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# **Improving the Competitiveness of the Timber and Wood Sector in Mozambique**

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# Improving the Competitiveness of the Timber and Wood Sector in Mozambique

## **DISCLAIMER**

The views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

Prepared for the Confederation of Mozambican Business Associations under the Mozambique Trade and Investment project, USAID Contract No.GS-10F-0619N, by consultants Alan Ogle and Isilda Nhantumbo.

# Contents

<b>Abbreviations and Acronyms</b>	<b>v</b>
<b>Executive Summary</b>	<b>vii</b>
<b>1. Introduction</b>	<b>1</b>
Objectives	1
Main Tasks	2
Methodology	2
Acknowledgements	2
<b>2. Overview of the Forestry Sector</b>	<b>3</b>
General Background	3
Policy and Regulations	5
Effectiveness of Policy and Legislation	8
<b>3. Resource and Log Harvesting</b>	<b>13</b>
Forest Inventory	13
Unhealthy Reliance on Export Logs	15
Licensing and Concession of Natural Forests	18
<b>4. Processing</b>	<b>23</b>
Background	23
SWOT Analysis	23
Assessment	26
Future Processing Scenarios	26
Way Forward for Processing	29
Recommendations	31
<b>5. Governance of the Sector</b>	<b>33</b>
Government Capacity	33
Community Benefits From Involvement in the Sector	36
Reforestation Levy	39

<b>6. Plantation Forestry</b>	<b>41</b>
Background	41
SWOT Analysis of Plantation Forestry	41
Recommendations	43
<b>Bibliography</b>	<b>45</b>
<b>Illustrations</b>	
<b>Tables</b>	
Table 2-1. Annual Log Cut (cubic meters)	3
Table 2-2. Log Exports (000 cubic meters)	4
Table 2-3. Sawn Timber Production (in cubic meters)	4
Table 2-4. Processed Timber Product Exports (in cubic meters)	5
Table 3-1. Effect of Local Sawmilling on Export Revenue and Royalty	17
Table 4-1. Simplified Cost Comparison of Log and Sawn Timber Exporting	25
Table 4-2. Government Revenue Foregone in Processing	24
Table 4-3. Processing Development Scenarios	27
<b>Exhibits</b>	
Exhibit 2-1. Provisions of the Forestry and Wildlife Regulations	9
Exhibit 2-2. Forestry Policy Issues Highlighted in Previous Studies	12

# Abbreviations and Acronyms

CBNRM	Community Based Natural Resource Management
CH	Concession Holder
CTA	Confederation of Business Associations of Mozambique +
DINATEF	National Directorate of Forestry and Lands
DNFFB	National Directorate for Forestry and Wildlife
FAO	Food and Agriculture Organization of the United Nations
FFA	Agricultural Development Fund (Fundo de Fomento Agrário)
GDP	gross domestic product
IFC	International Finance Corporation
IIAM	Mozambique Agrarian Research Institute
NGO	nongovernmental organization
PROAGRI	National Program for Agricultural Development
SLH	Simple License Holder
SWOT	Strengths, Weaknesses, Opportunities, and Threats



# Executive Summary

Mozambique has an abundance of natural forests. Natural forests with production capacity cover an estimated 20 million hectares, or 24 percent of the total country. Despite this extensive natural resource, the forestry sector is perceived to be underperforming in terms of both sustainable management of resource and in the development of an economically viable and competitive processing industry. The USAID-funded Trade and Investment project is supporting the Confederation of Mozambican Business Associations (CTA) in improving the performance of the sector, and if possible, creating sustainable export-oriented processing in the sector.

The objectives of this study are to

- Identify constraints on environmentally sustainable production and management of forestry and wood products;
- Find ways to promote both the export of wood products and the conservation and environmentally sustainable production of forests and wood, and develop related policy recommendations; and
- Assist in developing recommendations to implement forestry and wildlife regulations transparently and effectively.

The review focused on five strategic issues relating to sustainability and competitiveness—policy and regulations, resource and log harvesting, processing, governance in the forestry sector, and plantation forestry. The findings and recommendations on these five issues are summarized below.

## **POLICY AND REGULATIONS**

Government policy and legislation provide an adequate base to achieve the economic, ecological, and social objectives in the sector. Implementation, however, has been poor. The activities of simple license and concession holders are not monitored closely, economic rent is not maximized, and legislated benefits are not delivered to communities. Earlier studies have also highlighted deficiencies in policy implementation. It is therefore important that the CTA initiate dialogue with the government of Mozambique to develop a process of consultation in which the regulations are reviewed and adjusted to make the otherwise initially well formulated policy and legislation responsive to the changing needs and expectations in the sector.

We make the following recommendations regarding policy and regulations:

- The National Directorate of Lands and Forestry should create a strong policy unit that carries out analysis and engages in debate with civil society on the process of policy implementation, taking into account the dynamics of the sector and the macroeconomic environment.
- When changes in legislation are required, there should be adequate research and consultation as well as transparent dissemination of the legal instruments. Many diplomas

and decrees have created confusion for stakeholders, because the changes are often seen as unwarranted manipulation of the law by government.

- A way must be found whereby all stakeholders reach a consensus on high-priority issues in the sector and ways to address these issues. This process should be highly participatory and include an industry forum in which to discuss the findings of this and other studies.

## RESOURCE AND LOG HARVESTING

An up-to-date and nationally consolidated forest inventory should be the fundamental information tool for reviewing quotas and cutting plans as well as the basis for monitoring annual cuts in each province. Currently, the fragmented resource assessments by governments and NGOs and the lack of a clear long-term plan for updating data hinder the management and monitoring of productive forest areas.

We make the following recommendations regarding resource and log harvesting:

- The Inventory Unit of the National Directorate of Forestry and Lands (DINATEF), in coordination with other training institutions, should offer annual training to consulting companies and interested agencies. This training should cover the design of management plans, the inventory methodology, guidelines, monitoring systems, and other technical and economic aspects of natural forest management.
- The national forest inventory requires urgent updating. The update should be used to review quotas and cutting plans and form the basis for monitoring annual cuts in each province.
- The processing requirement for each concession should be reviewed to avoid future pressure on the forest resource.

## Unhealthy Reliance on Export Logs

Exports in log form have been 48 percent to 58 percent of the total log cut in the past three years. Log exports are largely of the “precious” species, which offer higher royalties. Log exporting could be described as an exploitative “gold rush” system in which the most valuable and most accessible species are removed rapidly. It is clearly the least sustainable aspect of the sector’s activity.

We make the following recommendations relating to log exports:

- A forestry sector summit or national forum is needed to assess (1) the current resource situation resulting from log exports; (2) the vision the country has for its natural forests in 5, 10, 20, and 50 years; (3) the steps necessary to ensure that sufficient resources are preserved for long term domestic needs;
- A resource rent reassessment is urgently needed to examine the scope for the government to (1) obtain higher resource rent; (2) reduce the imbalance of profitability between export logging and processing; (3) encourage loggers to cut more logs for the local market; and (4) reduce the number of species exported in log form to help increase local processing.

## Annual Licensing and Concession System

The simple licensing and concession system creates conflict between short-term profits and long-term use and management of natural forests. In 2005 there were 462 annual simple license holders

(SLHs) and by July 2006, 43 approved concessions. SLHs, reserved for Mozambican nationals, have simplified inventory and management planning requirements. Each SLH can be licensed for a different area each year, depending on the perceived logging potential of forest area remaining. An SLH can log up to 500 cubic meters per year from his licensed area. Forest concessions are based on a 50-year sustainable logging program over a designated area of forest. Foreign concession holders are allowed. Processing must also be installed as a condition of concessions. The SLH system encourages loggers to be driven by target volume only, with little concern for the quality of forest remaining. SLHs show little commitment to long-term sustainable management of forests. The license is merely seen as a cost or fee for access for short-term gain.

Concerning concession management, we recommend that a forestry sector summit or national forum be held to reassess (1) the current resource situation resulting from the current licensing of SLHs and concessionaires; (2) the country's vision for its natural forests in 5, 10, 20, and 50 years; (3) the practical steps that can be taken to improve management rapidly, including the replacement of simple licenses with concessions.

## PROCESSING

Mozambique has approximately 140 registered wood processing industries, including 100 sawmills that produced approximately 32,000 cubic meters of sawn timber in 2005. To encourage processing, concession holders, before they receive approval of their concession, are required to install a sawmill for each concession. Furthermore, the most valuable species (Class 1) are reserved for local processing at royalty rates that are at most only 25 percent of those prevailing for export logs. In addition, a royalty rebate of a further 40 percent of royalties for veneer and parquet flooring is meant to encourage value-added processing.

Processing has focused on low added-value sawmilling to produce rough-sawn green timber of a limited number of high-value species. Investment in modern tertiary wood processing (e.g., kiln drying, veneer, plywood, moldings, joinery, and furniture) has been limited. Sawmilling comes at a high cost to the Mozambican government: The loss in royalties of approximately 1.5 million meticals (MZM) per cubic meter equals a subsidy of approximately 39.5 million MZM (US\$1,518) per sawmill employee per year. In addition, sawmilling can even destroy value, as wood exported in log form is worth more than the export revenue for the rough green-sawn timber that can be cut from the log.

We make the following recommendations relating to processing:

- Earlier recommendations are important for wood processing as well. A national forum to take stock of where the sector is headed, a resource rent reassessment, reduced log exports, and improved concession management are also important to create a better balance between log exporting and domestic processing, and to provide a more inviting platform for investment in competitive processing.
- Current fiscal incentives—reduced royalties for processing—require review and adjustment. The royalties for sawing Class 1 timber into green sawn timber are too generous. Ideally, a range of royalty rebates will be linked to the level of value-added processing. The recommended review of resource rent on logs should include an assessment of the rebates applying to processing and the royalties applying to lesser-known species (with a view to lowering the cost of lesser-known species relative to other readily marketed species).

- The government of Mozambique should support research on the use of lesser-known species, including wood properties, likely end uses, processing characteristics, technologies, and markets.
- The requirement for concession holders to own mills should be removed as new concessions are granted.

## GOVERNANCE IN THE FORESTRY SECTOR

### Government Capacity

Despite a strong emphasis on government policy, recommendations by previous reports on the sector, and observations in the field, government capacity has improved little in recent years, with shortages in staff, skills, equipment, and funds.

We recommend the following actions to strengthen government capacity:

- Provincial governments and DINATEF should work together to enforce legislation. A coordinated approach would facilitate the monitoring of law enforcement throughout the country.
- Part of penalties and royalties should be allocated to training and advocacy for and support of law enforcement in the field.
- Compensation and incentives for forest guards should be reviewed, including salary and nonmonetary incentives (e.g., training, performance evaluation, and certificates of merit) to provide incentives that encourage staff to be proactive, without undermining higher-level salary scales.
- Laws and regulations should apply to everyone. Politicians involved in business activities in the sector should be publicly identified by the CTA and challenged to set an example on the sustainable use of resources. The anticorruption unit should be strengthened and should be trusted to act when illegal practices by politicians are brought to its attention. The CTA should research anomalies brought to its attention in the sector and help civil society to bring pressure for practical changes.

### Community Benefits from Involvement in the Sector

There is a legal requirement that communities should benefit from concessions and annual harvesting areas as part of the process of promoting local development and sustainable use of natural resources. Communities should be consulted in the process of land allocation and when the boundaries of forest concessions are set. In addition they should receive 20 percent of royalties paid by simple licenses and concessionaires. The government has decided to retain temporarily the 20 percent in most cases because of difficulties in meeting the disbursement requirements.

Recommendations regarding community benefits are:

- More can be done by Government, the CTA, the private sector, and NGOs to promote corporate social responsibility and outline the benefits and responsibilities of investors and communities.
- Formal business partnership contracts should be fostered between communities and the private sector.

- Community institutions should receive the resources and support they need to secure access to their 20 percent and promote the benefits of having a strong community to negotiate and form lasting mutually beneficial partnerships.
- When there are long delays in getting communities incorporated and bank accounts opened, the local government administration at the district level should hold the funds on behalf of the communities;
- Research is needed on alternatives to bank accounts, such as community trust funds, to overcome organizational problems at the community level.
- Adequate time should be allowed during the planning phase of concessions, simple license agreements, and plantation forestry land leases for preparatory discussions and community consultation.
- The impact and viability of reducing royalties for forest products harvested by communities, should be analyzed as part of the recommended royalty review, and other incentives offered to encourage licensing for pitsaw operations.

## Reforestation Levy

All harvesting licensees (both annual license holders and concessionaires) must pay a 15 percent levy in addition to their royalty payments and in addition to any direct funding from their own funds to reforestation. Provincial authorities are supposed to have a plan for reforestation to use the funds available. The funds, however, are sitting unused. The justification for the levy is weak and administration poor. Currently it is merely an additional tax on log harvesting.

Recommendations relating to these funds are:

- The government should (1) remove the levy, (2) include it with the royalty payment as part of the royalty review, or (3) be accountable to the sector for its use.
- If option (3) is chosen, the levy should be used for verifiable activities to assist in reforestation such as activities by the Forestry Research component of the Mozambique Agrarian Research Institute (IIAM). Such activities could include mapping and land-use planning, identification of areas that need urgent rehabilitation, forest research focusing on testing the growth of different species in different agroecological zones, and viability analysis. Priority should be given to research in provinces offering the highest potential for both native and exotic species.

## PLANTATION FORESTRY

Plantation forestry is the brightest prospect for long-term growth of the forestry sector.

Mozambique has already attracted several large overseas investors to Niassa Province to plant an estimated 160,000 hectares, and other investors are investigating other areas. DINATEF is preparing an afforestation strategy to promote large-scale plantations, to increase the contribution of the forestry sector to employment and economic growth, reduce the pressure on indigenous forests, and contribute to restoring degraded land.

We recommend the following actions relating to plantation forestry:

- The government's afforestation strategy should include (1) A clear roadmap of procedures to be followed; (2) clear information on taxation and incentives; (3) planning data on the

land areas favored by the government for plantation forestry; (4) planning for capacity building by the government to share information and monitor and evaluate activity.

- The government should review the annual rents payable for plantation forestry land to ensure that, taking into account differences in land quality, they are comparable with rents for agricultural and other land uses.

# 1. Introduction

Mozambique must continue to grow rapidly in the next decade to reduce poverty. Growth will depend, in part, on Mozambique's ability to take advantage of opportunities in international trade and investment by reducing transaction costs, increasing investment, and improving the competitiveness of labor-intensive industries—all of which must be integrated into the national strategy to sustain rapid growth and reduce poverty.

To assist Mozambique with this strategy, the USAID-funded Trade and Investment project is supporting the Confederation of Mozambican Business Associations (CTA) and other agencies and organizations inside and outside government to research and implement reform. This assistance includes activities related to improved trade and investment policies, technical and analytic analysis, policy coordination, and activities that will enable Mozambique's labor-intensive producers to gain greater access to international markets.

Mozambique has an abundance of natural forests, covering approximately 78 percent of the total area of the country. Natural forests with production capacity cover an estimated 20 million hectares, or 24 percent of the country's area. Despite this extensive natural resource, the forestry sector underperforms in terms of both sustainable management of its resource and development of an economically viable and competitive processing industry.

In this context, the CTA, in a bid to enhance the regional and international competitiveness of the formal wood and timber sector, worked with this consultancy to articulate how the CTA can lobby for the transparent and effective implementation of policy and regulations, and if possible, a sustainable export-oriented processing sector.

## **OBJECTIVES**

The objectives of this study are to

- Identify constraints on environmentally sustainable production and management of forestry and wood products;
- Find ways to promote both the export of wood products and the conservation and environmentally sustainable production of forests and wood, and develop related policy recommendations; and
- Assist in developing recommendations to implement forestry and wildlife regulations transparently and effectively.

## MAIN TASKS

The scope of work listed eight tasks important for the assignment:

- A background assessment of forestry and wildlife regulations, the Action Plan for the Reduction of Poverty, and the National Agricultural Program (PROAGRI)
- An analysis of the land concession system
- An analysis of wood production and trade practices in five provinces with a view to encouraging domestic added value
- An assessment of management capacity of the National Regulatory Body in Maputo
- Examination of why forestry and wildlife regulations are not fully implemented and what CTA can do to help;
- Assistance to the CTA in addressing issues.

## METHODOLOGY

Two consultants worked in Mozambique from July 20 to August 13, 2006. Besides conducting desk research, the consultants visited five provinces (Sofala, Zambezia, Cabo Delgado, Manica, and Niassa) and held discussions with approximately 30 representatives of entities in the government of Mozambique and private sector operating in the sector. They also gave a national-level half-day presentation in Maputo for stakeholders on August 11, 2006. Given the limited time, the review is not an exhaustive study of the sector, but focuses on strategic issues of competitiveness and sustainability.

## ACKNOWLEDGEMENTS

The consultants wish to express their appreciation to the many people who contributed to the evaluation with interest and enthusiasm. It is not possible to list all, but in particular the following deserve special mention:

- The executive director and staff of the CTA
- The Trade and Investment project leader, Tim Born, and USAID staff
- The staff of Nathan Associates Inc, in particular Ashok Menon, Stelia Narotam, and Sarah Butcher, who organized background information, the intensive fieldwork program, logistical arrangements, and contacts and provided valuable feedback on technical aspects of the report
- Staff of the National Directorate of Lands and Forestry as well as the staff of the five provincial directorates of agriculture visited
- Representatives of donor agencies who shared their perspectives and concerns
- The nongovernment and private sector personnel interviewed.

To these, and all others who freely made available their time, information, and facilities during the evaluation, we express our grateful thanks.

# 2. Overview of the Forestry Sector

## GENERAL BACKGROUND

### Economic Significance

The forestry sector in Mozambique (excluding charcoal, fuel-wood, and village-based hand-sawing for timber) provides direct employment for approximately 200,000 people. It accounts for about 10 percent of industrial production and contributes about 1 percent of GDP (excluding fuel-wood and other timber and nontimber forest products directly consumed by the rural population and sold in the informal market). In 2004 exports from the sector amounted to US\$30 million, approximately 2 percent of total exports. The sector earns the government of Mozambique approximately US\$6 million per year in royalties on logs harvested.

### Annual Log Cut

Table 2-1 shows the annual recorded log cut for the past six years. In the past two years, three provinces—Sofala, Zambezia and Cabo Delgado—have accounted for 73 percent of the log cut.

**Table 2-1**

*Annual Log Cut (cubic meters)*

Province	2000	2001	2002	2003	2004	2005
Maputo	685	1,082	495	30	123	36
Gaza	300	878	4,704	3,760	3,068	1,273
Inhambane	3,147	7,083	9,372	3,952	3,084	2,089
Sofala	39,289	28,372	26,214	18,768	30,240	22,387
Manica	12,201	15,719	20,442	13,536	15,099	13,784
Tete	1,260	660	1,145	3,097	2,770	8,608
Zambézia	28,000	26,622	33,200	25,395	23,932	25,084
Nampula	10,680	13,266	15,714	9,869	10,985	7,851
C. Delgado	21,440	27,683	51,456	34,376	63,062	21,167
Niassa	359	839	472	342	348	348
	117,361	122,204	163,214	113,125	152,711	102,627

SOURCE: National Directorate for Forestry and Wildlife (DNFFB)

## Log Exports

The breakdown of the annual log cut into log exports and locally processed wood is shown in Table 2-2. In 2003 and 2004, 50 percent of the annual log cut was exported as logs.

**Table 2-2**

*Log Exports (000 cubic meters)*

	2001	2002	2003	2004	2005
Logs exported as roundwood	33.6	65.0	59.0	72.6	60.0
Logs processed domestically	88.6	98.2	54.1	79.1	42.6
Total log cut	122.2	163.2	113.1	151.7	102.6
Annual cut exported as roundwood	27%	40%	52%	48%	58%

SOURCE: National Directorate for Forestry and Wildlife (DNFFB)

Despite the introduction of forestry and wildlife regulations in 2002, which brought in restrictions on log exports and stimulated domestic processing, the proportion of log exports in relation to annual cut has remained high for the past three years. As discussed in Section 3, log exports dominate for several reasons. A moratorium was imposed on the implementation of the forestry and wildlife regulations that related to the reclassification of species and reduction of harvesting fees for export logs. Furthermore, markets were discovered for species such as muanga and monzo, which boosted exports of logs from third- and fourth-class species. And the reorganization of the logging operators to implement the forestry and wildlife regulations has led to more concessions with approved management plans.

## Production of Sawn Timber

Table 2-3 summarizes the National Directorate for Forestry and Wildlife's (DNFFB) statistics on the production of sawn timber.

**Table 2-3**

*Sawn Timber Production (in cubic meters)*

Province	2000	2001	2002	2003	2004	2005
Maputo	4,993	14,674	9,238	19,151	4,443	11,607
Gaza	84	311	848	1,030	1,196	461
Inhambane	217	1,100	511	353	498	750
Sofala	1,283	3,926	2,636	4,968	5,997	4,091
Manica	591	1,133	1,607	2,006	1,328	3,117
Tete	100	560	336	500	1,790	278
Zambézia	2,469	2,336	3,215	4,206	4,941	3,458
Nampula	987	1,291	639	1,186	1,316	1,055
C. Delgado	3,147	1,418	5,161	11,403	6,514	7,362
Niassa	797	393	111	364	98	155
Total	14,668	27,142	24,302	45,167	28,121	32,334

SOURCE: DNFFB

A comparison of these figures with those in Table 2-2 does not provide an obvious explanation for why, in 2003, when the logs available for domestic processing fell dramatically, sawn timber production rose dramatically. The inventory of logs from the previous year appears to partially explain the difference, because six months or more often pass after tree-felling until logs are sawn. For the five-year period 2001 to 2005, an average of 43 percent of available round logs was converted to sawn timber—a slightly higher rate than the 30 percent to 40 percent that would have been expected. Another factor could have been the lack of a clear definition of what constitutes sawn timber—many companies declared that “roughly squared logs” are processed timber for export purposes. These statistics therefore should be regarded as indicative only.

## Wood Product Exports

Table 2-4 gives the export volumes of processed wood product for the past five years. The table indicates a large increase in both the volume and percentage of sawn timber being exported over the past five years.

**Table 2-4**

*Processed Timber Product Exports (in cubic meters)*

	2001	2002	2003	2004	2005
Processed wood product exports	980	1,847	1,208	8,366	12,388
Sawn timber production exported	4%	8%	3%	30%	38%

SOURCE: DNFFB

## POLICY AND REGULATIONS

Government policy and legal instruments are defined by national priorities but are also shaped by Mozambique’s international agreements. Government policy is geared particularly to poverty reduction by addressing the priorities areas defined in the Millennium Development Goals and by developing policies that bring “people and enterprises” into the mainstream of the economy.

### General Government Policies and Priorities

The main objectives of the current five-year program (2005–2009) are poverty reduction and rapid and sustainable economic growth. The majority of Mozambique’s population and economic activities depend on natural resources. Thus the government attributes high economic and strategic value to natural resources and emphasizes the need to regulate their extraction. Both the government and the legislature (the Assembly of the Republic), therefore, are (or are supposed to be) directly involved in and aware of the contractual conditions governing natural resources allocation, use, and management. The government and the Assembly, however, face a number of challenges: how to deal with exemptions for Assembly members and with conflicts of interest, and how to ensure that the allocation process is transparent, serves the interests of the economy, and contributes to the alleviation of poverty. Among the difficulties Mozambique has in implementing its progressive natural resources policy and legislation are conflicts of interest and corruption; these issues are discussed more at length in Section 5.

Furthermore, the government’s programs and legislative instruments highlight the importance of accelerating the allocation of land to various economic agents, including local communities. The government of Mozambique aims to create an environment that will encourage the private sector

and communities to engage in sustainable resource use. This includes managing native forests and plantation forests in a way that will promote investment in processing and add value to products. The five-year program stresses that the management of natural resources should provide tangible benefits to communities and lead to the development of a strategy for combating bush fires.

## **Poverty Reduction Strategy and Action Plan 2006–2009**

The Poverty Reduction Strategy and Action Plan (PRSP II 2006-2009) is the government's main social and economic plan. The plan identifies as its highest priorities human development (particularly education and health), improvement of governance, infrastructure development, agricultural and rural development, and improvements to macroeconomic and financial management.

PRSP II differs strategically from PRSP I in the way it seeks to enhance national economic growth and increase productivity. Unlike PRSP I, PRSP II defines the district as the main planning and development unit and emphasizes decentralization and financial management. Districts are given the responsibility for planning and for decision making on local issues.

Furthermore, PRSP II focuses on the development of small and medium enterprises, better collection of revenue, and budget allocation. These areas are particularly relevant for the forestry sector because the sector's competitiveness and contribution to the economy depend on improvement in management efficiency and on the operations of small and medium-sized enterprises, which can grow, accumulate wealth and savings, and reinvest in the sector.

## **National Program for Agricultural Development**

PROAGRI is the operative plan for the agriculture sector and how it will contribute to poverty reduction and economic development, and a second phase of the plan is being initiated. The first phase focused on institutional capacity building of the Ministry of Agriculture and Rural Development (now the Ministry of Agriculture), particularly in administrative and financial management (decentralized planning) and providing better working conditions (infrastructure, vehicles, and means of communications) at the national, provincial, and district levels. This was considered important to motivate staff to deliver services and improve the performance of the agricultural sector. PROAGRI also included the following initiatives:

- The reform of research and extension services that integrated research on agriculture, livestock, and forestry under the Instituto de Investigação Agrária de Moçambique (IIAM)
- Improvement and acceleration of the authorization of land use rights; the approval of forestry legislation and regulations; and the promotion of the private sector and community involvement
- Development of the capacity to address cross-cutting issues such as the environment and social sustainability, gender integration, and HIV/AIDS treatment and prevention.

The provinces started to take the lead in implementation of the program. Sofala Province, for example, allocated skilled personnel and resources for the improvement of forestry operations at the district level.

Despite these developments, PROAGRI is considered to have fallen short of having a major impact on the productive sector. It did not adequately support the emergence and development of a viable, business-oriented private sector, particularly in forestry. In addition, the government still

has a shortage of skilled personnel and of equipment; the capacity of the government to deliver basic services such as law enforcement is therefore still lacking.

PROAGRI II is based on four points:

- An improved understanding of markets
- The provision of financial services
- Dissemination and adoption of the technology needed to add value to agricultural products
- Access to natural resources.

PROAGRI II gives priority to government interventions for smallholder farmers, commercial agriculture, and the sustainable management of natural resources. The program defines the following functions as the Ministry of Agriculture's core functions:

- Policy formulation and monitoring
- The provision and coordination of regulatory services
- Other services, including research and extension, training, land-use zoning and planning, natural resources inventories, and strategic studies.

PROAGRI II has the following objectives:

- Help people at the household or family level to enhance their standard of living by developing agriculture
- Increase agricultural production and agroprocessing to ensure an adequate supply to the domestic market and the export of added-value products;
- Guarantee sustainable management of natural resources, based on adequate management and conservation plans, education, and monitoring systems involving all stakeholders.

The government carried out a strategic environmental assessment of PROAGRI II to assess the positive and negative impacts of the program, and strategic interventions were planned to ensure its social, economic, and environmental sustainability. An urgent need for a concerted and integrated zoning and land-use planning process was identified. Zoning and land-use planning are needed to ensure that national-, provincial-, and district-level decisions on land and resources allocation for different uses and users are properly informed. Resource assessment was meant to inform the allocation of resources to short- and long-term forest operators, and was seen as critical to facilitating the monitoring process. Furthermore, research on the impact of various interventions was key to developing an evidence-based response to problems.

The current zoning process and approach to strategic environmental assessment, however, is piecemeal. For example, the coastal areas (Gaza, Inhambane, Nampula and Cabo Delgado) have been assessed, to identify protected areas and areas with tourism potential. Small scale zoning has been undertaken in Manica and Zambezia, and elsewhere in the country, in the context of community-based natural resource management (CBNRM) projects, to identify potential areas for development such as forestry plantations. These zoning processes are conducted by the Ministry of Environmental Coordination, Ministry of Tourism, and NGOs.

Resources assessments of productive forest areas have been undertaken in certain provinces (Inhambane, Zambezia, Sofala, Manica and Cabo Delgado) providing local inventories to support the CBNRM initiatives in multiple-use forest areas. However, there is still poor linkage and planning of needs information at a strategic national level, to guide decisions with long-term

impact. This is wasteful of resources, and DINATEF, as the institution responsible for the management of land and forestry resources, should take a stronger lead in coordinating the zoning, land use, and resource assessment process with other government and nongovernment institutions. A strategic, integrated, and systematic approach to information on inventories in CBNRM areas is also needed. These represent a wealth of information on the resources in multiple-use areas, which are an important source of wood products (including energy biomass and construction material) and non-wood products.

## **Forestry Sector Policy and Regulations**

The Policy for the Development of the Forestry and Wildlife Sector (1997) establishes four objectives—economic, social, ecological, and institutional:

- Economic—promote the engagement of the private sector in sustainable management and generation of income by adding value to forest products
- Social—encourage communities to participate in the sustainable management of forest resources through the adoption of good practices and derivation of tangible benefits
- Ecological—conserve a forest resource rich in biodiversity and provide environmental services such as watershed and soil protection
- Institutional—equip all levels of forest administration with the capacity to formulate policy and ensure its implementation through monitoring.

The underlining assumption of the forestry and wildlife policy is that forest resources should be managed so that they contribute to economic development, and therefore poverty alleviation, while ensuring sustainability and the supply of goods and services. The principles of the Forest and Wildlife Law (October 1999) are the prevention of damage; responsibility for remedying the degradation of resources; harmony between communities and local government institutions; research and participation of the private sector in value addition; and stimulation of local development. The Regulations of the Law of Forestry and Wildlife (Decree 12/2002) define the operational details for this law. Exhibit 2-1 highlights the provisions concerning the three main issues analyzed in this study: sustainability, value addition and exports.

## **EFFECTIVENESS OF POLICY AND LEGISLATION**

### **Policy and Legislative Base**

The policy and legal instruments provide an adequate basis to achieve economic, ecological, and social objectives. This is important considering the development of the agriculture sector in general and the prominence given to sustainable forest management in PROAGRI II.

**Exhibit 2-1***Provisions of the Forestry and Wildlife Regulations***Sustainability**

- a. The concept of a management plan based on assessment of the resources (inventory) is introduced and made mandatory for both simple licenses and concessions, although a less detailed plan is envisaged for simple licenses. In both cases the Ministry of Coordination of Environmental Affairs should also have a say in the management plan.
- b. The government promotes forest concessions as a long-term commitment to management and processing of forest products.
- c. The concessionaire enjoys exclusivity in operations.
- d. An environmental impact assessment is required for forest plantations to establish potential impacts and mitigation measures related to introducing exotic species and large areas of monoculture.
- e. Formal land use rights are mandatory for forest plantations as long-term investments and should rely on clarity and security of land rights. This is also the case for establishing infrastructure in concession areas.
- f. Community participation is highlighted in various ways: communities are eligible to be concessionaires as well as holders of simple licenses; consultation of communities before the establishment of forest operations (harvesting and plantations) is required to avoid conflicts; community benefits must be spelled out in both simple licenses (number of jobs created) and concessions (or should be) and be part of the contract agreement; access to resources for household and community sustenance is a primary condition to ensure that the impact on the livelihoods of the people is limited; the government makes a complementary contribution of 20 percent of the royalties back to the community to support local development and provide an incentive for sustainable agricultural and harvesting of forest products so as not to undermine private-entity activities. This, however, is not to preclude entrepreneurs' social responsibility and partnership with local communities.
- g. To respond to the dynamics of the demand for wood species, and given the concentration of harvesting in a few species, the regulations allow for a regular update of the species through ministerial diploma.
- h. Royalties for different species were increased in the 2002 regulations to values of about US\$0.4 per cubic meter for fuel wood and up to US\$120 per cubic meter for precious species (at current exchange rates).
- i. A 15 percent reforestation levy is charged to allow the government to invest in rehabilitation of degraded forests and land.
- j. Concessionaires are required to pay an annual rent and royalty for harvested forest products.
- k. Forest plantations are not subject to payment for royalties, although they should seek authorization for harvesting their products, and pay for verification and transit (transport) fees.
- l. Law enforcement officers benefit from a subsidy of 20 percent of their salary and 50 percent of penalties on illegal activities.
- m. A contract with operators can be terminated if they do not follow the regulations and terms of the contract.
- n. The Forestry Authority licenses the consultants (companies or individuals) that design the management plans and reserves the right to withdraw the license if quality of information and proposed plans are not based on reliable data.

**Value addition**

- a. Capacity for processing is required for obtaining and managing forest concessions
- b. A 40 percent reduction of royalties is available as an incentive for certain processed wood (parquet and veneer).

**Exports**

- a. Only species classified as precious and second, third, and fourth classes can be exported in the form of logs.
- b. First-class species can be exported if processed as planks, railway sleepers, veneer sheets, or parquet. The export strategy (MIC/IPEX, 2003) prioritizes handicrafts, furniture, and construction material in quality improvement to supply the international market.

## Implementation

Although the policy and legislative framework are sound, the government of Mozambique has issued a number of diplomas and other ministerial statements relaxing some provisions of the forestry regulations. For example, immediately after the entry into force of the 2002 regulations, which initially banned the export of these first-class species in log form, the government reclassified species. The change of class should have increased royalties to the government but in fact the level of royalties for first-class species was allowed to continue unchanged for a year (2003). Then, for the following two harvesting seasons, the royalties for all categories were cut by 50 percent (Ministerial Diploma 57/2003). These types of decisions undermine the higher legal regulatory provisions. Furthermore, the forest rent has yet to be determined and paid.

The simplified management plans for simple license holders (SLH) are not being implemented as intended in the regulations. Rather than being a guide to best practice and helping ensure the long-term management of the forest, they simply list marketable species and the quantity to be exploited. Management plans for concessionaires are also generally cosmetic, serving only to satisfy the minimum interpretation of the regulations. They are also poorly implemented. For example, the annual harvesting blocks are not strictly demarcated, which means that harvesting can still be selective anywhere in the concession areas. Often there is no planned annual cutting cycle of designated coupes and operators merely look for the best and most profitable species from anywhere in their concession area.

Forest plantations can start without an environmental impact assessment. An environmental impact assessment is carried out after nursery establishment, planting, and other activities have started (e.g., Chikuetei plantation in Niassa).

Both government and private operators fail to deliver benefits to the communities. This is partly because of the superficial nature of consultation, the absence of an enforceable contract between the communities and operators, and logistical problems. For example, for communities to access the 20 percent contribution, they need to open a bank account—a problem because bank services are based in the capitals of provinces and few banking services are offered in the districts. There is no mechanism for systematically updating royalties based on market prices of the products or the fluctuation of the exchange rate. This means the government loses revenue. The government's policy and mechanisms for encouraging competitive processing of higher added-value wood products have been weak and undermined by pressure to export logs by both simple licenses and concessionaires.

## Framework for Forest Policy Implementation

The achievement of sector performance objectives for sustainability and contribution to the national economy depends initially on the government's capacity to create a conducive environment. What follows depends on the maturity of national entrepreneurs and a commitment by national entrepreneurs and foreign companies to follow the law. The private sector's participation in forestry is based largely on four premises:

- It is the duty of the state to provide resources at low cost with attractive incentives for using those resources (legal and financial).
- The local population's main role is to provide low-cost labor.
- Business operators want to invest little and earn high returns in a short time.

- Pressure should be maintained on government to relax the enforcement of regulations (and at times to change the law) to ensure that rewards are not compromised.

The policies and regulatory instruments governing the sector have gone through an exhaustive analysis, which include

- Private sector competitiveness and analysis of incentives for adequate engagement (Chitara, 2003; Reyes, 2003; NDF and the government of Mozambique, 2001; NDF and SAVCOR, 2005; Technoserve, 2003);
- Effectiveness of the forestry concession process as a driver for sustainable forestry management and stimulation of processing (Siteo et al 2003; Kir and Falcao, 2004);
- Effectiveness of the involvement of communities in sustainable management of forestry resources (Nhantumbo and Macqueen, 2003; Nhantumbo et al, 2006);
- Interventions to improve law enforcement (Bila and Salmi, 2003); and
- Opportunities to stimulate forest plantations (Coetzee and Alves, 2005);

Exhibit 2-2 summarizes some of these findings, most of which have not received appropriate attention in terms of implementation.

It is therefore important that the government of Mozambique conduct a comprehensive analysis of the various policy recommendations and develop a process of review, consultation, and adjustment of the regulations. This will ensure that the policy and legislation respond to changing needs and expectations in the sector.

We recommend the following process and action plan for this review, consultation, and adjustment:

- The National Directorate of Lands and Forestry creates a strong policy unit that carries out ongoing analysis and engages in debate with civil society on the process of policy implementation, taking into account the dynamics of the sector and the macroeconomic environment as a whole.
- When changes in legislation are required, adequate research and consultation should be conducted, and legal instruments disseminated in a transparent way. Field visits made for this study revealed that many diplomas and decrees have created confusion for stakeholders, who often see the changes as unwarranted manipulation of the law by government.
- A way must be found by which all stakeholders reach a consensus on priority issues in the sector and ways to address them. This process should be participatory; it could include an industry summit or forum in which the findings of this and past studies are discussed.

**Exhibit 2-2***Forestry Policy Issues Highlighted in Previous Studies*

Reyes (2003) makes recommendations addressed to “logging managers” that are also relevant for the government. Reyes’ recommendations include (1) replanting to encourage income generation in forest concessions. The fact that few concessions or simple license operators replant was a particular concern in Sofala and Cabo Delgado. A clear policy is needed specifying whether enrichment planting or pure plantations are needed, which species should be planted, and other details; (2) demonstrating social responsibility toward communities in harvesting areas, such as by contributing to the maintenance of essential infrastructure; (3) designing and implementing effective management plans as an integral part of logging companies’ business plans.

Reyes’ recommendations are contrary to the view presented by Chitara (2003) and others who consider that the law and regulations transfer responsibilities for forest management from the state to the concessionaires. These recommend (1) urgently promoting to all stakeholders an understanding of management plans and their benefits for business (2) fostering partnerships between the concessionaires and local communities; (3) investing in processing with adequate determination of the scale, not to surpass the capacity of the resources to sustain such processing in a medium and long terms; (4) raising entrepreneurs’ awareness of the ills of nurturing corruption and that the cost of operating within the law may be lower than is immediately apparent.

Sitoe et al (2003), in an analysis of forest concessions, recommend that (1) simple license holders should not harvest in productive areas because such harvesting accelerates the degradation and devaluation of areas that could be exploited through concessions; (2) concessions without management plans be cancelled; (3) concessions and simple license areas should be competitively bid to maximize government revenue and ensure the selection of credible and committed operators; (4) the size of concession areas should be limited through the forest rent based on the area and

volume; (5) forest rents should be established urgently; and (6) monitoring of concessions should be outsourced.

Chitará (2003) also looked at instruments for promoting investment in the forestry industry. He found that simple licenses do not encourage sustainable use and conservation of forest resources, and that simple licenses should be abolished over three years and the concession regime (individual or collective) promoted. Chitará considers that annual licenses could be issued for local communities. He also recommends incentives for investing in wood processing, including technical assistance in the development of management plans and training in new technologies. Better access to financing and law enforcement is crucial, especially access to credit with reasonable interest rates, although Chitará recognizes the weakness of local companies’ bookkeeping, accounting, and auditing, which are prerequisites for obtaining credit. He also recommends issuing land-use titles after approval of reforestation projects and establishment of a company in Mozambique and zoning of suitable areas for reforestation. Finally, Chitará recommends offering fiscal incentives not only for the establishment of businesses but for expansion as well.

Bila and Salmi (2003) analyzed law enforcement and stressed the importance of dissemination of legislation to the various actors; establishment of mechanisms for involving the community, NGOs, and police; incentives for inspectors; decentralization of law enforcement to the district level; and promotion of forest certification.

Nhantumbo and Duncan (2003), in an analysis of community participation, recommend support for the establishment of management committees, the development of guidelines for negotiation and agreement models between the private sector and communities; mechanisms for periodical monitoring of agreements; and the development of guidelines for accountability of the committees managing financial resources on behalf of communities.

# 3. Resource and Log Harvesting

## FOREST INVENTORY

### Background

DNFFB published the first national forest inventory in 1994. The inventory was based on satellite images because reaching many forest areas was difficult because of the civil war and danger from land mines. The inventory estimated the extent of Mozambique's forests and despite its acknowledged inaccuracies—given changes over time and the absence of periodic inventories—has been the only comprehensive guide to making decisions about allocating quotas for various products.

According to the 1994 inventory, Mozambique had 20 million ha of productive forest, with about 20 million cubic meters of commercial stock and an allowable cut estimate of 500,000 cubic meters per year. The allowable cut was determined taking into consideration all the 120 main commercial species. The inventory needs updating, given the market changes that have taken place—particularly with the narrow range of species preferred by the new Asian markets. Currently 80 percent of the commercial harvest comes from 15 of the 120 species listed in the Forestry and Wildlife Regulations.

The government has received more recent assistance in assessing forest resources. The African Development Bank funded a project to draw up a forest inventory in Northern Sofala and Cabo Delgado, concentrating on productive forest areas with potential for allocation as concessions. The Finland-funded Sustainable Forest Management project also recently conducted forest inventories and zoning in Zambezia, Inhambane and Manica provinces.

### SWOT Analysis of the Forest Inventory

#### *Strengths*

- The Inventory Unit of the National Directorate of Forestry and Lands (DINATEF) has qualified people, most with experience gained during their participation in the resource assessments mentioned above.
- Through the years, DNFFB and DINATEF have also gained experience in analyzing results of inventories for concessions and concessionaires' management plans. As a result, a committee of review has been able to identify poorly designed management plans and recommend cancellation of the concessions or a review of management plans. The existence of a body of knowledge on forestry resources at the Inventory Unit has been important in clarifying and detecting data discrepancies and inconsistencies.

- The department has canceled the licenses of companies and individuals who consistently present management plans based on data that is erroneous, either because their methodology was incorrect or because data were fabricated to favor the concessionaire's interests.
- Although the forest inventory guides decision making about harvesting levels, the expert opinion of government officers is also valuable in the determination of allowable cuts. For example, in Cabo Delgado, because of deficiencies in earlier data, a cautious approach is now taken to annual cuts suggested by management plans when officials approve annual licenses.

### **Weaknesses**

- An annual allowable cut of 500,000 cubic meters is too generous, considering that harvesting has been largely unregulated and concentrated in a handful of species, thereby devaluing the productive forests. Annual licenses continue to be issued, exacerbating this problem. Unless more lesser-known species become popular, the commercially favored species will not be sufficient to sustain both export logging and the large-scale processing envisaged by the forest regulations and the value-addition policy.
- Most decisions on quotas are still based on the 1994 inventory, particularly for annual cutting levels applying to simple licenses, although annual harvest levels for concessions are set with greater reliance on management plans, which supposedly use more recent information.
- There is an over-reliance on the inventory data prepared by consultants involved in the preparation of management plans, many of whom have compromised their independence and reputation, succumbing to the temptation of quick profits to be made by producing what the client wants to hear.
- Management plans for forest concessions are not based on reliable data. Inventories tend to overestimate the commercial volume. For example, during fieldwork for this study, a concessionaire indicated that after the harvest of 1,100 cubic meters of commercial timber in the first year, the concession would be abandoned because all the readily accessible and profitable logs had been removed—from a 45,000 ha concession with an expected 50-year life!
- DINATEF is slow to process the provincial inventory data and has not consolidated data to produce an updated comprehensive national inventory and sustainable cutting plan based on information gathered in recent years.
- The data from recent inventories in Sofala and Cabo Delgado have only recently reached the provincial services of Sofala, and in Cabo Delgado, about 80 percent of the inventoried area is now within the boundaries of Quirimbas National Park.

### **Opportunities**

- DINATEF is undertaking (or planning to undertake) a number of actions relating to forest inventories: (1) develop guidelines for designing management plans; (2) conduct a national forest inventory starting this year; (3) initiate testing of a forest monitoring system (by the Inventory Unit, with Finish support) to provide information on changes resulting from logging (illegal or otherwise) and other land use practices.

- Mozambique is a pilot country for a global project on rapid forest assessment funded by the Dutch Government. The project uses satellite imagery and modeling to monitor changes in biodiversity due to logging, bush fires, and other factors.

### **Threats**

- Delays in producing improved national inventory data will allow continued unsustainable resource allocation and unsubstantiated harvesting quotas.
- The valuable species are already scarce in most districts, and in the medium term will not be sufficient to allow for the current level of harvesting, let alone an increase.
- The requirement for concessionaires to install processing operations has led to the proliferation of small mills with low capacity, low-quality products, and little interest in seriously operating the equipment installed. But even if markets improve and all the mills were operating there may be insufficient resources available.
- There is a need for GoM to take greater responsibility in the process – they currently put too much reliance upon opportunist concessionaires
- Without clarification of where responsibility lies for carrying out forest inventories and designing management plans so that credible data can be collected and business plans drawn up, the government cannot obtain the accurate information about resources that it needs to monitor the impacts of use and management, and businesses cannot make informed long-term investments.
- Selective harvesting by simple annual license holders undermines and impoverishes a resource that could, in some areas, be part of future concessions.

### **Recommendations**

- The Inventory Unit of DINATEF, in coordination with other training institutions, should offer annual training to consulting companies and other interested agencies. The training should cover the design of management plans, inventory methodology, monitoring systems, and other technical and economic aspects of natural forest management.
- The national forest inventory must be updated and consolidated urgently. This update should then be used to review all quotas and cutting plans and be the basis for monitoring annual cuts in each province.
- The requirement for processing for each concession should be reviewed to avoid future pressure on the forest resource.

## **UNHEALTHY RELIANCE ON EXPORT LOGS**

### **Background**

Mozambique allows harvesting of logs for export in log form and the cutting of logs for use in domestic processing. As detailed in Section 2, log exports have made up 48 percent to 58 percent of logs cut. Log exports are largely of “precious” species, with the highest royalties (MZM 2 million per cubic meter), while Class 1 species, reserved for local use or for export as processed products, have royalties of MZM 0.5 million per cubic meter.

## SWOT Analysis of the Production of Logs for Export

### **Strengths**

- Mozambique has several heavy hardwood species that are difficult to saw domestically but are sought after in Asian markets for the manufacture of traditional dark, ornate furniture.
- The production of logs for export is an activity that Mozambique nationals can readily participate in, because it requires a relatively low investment and yields high profits.
- The government of Mozambique has progressively tightened quotas for the export of logs over the past three years as the forest resource has declined.

### **Weaknesses**

- The current logging system could be described as a “gold rush,” with the most valuable and accessible species “cherry-picked” for log exports.
- Most of the abuses of regulations and problems of enforcement relate to log exports and include
  - Cutting without a license;
  - Overcutting the authorized cut;
  - Pressure on consultants to prepare unreliable inventories and management plans that maximize export species;
  - Concessionaires’ logging outside the annual block planned for harvesting to obtain higher volumes of export logs; and
  - Incorrect identification of species before export, which sometimes allows Class 1 species to be exported in log form.
- Logging for export is clearly the least sustainable aspect of sector activity. Until more reliable inventory data is available for the whole country, the annual quotas granted for export have a very poor scientific justification and are subjective.
- The chase for export logs has affected the desire to invest in longer-term added-value processing. During fieldwork, some expressed the view that few would invest in a longer-term, high added-value wood industry processing sector when export logging has already taken the largest, easiest, and most valuable logs.
- Provincial government forestry staff do not have the capacity to control this aspect of the sector.

### **Opportunities**

- There is scope for the government of Mozambique to obtain higher resource rent and reduce the imbalance of profitability between export logging and processing;
- The volume exported by a license holder or concessionaire could be linked to the volume of logs sold in the local market.
- There is scope to increase the level of local processing by progressively removing certain species from the export list and transferring them to Class 1.

## Threats

- Legislating for decreased log exports/ increased primary domestic processing of export logs reduces the government of Mozambique royalty revenue and foreign exchange earnings, as shown in Table 3/1. The analysis (based on a generous average conversion of 40 percent from log to sawn timber of one cubic meter of Umbilla wood) indicates that through the promotion of primary processing, foreign exchange would drop by 37 percent and royalties by 75 percent;
- There is a strong belief among many Mozambican nationals in the sector that the high profitability from export logging is their right and should not be undermined;
- If the current level of export logging continues, many in the sector foresee resource depletion of economically-accessible export logs, within a five to ten year period. Already over the past 5 years logging distances have markedly increased and log sizes reduced;
- Mozambique has a relatively small natural forest resource and is at high risk of joining the many countries that have allowed log exports to continue at too high a level for too long, so undermining their chance of having a sustainable domestic processing industry;
- Intermediaries (mainly Asian log buyers and their agents) are currently taking most of the “super profit” element from logging, through their financing activities, under-measurement, transfer pricing, limited international competition and lack of open market transparency in their buying. Unfortunately, however, even with higher resource taxes, there are few ways for Mozambique to effectively control the level of profit taken by intermediaries that work in collusion.

**Table 3-1**

*Effect of Local Sawmilling on Export Revenue and Royalty*

Source of Revenue	MZM	USD
<b>REDUCTION IN EXPORT REVENUE</b>		
Export revenue from 1 cubic meter of Umbilla if exported as log <sup>a</sup>	9,100	350
Export revenue from 0.4 cubic meter of Umbilla if sawn and exported as sawn timber with a 40 percent recovery rate <sup>b</sup>	5,720	220
Difference	3,380	130
<b>LOSS OF GOVERNMENT ROYALTY REVENUE</b>		
Royalty revenue if classified as a precious species and exported as log	2,000	77
Royalty revenue if sawn as a Class 1 species	500	19
Difference	1,500	58

<sup>a</sup>Based on Pau-Preto price-FOB

<sup>b</sup>Based on current prices at Quelimane for weighted average mix of grades for export— US\$550 x 0.4

## Summary

The export of logs is rapidly depleting the most valuable and most accessible species in an unsustainable manner.

## Recommendations

A forestry sector summit or national forum is needed to reassess

- The resource situation resulting from log exports;
- The vision the country has for its natural forests in 5, 10, 20 and 50 years;
- The steps necessary to ensure that sufficient resource is preserved for long-term domestic needs; and
- Resource rent—the scope for the government of Mozambique to (1) obtain higher resource rent; (2) reduce the imbalance of profitability between export logging and processing; (3) encourage loggers to cut more logs for the local market; and (4) reduce the number of species exported as log to help increase the level of local processing.

## LICENSING AND CONCESSION OF NATURAL FORESTS

The 2002 regulations of the Forestry and Wildlife Law provide for two types of harvesting of natural forests for commercial purposes—exploitation by annual simple license and forestry concession.

In 2005, there were 462 annual simple license holders (SLHs), and in July 2006, 43 approved concessions. SLHs are reserved for Mozambican nationals and have simplified inventory and management planning requirements. Each SLH can be licensed for and allocated a different area each year, depending on the perceived logging potential of forest areas remaining. SLHs can log up to 500 cubic meters per year from their licensed area.

Concessions are based on a 50-year sustainable logging program over a designated area of forest. Foreign concession holders are allowed. Processing equipment must also be installed.

## SWOT Analysis of the Annual Simple License System

### *Strengths*

- SLHs are an important means through which Mozambican nationals can participate in business opportunities in the sector.
- SLHs are useful for harvesting smaller areas of forest that are not big enough to warrant a concession.
- In most provinces (except Nampula) the number of SLHs has declined in the past two years, as a result of deliberate efforts to reduce the number of operators under this system.

### *Weaknesses*

- The SLH system encourages loggers to be driven only by target volume, with little concern for the quality of forest remaining.
- As a result, SLHs show little commitment to long-term sustainable management of forests. The license is seen merely as a cost or fee for short-term gain.
- SLHs “pick the eyes” from the resource and make large areas less viable as future concessions.
- Many of the weaknesses mentioned in Section 3 about export logging are attributable largely to the poor performance of SLHs.

- A disproportionate percentage of the enforcement problems and capacity issues of provincial government forestry staff relate to the activities of SLHs. Overall, the proportion of SLHs following the rules is small.
- Illegal logging practices are common, including
  - Encouraging village cutting of logs outside license area and purchasing the logs
  - Cutting and discarding undersized logs
- Most SLHs have problems becoming concession holders because they lack capital (to pay for the inventory and management plan) and business skills.
- Some SLHs complain that all the best natural forest has already been allocated to concessionaires and they would rather carry on as SLHs.
- Most SLHs are now heavily in debt to Chinese intermediaries, who use debt as a means of underpricing and leveraging over-cutting.

### **Opportunities**

- Stronger incentives, in the interests of sustainability, might encourage SLHs to become concession holders.
- A draft proposal for accelerating the conversion of SLHs to concession holders discussed during fieldwork suggested the following conditions:
  - Phase out SLHs over five years
  - Reduce maximum size of concession (e.g., 10,000 ha)
  - Remove the requirement for processing;
  - Restrict program to SLHs operating satisfactorily for five years
  - Allow Mozambique nationals only
  - Provide donor assistance of 50 percent to SLHs with inventory and management plans, with the balance paid by the applicant (the Nordic Development Fund may finance loans for applicants).

Most SLHs interviewed and provincial forestry and environmental authorities generally supported this proposal. Several thought it should be tested in one province first, or in selected “progressive” SLHs in a number of provinces. The proposal could be modified to allow groups of SLHs to operate one concession and/or communities to become joint-venture business partners in concession management. It would need to be supported with training on business, sustainable forestry, and environmental management.

### **Threats**

- The phasing-out of annual licenses was not a goal of the forestry and wildlife regulations. Rather, the goal was to facilitate the engagement of entrepreneurs in long-term use and management of the resources, but this goal has not been met.
- A number of SLHs do not want to become concessionaires because they prefer to continue to pick smaller, profitable, rich areas of forest;
- Some SLHs fear that phasing out of SLHs will force them to be merely contractors for larger concession holders.

## SWOT Analysis of the Concession Holder System

### **Strengths**

- The policy and regulations encouraging concessions are sound and the best hope for sustainable, long-term retention of well-managed natural forests.
- Concessions are based on the assumption that a 50-year contract will give the concession holder a large stake in managing the forest for long-term sustainability and profitability.
- Concessions have important advantages over SLHs—they restrict the annual cut and work more closely with communities and in fire prevention.
- Concession management plans are an important business planning tool for concession holders..

### **Weaknesses**

- Many concession holders, like SLHs, show little commitment to long-term sustainable management of forests and see the concession as fee for short-term gain.
- Most concession holders harvest only the seven most valuable “precious” and Class 1 species.
- Most concession holders target the richest, closest, and most profitable areas of their concessions first, and a number of concessions are likely to be abandoned after the first five years;
- Many inventory surveys and management plans are based on what the client wants to hear rather than the forest’s ability to yield a long-term sustainable cut.
- Concessions are conditional on the installation of processing capacity but many concessionaires put install only small, portable mills that are never operated because no minimum level of processing was set.

### **Opportunities**

- There is still considerable scope for improving the quality of concession management plans and concession holder operations.
- Third-party forest certification is still in its infancy in Mozambique. It offers a virtual guarantee of sustainability and stronger markets for products.
- There is considerable scope for greater cooperation between concession holders and SLHs to encourage sustainable logging and business training, through subcontracting to Mozambican nationals who are SLHs.
- There is also scope for communities to take over part or even total equity ownership of concessions. This approach (usually including initial assistance from donors) has been successful in other countries.

### **Threats**

- Many Mozambican entrepreneurs in the sector see concessions, with requirements beyond the reach of most SLHs, as a system that is gradually encouraging foreign companies to dominate logging in the sector.

- Without improved provincial forestry staff surveillance, the benefits of the concession system could be largely lost.

## Summary

The concession management system is central to sustainable forest management. The quality of management of Mozambique's natural forests is still a long way from the policy and legislative goals that aim to promote sustainability. Urgent action is required to prevent the rapid depletion of the resource and a major decline in the number of concessions that can continue as viable businesses.

## Recommendations Relating to Concession Management

A forestry sector summit or national forum is needed to reassess

- The current resource situation resulting from the licensing of SLHs and concessionaires;
- The country's vision for its natural forests in 5, 10, 20, and 50 years'; and
- Practical steps to improve management rapidly, including the replacement of simple licenses with concessions.



# 4. Processing

## BACKGROUND

Mozambique has approximately 140 registered wood processing industries (including carpentry workshops). Of these are approximately 100 sawmills that in 2005 produced approximately 32,000 cubic meters of sawn timber.

Concession holders are required to install sawmills to receive approval for a concession but not to process a certain proportion of the annual cut. Many mills are therefore inoperative or used infrequently.

To encourage local processing, the most valuable (Class 1) species are reserved for local processing at royalty rates that are at most only 25 percent of those for export logs. In addition, a royalty rebate scheme (a rebate of a further 40 percent of royalties for veneer and parquet flooring) encourages higher added-value processing. Fiscal incentives—duty-free imports—are also available for the initial investment in wood processing equipment.

Processing has focused on low added-value sawmilling to produce rough-sawn green timber of a limited number of high-value species. Investment in modern tertiary wood processing (e.g., kiln drying, veneer, plywood, moldings, joinery, and furniture) has been limited. Exports have also been limited, although the export of green rough-sawn timber has risen rapidly in the past three years.

## SWOT ANALYSIS

### Strengths

- Mozambique has some of the finest tropical hardwood species in the world.
- Compared with the forest areas of other countries in southern and east Africa, Mozambique's indigenous hardwood forest area per capita is high. Mozambique (as well as Angola and Zambia) is recognized as having a large forest cover containing a valuable mix of commercial species.
- Adequate primary sawmilling capacity has already been installed.
- The domestic market for primary and added-value wood products is growing rapidly.
- The volume of sawn timber exported has grown rapidly in the past three years, from 1,208 cubic meters in 2003 to 12,388 cubic meters in 2005.

### Weaknesses

- Most sawmilling capacity has been installed as a kind of fee for access to a concession area and does not represent a commitment to added value processing. The mills produce a

high proportion of roughly squared or 10 cm-thick slab timber to meet the government's minimum requirement for sawn timber for export.

- The export revenue lost through processing is high (see Table 3-1). A log exported in round form is worth approximately 60 percent more than the exported sawn timber that can be obtained from that log. Sawing and handling cost an extra USD67 per cubic meter (see Table 4-1). The reasons for this loss in value through processing are complex, however the most important reasons are:
  - Doing primary processing closer to the final end-use market for sawn timber is more efficient because the sizes of sawn timber pieces match the needs of producers of furniture components and joinery more accurately. Overcut is minimized (providing an extra allowance of 3 to 5 mm in rough-sawn dimensions is common in timber exports).
  - Mozambique sawmills are generally smaller and less accurate in their cut tolerances than larger, modern, specialized overseas mills.
  - In most export markets the import tariff on sawn timber is higher than for logs. This means that importers can afford to pay a premium or higher price for logs.
  - The waste products from sawmilling (slab-wood and saw dust) can be used or sold, offsetting sawing costs in most importing countries. Slab-wood, in particular, can often be resawn into smaller components or used in less-exposed components (e.g., drawer components, table leg fixings), so a higher proportion of off-cuts is used. In Mozambique, these waste products generally have little or no value.

**Table 4-1**  
*Simplified Cost Comparison of Log and Sawn Timber Exporting*

Cost Component	USD per m <sup>3</sup>	
	Sawn Timber for Export	Log Export
Felling and extraction cost to loading point <sup>a</sup>	25	25
Royalty	31	123
Reforestation Levy (15%)	5	18
Transportation (350 km one way to port or mill) <sup>a</sup>	60	60
Logging overheads <sup>b, c</sup>	10	10
Sawing costs to green sawn <sup>a, b</sup>	52	
Sawing overhead <sup>d</sup>	5	
Transport to port	10	
Total Costs	198	236
Profit margin	22	114
Selling Price <sup>e</sup>	220	350

<sup>a</sup> Assumed to include depreciation

<sup>b</sup> Based on TECHNOSERVE analysis "Overview of the Mozambique Timber Industry" May 2003

<sup>c</sup> Includes concession cost amortization, management, marketing

<sup>d</sup> Includes management and marketing

<sup>e</sup> Based on 0.4 m<sup>3</sup> (40 percent conversion rate) of Umbilla sold at US\$550 per m<sup>3</sup>

Note: The figures were obtained from fieldwork and are considered to be indicative averages for comparative purposes

- Sawmilling costs the government of Mozambique royalty revenue, as shown in Table 4-2. This is because logs processed domestically are charged only 25 percent of the royalty charged for export logs. This loss in royalty of approximately 1.5 million MZM per cubic meter equates to a subsidy of approximately 39.5 million MZM (US\$1,518) per employee per year. In addition, logs that are processed into veneer or parquet receive a further 40 percent rebate—this additional cost to the government has not been taken into account here.
- A large (but unquantified) proportion of sawmilling is cut to 100 mm flitch for export markets, with minimal value added.
- The requirement to install a sawmill for each forest concession does not encourage efficiency or economies of scale in processing. Only about half the installed sawmilling capacity is operating. Most mills installed to meet this requirement are small, old, and wasteful, use labor-intensive technology, and lack market focus.
- The business environment in Mozambique is high cost because of restrictive labor regulations, high interest rates, high cost and low reliability of electricity, a slow and corrupt bureaucracy, poor contract enforcement procedures, poor infrastructure, high tariffs on imported supplies, difficulties in obtaining permits for foreign technical staff. Given the low return on investment (see Table 4-2) and rapidly declining resource, attract larger investors is difficult.

**Table 4-2***Government Revenue Foregone in Processing*

<b>Chanfuta Wood Export</b>	<b>Revenue per 1,000 m<sup>3</sup> (MZM)</b>	<b>Total (MZM)</b>	<b>Total (USD)</b>
If it could be exported as log	2,000,000	2.0 billion	76,923
If it is processed locally through a sawmill	500,000	0.5 billion	19,231
Difference—loss in government revenue resulting from processing	1,500,000	1.5 billion	57,692
Average no. of employees per 1,000 m <sup>3</sup> of log input		38 employees	
Cost in revenue foregone per employee per year		39.5 million	1,518

- As Table 4-2 indicates, the indicative profit margin on sawmilling (10 percent) is much lower than the 33 percent profit that can be obtained from exporting logs.
- Mozambique has focused largely on low added value primary processing into green rough-sawn products. The country has no operating plywood, particle board, or medium density fiberboard industries, and very limited kiln-drying to support tertiary added value joinery and furniture-making.
- Several of the more business-orientated sawmillers already complain of an insufficient log supply because of the focus on export logging.
- Market development by sawmillers has been poor. Little cutting or market testing of lesser-known species is carried out to fill the construction timber market. This segment of the market is being partially satisfied by imported pine. Only one furniture manufacturer has managed to secure export orders.

- Most sawmills are licensed without environmental approvals. Current log export and processing policies do not encourage an expanded domestic open market for logs that could be the basis of larger-scale sawmilling and higher added-value processing.

### Opportunities

- The availability of some of the finest wood species in the world should continue to attract a small number of high quality “craftsman” furniture and joinery manufacturers that target the domestic and export markets.
- The fast-growing tourism industry should provide an increasing demand for higher value added joinery and furniture.
- The domestic market for household joinery and furniture can also be expected to outgrow economic growth rates in the medium term. However, local timber-based industries must also compete with cheap panel-product furniture imports.

### Threats

- Poor infrastructure and increasing distances to obtain logs mean high and increasing landed costs at mills in major centers, for all but the highest value species (typically US\$100 to US\$150 landed cost).
- Only one concession is certified by international third-party certifiers (Forest Stewardship Council) —certification is becoming increasingly important for EU and US exports;
- Mozambique’s sustainable tropical hardwood log supply is small and fragmented compared with the supplies of a number of other African and Asian countries. It is unlikely in the future to attract major export joinery or furniture manufacturers.

## ASSESSMENT

Domestic processing destroys value instead of adding value when compared with log exports. Domestic processing, which consists mainly of low-value primary processing, already receives a large government subsidy through reduced royalties. Furthermore, it is small-scale and fragmented and shows little evidence of planning for export market development.

## FUTURE PROCESSING SCENARIOS

Three following three scenarios for the future highlight the main options available to the government:

- Maximize log exports.
- Continue as is, with log exports dominating and processing development weak.
- Reduce and then stop log exports and proactively assist processing development.

These three scenarios are presented in more detail in Table 4–3.

**Table 4-3***Processing Development Scenarios*

	<b>Scenario 1</b>	<b>Scenario 2</b>	<b>Scenario 3</b>
Outline of Scenario	Maximize log exports	Continue the current situation (i.e., dominated by log exports and weak processing development)	Reduce and then stop log exports and proactively assist processing development
Economic impacts	<ul style="list-style-type: none"> <li>• Maximizes short-term foreign exchange and the government of Mozambique royalty revenue for approx. 5 years</li> <li>• Initial loss of employment and multiplier benefits from processing</li> <li>• Later loss of employment and multiplier benefits from harvesting and log transport</li> <li>• High level of processed timber product imports</li> <li>• Very limited possibility of Mozambique ever being able to enter the high value added wood export markets</li> </ul>	<ul style="list-style-type: none"> <li>• High level of foreign exchange and royalty revenue for 5 to 10 years</li> <li>• An ongoing high loss of potential value due to the concentration on primary processing with high wastage of raw materials</li> <li>• Emphasis remains on primary processing and minor exports of primary processed products</li> <li>• Little additional employment and multiplier benefits</li> </ul>	<ul style="list-style-type: none"> <li>• An initial rapid decline in foreign exchange and royalty revenue</li> <li>• A moderate increase (perhaps doubling each 5 years) in employment and multiplier benefits</li> <li>• A moderate increase (perhaps doubling every 3 years) in added value export products</li> </ul>
Sustainable forest management impacts	<ul style="list-style-type: none"> <li>• Selective harvesting of a small number of species likely to continue, hence degrading the value of the forests</li> <li>• The majority of the concessions are likely to be inoperative within five years because the private sector has little incentive to embark on long-term concession management</li> <li>• Widespread clearing/ conversion of productive forests into multiple use forests, degraded forest land or agriculture</li> <li>• Consequential loss of wildlife, biodiversity and soil/ water management benefits</li> </ul>	<ul style="list-style-type: none"> <li>• Majority of the concessions are likely to be inoperative within 10 years</li> <li>• Similar forest clearing and loss of wider benefits of forests as in Scenario 1, but perhaps delayed by five years</li> </ul>	<ul style="list-style-type: none"> <li>• Much greater incentive for concessionaires to preserve and protect forests through sustainable management practices</li> <li>• Incentive for concessionaires to adopt self regulatory forest certification schemes</li> <li>• Forests should be better protected with a maintenance of wildlife, biodiversity and soil/ water management benefits</li> </ul>
Governance in the sector	<ul style="list-style-type: none"> <li>• Regulating and controlling activity is difficult for government forestry personnel. Problems of harvesting quotas, illegal logging, non-adherence to management plans, species classification will increase.</li> </ul>	<ul style="list-style-type: none"> <li>• Ongoing problems for government forestry personnel to regulate/ control activity</li> </ul>	<ul style="list-style-type: none"> <li>• Less pressure for illegal activity</li> <li>• Capacity of government forestry personnel to supervise and monitor is likely to be better matched with level of activity</li> </ul>
Risks	<ul style="list-style-type: none"> <li>• Widespread domestic and international criticism of Mozambique's forest management</li> <li>• Early gains in government revenue, but then rapid loss, with the sector making minimal contribution to the national economy, the development of the private sector, and poverty reduction</li> <li>• Most processing will be idle within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing domestic and international criticism of Mozambique's poor forest management</li> <li>• Most existing processing will be idle within 15 years</li> </ul>	<ul style="list-style-type: none"> <li>• Criticism from Mozambican loggers (most likely SLHs) of reduced activity and profits</li> <li>• Mozambique's overall business environment (including infrastructure, high costs, costly credit facilities, restrictive labor regulations) may continue to deter added value investment</li> </ul>



Following the recommendations in Section 3 (i.e., a national forum to take stock of where the sector is heading, a comprehensive review of legislation and operating instruments, a resource rent reassessment, reduced log exports, and steps to improve concession management) should help create a better balance between log exporting and domestic processing, and thus a move towards Scenario 3, by providing a platform for increased investment in competitive processing. Further measures, however, are necessary.

## **WAY FORWARD FOR PROCESSING**

The following are regarded as the main issues for the development of a sustainable and competitive wood processing industry in Mozambique.

### **Higher Added Value Processing**

As mentioned above, Mozambique has focused on low added value primary processing into green rough-sawn products. The country has very limited kiln-drying to support tertiary added value joinery and furniture-making. Other added value processing such as cut stock or componentry for furniture, glue lamination, joinery (doors, door frames, moldings, window frames, stairs, solid-wood kitchens) and furniture are still in their infancy.

Increasing investment in tertiary-level added value wood processing is a common challenge in developing countries with relatively small volumes of high-value natural forest species. Few countries have succeeded in using their remaining resource wisely for sustainable added value processing before it is too late. Several (Indonesia, Ghana, and Malaysia) have combined strong government regulations banning log exports with greater incentives for processing, depending on the percentage of added value, but with varying success. Other countries have developed tertiary wood processing at the stage when their indigenous wood supply had already become insufficient to provide any competitive advantage (e.g., India, China, Vietnam, Thailand, Philippines, South Africa).

The government of Mozambique in fact can make few interventions to support competitive added value investment in the sector. Changing the overall image of Mozambique into that of a soundly managed growing economy that is attractive to both domestic and multinational entrepreneurs is considered to be of far greater importance than providing fiscal incentives to wood processing. Therefore government efforts go to improving the business environment (i.e., restrictive labor regulations, high interest rates, poor infrastructure, a slow and corrupt bureaucracy, poor contract enforcement procedures, high tariffs on imported supplies, poor education and technical training, and difficulties in obtaining permits for foreign technical staff).

What is needed is niche investors that will bring with them both markets for specialist wood products and the technology and capital to produce such products. Mozambique already has several of these investors in the forestry sector but it could support many more.

Fiscal incentives—reduced royalties for processing— however, do warrant review and adjustment. Currently, Class 1 species are reserved for local processing at royalty rates that are at the most only 25 percent of those for export logs. In addition, the royalty rebate scheme—a rebate of a further 40 percent of royalties for veneer and parquet flooring—is meant to encourage higher added value processing.

The royalties for sawing Class 1 timbers into green sawn timber are considered overgenerous. If, as recommended in Section 3, the royalties on export logs are reviewed and increased, and the number of species reserved for local processing increased, a similar review of the appropriate royalty for Class 1 logs should be conducted. Such a review will probably recommend that the royalty on Class 1 logs be increased. Then a range of royalty rebates could be linked to the level of added value processing. For example, added value processing could be divided into four levels:

- Level 1—Primary sawing into green sawn, green planed, or air-dried timbers
- Level 2—Peeled veneer, plywood, kiln dried timber, timber moldings, pressure-treated timber, precut kitset housing, cut stock for furniture or strip flooring
- Level 3—Joinery products, glue lamination, sliced veneer, parquet
- Level 4—Furniture.

Higher royalties and no rebate should be payable by Level 1 processors. Rebates (progressively higher percentages for level 3 and 4 processing) would apply to other processors. Rebate would be best applied to the purchaser or user of logs or sawn timber and not necessarily to the producer of logs. This would necessitate an agreement between processors and the government to submit periodic verifiable documentation of wood purchases and added value product sales. For Mozambique's small forestry sector, administering a rebate system should be within the government's capacity. A more detailed study would be necessary, however, to better define the preferred method of incentives and working procedures.

### **Encouragement of the Use of Lesser-Known Species**

There has been little cutting or market testing of lesser-known species to supply lower-value market segments, although there have been several exceptions—muanga has recently become a sought-after species for export to Asia and South Africa. Again, a reclassification of species and a royalty review should assist in increasing royalties for the readily accepted species, and possibly in maintaining the current royalties for lower-class species. Greater use of lesser-known species would

- Take pressure off the Precious and Class 1 species that are already overcut;
- Improve the use of available species in a logging area and lower the average cost of harvesting through improved recovery; and
- Supply lower-cost timber to the market for lower-value end-use purposes (such as construction) and to compete with sawn timber imports.

It is recognized that in concessions with very long transport distances to major town and city markets, the use of lower value lesser-known species will often be commercially unattractive.

Increasing use of lesser-known species will require research support from the government of Mozambique on species properties, likely end uses, processing characteristics, technologies, and markets. Most countries that market tropical hardwoods have research programs that support high-value use of as wide a range of species as possible. Ghana is one of the best examples. It has researched and published excellent promotional material about the properties and end uses of its species.<sup>1</sup>

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<sup>1</sup> See [www.forig.org/forig/history](http://www.forig.org/forig/history)

## Development of an Improved Open Market for Logs

As mentioned, the processing industry in Mozambique is fragmented and small scale compared with those of other countries. One of the main reasons for this fragmentation is the requirement for concession holders to install their own processing units on the concession or in a nearby town. (This flexibility on the location of processing is not clearly spelled out in the regulations, but is part of local initiatives (e.g., Sofala) that provincial authorities have taken to boost employment opportunities). This requirement to install processing units has increased capacity to the point that it now exceeds the resource available, and many mills are grossly underused. It is therefore questionable whether additional sawmilling capacity is needed as new concessions are granted, especially given the fact that it does not encourage higher value addition.

Discouraging concession holders from owning processing mills and encouraging them to sell logs to other processors offers a number of advantages. It would enable larger, more competitive mills and economies of scale to emerge. It would encourage added value specializations—for example, a viable veneer peeling and plywood mill (using second-hand equipment) would require an estimated 20,000 cubic meters per year of low- to medium-density logs. It would also encourage other added value specializations such as servicing export markets with kiln-dried sawn timber of a particular species.

Concession holders are rarely experts in wood technology and wood product marketing. The skills to manage a 50-year concession sustainably are different from those needed to manage a competitive wood processing industry. Discouraging concession holders from processing should improve the use of lesser-known species because most current concession holders saw only species that they know find a ready market. Furthermore, it should encourage clusters of processors in cities with port facilities. Clusters are thought to increase the productivity of companies based in the area, improve the pace of innovation, and stimulate the formation of new ancillary businesses in the cluster.

## RECOMMENDATIONS

- The recommendations in Section 3 (i.e., a national forum to take stock of where the sector is heading, a resource rent reassessment, reduced log exports, and steps to improve concession management) are important to create a better balance between log exporting and domestic processing as well and to provide a more optimistic platform for increased investment in competitive processing;
- Fiscal incentives in the form of reduced royalties for processing require review and adjustment. The royalty rebates for sawing Class 1 timbers into green sawn timber are considered too generous. A range of royalty rebates should be linked to the level of added value processing. The review of resource rent on logs should include an assessment of the rebates for processing.
- Similarly, royalties for lesser-known species should be reviewed, with the aim of lowering the cost of lesser-known species relative to more readily marketed species.
- The government of Mozambique should support research on the use of lesser-known species, including wood properties, likely end uses, processing characteristics, technologies and market.
- The requirement for concession holders to install their own processing units has resulted in a fragmented and small scale processing industry in comparison with the industries of

other countries. In addition, there is more milling capacity available than there is resource. The requirement for concession holders to own mills should be removed as new concessions are granted.

# 5. Governance of the Sector

## GOVERNMENT CAPACITY

### Background

PROAGRI I addressed the government's capacity to improve policy formulation, enforcement, and managerial issues such as human resources, planning, and financial management. It also stressed the need to create a good working environment and the importance of intervening promptly when law enforcement is necessary. PROAGRI II states that strengthening government capacity is the key to enhancing the sector's performance and carrying out its core functions. Reports and observations in the field, however, indicate little has improved in terms of shortages of staff, skills, equipment, and funds.

The central government has the role of developing policies, supporting legislative instruments and monitoring their implementation. Government at the provincial and district levels is more concerned with law enforcement and service provision. In line with government of Mozambique's administrative policies, the agricultural sector is undergoing a process of decentralization. The Law of Local State Institutions defines the roles of provincial governments and other bodies, including district authorities. The Land Law and the forestry and wildlife laws and regulations also give some prerogatives for decision-making to the provincial level. The Provincial Services of Forestry and Wildlife, through the Provincial Directorate of Agriculture, come under the control of both DINATEF and their respective provincial governments.

### SWOT Analysis of Government Capacity

#### *Strengths*

- Despite the many difficulties facing most provincial government services (and indeed the national government), staff show drive, motivation, and commitment to control the forestry situation.
- Staff at the provincial level find creative ways of controlling illegal activities. For example, in Sofala a permanent control post has been set up at the harbor to monitor exports and verify species, quantity, minimum diameter, and other aspects of wood exports. Manica limits the number of simple licenses issued every year on the basis of officials' understanding of the availability of resources and credibility of the operator. Cabo Delgado officials do not only follow the inventory data in the management plan in issuing licenses for concessionaires but rely on their own knowledge of the resource as well. They also evaluate an applicant's processing capacity to set annual log allocations.
- All stakeholders interviewed recognized that in the past three years the government's capacity to control illegal logging and the indiscriminate export of logs has improved.

## Weaknesses

- Sector policies and provincial government policies and priorities are not always the same because of differing perspectives and uncoordinated decision making.
- Notwithstanding improvements, law enforcement continues to face challenges due to limited numbers and qualifications of personnel, lack of transport, poor communication equipment and other infrastructure, and a shortage of funds. In the four logging provinces visited the staffing capacity was:
  - In Sofala there are on average only one or two guards per district, who are supported by several control posts, including the harbor in Sofala, and a mobile brigade.
  - Zambezia has 32 guards: 16 in the districts, 8 in the fixed post of Nocoadala, 4 in the mobile brigade, and the rest at the harbor
  - Cabo Delgado has only 34 guards;
  - Manica, with a lower productive forest area, is better staffed, with more than 30 guards, of which 25 are based in Chimoio.

Given the extent of illegal activity in Cabo Delgado, Sofala, and Zambezia, these numbers are clearly inadequate.

- The AIDS pandemic has also contributed to a reduction in the number of trained guards.
- The five provinces visited lack qualified personnel to carry out technical monitoring of concessionaires' activities in harvesting areas and communicate with and provide direction to industry.
- Law enforcement is an important function in the forestry sector, and guards are therefore generously remunerated, receiving a risk allowance of 20 percent. But in addition, guards are allowed to retain 50 percent of penalties resulting from arrests they make. In fact, the 50 percent ends up the threshold for bribes, often for even minor infringements. Although this system helps reduce infringements, it also creates opportunity for corruption.
- Systems for planning and monitoring law enforcement are poor. Internal control mechanisms, including performance evaluations, need to be improved to motivate staff. Only a small number of people in the sector (the guards) get the reward payment for arrests made. The capacity to monitor law enforcement—supervising the fairness of penalties, corruption surveillance—that would reduce the temptation to accept bribes should be strengthened.
- The most common illegal activities include harvesting without licenses, harvesting outside set boundaries, and harvesting more wood or different species than those specified in the license. Monitoring these activities is extremely time consuming.
- Few concessionaires are as committed, responsible or self-motivated in implementing the legislation as long-term responsible businesses.
- The government does not take the lead in research on markets and wood properties that would stimulate processing of the secondary species. This means that changing the classification of tree species, for example *Combretum imberbe* (mondzo) and *Pericopsis angolensis* (muanga), to Precious comes only in response to Chinese operators' pressure. This suggests that IIAM's research agenda is not responsive enough to agricultural sector priorities. Yet use of other public and private educational and research institutions is limited.

### **Opportunity**

- For some years forest certification has been discussed as a way to foster adherence to the principles of sustainable use, promote social justice, and give added value to products. Concessionaires and certified wood processors who follow the criteria and indicators set out by certification agencies are eligible for improved access to international markets and may gain a price premium. Adherence to certification schemes shows that a business is committed to sustainable forestry practices. Certification is a third-party supervised self-management and self-enforcement tool. If more forest concessionaires embraced certification, the need for government to police forestry business activities could be relaxed. This would free law enforcement personnel for research and information-gathering relating to sustainable forest management.

### **Threats**

- Foreigners, particularly Chinese log buyers, exploit weaknesses in local law enforcement. By financing and monopolizing the export log market they have manipulated many harvesting operators (particularly the simple annual license holders) to operate outside the law.
- Political influence and power are used to override legislation. Interference from well-positioned people undermines law enforcement in the provinces.
- Unless government capacity improves, concessionaires will continue to harvest too much of the most valuable species as quickly as possible and then abandon large forest areas unproductive.

### **Recommendations**

- Provincial governments and DINATEF should work together to enforce legislation. There is no uniform approach to implementing the law among the provinces. A coordinated approach would facilitate the monitoring of law enforcement throughout the country.
- A part of the penalties and royalties should be allocated to training and advocacy of law enforcement in the field.
- A review of incentives for forest guards should be carried out, including salary and nonmonetary incentives (e.g., training, performance evaluation, certificates of merit) to offer incentives that encourage staff to be proactive without undermining the higher level salary scales.
- Laws and regulations should apply to everyone. Politicians involved in business activities in the sector should be publicly identified by the CTA and challenged to set an example on the sustainable use of the resources. The anticorruption unit should be strengthened and should be trusted to act when illegal practices by politicians are brought to its attention. The CTA should research anomalies brought to its attention in the sector and help civil society bring pressure for practical changes.

## COMMUNITY BENEFITS FROM INVOLVEMENT IN THE SECTOR

### Background

As outlined in Section 2, government policy has identified poverty reduction as a national goal to which all economic and social activities should contribute. The government has also stated that renewable natural resources play an important role in realizing the objective of poverty reduction. Land forestry resources are expected to benefit communities in the following ways:

- Communities are supposed to benefit from concessions and annual harvesting areas, which are essential for promoting local development and the sustainable use of natural resources
- Communities should be consulted in the process of land allocation .
- Communities should also be consulted when the boundaries of forest concessions are set.
- Consultations with communities and other stakeholders are essential to the process of acquiring land for forestry plantations to minimize future conflicts.
- Twenty percent of royalties paid by simple licenses and concessionaires should be returned to the community where the resource was harvested.

The 20 percent allocation is intended to motivate communities to carry out sustainable forest management—activities such as minimizing bush fires, not harvesting forest resources for commercial purposes (e.g., producing charcoal, pitting sawing) without a license, and supervising concessionaires' and simple license holders' forest activities. Communities are encouraged to contribute to law enforcement by stopping illegal harvesting.

To clarify the regulations and stress the need for accountability and public access to financial reports and activities undertaken from the 20 percent, Diploma 93/2005 specifies ways the 20 percent should be allocated and requires natural resources management committees to have a bank account.

Now, most banks require a valid Mozambique identification card to open an account, but most committee members do not have identification cards, and therefore cannot open a bank account so the community can receive its 20 percent allocation. Funds from 2005 and 2006 have yet to be disbursed, in part because of the difficulties communities face in meeting the requirements for receiving funds, and further delays in distributing the money are likely.

Zambezia has 8 billion MZM and aims to return these funds to about five communities. Cabo Delgado has approximately 1 billion MZM, of which 229 million MZM are to be given to communities of Nangade district. Manica province has 2.3 billion MZM and Pindanyanga Community will be the first beneficiary. In Sofala, the Matondo community in Cheringoma has fulfilled all the requirements and should receive the money. In all provinces visited, the disbursement of these funds was still at the planning stage.

## SWOT Analysis of Administration of Community Involvement

### **Strengths**

- Diploma 93/2005 and a note of clarification of the diploma are important guidelines for communities and other stakeholders to understanding the aim of these funds and the process for allocating them.
- In Sofala, two concessionaires (TCT and IMM) have made partnership agreements with local communities. Although the agreements are not perfect, they are a step toward ensuring harmony between private business entities and communities.
- Simple license holders also support local communities by responding to specific requests (e.g. for school chairs). The association of simple licenses in Zambezia considers that the 20 percent funding is also having a positive impact, as the communities do not make as many demands as they used to and are more active in ensuring that good forest management practices are adopted.
- Corporate social responsibility is important for the security of communities and risk reduction for entrepreneurs.
- Revenue collection in some provinces has already shown that 20 percent of royalties are likely to make a significant contribution to communities in the vicinity of forestry concessions.
- The legislation establishes that communities should continue to have access to essential products for their own consumption (water, fishing, etc.) as well as to sacred areas.

### **Weaknesses**

- Diploma 93/2005 sets unrealistic requirements for communities to access the 20 percent of the royalties—for example, opening a bank account in areas where there are no banks (which is the case in most districts where forest activities take place). This is likely to bring high costs to the community, not only to open the account, but to meet documentation requirements. In Cabo Delgado, for example, only three districts (Montepuez, Mocimboa, and Mueda) have banks, while in Manica, only Chimoio and Manica districts have banks.
- The private sector erroneously interprets the 20 percent as its own contribution.
- Twenty percent of the royalty paid to the government has a negligible impact on the livelihoods of the communities in simple license areas (SLHs operate mainly in more poorly stocked open forest areas), and this may influence their commitment to good management practices.
- Agreements between forest concessionaires and communities made during the consultation process may not be put into practice in part because there is no mechanism for enforcing or monitoring agreements.

### **Opportunities**

- Local NGOs such as ORAM (Zambezia, Sofala and Manica) and projects such as the FAO project in Manica provide organizational support (establishment of local natural resources management committees, opening bank accounts, etc.) to ensure that communities are prepared to receive the 20 percent. Their experience can also provide information to

government and inform it of the practical hurdles and solutions for speeding up the distribution of the 20 percent.

- The Land Fund also aims to provide the support that communities need to become more entrepreneurial and to act as business partners with the private sector. The fund aims to provide assistance in becoming legally incorporated, acquiring formal rights to natural resources, assessing the resources, business planning, and other practicalities of establishing a business.
- The 60 CBNRM initiatives already in the country provide proof of the benefits of community involvement in forest resource management and offer lessons in ways communities can become involved in the management of the natural resources.

### **Threats**

- Communities are often seen as placing increasing demands on the private sector.
- In Zambezia, Cabo Delgado, and Manica the traditional leaders in some communities are involved in promoting illegal harvesting and sell logs to selected operators; an activity that is likely to increase if the 20 percent is not paid promptly.

### **Recommendations**

More can be done by government, the CTA, the private sector, and NGOs to promote corporate social responsibility and to clearly outline the benefits and responsibilities of investors and communities. Recommendations to accelerate the benefits are:

- Formal business partnership contracts between communities and the private sector should be fostered. Communities should have an equity share in the business to secure their motivation, identification with, support of, and participation in common goals in forestry projects (e.g., control bush fires). Such contracts can also prevent misunderstanding and reduce business risk while at the same time building a long-term symbiotic relationship;
- Community institutions should be given the resources and support they need to secure access to the 20 percent funds available and promote the benefits of having a strong community group negotiate and form lasting mutually beneficial partnerships with investors.
- When getting communities incorporated and bank accounts opened are delayed, the district-level government administration should hold the funds on behalf of the communities. This assumes there is accountability and a transparent decision making on the use of funds for community projects.
- Research is needed on alternatives to bank accounts such as community trust funds to overcome the organizational problems at the community level.
- Adequate time should be allowed during the planning phase of concessions, simple license agreements, and plantation forestry land leases for preparatory discussions and community consultation to ensure that communities fully understand the objectives and implications of the investment and can give an informed opinion. The investment of adequate time at the outset will make the consultation more effective and reduce potential conflict in the long term.

- During the recommended royalty review, the impact and viability of reducing royalties for forest products harvested by communities should be analyzed and other incentives offered to encourage licensing for pitsaw operations.

## REFORESTATION LEVY

The government of Mozambique created the Fund for Agricultural Development to capture the revenues generated by the agricultural sector and to enable the allocation or reinvestment of these funds in high-priority areas. The forestry sector is one of the biggest contributors to the fund, contributing revenue from licensing, restocking, reforestation, penalties, and sale of confiscated products (Kir and Falcao, 2004).

All harvesting licensees (both annual license holders and concessionaires) must pay a 15 percent levy in addition to their royalty payments to any of their own funds for reforestation such as enrichment planting or funding of pure plantations. Provincial authorities are supposed to have a plan for reforestation in their provinces to use the funds available. The provincial plans are then to be consolidated into a national reforestation plan or projects.

### Strengths

- Some research has been conducted on native species that are suitable for reforestation and or enrichment planting. The IIAM brings together expertise in soil assessment and species cultivation to form a comprehensive research program on various species.
- Some concessionaires, such as TCT, have had positive results from reforestation or enrichment planting with native species. Other companies, such as MADAL, have indicated their interest in reforestation in their concession if they can access their 15 percent levies. Other companies could also be mobilized to set up large plantations jointly with the government of Mozambique to use the funds available and create rural employment.

### Weaknesses

- The national-level policy and guidelines are unclear on how these resources should be allocated to provincial agencies or to the private sector. Nor do they make clear who is responsible for reforestation using the funds collected. The funds are therefore sitting idle instead of being used for the reforestation and rehabilitation of degraded forests or for much-needed research.
- The levy is really just an additional tax on the forestry sector.

### Opportunities

- The government is developing a national reforestation strategy to clarify the role of the 15 percent levy.
- Macromapping of some areas has started. Funds from the 15 percent levy could complement other sources of funding and speed up the macromapping process, given the strong interest in investing in plantations in Mozambique.

## Recommendations

The justification for the levy is weak and administration of its use has been poor. It is merely an additional tax on log harvesting. The government therefore should remove the levy or include it with the royalty payment as part of the royalty review, or account for its use clearly.

If the levy is maintained and accounted for properly, funds should be used for verifiable activities to assist in reforestation such as support of activities through the forestry research component of IIAM. Such activities could include mapping and land-use planning, identification of areas that need urgent rehabilitation, forest research on the growth of different species in different agroecological zones, and viability analysis. High priority should be given to research in provinces offering the highest potential for both native and exotic species.

# 6. Plantation Forestry

## BACKGROUND

Plantation forestry worldwide is becoming the favored means of producing large volumes of industrial wood because uniformity is needed by large-scale industrial processing and harvesting natural forests raises environmental concerns. The global plantation area is about 5 percent of the world's forest area. This five percent is estimated to have produced about 35 percent of global industrial roundwood in 2003, and the role of plantations is expected to increase. The establishment of new plantations continues at a rate of about 4.5 million hectares annually. Most plantations are relatively young, with large areas established in the past two decades. Large volumes of wood will become available to world markets as they reach harvestable age. It is expected that between 50 percent and 75 percent of the world's industrial wood in 2030 will have been plantation grown.<sup>2</sup>

Mozambique has an estimated 7 million ha of land suitable for large-scale plantations. Of this area, 3 million ha has been identified as a national plantation forestry target. Industrial forestry plantations are not new to Mozambique. Plantings, mainly by the government, have been made in the past 40 years. The largest area, 18,000 ha in Manica province, was privatized in 2004.

Plantation forestry is seen as the brightest prospect for the long-term growth of the forestry sector. Mozambique has already attracted several large overseas investors to Niassa Province to plant an estimated net area of 160,000 ha, and other investors are investigating other areas.

The government of Mozambique has commissioned several donor-funded studies relating to plantation forestry.<sup>3</sup> DINATEF is preparing an afforestation strategy to promote large-scale plantations, to increase the contribution of the forestry sector to employment generation and economic growth, reduce the pressure on indigenous forests and contribute toward restoring degraded land.

## SWOT ANALYSIS OF PLANTATION FORESTRY

### Strengths

- Mozambique has ample land that can be leased at low rates.

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<sup>2</sup> Roger A. Sedjo (2003) Biotech and Planted Trees: "Some Economic and Regulatory Issues"

<sup>3</sup> FAO's National Afforestation Strategy: Towards Thriving Plantation Forest Development in 2005 and SAVCOR's Investment Prospective of Forest Plantations in Mozambique in 2005.

- Mozambique already has approximately 25,000 ha of plantation forests, which proves tree growth and solutions to technical issues relating to plantation establishment and management to investors.
- Plantation forests have many attributes of natural forests—they convert water, sunlight, and carbon dioxide into wood, help stabilize steep slopes against erosion, and prevent flooding.
- The continued strong growth in global markets for forest products and Mozambique's favorable position in relation to South Africa and Indian Ocean countries provide strong marketing reasons for development.
- The establishment of plantation forests is labor intensive (commonly between 60 percent and 80 percent of cost is spent on salaries and wages) and can help alleviate rural poverty quickly.
- Plantation forest establishment can provide a useful buffer for natural forests. Plantation forestry normally brings with it effective fire control systems that can help protect natural forests in the vicinity. In addition, the wages earned by communities working in plantation forests usually reduces communities' interest in fire clearance for agriculture and unsustainable fuel wood, charcoal, and pit-sawing activities.
- According to our review of the literature and discussions with stakeholders, the land allocation process is clear and is not an important deterrent to forest plantations. The government of Mozambique has been issuing certificates within 90 days, which is an acceptable length of time considering that decisions are made for large areas and with likely long-term impact. Indeed, there may be a need to balance speedy decisions with adequate community consultation and clarification of land rights to avoid conflicts in the medium and long terms.

## Weaknesses

- Much of the land available in Mozambique is remote from ports and other infrastructure,
- Generally rainfall of more than 1,000mm per year, spread throughout the year, is necessary for fast growth (i.e., of more than 25 cubic meters per ha per year). Much of Mozambique has a four to five-month dry season that will restrain growth and increase fire risk and surveillance costs.
- The physical and chemical properties of degraded soils resulting from many years of annual burning and shifting agriculture will reduce tree growth prospects in many areas.
- Procedures to obtain Investment Promotion Centre approvals and land lease agreements have taken up to two years for recent large projects.
- Plantation forestry is very capital intensive and requires long waiting periods before cash flow becomes positive. Plantation forests therefore probably will be owned primarily by foreign institutional investors.
- There is no national land-use suitability or land-use mapping available in Mozambique. It would be useful as a guide to investors and the government of Mozambique on land allocation decisions for plantations.

## Opportunities

- In the longer term, plantations offer a much better prospect for sustainable development and industrial growth than natural forests.
- Mozambique has the potential to become the largest forest plantation-growing country in the southern hemisphere.
- Major opportunities will develop for Mozambican-owned specialist subcontracting companies to establish, manage, and harvest plantations.
- Out-grower joint-venture schemes with communities are possible and should be encouraged in the afforestation strategy that the government of Mozambique is preparing.

## Threats

- Overseas investors, particularly the more reliable multinational investors, require clear, consistent guidelines on procedures to invest. Unless Mozambique develops a clear roadmap for investment in plantations, it will continue to attract investors interested in land speculation, not afforestation.
- Harmonizing the interests of investors and local communities will often be difficult because the practice of shifting cultivation and uncontrolled burning is still widespread.
- The low cost of land creates a high risk of initial investors' leasing large areas of land, investing little, then selling the plantation to subsequent investors at considerable profit, thus delaying forestry plantation.
- If fiscal incentives are not developed carefully so that they are roughly consistent with incentives in other plantation forestry countries and yet do not compromise long-term government revenue from the sector, either investors will not be attracted to Mozambique or the government will give away more tax revenue than it needs to in order to attract investors.
- Current investors' success will be critical in attracting other large investors. There is a risk that current investors could easily become disillusioned—these initial investors must be fostered and assisted in overcoming unplanned obstacles.

## RECOMMENDATIONS

The government of Mozambique's plantation forestry strategy should include

- A clear roadmap of procedures to be followed;
- Clear information on taxation and other incentives;
- Planning data on which areas the government favors for plantation forestry; and
- Planning for capacity building to share information and monitor and evaluate activity.

The government of Mozambique, taking into account differences in land quality, should also review the rents payable for plantation forestry land to ensure that they are comparable with rents for agricultural and other land uses.



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