Pacific 2020

BACKGROUND PAPER: FORESTRY

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Pacific 2020 Background Paper: Forestry

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Disclaimer

This paper is one of a series of nine background papers written for the Pacific 2020 project, which was conducted by the Australian Agency for International Development (AusAID) in 2005. Pacific 2020 examines various components of the economies of the Pacific, Papua New Guinea and East Timor. It aims to generate practical policy options to contribute to stimulating sustainable, widely shared economic growth in these countries.

This paper is based on the discussion at a round table meeting of regional practitioners and experts, which occurred in June 2005. The findings, interpretations and conclusions expressed in this paper are based on the discussion at this round table, and from a subsequent peer review process. They are not necessarily the views of any single individual or organisation, including AusAID, the Pacific 2020 Steering Group, contributing authors, round table participants or the organisations they represent.

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SUMMARY

Forests are an important natural resource in the Pacific island countries.

Forests are an important natural resource in the Pacific island countries. Although local communities own the vast majority of forested land, they depend very much on logging companies, often foreign, to harvest the forest resources. These companies often focus on maximising their profits in the short term rather than sustainably harvesting timber and equitably sharing the benefits. Community and farm forestry are important ways of improving the current situation. This will require efforts, including from donors, to build community capacity.

Forest resources are extremely important to the subsistence economies of the smaller states (for example, Federated States of Micronesia, Kiribati and East Timor), which are also very vulnerable to climate change.

The larger island countries of Solomon Islands, Papua New Guinea, and Fiji gain considerable benefits mainly from whole log exports. Vanuatu, on the other hand, maximises these benefits by processing timber for export.

Forests are being degraded and biodiversity is under threat.

While all governments in the region express commitments to sustainable, multiple-use forestry, forests are being degraded by localised population pressure or unsustainable use, or both. At the same time, globally significant biodiversity is under threat. The environments on which so many Pacific island people depend are arguably being degraded. They are certainly being managed in ways that cannot be sustained, creating significant negative impacts for present and future generations. As well, many of the forest resources are particularly vulnerable to natural catastrophes, especially cyclones. Mangrove forests, for example, can help to mitigate the effect of natural disasters, particularly in small island states.

The larger forested countries (Solomon Islands and Papua New Guinea) are exploiting the resources at such a rate that the benefits from foreign exchange earnings will either disappear or be significantly reduced during the period to 2020.

Business as usual is the worst case scenario.

The rate of degradation of forest and related environmental factors is at crisis levels. Failure to effectively implement policy and to enforce existing legal requirements remains a major issue in the forestry sector. Business as usual is the worst case scenario. A shared vision and understanding of the sector based on a common purpose and a clear set of principles is needed urgently.

Despite this relatively bleak picture there are a number of opportunities for economic growth from the forest sector to maintain the range of services and benefits to the people of the Pacific. These will rely principally on establishing an enabling environment (focusing on governance, market access including aggregating supply for

efficient transport and establishing enforceable agreements with smallholders) at the same time as maintaining the various environmental services and safety nets. Systems of sustainable forestry and agroforestry will need to be promoted. The linkages between forestry and other sectors (e.g. tourism, agriculture etc) needs to be recognized through integrated land use planning.

If a balance is achieved between economic, social and environmental considerations involving all sectoral interests, forests can provide significant opportunities for future development founded on the sustainable use of resources and the preservation of a healthy environment on which the people of the Pacific depend.

Governments and donors need to address the following issues and opportunities.

Governance needs to be improved.

- The clearing and degradation of forests contributes to environmental, economic, social and political instability in some of the Pacific island countries.
- It is paramount to improve the regulatory framework for enabling sustainable forest management, such as regional strategies, national policies, legislation (including fiscal), guidelines and sector plans. Currently, the decision-making is highly fragmented, inconsistent and uncoordinated. Illegal, under-reported and unreported logging is a significant issue.

Sound laws and regulations need to be implemented.

- The role of government in administering forest resources needs to be more clearly defined, the rights and benefits to the resource owners need to be identified and ethical partnerships with the private sector need to be established, so that political stability and forest policy are both rational and consistently applied. As a result it is likely that forest administrations need much greater support within the budgetary process.
- If forest management responsibilities are devolved to subnational entities, these entities will require considerable technical assistance to implement policies successfully. Currently reinvestment in the resource and in the agencies that are supposed to act as stewards of the forests is low compared with the rents extracted from them.

Certification schemes are needed if niche markets are to realised.

- Fast-growing, specialty, small wood plantations offer an economic opportunity that requires access to niche markets for the output, which is more likely with schemes of certification.
- Certification will also help to address environmental and sustainability issues although it may require a staged or tiered introduction and possibly need to be adapted within codes of practice and national or even regional standards.
- There are a number of non-timber forest products that have the potential for significant economic returns. These need to be investigated (particularly to address issues of sustainability) and supported by marketing schemes and, after analysis, possibly microcredit mechanisms.

Land tenure issues need to be addressed.

- The establishment of plantations at anything but the community level will require issues associated with land tenure to be addressed.

Value-adding and community forest management require enabling environments.

- While value-adding processing can provide major economic benefits, it requires an enabling environment for the private sector. Carbon trading may present an opportunity for engaging with the private sector but will require the implementation of sound policies and the development of significant technical capacities. Indeed there are substantial issues about the eligibility of Pacific island countries under the provisions of the Kyoto Protocol and Clean Development Mechanism.
- Enforcing contractual obligations between resource owners and investors is a priority.
- Communities need to be in a position of partnership with the private sector, and decision-makers need to focus on sharing information and building the capacity of communities.

Sustainable forest management requires support.

- Regional initiatives for controlling illegal logging and supporting sustainable forest management as part of the Asia-Pacific Forestry Commission and other regional forums also require support. Partnerships with non-government organisations, which have a comparative advantage in working at the community level, need to be strengthened but not as a means of replacing government responsibilities.

Donor support needs to be coordinated.

- Donor support needs to be enhanced by better coordination, with an emphasis of mainstreaming economic benefits at the community level.
- Donor support should also include focussed research to maintain Pacific countries comparative advantage in the production of forest products for a number of speciality markets.

INTRODUCTION

Forests are a vital safety net for the people of the Pacific

Forests are an important natural resource in the Pacific island countries. They cover between 20 and 80 per cent of their land areas (except in Tonga with a forest area of less than 8 per cent).[1] The forest area per person ranges from as little as 0.1 hectare in Micronesia up to the very high 5.9 hectares in Solomon Islands. Forests are vital safety nets to the people of the Pacific particularly to the economies of the smaller states that are extremely vulnerable to climate change. They provide subsistence economies with a source of sustenance in times of hardship – when crops fail, when economic crises hit, in times of conflict, or following natural disasters. Non-wood forest products provide a range of goods for domestic use and for the market, among which are game, fruit, nuts, medicinal herbs and forage.

They also provide a range of normally unpriced environmental benefits including carbon sequestration, watershed protection, biodiversity, coastal protection and aesthetic qualities of the landscape.

The forested islands of the Pacific hold globally significant levels of biodiversity and endemism.

The forested islands of the Pacific hold some of the world's last remaining areas of intact lowland tropical rainforest with globally significant levels of biodiversity and endemism. Forest ecosystems (including inland, wetland, lowland, coastal and mangrove forests) sustain plant, animal and human ecology, social and cultural structures and subsistence agriculture. This agriculture is generally based on a system of customary land tenure and is mostly in the form of forest–fallow rotational systems. Forests have many links to other sectors and production systems – for example, ecotourism and fisheries (environmental protection of coral reefs and fish-breeding grounds from erosion, pollution and sedimentation). Many forests and the direct benefits they generate are undervalued and their diversity is little appreciated.

The future development of forestry in the Pacific islands must be firmly founded on the sustainable use of resources and the preservation of a healthy environment.

Four Pacific countries – Papua New Guinea, Solomon Islands, Fiji and Vanuatu – have forest industries that are very important to their formal and informal economies, particularly as a source of foreign exchange, fuel, food and shelter. Vanuatu earns foreign exchange from processed timber exports and taxes, and gains an economic advantage through the value of domestically sourced inputs and employment.[2] Fiji, to a lesser extent, mirrors Vanuatu. In contrast, Papua New Guinea and Solomon Islands, with proportionately lower levels of processing, gain less advantage from the sector for the rest of the economy.

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1 Food and Agriculture Organization, Global *Forest Resource Assessment 2000 Main report*., FAO Forestry Paper 140. Rome.

2 Vanuatu is also exceptional in that it has put in place the National Forest Policy, which strives to bring all stakeholders together to work cooperatively to achieve sustainable forest management, while also ensuring long-run revenue generation, economic development and conservation of forest biodiversity. With the support of the Secretariat of the Pacific Community and the German Government owned firm, Deutsche Gesellschaft fur Tecnische Zusammenarbeit (GTZ) GmbH, a first draft of a national forest policy (based partly on Vanuatu's) for Fiji has undergone a comprehensive national consultation process. A second draft will be submitted to government later this year.

Compared with the four countries just mentioned, smaller island states rely on forests primarily as part of their informal economies.

Unprecedented logging and land conversion are issues.

Over the past decade there have been unprecedented logging and land conversion on all of the larger islands of Melanesia. The loss of forest ecosystems as a result of the spread of agriculture is an issue in those countries with high population densities – Federated States of Micronesia, Kiribati, Marshall Islands, Niue and Tuvalu. The loss of forests in Samoa and Cook Islands has been due to natural disasters (cyclones).

CURRENT CHALLENGES

Forest resources in the Pacific are not contributing as they should.

Forest resources in the Pacific are not contributing as they should to economic and social development or sustainability. Long-term concessions based on sound land use plans and forest management plans that include properly calculated annual allowable cuts are not implemented, even if enfranchised in national policies and legislation. This results in minimal benefits for sustainable development. In many countries the forestry sector is too narrowly focused on timber production through unsustainable round log export.

The region, particularly the largest four forested countries, suffers from a number of inherent economic issues, including a lack of long-term investment, the high cost of production, dispersed domestic markets, distant international markets, an undiversified and fragmented production base, the high cost of infrastructure and a heavy reliance on external trade and aid. The forestry sector itself is affected by a number of endogenous problems, including a relatively low skill base (particularly for processing), a lack of infrastructure, weak governance and the lack of an enabling environment for the private sector

Poor governance and forestry management are contributing to the degradation of forest resources.

Ineffective governance and poor forestry management (planning, policies and capacity for implementation) are contributing to the degradation of forest resources and significant environmental impacts. In some countries these effects are exacerbated by an incomplete understanding of the immediate impacts and long-term ramifications of current commercial logging practices or because there are no alternative opportunities for generating assured incomes. In many areas (for example, Solomon Islands and Papua New Guinea) logging continues to be carried out at two to three times the ‘sustainable yield’ level.

Revenue from commercial logging is rarely used for longer term investment.

With the notable exception of Fiji, forestry revenue is directed largely to government and not to the resource owners as a long-term benefit stream. Revenue from commercial logging is rarely used as capital for longer term investment and is regarded by many as a source of cash for the short term. There are examples where decision-makers regard forests as an inexhaustible resource, given that resource owners lack the capacity to commercially exploit their resources by themselves. Funds

for promoting secondary forests are either not available or are siphoned off to fund more pressing recurrent expenditure.

Employment opportunities for nationals are limited.

While some infrastructure and other services are provided to communities, much is substandard. Even employment opportunities for nationals are limited to the lowest paid jobs. In Papua New Guinea there are many examples of illegal foreign workers, and many of the anticipated benefits for job creation are illusory.

In some countries the impacts of the commercial exploitation of forests can be indirectly linked to impacts on human health. For example, limited initial survey data indicate that the incidence of HIV/AIDS around remote logging camps is high in comparison with the incidence associated with other rural development activities.

FUTURE CHALLENGES

Some countries will lose much of the existing financial benefits of their forest resources. For example, Solomon Islands' exports of whole logs have accounted for two-thirds of its total exports in recent years. The most recent inventory information indicates that its primary forest will be cut out in less than 10 years, even if cutting levels are reduced significantly. The large scale, mostly foreign-owned, companies operating in the natural forest and exporting round logs, with a token level of activity in sawn timber and other processing will leave.

Empirical and anecdotal evidence indicates that many of the mainly foreign commercial operators in the PNG forestry sector recognise a similar critical situation and are implementing short-term strategies of less than 15 years focused on providing capital to expand into other sectors, including retail investment in Australia. Therefore the present character of the forest industry in these two countries will change dramatically.

Markets for whole logs will be driven largely by processing for export markets, particularly in China and India.

Markets for whole logs will be driven largely by processing for export markets, particularly in China and India. As China and India develop as global economic powers they will have a large and growing demand for timber, which is likely to continue to rise sharply well into the medium term.

For example, China's imports of timber products and pulp more than doubled in roundwood equivalent volume between 1997 and 2002, rising from 40.2 million to 95.1 million cubic metres. Demand for wood pulp is also rising at a similar rate. Analysis undertaken by Forest Trends, a US-based research organisation, highlighted very heavy investment in pulp and paper in advance of the required plantation developments. This will result in increasing pressure on forests in the Asia-Pacific region, as demand for wood pulp in China continues to increase.

Forest Trends research also suggests that China will remain heavily dependent on imports for more than 15 years and current projected estimates of when self-

sufficiency will be attained in China are overoptimistic. Current rates of exploitation to meet China's demand threaten the future of forests and forest-based industries in the Asia-Pacific region. Policymakers need to consider how to respond to this threat and the commercial opportunities that it presents. India is growing to represent a similarly large market for timber.

Prices could be depressed by increasing supplies from plantations.

In the longer term, most market forecasts indicate that prices could be depressed by increasing supplies from plantations.[3] A number of Asian nations are expanding plantations (by 2002 China had already established 7 million hectares) and plantation timber supplies in China are expected to increase dramatically in the next decade. Although high-value durable hardwood species will continue to command a market premium, plantation timber will be substituted for lower value species used in structural and pulp applications. As a result, the returns from logging will decrease as markets become more restricted for the lower value hardwoods currently being produced by whole log export operations.

Under this scenario the major primary natural and accessible forests of the Pacific are likely to be logged out by 2020.

Under this scenario the major primary natural and accessible forests of the Pacific are likely to be logged out by 2020. But not all forests will be logged. Secondary forests are unlikely to be able to meet any increased demand due to the failure of reforestation.[4] There is obviously potential for larger scale plantations to provide greater volumes per hectare and economies of scale in terms of production. However, experience has shown that factors such as high interest rates, low wood prices, a lack of suitable planting areas and the financial attractiveness of alternative land uses (for example, oil palm) discourage interest from the private sector.

Good governance, clear land tenure arrangements, national security and market development attract and empower investors, both small and large scale. Fiji's existing mahogany plantations are a valuable resource but will require skilful management and marketing if economic returns are to be maximised and maintained.

New plantations would need to focus on a few species in which the Pacific has some comparative advantage.

New plantations would need to focus on a few species in which the Pacific has some comparative advantage to meet the demands of specialty markets not likely to be supplied by other countries producing plantation woods. For example, short rotation, community plantation teak produced in Solomon Islands has the opportunity to be a valuable income generator. New plantation investment will also need to overcome the hurdle of cash-flow demand during the early development years and the relatively long period before pay-off (final harvest). Joint venture arrangements with the private sector offer the potential to address this hurdle but these arrangements require the investment climate (for example, governance and security) to be adequately addressed.

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3 This has to be considered in the light of the fact that the global demand for primary wood products is rapidly increasing and that the world's natural forests may not be able to meet this demand.

4 This reflects a failure to log primary forest using reduced impact logging procedures and species-specific diameter cutting limits, which are meant to be implemented in many countries.

Tree growing in the tropics is very labour intensive, requires few tools and very little infrastructure, provides real opportunities for rural employment and requires a long-term commitment. Many of the export-oriented agricultural projects tried in the tropics have quickly flooded the limited markets available. However, this is unlikely for teak and mahogany. The supply of high-quality furniture timbers is in decline from natural forests, and export markets are increasingly prepared to pay a premium for quality timber sourced from sustainably managed, village-level forest enterprises.

In 2003, 1000 hectares of teak trees were planted by some 2000 families across Solomon Islands. If these trees are well managed, each hectare could be worth A$100 000 over a 20-year rotation. Thinning would produce the first income flow as early as year 12. Nationally, if 1000 hectares of teak trees were planted each year those trees could add A$100 million to the economy each year on a sustainable basis. This is three times the current total government income, or twice the revenue being generated from the unsustainable harvesting and sale of natural forest logs. In addition, foreign logging companies would not be required to organise the export trade for the plantation timber. Villagers could cut, carry and stack the timber for export, so that the money generated stayed within the village and country. It would not require big logging companies and heavy machinery as for natural forest logs.

Further potential examples for the development of specialty wood of small size, include:

1. Sandalwood in Vanuatu, Fiji, Cook Islands and Tonga (where two hectare of sandalwood age 15-20 years is currently worth of the order of USD$400,000 with an identified strong long term demand),;
2. Fast growing hybrids of Pacific species (e.g. fyasi and autrocaledonium with Indian/Indonesian sandalwood);
3. Poumuli in Samoa. Using a 7-9 year rotation durable poles can be produced for the opening markets in Australia and New Zealand to replace chromate treated vineyard poles; and,
4. Terteaminalia catappa which is useful for coastal protection, produces nuts in 2-3 years and timber in a relative short rotation. Even the bark provides medicine.

Nonetheless, it must be acknowledged that communities involved in such operations would still place a high priority on immediate income streams, which could mean that the maintenance and establishment of such small scale plantations would be seen as a lower priority to other short term cash crops. In Papua New Guinea, whose population is expected to grow from 5.9 million to 8.8 million during the period to 2020), the demand from the domestic market will also be a factor.

A VISION FOR THE FUTURE

Forest management should be directed primarily at improving the livelihoods of rural landowners and, in so doing, achieve greater social and economic benefits for current and future generations. While other objectives such as earning the maximum value-added export revenue remain important this should not be at the expense of sustainable forest management principles and at the expense of landowners affected by unsustainable forest use. While a few would continue to benefit considerably from the continuation of a narrow commercial focus this would not serve the national interest of many countries.

If forests are to be a basis for sustainable development, sustainable forest management will need to be achieved.

If forests are to be a significant basis for economic, social and environmentally sustainable development, the principles underlying sustainable forest management need to be addressed by decision-makers, including those people who live in or who rely on forests for their welfare.

SUSTAINABLE FOREST MANAGEMENT

Forest management, conservation, development and industrial use, as well as research, extension, training, education and forest administration, which support forestry development, need to be directed to achieving the goal of sustainable forest management.

Sustainable forest management is the management of a forest estate to not only produce a sustainable yield of timber and non-timber forest products but also maintain the underlying ecological processes.[5] These processes sustain forest ecosystems, conserve biological diversity and protect wildlife habitat, soil, water quality and quantity, and associated aquatic habitats.

Fundamentally, sustainable forest management involves:

- promoting sustainable forestry and agroforestry systems, recognising the links between forestry and other sectors (for example, tourism and agriculture) through integrated land use planning (as in the Participatory Land Use Planning for the Model Area for Community-Based Natural Resource Management in Drawa, Fiji)

Sustainable forest management requires accountability, transparency, information, the rule of law and economic efficiency.

- promoting community forestry and participatory forest development by encouraging landowners to be involved in managing and using their own forests
- protecting the integrity of ecological systems and biodiversity
- reducing the rates and areas of land degradation
- maintaining and extending forest cover
- rehabilitating areas of degraded natural forest remnants

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[5] The sustainable yield of timber from a forest is the volume that can be cut annually without depleting the total timber resources; that is, the volume cut must not exceed forest growth. It should be noted that there is a great difference between the actual reduction in stocking timber volume and the reported extracted timber volume that reaches the market due to the damage to the residual stand, timber breakage and timber waste and this needs to be appropriately factored in to the sustainable yield calculations.

- expanding afforestation of degraded grassland, and
- implementing international environmental accords to which Pacific countries are signatories.

Accountability, transparency, the timely provision of information to all stakeholders, the rule of law, the equitable distribution of benefits and economic efficiency will be required to secure the vision of sustainable forest management.

ISSUES AND OPPORTUNITIES

Some of the issues and opportunities facing the forestry sectors of the Pacific island countries are presented in the table below.

ISSUES AND OPPORTUNITIES FOR FORESTRY IN THE PACIFIC

Present situation/issues	Actions and opportunities
General issues	
Lack of awareness of the importance and diversity of forests	Improve education and training in forestry and environmental studies.
	Create links between forestry and other sectors (by planning land use, identifying champions and/or identifying existing plans and strategies at local, national and regional levels and harmonising the legal framework across sectors).
Lack of effective community involvement in land use decision-making	Provide technical assistance to landowners and involve them in decision-making so that they are in a position to provide informed consent.
Need to clarify the roles of private and public sectors and indeed all stakeholders in forest resources	Enforce existing legislation and regulations to promote sound and sustainable business practices for all forestry companies (foreign and domestic, and large and small).
Natural primary forest	
Illegal logging	Take a regional and international approach to coordinating law enforcement by integrating with or linking to East Asia forest law enforcement initiatives (participate in ministerial-level Forest Law Enforcement Group (FLEG) meetings and in technical discussions on log monitoring and control, money laundering etc.).
Transfer pricing	Maintain/introduce log export monitoring systems.
Unsustainable harvesting (exhausted before 2020)	Raise awareness of existing forest resources through updated national forest inventories, of the pending crisis and of the importance of the forestry sector.
	Undertake three-year reviews of logging permits.
Lack of institutional capacity (forest and environmental agencies)	Develop institutional capacities through technical assistance.
	Increase budget support
Minimisation of landowner benefits	Provide timely and relevant information to all stakeholders and involve landowners in the process.
	Enforce legislation and policies.
	Provide legal assistance to landowners
Significant environmental degradation	Continue to develop and implement reduced impact logging systems.
	Introduce certification (national and/or regional) and develop related standards.
Secondary forest	
Lack of regeneration	Support technical assistance in developing community-based rehabilitation techniques.
	Enforce or introduce logging codes of practice and reduced impact logging of primary forest.

Present situation/issues	Actions and opportunities
Village/community forestry	
Market access	Develop a group certification program and marketing services.
	Address infrastructure issues with agriculture.
Lack of technical capacity for propagation and maintenance	Provide technical assistance and capacity building (eg current programs in Samoa, Vanuatu and Solomon Islands).
Development of specialty wood of small size • sandalwood in Vanuatu, Fiji, Cook Islands and Tonga and fast-growing hybrids of Pacific species (fyasi and autrocaledonium) with Indian/Indonesian sandalwood • teak in Solomon Islands • poumuli in Samoa	Undertake research to improve genetic materials, species selection, establishment, maintenance and marketing.
Lack of credit/start-up capital	Investigate and establish options for microcredit (in forestry, agriculture, tourism, etc).
Conservation	
Lack of effective legislative framework	Evaluate the potential of the landscape approach (such as the Fiji approach).
	Identify opportunities for other land uses (eg linking good forest science, which incorporates traditional knowledge, with tourism).
	Establish land-use plans and implementation frameworks at local levels.
Lack of effective capacity for implementation	Target local-level technical assistance and community involvement.
Large-scale plantations	
Tree species well adapted to Pacific environment (eg mahogany in Fiji)	Provide research assistance in selecting species and developing silviculture and markets
Suitable land and tenure issues	Address landowner and investor issues so that each party's contract commitments are enforceable.
Use and marketing problems	
Non-timber forest products	
Species selection, propagation and marketing	Provide support for identifying, propagating and marketing high-value non-perishable products (eg canarium nuts in Vanuatu and Solomon Islands, pandanus, medicinal plants).
Tourism and high costs of travel	Link potential forest-based tourism sites and destinations via regional agreement (eg Fiji and New Caledonia)
High transport costs	
Timber forest products	
Enabling environment for private sector	Implement enabling tax and macroeconomic policies, and maintain the rule of law and political stability and focus on niche markets.

Many governments are allowing for devolution and decentralisation of forest management.

Many governments in the region have or are moving to provincial decision-making, allowing for devolution and decentralisation of forest management. There are opportunities to assist with capacity building at both the regional and community levels for 'mainstreaming' forest management into community development. Increasing incomes at the community level on a sustainable basis will not only provide increasing economic prosperity for local communities but also provide governments with sustainable revenue streams. These streams can be used potentially

to fund key expenditure priorities such as infrastructure, education and health care, which in turn would contribute to further increases in community welfare.

REGIONAL PERSPECTIVES

The major Pacific island countries with forestry activities are members of the International Tropical Timber Organization (ITTO) and the Asia-Pacific Forestry Commission, supported by the Food and Agriculture Organization, which have fostered significant efforts to promote country-based initiatives for sustainable forest management. These initiatives need continued effective support by donors and governments.

Any discussion of the efficient use of resources and maximising opportunities for sustainable economic development is underlined by the need to address issues of governance. Donor coordination to encourage Pacific island governments to improve governance is critical. In rural areas where forest resources will be depleted in the short term, it can be expected that political stability will be an issue.

Regional action can be taken to address illegal, under-reported and unreported logging.

Illegal, under-reported and unreported logging has recently been acknowledged by many Pacific countries as a potential problem and there is now some willingness to openly discuss this issue (at least at a technical level). While nascent, direct support for such dialogue is a regional opportunity not only to raise awareness of the inherent issues but also to find agreement and a way forward to address this widespread problem. Many commercial forestry operators are present in several countries, making regional action possible.

Currently, export markets being supplied whole logs directly by Pacific island countries require no or little certification. This may change before 2020 if countries such as China take up the policy challenge of certification. Major trading partners for finished products are encouraging such endorsements.[6] As such, market access for high-value forest products is likely to be predicated on some form of certification.

The efforts of non-government organisations and other agencies are focusing on certification in a number of countries. Many are initiating certification at the

Consideration should be given to supporting a regional certification body.

community level by establishing a third party mechanism (group certification) to certify a number of small enterprises that independently would not have the expertise or finance to meet the costs of certification. Support for national certification bodies is required and consideration should be given to supporting a regional certification body. Assistance is also required to develop national standards and a local capacity for certification, possibly combining certification of forest management for timber

6 The United States and the European Union are likely to play a significant role in this issue. Australia has also committed to working with producing countries and importing industries to encourage the sourcing of imported timber from sustainably managed resources. The New Zealand Government's timber procurement policy aims to encourage increased government use of sustainably produced and, where available, certified timber.

production with other forest-based enterprises, such as production of non-timber forest products and ecotourism.

Independent log-monitoring programs have been relatively successful (for example, in Papua New Guinea), capturing significant revenues for government that would have otherwise been forgone. These monitoring programs need consistent support and to be vested with independent entities. They cannot be subsumed into forest agencies, despite the high calibre of many individuals.

Downstream processing faces constraints.

Domestic processing of the raw product is attractive because of the value added. Timber processing involves investment in land, buildings, machinery and vehicles, the purchase of local goods, services and fuel, and the employment of local labour. While many countries have policies committing to promoting downstream processing (particularly sawn wood), similar constraints to those that exist for establishing plantations have frustrated their successful implementation. Mobile sawmills can be seen as a community resource for value-adding processing but a number of issues need to be resolved. For example, these operations are not necessarily environmentally benign, the production can be extremely wasteful, the distribution of income is not necessarily equitable, and finding and accessing markets to trade the resulting products is difficult without considerable extension and technical assistance.[7]

In many cases, landowner benefits from community-level production of timber have been minimised due to their inability to negotiate a fair price and enforce contractual obligations (where they have been established) with the buying companies. Nonetheless, indications are that scaling up such opportunities and developing more effective and direct marketing systems will provide greater economic benefits to local communities. At the same time, buying companies would benefit if contractual obligations entered into by landowners were also enforceable.

Opportunities for producing high-value, non-perishable, non-timber products need to be investigated.

There are a number of non timber forest products which have the *potential* for significant economic return and these need investigation (particularly to address issues of sustainability) and support through establishment of marketing and, after analysis, possibly micro-credit mechanisms. High value non perishable products (e.g. nangai (ngali) nuts in Vanuatu, Papua New Guinea and Solomon Islands, pandanus, medicinal plants) are potential examples.

Nangai nuts which grow wild in Vanuatu, PNG and Solomon Islands have the potential to be a significant income and employment generator. An AusAID project in Vanuatu is supporting improved harvesting, packaging and marketing of these nuts. Limited value adding can produce prices as high as A$17,000 per tonne. Currently only 160 tonnes of nangai nuts are supplied each year which is a mere five per cent of all nangai nuts available in the country. The potential for nangai nut

[7] It is expected that the forthcoming results of a Center for International Forestry Research (CIFOR) study will quantify the benefits and drawbacks of mobile mills.

production in Papua New Guinea and the Solomon Islands is even more dramatic as some estimate that these countries have forty and twenty times the wild nut populations of Vanuatu. While dramatic expansion of production is possible a number of issues will require assistance including the present lack of access to the EU market. Nonetheless building on the work already started by AusAID, nangai nut production could be a significant source of economic growth in the short term and certainly within the period to 2020.

Continued technical assistance to improve forest management and monitoring systems is a priority.

Support to upgrade the capacity of the forest and environmental agencies to implement their statutory and regulatory responsibilities, including the introduction of reduced impact logging, would lead to significant improvements in forest operations. Continued technical assistance to improve forest management and monitoring systems is a priority and governments should be encouraged to ensure that budget resources are adequate for maintaining such systems. Newer, more efficient approaches to supervising individual forest operations are needed. The resource-intensive input monitoring of forest operations needs to be re-evaluated in the light of a number of more efficient systems of output-based monitoring.

Facilitating forest based tourism by linking potential forest based tourism sites and destinations via a regional agreement (e.g. Fiji and New Caledonia) also has significant potential for growth. There is evidence that even small absolute cash transfers from forest-based tourism schemes can substantially benefit local people . As tropical deforestation progresses, forest environmental services formerly provided for free as a "subsidy from nature" also become scarcer. This has led to payments for four types of services: carbon sequestration, watershed protection, biodiversity, and aesthetic qualities of the landscape. These have been supported by a range of organizations and coalitions and even some governments such as the Intergovernmental Panel on Climate Change (IPCC), hydro-electric companies in Latin America and international NGOs and foundations.

Carbon trading opportunities and technology transfer

Many Pacific Island countries are investigating the potential of natural forests for carbon trading. It should be noted that the World Bank suggests that there will likely be increasing opportunities for international support for carbon sequestration including in the forests of the Pacific. While these mechanisms are still unfolding it can be anticipated that technical assistance will be required to enable carbon trading to occur. Significant opportunity for knowledge transfer exists among developed nations and this may be an area where technology transfer, perhaps with donor support, could make a substantial difference. In the initial period to 2020, such support would likely be relatively small as mechanisms and approaches are piloted and the results evaluated. But if successful, and given the proportion of tropical forested systems in some of the Pacific Island countries, in the longer term the larger countries could benefit with amounts as large as several hundred million dollars.

Biodiversity Conservation is already supported by the Global Environment Facility and by a host of foundations and NGOs. Further opportunities exist for the payment for environmental services and there are a number of Latin American examples which could be adapted to the Pacific.

SOME SPECIFIC COUNTRY PERSPECTIVES

SOLOMON ISLANDS

- Continued support is required for the successful passage and implementation of new forestry legislation, which will need to anticipate the changes in the forestry sector as production from the natural forests dramatically declines It will necessarily need to take in to account the experience with family based plantation of high value tree species from the Solomon Islands Forest Management projects and provide the basis for the recent initiative to establish a reforestation program and fund.
- At the community level, technical support needs to be provided for establishing nurseries, selecting fast-growing commercial timber species and developing access to markets.
- Community reforestation, particularly in Malaita, and possibly plantations in Guadalcanal are needed not only to provide an economic return but to address rural youth unemployment issues.

EAST TIMOR

- Capacity and institutional building is required to deal with forestry issues.
- An agroforestry perspective is needed for catchment management and rehabilitation, providing villages with planning and revegetation techniques and associated technical assistance for establishing nurseries.
- Opportunities for sandalwood plantations need to be evaluated.
- Fuel wood programs need to be designed to reduce pressure on existing forested areas.
- There needs to be a significant local focus on improving biodiversity and other environmental services.
- Opportunities for tourism that would assist in developing conservation areas need to be investigated.

PAPUA NEW GUINEA

- Both national and provincial agencies, particularly the Department of Environment and Conservation and the Forest Service, need urgent support and technical

assistance to implement sound forest policy. This will require considerable political will and issues inherent in recurrent funding allocations to be addressed.

- Landowners need to have access to technical assistance at the community level if they are to be able to provide 'informed consent' with respect to decisions on the exploitation of their resources and to implement and monitor those decisions, with an increase in the benefits of such development being equitably shared.
- Notwithstanding the above, recent experience of other donor programs, notably the World Bank Forestry and Conservation Project, indicates that there are difficult governance issues at the national level to be addressed.

FIJI

- Continuation of the implementation and development of the new National Forest Policy (partly based on Vanuatu's).
- Fiji is presently working through an approach to develop forest certification at the landscape level to further sustainability. Support for this initiative as a model may provide an opportunity for developing an effective Pacific island approach to certification and conservation.

VANUATU

- The National Forest Policy and the extension services provided at the community level should be evaluated from the point of view of replicating them in other countries, as is the case in Fiji.