the timber industry, the State has ‘management rights’ over 10.5 million hectares of forest areas out of the 11.9 million hectares classified as production forest areas (Table 1 and Figure 1). The management rights are for timber production only and not the other goods and services that most of the rural people also rely on, including the wider benefit to the nation and globally as a result of having forest cover.

Forests – Common Pool Resource

The concern for the *commons* has been talked about for centuries, but even then there are also debates on what is meant by *the commons*⁶, *common property resources*⁷, and *common property*⁸ (Hardin, 1968; McKean and Ostrom, 1995; Ostrom *et al.*, 1999; Berkes and Farvar, 1989; McKean, 2000; Watt, 2000). The debates on the definition or use of the term ‘common property’ also highlights the philosophical differences of traditional view as opposed to the Western scientific resource management view, with respect to ‘property’ (Berkes and Farvar, 1989).

In the Western view, property is either private or it belongs to the state. On the other hand, the traditional view on common-property is restricted to communally owned resources, for which there exist communal arrangements for the exclusion of non-owners and for allocation among co-owners. This is the case in point in PNG where the land is customarily owned by kinship groups. In order for the State to develop and manage a forest area, it has to negotiate for the ‘rights’ to access the forests. Under this situation, all co-owners may simultaneously agree to lease their ‘timber rights’ to the State in accordance with the rules laid down by the State. This is quite opposite to a normal

⁵ The FMA replaces what used to be the Timber Rights Purchase (TRP) process prior to 1991.

⁶ Refers to interests that belong equally to two or more people and shared by all alike.

⁷ The same meaning as in common pool resources.

property rights situation where because the kinship groups owned the forest resource, they lay down the rules.

I prefer to adopt the term *common pool resource* as opposed to ‘common property resource’ as it differentiates the resource – in this case – the forests from ‘common property’ - which identifies the rules (*common property regime*⁹) pertaining to the management of that forest (McKean and Ostrom, 1995; Edwards and Steins, 1998; Ostrom *et al.*, 1999; McKean, 2000). In this way, it is easy to identify that *common pool resources* are a class of resources for which exclusion is difficult and joint use involves subtraction which could lead to depletion (Berkes *et al.*, 1989; McKean, 2000). It is therefore necessary for some form of institutional mechanism to be instituted to address the excludability and subtractability nature of the common pool resource (McCay and Acheson, 1987; Berkes and Farvar, 1989; McKean and Ostrom, 1995; Ostrom *et al.*, 1999; McKean, 2000).

Many empirical studies (Acheson, 1989; Berkes, 1989; Wittayapak, 1994; Ostrom *et al.*, 1999) have shown that the successful management of common pool resources involves resources that are effectively managed by small to relatively large groups. Are there cases of such projects, and if they are a success, can they be reproduced? This should be an important question for the Pacific region. As well appropriate studies should be instituted to look at the success of State’s and small groups (in particular the resource owners with support of non-governmental organisations) attempts with the management of the forest resources of the region. The study should cover all the natural resources, taking into consideration all the goods and services that are available and could be derived from the said natural resources. In the case of the forest resources, it should cover the total forest resources and not just the trees.

⁸ Refers to those resources where access is limited to a specific group of users who hold their rights in common. It is not open access to everyone and therefore not easily open to private allocation.

⁹ This refers to a property-rights arrangement in which a group of resource users share rights and duties toward a resource.

Evidence of other theories, e.g., Watson's (1989) 'modern community development theory'¹⁰, asserts that sharing of communal resources is often elitist and subject to dishonesty in a modern community. In specific reference to PNG, this same study should explore existing institutional framework, in particular the incorporated land groups (ILG) and land owner companies (LOC) with respects to its functioning as an institution and how it has performed, in line with the criteria set by Gibbs and Bromley (1989) as follows:

- 1 a minimum (or absence) of disputes and limited effort necessary to maintain compliance: *the regime will be efficient*;
- 2 a capacity to cope with progressive changes through adaptation, such as the arrival of new production techniques: *the regime will be stable*;
- 3 a capacity to accommodate surprise or sudden shocks: *the regime will be resilient*;
and
- 4 a shared perception of fairness among the members with respect to inputs and outcomes: *the regime will be equitable*.

By examining institutional arrangements, the study will provide some assessment of the resource owners relationships to the forest resource, therefore, translating interests into claims, and claims into property rights (Gibbs and Bromley, 1989). The claim to property rights is a big concern for the State as constitutionally, the State does not own the land and therefore cannot claim ownership of the forest resource. It's attempts to manage the forest resources is more at the whim of the resource owners, who are not willing to give up their land freely or easily for forest management. The loggers have taken advantage of this weakness and are 'free-riding' in that they are exploiting the forest resource without any desire for forest management.

Property Regime – Forests

Ward (1997) argued that land (and I would include forest resources) are not 'common property' in the sense of open-access or equal access in the Pacific islands. This view is

¹⁰ Suggests that sharing of communal resources is often elitist and subject to dishonesty in a modern community compared to the traditional society which has a feudal structure.

supported by Power (1999) who asserts that in PNG, both resources (land and forests) can be grouped under private property regime, state property regime and communal (group) property regime, depending on the property right regime applied. In some parts of PNG with low population density, it could be argued that forests were traditionally open-access resources because there is no clearly defined property right over it (Filer, 2000 – personnel communication). Sack (1973) suggested that as far as the locals are concerned, there are no ‘ownerless’ land areas. But amongst themselves they do acknowledge that there are land areas that have no outright owner, at a time. However, once a land area is determined to have some forestry or other potential, a claim is laid on it and it becomes a group property which could then change to being a state property, and eventually becomes a private property.

In the PNG context, it is not a clear cut situation when trying to place the forest resources under any of the four commonly know property rights regimes – Table 2. This paper suggests that the issue of ‘property rights’ should be explored further, particularly for the Pacific Region to get an understanding of where resource owners and the State see themselves with respect to maintaining and sustaining a forest resource base for the benefit of the total nation as well as the global community.

Table 2: Types of property-rights systems used to regulate common-pool resources.

Property rights	Characteristics
Open access	Absence of enforced property rights
Group property (Communal)	Resource rights held by a group of users who can exclude others
Individual property (Private)	Resource rights held by individuals (or firms) who can exclude others
Government property (State)	Resource rights held by a government that can regulate or subsidise use.

Source: Ostrom *et al.*, 1999 – Table 1:pp 279

Many writers assert that Hardin's theory of the tragedy of the commons 'fails to distinguish between common property as a theoretical condition in which there are no relevant institutions (open access) and the common property as a social institution (the commons)' (McCay and Acheson, 1987). This is because Hardin (1968) based his theory on the assumption that:

- 1 common property is the same thing as open-access;
- 2 restrictions on access are the only effective means of resolving commons problems;
- 3 solutions to the commons dilemma should be restricted to the intervention of external authority on the one hand and privatisation of property rights on the other;
- 4 private property protects resources from abuse and waste, and not common property;
- 5 the causes of environmental decay and economic loss are due to the nature of property rights; and
- 6 it is the system of the commons that fails to furnish the adequate incentive, and not capitalism.

McCay and Acheson (1987) further assert that empirical studies have indicated that all the above assumptions are inaccurate. This paper is not to debate these assumptions but rather to see its applicability or otherwise, with respect to the management of forest resources in PNG, which is viewed as a common pool resource. These will be viewed from the perspective of the resource owners, the State and the timber industry, including other interest groups, for example the non-governmental organisations (NGOs), and multilateral (World Bank) and bilateral (AusAID) aid agencies.

Resource Owners Perspective of Forests

The resource owners in PNG view the land and the forests (trees) on it as belonging to them, passed on through their ancestral link to the land. During the period of colonial administration and the notion that the people had to develop came the idea that they could use their forest resources in exchange for development. In most instances, the people

were quite keen to have their forested land areas developed into timber projects so to have development (Cavanaugh, 2001 – based on his experiences under colonial rule). But what is development?

By ‘development’ the people mean that all settlements in the bush should get a road, that every man should then have his own vehicle, that all goods should be easy to buy, that money should exist in abundance, that all children should go to school and that no-one should have to die because of illness Renner, 1990:17; Mullins and Flaherty, 1995:95 as cited in Connell, 1997:102).

It is another story whether or not the people are getting this sort of development.

State Perspective of Forests

The government of the Independent State of PNG perceived the forest as a national asset and it is its role to manage and regulate its use. Has it been successful in doing this? Barnett (1989) asserts that the timber industry in PNG is out of control because of corruption at the political, bureaucratic and local levels, and the inability of the State’s institution that was set up to regulate the forestry sector, namely, the Department of Forests.

Perspective of Other Interest Groups

NGOs

One could suggest that the NGOs see it as their role to represent the rural people in any form of development debate. But do they? There are many NGOs in PNG, many of whom are involved directly in forestry related projects with rural villagers. But there seems to be mistrust between the NGOs and State institutions and even amongst themselves NGOs themselves.

World Bank

The World Bank has had a long history in PNG’s forestry sector. One of its early recommendations under the colonial administration was that the forest resources of the country had potential to be developed to booster its economic and social advancement (Connell, 1997). Even at independence, the Bank is still involved in the forestry sector.

It was instrumental in bringing about the current Forest Policy and Legislation and is using forestry as a conditionality for its assistance to the PNG Government under the Economic Recovery Program (commonly known as the Structural Adjustment Program) (Dubash and Filer, 2000).

AusAID

Because of its historical link with PNG, Australia through AusAID has had a very long and close relationship with PNG. It is involved in almost every sector of the country's institutional framework. It has had its successes as well as failures in its relationship with PNG. But it is suffice to suggest that in terms of forestry, perhaps the people of PNG were given a false perception that their forest resources was worth more when in fact it wasn't (Endacott, 2001 – personal communication).

Conclusion

Considering that the forest resource - trees is customarily owned, a better understanding of the interaction between people and forests is crucial. As without a clear understanding of what 'property rights' each party has in terms of the ownership of the trees, the issue of management cannot be easily addressed. Perhaps in the PNG situation resource owners are not capable of maintaining and sustaining themselves with their traditional use of the forest because of the market economy (logging activities) that has been brought in. There are instances of other rural communities in other developing countries adopting to the market economy and therefore able to sustain themselves with the resources available to them (Gudeman and Rivera, 1998). Could it lead to *the dilemma of the commons*¹¹ as both the State and the resource owners perceive the forest resource as a marketable commodity, that each wants to derive the most benefit from? (Grima and Berkes, 1989).

In the Melanesian society, traditional resource management systems, reflect the origin of the societies, and are built on principles of allocation and cooperation within hereditary groups (Baines, 1989). There is still confusion and misunderstanding among planners,

administrators and legislators about the origin and nature of those rights, which, if not supported by government, may disintegrate because of the economic forces for development (Baines, 1989; Power, 1998; 1999; Young, 1998). The urge for some common ground to be reached, taking into account the changes taking place, due to 'pressures from population growth and desire for wealth and higher living standards' (Young, 1998) is very real. The call by the Prime Minister of Papua New Guinea – Sir Mekere Morauta for land issues to be addressed, such that some form of land title adaptable to both custom and the needs of the nation for business and commerce is created, is timely (National, 9th November, 2000).

Beside the complexity of land tenure, the market-economy paradigm is a concept that most rural resource owners lack any understanding: of how it works and what is expected of it (Wittayapak, 1994). Traditionally, within the rural community, the resource owners have an understanding of why they need to maintain a resource, leading to a sustainable system (Berkes, 1989; Wittayapak, 1994; Ostrom *et al.*, 1995; Gibson *et al.*, 2000). But, it must also be realised that it may be difficult to maintain the communal ownership once a market economy has developed (Grima and Berkes, 1989). This is becoming more obvious in PNG with many resource owner groups claiming rights to the same piece of land, threatening the progress of a development project.

The forests play a multitude of function which are all interdependent on each other, and hence its categorisation as a common pool resource. As such, its use by one user deprives another from using it, while at the same time reduces the quantity (for example the volume of timber) available for some other user. How adverse or positive these effects can be is important both for the traditional owners as well as the global community.

Papua New Guinea has its unique system of ownership and use-rights that would add to the knowledge of common pool resources. Appropriate studies should be instituted to provide answers that will explain resource-use policies, and cooperation among users

¹¹ The commons dilemma is the theory which suggests that there are too many users to a limited resource.

under certain conditions and lack of it under other circumstances. This then will shed some light on some of these circumstances so that new forms of common pool resource management system is identified and applied to enhance the carrying capacity of those resources – in this case the forest - so that no one is disadvantaged by its present use. But most importantly, that it will help in contributing to the challenge that:

A new theory of common-property (pool) resources has to be able to account for sustainable resource management under communal (group)-property regimes. Alternative models based on more complete theory, rather than the misleading ‘tragedy of the commons’ model, could provide the basis for the sustainable use of common-property (pool) resources for the future (Gibbs and Bromley, 1989:15).

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