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Mozambique Mozambique Country Forest Note

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MOZAMBIQUE COUNTRY FOREST NOTE

SUMMARY

Mozambique has 32 million hectares of natural forests, covering 40% of its area. The predominant forest ecosystem is the miombo, covering approximately two thirds of the total forest area. Other forest ecosystem types include internationally recognized biodiversity hotspots such as the coastal forests in the south, afro-montane forests in central Mozambique, and coastal dry forests in the north; and the second-largest area of mangrove in Africa.

Forests are an important contributor to the country's economy and a source of employment, income and livelihoods in Mozambique's rural areas. The forest sector contributed approximately US\$330 million to Mozambique's GDP in 2011 and directly employed 22,000 people (*data currently being updated*).¹ Forests provide significant goods and services to local communities, including food, energy, medicine, construction materials and non-timber forest products (NTFPs). The miombo woodlands are estimated to contribute with around 20% of household cash income and 40% of the household subsistence (non-cash) income.

Forests provide significant ecosystem services of both local and global value, particularly climate and water regulation, carbon sequestration and storage, watershed protection, reduction of soil erosion, as well as habitat to globally important species. The total above- and below-ground carbon stock in Mozambique is estimated at more than 5.2 billion tCO_2 ,² Forests are the habitat for biodiversity, including endemic species such as the Gorongosa Pygmy Chameleon and the Vincent's Bush Squirrel.

Although Mozambique's forests have tremendous value and unrealized potential, they are being rapidly depleted. The country lost around 267,000 ha of forests every year from 2003 to 2013, representing a historical deforestation rate of 0.79%.³ This led to around 46 million tons of CO₂ being emitted every year into the atmosphere, accounting for 69% of Mozambique's overall GHG emissions. Forest degradation caused by illegal logging of valuable species led loss of revenues to the Government from the sector. Forest loss diminishes biodiversity as well as the country's potential for nature-based tourism.

The Government of Mozambique (GoM) has demonstrated commitment to reducing deforestation and forest degradation, and to improving forest governance. Mozambique's National REDD+ Strategy aims to reduce deforestation by 40% and restore 1 million hectares of forests by 2030. Mozambique's Nationally Determined Contribution (NDC), submitted to the UNFCCC, sets targets for greenhouse gas emission reductions of 23MtCO₂ from 2020 to 2024 and 53 MtCO₂ from 2025 to 2030.⁴ A series of reforms are being undertaken in the sector, including the revision of the policy and legal framework, creation of a new institution for forest law enforcement and moratorium on new forest concessions, and a ban on log exports.

By promoting an integrated landscape management and forest-smart approach to the

¹ FAOSTAT (2011)

² Based on the 2018 National Forest Inventory, NFI Report, DINAF (2018)

³ NFI Report, DINAF (2018)

⁴ Intended Nationally Determined Contribution (INDC) of Mozambique to the United Nations Framework Convention on Climate Change (UNFCCC) (2016). www4.unfccc.int/ndcregistry/Pages/All.aspx. The GoM is in the process of updating the INDC.

promotion of rural development, the World Bank responds to the needs of the GoM while being in full alignment with the Bank's Forest Action Plan. In Mozambique, the Bank focuses on promoting sustainable rural development, for which forests are a key resource. The Bank's portfolio, made up of several ongoing investments, TA, analytical work and results-based payments operations, totals over US\$300 million and provides opportunities for the country's poorest citizens ("bottom forty") through sustainable forest management.

The GoM is showing unprecedented levels of commitment to addressing long-standing issues in the sector through policy reform and investments on the ground. This is a window of opportunity for addressing long-standing issues in Mozambique's forest sector. The Bank is actively responding to this opportunity by assisting the GoM to access Bank financing and to mobilize resources from other development partners, and by providing capacity building and technical assistance, convening a wide range of stakeholders and conducting analytical work that contributes to sound decision making about forest sector policies and management practices.

Further resource mobilization is needed not only to scale up current efforts, replicate them up in other landscapes, but also to expand the effort to mainstream forest issues into other sectoral investments, particularly agriculture and energy.

	Project	Goal	Amount (US\$)	Duration
echnical ssistance	ILFM Programmatic Technical Assistance	Strengthen the GoM institutional capacity in managing forests and landscapes while promoting rural development.	~2M	2016-2022
T ₆ As	FCPF REDD+ Readiness	Advance the REDD+ agenda	8.8M	2012-2018
	MozFIP (Series of Projects)	Improve the practices and enabling environment for forest and land management in targeted landscapes	47M	2017 - 2022
Investments	MozDGM	Strengthen the capacity of target communities and community-based organizations to participate in integrated landscape management	4.5M	2018 - 2023
	MozBio 1 and 2 (Series of Projects)	Increase the effective management of Conservation Areas (CAs) and enhance the living conditions of communities in and around them	46.3M 55M	2015 – 2019 2019-2024
	Sustenta 1 and 2 (Series of Projects)	Integrate rural households into sustainable agriculture and forest-based value chains	80M	2015 - 2021 2019 - 2024
Results- based Finance	Zambezia ER Payments Project	Results-based payments for emission reductions in the Zambezia landscape	Up to 50M	2018 - 2024
al work	Agenda 2035 for the Forest Sector	To develop a strategic long-term vision for the forest sector	0.3 M	2018
Analytic	Land Use Planning for Enhanced Resilience of Landscapes (LAUREL)	Support integrated decision making for landscape management across sectors and levels of government through improved spatial data on land degradation	1.5 M	2017-2019

SUMMARY OF BANK ENGAGEMENT IN MOZAMBIQUE

RATIONALE AND RESULTS EXPECTED

This Mozambique Country Forest Note articulates the status, vision and relevant investment and policies of the forest sector in Mozambique, and presents the integrated landscape management and forest-smart approach that the Bank has taken in the country. It makes the case that strategic investments in the forest and land use sectors are needed to reduce rural poverty and ensure sustainable management of natural resources, particularly forests. This Note is intended to serve as a base for dialogue with the Government, development partners and other stakeholders on the sector and future investments, including for securing additional financing for advancing the programmatic approach.

FORESTS' CONTRIBUTION TO SUSTAINABLE RURAL DEVELOPMENT IN MOZAMBIQUE AND TO GLOBAL ENVIRONMENTAL SERVICES

Mozambique is richly endowed with natural resources, including 36 million hectares of arable land and 32 million hectares of natural forests, of which 27 million hectares are categorized as productive forests. These cover a variety of forest ecosystems, including the coastal forests in southern Mozambique, afro-montane forests in central Mozambique, and coastal dry forests in northern Mozambique. Miombo woodlands represent the most extensive forest ecosystem in Mozambique, comprising approximately two-thirds of the country's forested land. Miombo is the dominant forest type in several northern provinces, including Zambezia, Nampula and Cabo Delgado, where most of Mozambique's poor reside and depend on the woodlands for their basic livelihood necessities.⁵

To secure the contribution of forests to sustainable rural development, an integrated landscape management approach is needed. The threats to forests come from multiple sources and sectors, primarily outside of the forest sector, involving multiple actors through competing demands on the land and resources. The integrated landscape approach requires interventions within and beyond the forest sector, and at various scales – strengthening of the enabling environment as well as investments on the ground. The aim is to achieve multiple objectives such as livelihood diversification, sustainable forest and land management, and climate change mitigation and adaptation. This approach is key to sustainable rural development in Mozambique.

⁵ The Earth Scan Forestry Library. *The Dry Forests and Woodlands of Africa*. Ed. Chidumayo, E N and D J Gumbo, London: Earth Scan Publishing (2010)



Figure 1. A) Forest cover in Mozambique, in two target provinces where the Bank is engaged; B) miombo woodlands, dominated by species from the genera Brachystegia, Julbernardia and Isoberlinia. Source: Financial analysis of the natural forest management sector of Mozambique, UNIQUE (2016)

LIVELIHOODS AND PATHWAYS OUT OF POVERTY

Poverty is concentrated in the rural areas and in the Central and Northern regions, and is strongly related to depletion of renewable natural resources (forests, fisheries and **biodiversity**) low agriculture and to productivity. Zambézia and Nampula, two target provinces of the Bank's natural resources and forest investment portfolio, experience both high rates of poverty and high rates of forest loss (Map 1). growth. Poverty reduction and inclusive particularly in the rural areas, require sustainable use of natural resources. Forests are a key resource for poverty reduction, providing significant goods and services that meet the livelihood needs of the poor and that can foster income growth.

The miombo forests provide essential goods such as food, energy, shelter and medicines for local communities.⁶ Construction materials, e.g. timber for houses, fences and granaries as well as grasses for thatched roofs, can be sourced. Natural fibers provide the raw materials for necessities like baskets, ropes, clothing, nets, brooms, and mats.

Non-timber forest products serve nutritional and medicinal needs and have income-generation potential. Forests also act as a safety net for high poverty levels and forest loss.



Figure 2. Bivariate map of poverty and forest cover loss. The provinces of Cabo Delgado, Zambezia and Nampula are priorities for MITADER. The latter two experience

populations by providing secure access to resources and services critical to food security.

⁶ Campbell, B M et al. Miombo Woodlands – Opportunities and Barriers to Sustainable Forest Management in Observatory (2007)

Wood and charcoal are critical for household energy needs, with biomass accounting for 80% of total energy consumption in Mozambique. While highly utilized in rural areas, it is also the preferred fuel in urban areas, supplying energy for 76% of households in Maputo and Matola. Charcoal is also an important source of income derived from forests. The charcoal industry generates jobs in the rural areas, reaching between 136,000 and 214,000 people.⁷

Agriculture, a major source of livelihood and a predominant land use in rural areas, is highly dependent on natural resources. Approximately 3.9 million households cultivate an area of about 5.1 million ha (out of 36 million ha) of arable land, mostly practicing subsistence agriculture on holdings that average about 1.3 ha.⁸ The most important food crops are cassava and maize, followed by sorghum and rice. Only an estimated 16% of rural households engage in cash crop production. Agricultural value chains can form the backbone of the rural economy as they create jobs, increase rural income, strengthen food security and facilitate better nutrition. Agricultural production benefits from a range of environmental services generated by forests, such as the maintenance of steady water flows. Sustainable agriculture practices, such as conservation agriculture and agroforestry, consider this interdependence and seek to increase productivity while strengthening the resilience of natural resources and the productive systems.

Non-timber forest products (NTFPs) are a significant resource for livelihoods of the rural poor. Approximately 6,850 formal and 189,000 informal small and medium enterprises trade in NTFPs, primarily products such as honey, handicrafts, charcoal and firewood. ⁹ NTFP trade occurs primarily in the informal sector through family- or community-based initiatives, but is an important activity in the sustainable production of forest goods and income generation. There remains a wide range of products that have potential entry to commercialization. A study in Zambézia, Nampula and Cabo Delgado found a wide range of 47 NTFPs with varying degrees of investment need, market potential and research and development requirements. These products cover value chains for food products, essential oils, cosmetics, construction and handicrafts, and hygiene products. Common ones currently explored are baobab, moringa and marula.

Community-based natural resource management is a necessary strategy to promote the dual objectives of sustainable resource management and rural development. The majority of Mozambique's rural communities depend on natural resources for their livelihoods. Active engagement of communities in natural resources management (forests, wildlife, fisheries) has shown to be an efficient and effective tool in ensuring sound management of these resources. Strong local institutions and rules that govern the resource are needed, in particular, devolution of rights to the resource, so that community members can benefit from management. Security of resource access also allows the balance of rights and obligations, tying benefits from the resource to the quality of management. In Mozambique, community rights to land and to natural resources have been strengthened through community land delimitation. As of 2014, the communally-held lands of 427 communities were delimited, corresponding to about 3.5M ha of land under community management.

ECONOMY: JOBS AND WEALTH CREATION

On a national level, forests are an important contributor to the economy, generating both income and employment. In 2011, the forest sector contributed approximately US\$330 million to

⁷ Mozambique National Biomass Strategy, EUEI (2012)

⁸IAI (2012) and Agriculture and Livestock Census (CAP) (2010)

⁹ Nhancale, B. et. al, Small and medium forest enterprises in Mozambique, IIED (2009)

Mozambique's GDP (2.8%) and directly employed 22,000 people.¹⁰ In 2016, the sector contributed approximately 13.7% to Mozambique's GDP.¹¹ Natural capital from forests has grown over time, and constitutes a significant share of natural resource wealth in the country (Figure 3).



Figure 3. Components of natural resource wealth over time, including forests. Source: Database for Changing Wealth of Nations, World Bank (2018)

Mozambique's high-quality timber species are valued in international markets, but more recently have exported mostly to the Chinese market. Exports are mostly in the form of logs (74% of timber/wood exports 2013), followed by sawn wood (21% in wood exports) and chips and particles (remaining 4%).¹² 90% of exports went to China in 2013. The export market is dominated by Chinese companies and is highly selective, focusing on: *Dalbergia melanoxylon* (local name Pau preto); *Pterocarpus angolensis* (Umbila); *Afzelia quanzensis* (Chanfuta) and *Millettia stuhlmannii* (Jambire). In the domestic market a slightly wider range of species is accepted, although preference is still given to the premium species.¹³ Chanfuta, Umbila and Jambire are the most-used species with 85% in domestic wood consumption, followed by Metonha, Metil, Messassa, Missanda and Messinge.¹⁴ The average Annual Allowable Cut (AAC) for precious and first-class species in 2017 is about 446,000m³, based on the recently concluded National Forest Inventory.¹⁵

Presently two forms of commercial harvesting licenses exist for natural forests: forest concessions and simple licenses. The number of forest operators varies annually. In 2017, 193 forest concessions and 624 simple licenses were emitted.¹⁶ Licensees for timber have the right to harvest and transport timber according to the AAC specified in the approved management plan. Management varies considerably with respect to the area licensed to forest operators. The actual productive area can range from 50% to 90% of the whole concession area. Likewise, the AAC varies substantially but is generally very low (< 0.2m³/hectare per year), reflecting the low density of the Miombo forest. Investments in assets and infrastructure varv between the two license types, with forest

TYPE QUANTI		DETAILS
Simple License	624	Duration 5 years Area < 10,000 ha Requirements • Mozambican nationals only • Simple forest management plan Production • Timber: 500m ³ /yr • Charcoal: 1,000 bags/yr regardless of size
Forest Concession	193 1 Charact	Duration 25–50 years, renewable Area >10,000 ha Requirements • Management plan approved by the provincial governor (s 20,000ha) or National Forests Directorate (> 20,000) and periodically renewed • Proof of timber processing capacity (e.g. sawmill) Production • Timber as per Forest Management Plan (FMP) • Chercog not allowed.

licenses and forest concessions. Source: DINAF (2017)

¹⁰ FAOSTAT (2011)

¹¹ World Bank Open Data, www.data.worldbank.org

¹² Global Development Solutions (2016)

¹³ Financial analysis of the natural forest management sector of Mozambique, UNIQUE (2016)

¹⁴Assessment of harvested volume and illegal logging in Mozambican natural forest, Faculty of Agronomy and Forest Engineering (FAEF), University of Eduardo Mondlane (2013)

¹⁵ NFI report, DINAF, 2018

¹⁶ DINAF, 2017

concessionaires usually investing more substantially in heavy machinery to harvest and transport logs, as well as processing facilities (required by regulation for forest concessionaires only). Mozambique has about 200 sawmills, of which 47% are complemented by carpentries.¹⁷

Sustainable forestry operations are not financially viable under current market conditions, with limited incentives for the integration of sustainability measures such as silviculture, reforestation or valueadded processing. Current unsustainable practices remain profitable, thus there is little incentive to improve management or increase the value of the resource locally. Studies on the economic analysis of the value chain of wood have confirmed that there is net profit along the entire value chain with prices varying only by product and point of sale, estimated at US\$32/m³ in the forest, US\$44-81/m³ of sawn timber for the domestic market and US\$61-115/m³ of sawn timber for



Figure 5. Current timber value chains. Source: Adapted from UNIQUE (2016).

Box 1: Actors in the forest landscape – Private sector The private enterprises in the forest sector are predominantly small and medium businesses (employing less than 50 people), which account for 95% of formal sector businesses and 99% of informal sector operations.¹⁸ Forest enterprises operate across different stages of the timber value chain. There are timber producers, primary processors (sawmills) and secondary processors (carpentry workshops, furniture factories).

National and international forest enterprises operate in Mozambique. Obtala Limited is one large international firm operating in Zambezia and it has a MoU signed with FundInvest, SA for the export of timber. There are about 120 Chinese companies across the country, including concessionaires and traders. Larger national enterprises include LevasFlor and TCT Indústrias Florestais. These companies tend to have more integrated value chains, incorporate sustainability in their operations and engage in initiatives beyond timber that involve local communities. LevasFlor is the only FSC-certified company in the country. Smaller national enterprises tend to be focused on short-term gains, with little sustainability considerations integrated into management.

Forest operators are organized into associations at several levels, although the sector is not sufficiently consolidated and representativeness of the associations is debatable. At the national level, the Mozambican Association of Timber Operators (AMOMA) engages frequently with the Government.

the export market.¹⁹ This illustrates that it is equally profitable to sell logs to sawmills or to sell sawn timber, thus discouraging operators from doing any processing. This profit scenario is based on the common case that no costs are incurred for silvicultural treatments or practices that could add to the sustainability of the operation.

Improving the sustainability of the sector will require interventions in three areas: strengthening the enabling environment; supporting improved management practices; and developing value chains and markets for a new range of products. Government capacity needs to be strengthened to implement and monitor forest management standards and regulations, to curtail

illegal logging (and associated unfair competition), and the licensing system reviewed (including with the implementation of 'chain of custody' systems. Harvesting volumes need to be licensed

¹⁷ Global Development Solutions (2016)

¹⁸ IIED (2009)

¹⁹ UNIQUE (2016)

based on sustainable yields and future stocks (which in turn should be ascertained with the best available science). Sustainable forest management practices, potentially officially certified by third parties, need to be promoted and private operators provided incentives and technical support towards sustainability, and value addition. Private sector management decisions need to be based on sound data and planning, maximizing forest utilization and integration of silvicultural practices. New, viable value chains and markets should be explored, including for value-added products, certified timber, and a wider range of species not currently marketable. Markets for certified wood should be explored. Investments in value addition and infrastructure can sustain or even raise profitability despite additional costs, if accompanied by technical know-how, access to finance, and market development. As show in Figure 5, the current timber production system is limited in terms of the types of products and export destinations, with little investment in processing facilities for higher-value wood products.

In terms of utilized wood volume, charcoal is probably the most important product of Mozambique's Miombo forests. The charcoal value chain is highly important for local communities, although the charcoal business is largely informal– only about 5% of the charcoal sector is thought to be formal.²⁰ Considering the instance where license fees and the reforestation tax is not paid, the net revenue for a ton of charcoal ranges from about US\$5-21, depending on whether the point of sale is along a forest road or in urban centers. By law, charcoal producers and transporters or wholesalers are required to have a license. For producers, this costs 5Mt per 70kg bag produced and a producer can legally produce a maximum of 1,000 bags per year (totaling about US\$80). Most producers, however, do not have licenses and operate informally. Production is diffuse and decentralized, and enforcement of even the limited rules in place hardly occurs. Transporters have a higher tendency to have license or carrying volumes exceeding the permitted volumes are fined about US\$667. Current charcoal value chains are therefore unsustainable and a major driver of degradation. First, second and third class species are often harvested, which the law prohibits.

NATIONAL WOOD CONSUMPTION

Domestic wood consumption was estimated to be around 414,000m³ in 2012. Wood consumption in the urban centers in 2012 was estimated to be around 257,000m³ of logs equivalent. Wood consumption of carpentries annexed with sawmill was about 7,000m³ of logs equivalent.²¹ Consumption of native wood species in rural areas was estimated to be at least 150,000m³. The commercial transactions involving raw material for the carpentries in urban areas, excluding sawmill annexed carpentries, was estimated to reach at least 2.25 billion meticais/year (about US\$75 million). Domestic consumption constitutes about 90% of total production, ²² which includes school furniture, parquet, railway sleepers, electricity poles, panels, construction materials and crafts. Domestic consumption of processed wood products is mainly based on imports from South Africa and Portugal (furniture, posts, panels). In 2013, Mozambique imported US\$76 million in wooden furniture and chairs, US\$16 million of slabs, panels, plywood, and ceilings, US\$9 million of plywood, laminates; US\$8.5 million doors and window frames, US\$6 million particle board; and US\$5 million boxes and pallets.²³

COMMERCIAL FOREST PLANTATIONS

²⁰ Sustainable Charcoal Value Chain Mozambique, Energy Engineering Solutions (2014)

²¹ FAEF (2013)

²² Global Development Solutions (2016)

²³ Global Development Solutions (2016)

Despite a considerable forest stock, Mozambique is an importer of timber products, while the supply gap for timber products continues to grow (Figure 6). Domestic timber markets are expanding, with the fast-growing construction industry and expansion of the electricity grid being the largest consumers of timber in the country. The current domestic timber supply is not sufficient to cover these growing demands, making it necessary to import poles for transmission lines and construction timber. Analysis projects that the consumption of harvested wood products (sawn wood, wood-based panels, paper and paperboard, other industrial roundwood will grow from 2.4Mm³ in 2014 to 6.3Mm³ in 2040. The projected industrial roundwood supply gap is 3.7Mm³ by 2040.²⁴ These dynamics highlight an opportunity to improve production capacity and quality of natural forest products, and also the potential for commercial plantations. Furthermore, plantations can reduce the pressure on natural forests to meet the demand for timber products.



Figure 6. Expected demand for harvested wood products in 2040 and the corresponding productive forest area needed. Source: Harnessing the Potential of Productive Forests and Timber Value Chains for Climate Change Mitigation and Green Growth: Opportunities for Private Sector Engagement, UNIQUE (2016)

The plantation sector in Mozambique is promising and has been identified as a focal area for economic development by the Government. The National Reforestation Strategy lays out a target of restoring 1 million ha by 2030. An estimated 3.5 million ha are considered suitable for forest plantations in the central and northern areas of the country.²⁵ Mozambique has adequate conditions

for expanding multipurpose plantation forestry, including a growing demand for forest products and availability of land. Increasing the country's forest plantation area from the current 60,000 hectares to more than 1 million hectares in 2030 would have the potential to create 250,000 jobs and produce US\$1.5 billion worth of manufactured products and exports.²⁶ Mozambique is well

Box 2: Reforestation – Multiple use

The GoM has promoted reforestation for multiple uses. The National Reforestation Strategy (2009) identifies the roles of reforestation for several ends: energy, conservation and community use. Mozambique has signed up to the African Forest Landscape Restoration Initiative (AFR100), a regional land restoration initiative, and pledged to restore 1 million hectares of degraded lands.

²⁴ A historical, 10-year analysis of wood consumption, population growth, and industrial sector GDP resulted in correlation factors that were used for projection of HWP consumption until the year 2040. Policy assumptions were quantified to develop a green growth scenario for consump-tion of HWP until 2040. Source: *Harnessing the Potential of Productive Forests and Timber Value Chains for Climate Change Mitigation and Green Growth: Opportunities for Private Sector Engagement.* UNIQUE (2016)

²⁵ National Reforestation Strategy, MITADER (2009)

²⁶ National Reforestation Strategy, MITADER (2009)

Box 3: Portucel and IFC

Portucel is the largest investment in rural areas in Mozambique. The company has a licensed area (DUAT) of about 356,000 ha of which 246,000 ha is expected to be planted. Portucel is developing Eucalyptus plantations in a mosaic landscape approach, with forestry blocks interspersed with houses, agricultural fields, high value conservation areas and other protected uses. Portucel's firstphase investment has received approximately US\$32.0 million from IFC, including advisory services focused on their community development program that covers 6,000 households and 115 communities. The company has planted 13,200 ha planted so far, and faced challenges in accessing land to expand the planted area. The company is now looking into other business models, including outgrower schemes.

positioned to supply the markets in neighboring countries in Southern and Eastern Africa, and has a comparative advantage accessing key markets in Asia.

However, key conditions for investment production costs, market access and the enabling environment – can be improved to increase the business climate and competitiveness of the sector. Production costs are affected by growth potential, land access and labor availability. Natural, climatic conditions and geography lead to low productivity per hectare of 20 to 35 m³ per ha per year, lower than in neighboring South Africa and much lower than the highest rates achieved in Latin America. Growth rates can

however be increased significantly with proper research. The high and growing domestic demand for wood products provides a domestic market, but an environment must be created to enable the sector to produce at internationally comparable costs. Managing company-community relations is a challenge – companies have to undergo long and intense negotiations with communities in order to get a land use license (DUAT) and the correct procedures for this process remains a tenuous subject and lacks government orientation.²⁷ Investors have reflected on the need for clarity on the rules on forest conversion, rights of companies to access land, and the process for obtaining a DUAT. Such risks around land have presented a deterrent for investors. Mozambique also currently lacks skilled labor and adequate technologies. Developing a thriving planted forests sector is a long collaborative process that will require inputs and commitment from all stakeholders: the public sector to improve the enabling environment and framework for investments, and private actors including smallholders to provide the investments. Portucel and IFC are collaborating with the GoM and World Bank through the planted forest grant scheme under MozFIP, in particular in the design of technical assistance models to outgrowers.

BIODIVERSITY AND TOURISM

The link between biodiversity conservation (for which forests are key), tourism and poverty alleviation is highly relevant in the context of Mozambique. Conservation areas (CAs) serve as key assets for development of tourism and poverty alleviation, and tourism is considered a key growth sector offering high employment potential, particularly in rural areas. Tourism is the third largest investment sector in Mozambique. The sector in particular can benefit the poor as it tends to employ more unskilled labor, while nature-based tourism is based on cultural and natural resources that the poor possess and personify. Pro-poor tourism will increase the perception of the value of biodiversity resources and lessen pressure on the CAs. In addition, CAs can be an effective strategy for forest protection, as in the case of Gilé National Reserve – deforestation within the Reserve was found to be lower than the area outside of the Reserve's boundary (Figures 7 and 8). Tourism contributed to 3.2% of Mozambique's GDP in 2013 and is expected to increase, while visitor arrivals are expected to grow by 8% annually. Given the mutual dependence of tourism and

²⁷ Improving the Business Climate for Planted Forests in Mozambique, UNIQUE (2016)

biodiversity, targeted policies and investments that also lead to conservation are important to ensure that sustainable, pro-poor tourism is achieved.



Figures 7 and 8. Forest map of Zambézia province, showing low deforestation in the Gilé Reserve. Deforestation rates in the Reserve and districts in the province show the contrast in and outside of the Reserve's boundaries. Source: *Zambezia Integrated Landscapes Management Project Background Study*, EtcTerra (2016)

ECOSYSTEM SERVICES FROM FORESTS

Forests provide significant ecosystem services of global value, particularly carbon sequestration and storage and biodiversity habitat. Due to its unique ecology, miombo has globally-significant climate mitigation potential. Dominated by species from the genera Brachystegia, Julbernardia and Isoberlinia, miombo grow slowly due to low rates of nitrogen and phosphorus uptake (constrained mainly by soil moisture, i.e. rainfall) with net primary production capped at 900-1,600 g m² per year. Miombo have harden) that resists moisture loss and the leaves have high tannin content. This constrains use by herbivores; only large ungulates, like elephants, can process the material. Unless completely uprooted, miombo regenerate readily by coppice from stumps and rootstocks after disturbance. Given that dry season fires on average burn a third of the miombo landscape every year, this resilience is exceptional.²⁸ For this reason, the woodlands can act as a stable carbon sink. Miombo forests constitute important reservoirs of above- and belowground carbon (at 227 total carbon dioxide $(tCO_2)/hectare^{29}$) and have significant potential as a carbon sink. The total above- and below-ground carbon stock in Mozambique is estimated at more than 5.2 billion tCO₂.³⁰ This significant carbon store is central to the country's climate change mitigation commitments. Forests also reduce the probability and effect of natural disasters, as has been documented in the Licungo (Zambezia) watershed. Hence, well-managed forests can increase local communities' resilience to climate risks.

The woodlands also play an important role in water regulation by maintaining water flow and quality and protecting land from soil erosion. As most of Mozambique's major river basins are either located or have most of their headwaters in the forests, hydrology underpins the country's agricultural productivity and enhances the adaptive capacity of rural communities in response to

²⁸ Scholes, M C and M O Andreae. *Biogenic and Pyrogenic Emissions from Africa and their Impact on the Global Atmosphere* in Ambio. 29(1) (2000)

²⁹ Study on the Zambezia Integrated Landscape Management Program, EtcTerra (2016), figures being updated.

³⁰ From *Linha de Referência, Monitoria, Relatório e Verificação para o REDD+ em Moçambique*, Sitoe et al. 2013, based on the 2004 national forest inventory, using IPCC Tier 1 calculations.

climate-related stressors such as drought and floods.⁵ Forests have a key role in filtering water entering streams, playing a key role in water quality and quantity.

The forest ecosystems are internationally recognized biodiversity hotspots and habitat for a variety of plants and animals, including birds and large terrestrial mammals, some of which are endangered and endemic to Mozambique. Wildlife numbers of certain species, such as elephants, have declined and continue to be under threat from poaching. At the same time, as humans move into elephant range and habitat, the risk of human-wildlife conflict increases, which leads to further threats to their numbers.

Box 4: Unique forests of Mozambique - the afro-montane Mabu forest and coastal forests of Northern Mozambique

Scientific expeditions to Mt. Mabu, a montane inselberg in Northern Mozambique led to the discovery of a 7,880 ha block of undisturbed rainforest of a forest type not well represented elsewhere. Ten new species (plants, mammals, reptiles and butterflies) have been discovered based on biological surveys of only 20% of the forest, hence it is expected that significantly more species will be found with further investigation. Mt Mabu is particularly important for rare birds and it supports a variety of endemic and restricted range species. The forests on Mt Mabu store significant forest carbon.³¹

The coastal forests of Eastern Africa – stretching along the Indian Ocean coastline from Somalia to Mozambique and the largest remaining extent of which is reported to be found in Mozambique – are considered by Conservation International to be a global biodiversity hotspot. This is an area of high diversity and endemism under increasing threat. A study conducted in Cabo Delgado in 2011 concluded that the high proportion of range-restricted species, the limited extent of the forest patches, and the increased threat to the area show these forests to deserve international conservation concern.³² A landscape or ecosystem-level conservation response is needed to conserve the full range of forest types and species.

³¹The discovery, biodiversity and conservation of Mabu forest—the largest medium-altitude rainforest in southern Africa, Bayliss et. al., Oryx, 48(2), 177–185 (2014)

³²Coastal dry forests in northern Mozambique, Timberlake et. al, 2011, Plant Ecology and Evolution 144 (2): 126–137 (2011)

Figure 9. (Top L, clockwise) Mangroves in Quirimbas, Cabo Delgado; Mushrooms in the Mt Mabu forest; Aerial view of Bazaruto National Park, a key area for nature-based tourism; Fishermen taking in the day's catch, an important livelihood source in the coastal regions. Source: World Bank and The Guardian (2017)



Mozambique has the second-largest mangrove cover area in Africa. Mangroves boast a diversity of marine life and are vital for their role as a highly productive nursery for fish and prawns, cultivated by coastal communities for subsistence and profit.³³Approximately 850,000 households, or 20% of the population, rely on fisheries for some part of their income and employment in the sector has increased by 260% since 2002, due in part to the development of processing and commercialization. Fish is a key component of the Mozambican food basket, comprising 27% of protein consumption. Furthermore, mangroves enhance neighboring ecosystems like coral reefs and seagrass beds, offering opportunities for eco-tourism.

CURRENT CHALLENGES AND OPPORTUNITIES FOR FORESTS IN MOZAMBIQUE

³³ World Wide Fund for Nature (WWF). *East African Mangroves* in The Global 200: The most outstanding and representative areas of biodiversity (2017).



CHALLENGES

Although Mozambique's forests have tremendous value and potential to maximize benefits locally and globally, they are being rapidly depleted. The country has lost around 267,000 ha of forests every year from 2003 to 2013, which represents a historical deforestation rate of 0.79%. This led to around 46 million tons of greenhouse gases being emitted every year into the atmosphere, which represents 69% of Mozambique's overall emissions. Forest loss signifies a loss of biodiversity as forests represent important habitat for wildlife in Mozambique, including endemic species.

Forests are lost because of a combination of direct and indirect drivers linked to several sectors, primarily small-scale agriculture, biomass energy, and unsustainable forest management. Forest conversion to agriculture is the dominant driver of deforestation (65% of total deforestation), led primarily by shifting subsistence cultivation (slash-and-burn agriculture, often resulting in uncontrolled spreading of fires), followed by urban expansion and infrastructure development (12%). As for forest degradation, the key drivers include forest extraction for biomass energy (particularly charcoal for urban use), and unsustainable timber harvests (including through illegal logging) to supply domestic and international markets.³⁴

³⁴ Identificação e análise dos agentes e causas directas e indirectas de desmatamento e degradação florestal em Moçambique, Winrock and CEAGRE (2016)



Figures 10 and 11. Deforestation drivers. Source: Winrock and Ceagre (2016). Deforestation in Mozambique from 2003-2013. Source: *Mozambique's FREL for Reducing Emissions from Deforestation in Natural Forests*, MITADER (2018)

The indirect drivers that contribute to deforestation and forest degradation in Mozambique include land tenure insecurity, inadequate land use planning and demographic pressure. Land tenure insecurity discourages investments in longer-term assets with limited to no immediate returns, including forests and other natural resources. This dynamic is made worse by demographic pressure, particularly when agriculturally based population density increases in and close to forested areas as it is occurring in several areas throughout Mozambique.

The forest sector in Mozambique suffers from chronically weak governance, further fueling forest loss. A participatory forest governance assessment was conducted in 2016 in two provinces using the PROFOR-FAO tool (see Results in Figure 12). The assessment revealed a consensus among stakeholders that governance is weak, particularly around institutional capacity and the implementation of laws and regulations. Forest law enforcement is absent and forest crimes often go unpunished, permitting widespread illegality. Forest sector policies contradict those in other sectors, while measures to combat corruption are not systematically applied. Stakeholder participation in planning and decision-making in the sector is low, particularly the inclusion of women. This has resulted in limited trust among stakeholders and limited benefit sharing with local communities. Illegal logging is widespread. Forgone tax revenues were estimated at US\$540 million between 2003 and 2013 from unreported wood exports (mostly logs), mainly to Asian markets.³⁵ The Ministry of Land, Environment and Rural Development (MITADER) conducted a separate assessment of forest operators³⁶ that revealed a low level of compliance with minimum forest management legal, environmental and social standards.



Figure 12. Results of the forest governance assessment, by Pillar of the assessment framework

Current forest management practices undermine the sustainability of the resource base.

³⁵ Avaliação das perdas de receitas devido a exploração e comércio ilegal de madeira em Moçambique no período 2003 – 2013, WWF (2015)

³⁶ This evaluation was conducted in 2016 with involvement of the local university and civil society groups. Cofinanced by the World Bank and WWF, it serves as a key indicator for the sector.

Current practices focus only on a few species and the volumes harvested of these selected species are not sustainable. The resource degrades and devaluates gradually. Furthermore, investments into silviculture are virtually absent and efficiency of operations is low. Most businesses do not employ forest technicians, and use outdated techniques and technology; except for few operators making serious efforts to improve efficiency, recovery and value addition. The Government's capacity to enforce the law is limited. The forest licensing system is outdated and cumbersome, basic information on the sector is not publicly available. Weak governance further hinders effective public participation and social accountability, which leads to non-inclusive decision-making around natural resource use and the erosion of trust among stakeholders.

Another challenge to sustainable resource management is the low levels of land rights registration. The land administration agency's capacity to issue and monitor the use of DUAT as well as to register land occupations is low, a problem that is partly due to insufficient human and financial resources. Community delimitation efforts have been delivered for several years through financing provided by bilateral donors, but with elevated costs and limited impact (so far, a total of 950 communities have been delimited, and about 500,000 DUAT have been recorded). The lack of, or inadequate, decentralized registration services at district level, with poor or no coordination between relevant actors, has inhibited efforts to systematically execute the cadastre and register land rights. Almost all land administration and management services, both in municipalities and in rural areas, do not provide effective administrative responses and are not accessible for most citizens. Acquiring a DUAT is lengthy and costly, and it can involve many steps over several years. There is little direct communication, formal integration and harmonization of systems and procedures. The absence of a common methodology has led to mixed results of previous efforts, an ineffective control of the process of occupation and distribution of land resources by public institutions. This has contributed to an increased level of land-related conflicts and the expansion of the informal land market, which is particularly dynamic in growing urban centers.³⁷

The benefits that communities can gain from forests are limited, exacerbated by the lack of full recognition of rights to natural resources. The law mandates that communities residing within licensed timber areas receive 20% of the logging taxes paid to the Government by the forest operators. 50% of the value of fines collected from forest law enforcement should also be shared with community members who participate in enforcement activities. However, communities receive little to no benefit either due to unlicensed wood harvesting, the cumbersome process and weak enforcement of the benefit sharing mechanism. There are 1089 communities that receive a portion of the 20% of taxes collected from forest licenses.³⁸ There is also state reluctance to cede authority over natural resources to local communities. Even when rights are conveyed, local communities are often not sufficiently capacitated to govern, manage and develop their resources. Unfortunately, the general perception of benefits from resources is the sharing of revenues, rather than creating economic benefits and well being through active engagement in management. Communities also have limited negotiating power with third parties. Participation of local communities and community-based organizations in decisions related to resource management is also weak, leading to their limited influence in resource management. This is due to a combination of institutional weaknesses, low expertise and technological capacities, lack of partnerships and finance.39

 ³⁷ Mozambique Land Administration Project (Terra Segura), World Bank Project Appraisal Document (2017)
³⁸ DINAF annual report (2015)

³⁹ Community Based Natural Resource Management: Reformulating and strengthening current approaches in *Mozambique*, World Bank policy brief (2016).

Intersectoral collaboration and coordination can be greatly improved. Even as the landscape approach is gaining importance, there is much room for coordination amongst sectors at the policy level and in initiatives on the ground. An example is the case of forest law enforcement, where coordination among the forest administration, law enforcement agency, police and customs is paramount, yet this collaboration is not effective. Another important instance of collaboration is that between MITADER and the Ministry of Transport on the integration of spatial forest data into the cross-ministerial national database managed by the Ministry of Transport. Or yet, the coordination between agriculture and forestry activities, as future commercial agriculture development has significant potential to reduce forest cover.

OPPORTUNITIES

The current Government has created an institutional set up that places strong emphasis on reducing rural poverty and sustainable natural resource management. The Ministry of Land, Environment and Rural Development (MITADER) was established with a broad mandate over land, forests, rural development, climate change, environment and conservation, facilitating cross-sectoral coordination. MITADER established the National Sustainable Development Fund (FNDS) to mobilize and manage domestic and international financing, including climate finance, and to foster activities on rural development and sustainable natural resource management. FNDS has provincial units, currently in Nampula, Zambezia and Cabo Delgado. MITADER adopted the National Sustainable Development Program, aimed at improving the livelihoods of rural

populations and the management of natural resources through promoting small and medium enterprises in the rural area, in value chains linked to agriculture, forestry and tourism. Forests are recognized as an instrument for poverty reduction under this Program.

The Government's high-level priorities and targets

Box 6: Actors in the landscape – Government Currently, the management of productive forests fall under the jurisdiction of two ministries— the Ministry of Land, Environment and Rural Development (MITADER), which through its National Directorate of Forestry is responsible for the use and conservation policies of natural forest resources and wildlife in so-called productive forests, multiple use, forest conservation and carbon stock; and the Ministry of Agriculture and Food Security (MASA) responsible for the establishment, management and administration of forests planted for productive or conservation purposes. Although MITADER is responsible for managing the forest resource for energy purposes, the country's energy development policies and strategies are under the Ministry of Mineral Resources and Energy (MIREME).

expressed in their Five-Year Plan (PQG 2015-19) recognize the importance of rural development and forests. Priority V emphasizes sustainable and transparent management of natural resources and the environment, which includes improving land-use planning and strengthening the implementation of these land-use plans. Land tenure security is described in PQG 2015-19 as key to promoting the rights of local communities and their livelihoods and a more business-enabling environment in Mozambique.

The current Government has also publicly recognized forest-related challenges and shown commitment to addressing them. MITADER has been implementing a forest sector reform since 2015 to address challenges in the forest sector, including institutional changes and a review of the national forest policy and legal framework (Box 7) The World Bank has closely followed and supported these reforms, and engaged in policy dialogue including just-in-time technical advice on these measures. The momentum around the forest sector reforms led the Bank to significantly increase its support to the sector. As the largest investment in the forest sector, MozFIP is providing the financing needed to implement the reforms.

The Government has also set goals for carbon emission reductions. Mozambique submitted its

Nationally Determined Contribution (NDC) to the UNFCCC in 2016. The NDC targets for total reductions are 23MtCO₂ from 2020 to 2024 and 53.4 MtCO2 from 2025 to 2030. The NDC is being updated in 2018, with the National Climate Change Adaptation and Mitigation Strategy guiding NDC implementation. In 2015, MITADER approved the National REDD+ Strategy, which aims to reduce deforestation by 40% and to restore 1 million hectares of forests by 2030, equivalent to annual emission reductions of 170MtCO₂. The creation of a National Forest Monitoring System was concluded in 2018, capable of monitoring forest cover and measuring, reporting and verifying (MRV) emission reductions. This included the submission of

the Forest Reference Emissions Level (FREL) the UNFCCC. The FREL is the baseline against which to assess Mozambique's performance in climate change mitigation through forests as well as the impact of polices and measures taken by the Government to achieve NDC goals. Mozambique is currently developing a methodology to calculate emissions from forest degradation.

Box 7: Forest sector reforms under MITADER

- Revision of the national forest policy, strategy and law (ongoing)
- **Two-year suspension** on new licenses and concessions (Decreto 40/2015)
- Nation-wide audit of licensed areas (forest concessions and simple licenses) (2015)
- Moratoria on exploration of *pau ferro* for five years (DM 10/2016)
- New law on timber exports, including log export ban on all native species (Law 14/2016)
- **Operação Tronco** (2016), an intelligence and enforcement operation that led to massive timber seizures (reported 150,000m3 and estimated fines of more than US\$1.4M) that was a signal of government action to confront illegal logging
- **Transfer of forest law enforcement mandate** to the newly-created National Agency for Environmental Control (AQUA) and the National Enforcement Service (*Serviço Nacional de Fiscalização*) (ongoing)
- New **export regulation of processed wood** (Decree 42/2017), to ensure better control of the timber export business and promote greater added value to timber
- Creation of **FundInvest** (2017, published in BR 172 III Serie), an entity affiliated with the State to facilitate the export of processed timber
- **Minimum standards for sustainable management** (2018), to be translated into a legal instrument for evaluation of operators' performance to inform any suspension of licenses, with potential for a national certification standard to be developed.
- Update of the **National Forestry Inventory** (2018), which was critical input to the definition of the AAC for 2018. The NFI should be used to inform the allocation of forest licenses and potential moratoria on certain species.
- Update of the National Forest Program (2018)
- Revision of the licensing framework (2018)
- **Exploration ban** on nkula, pau ferro and mondzo, **export ban** on chanfuta, umbila and jambire (Despacho 29/3/18)
- Revitalization of the National Forum on Forests (2018)

The REDD+ Decree was approved in April of 2018, creating the legal basis for and establishing the norms and principles that will govern programs and projects that promote emission reductions and enhance carbon stock.

Having recognized systematic community land delimitation as part of a wider strategy to promote sustainable rural development, the Government has been clarifying land rights. The Government's *Terra Segura* program aims to register five million individual parcels and delimit four thousand communities. The World Bank is supporting this goal through the MozFIP and Sustenta projects, as well as through the MozLand project. The delimitation process comes as a packet of interventions, often involving the participatory preparation of local land use plans,

Community Development Action Plans (CDAPs), ⁴⁰ the creation of a Natural Resources Management Committee, as well as capacity building activities for the community. The legal registration of land use rights is a first step towards the protection of communities and individual land rights, and is seen as a fundamental criterion for engaging in CBNRM initiatives, particularly if there is a trajectory towards attracting investors.

There are also ways forward to increase the benefits to communities from forests, beginning with key stakeholders recognizing that CBNRM is a key element of a national rural development strategy. The recently concluded 5th National Conference on Community-Based Natural Resources Management, financed by the Bank, consolidated a national strategy and Action Plan for advancing CBNRM in the country. Recommendations include creating an autonomous institution dedicated to CBNRM that could institutionalize long-term capacity building for communities and pursue long-term partnerships for communities to harness the market potential for forest and agriculture products. To do this, the Government should endorse a coherent package of interventions with well-tested tools and approaches that can be replicated and scaled up in CBNRM initiatives nation-wide. The MozDGM project (see Box 8) will serve as a vehicle of financing through which the Action Plan will be implemented.

Box 8: Actors in the Landscape – Civil Society

Civil society organizations have the essential responsibility of holding the government accountable. NGOs are also the main implementers of CBNRM projects that involve working with communities. There are few civil society organizations in Mozambique with significant direct experience in forest management and governance. The majority of these organizations are focused on community development aspects, such as on community organization and planning, and promoting activities for livelihoods and income generation—but which are often related to resource management. They are key institutions for the continued strengthening of community capacity for CBNRM. The Bank has close partnerships with many of them, such as the World Wildlife Fund for Nature (WWF) Mozambique, Iniciativa para Terras Comunitárias (iTC), Micaia Foundation, Radeza and ORAM.

The **Multi-Stakeholder Landscape Forums** in Zambezia, Cabo Delgado and Nampula are important spaces for dialogue and landscape-level decision-making among a diverse set of stakeholders, with a large role for civil society. The forums have structured thematic working groups to discuss technical issues of priority in the landscape. In Zambezia, the platform led to the creation of a civil society working group that signed an MoU with Portucel to provide advisory services on social and environmental issues.



The **Mozambique Dedicated Grant Mechanism for Local Communities Project (MozDGM)** is a project within the ILFM portfolio managed directly by and for communities, community-based organizations (CBOs) and civil society organizations (CSOs). Led by WWF Mozambique and a National Steering Committee comprised of civil society members, MozDGM is an unprecedented opportunity focused on strengthening the capacity and participation of communities, CBOs and CSOs in natural resource management and that can influence a national approach to capacity building.

In recent years, Mozambique has been able to mobilize substantial financial resources for forest and natural resource sector management and improvement. There is potential for this to increase, and continued resource mobilization is necessary to ensure that these efforts can be sustained. Mozambique's Forest Investment Plan (2015) laid out a large-scale, phased framework

⁴⁰ Also known as *Agenda Comunitárias*, these action plans express the aspirations of communities (including different social groups) about their development in a predefined period and prioritize the various initiatives the communities believe are possible within their delimited area. This provides the basis on which a community negotiates its interests or intentions/plans with different actors (e.g. NGOs and investors).

and direction for expanding investments outside and within the sector, which furthers the programmatic landscape approach. The Investment Plan considers the existing allocation from the FIP and other World Bank operations as the initial phase of the framework, and subsequent phases would expand FIP and sector-related activities to other landscapes, as well as deepen and sustain existing activities and policy reforms. The Investment Plan, coupled with the Bank's convening and technical support, led to the creation of the Multi-Donor Trust Fund for Integrated Forest and Landscape Management that has potential to attract other development partners. While significant resources have already been dedicated to the Investment Plan, to implement it fully across the entire country would require additional resources of well over 500 million USD. The phased approach is designed to demonstrate the strength of the institutional and implementation structures to deliver concrete results in the sector, facilitating the leveraging of additional finance from other international instruments and donors.

The Bank's Integrated Forest and Landscape Management portfolio, in support of the GoM's sustainable development agenda, provides a platform for drawing together a diverse range of financing sources and continues to grow (Figure 13, next page). There are also expanding opportunities for climate finance, the commitment from the FCPF Carbon Fund being a first vote of confidence of demonstrable results in emission reductions. Mozambique is actively seeking opportunities under the Green Climate Fund, a key resource identified early in the Investment Plan. Another source of financing is the private sector. Private actors are providing increasing investment in sustainable resource management through partnerships, both with the public sector and with communities.

Box 9: Actors in the Landscape – Academia

The forest sector counts on the support of local universities as well as national and regional research agencies. Universities that partner on Bank projects include Universidade de Eduardo Mondlane (UEM), UniZambezi in Zambezia, and UniLurio in Cabo Delgado. Instituto de Investigação Agrária de Moçambique (IIAM) is the main research institution on agroforestry. The role of academia could be expanded to provide applied technical assistance and capacity building to other actors in the sector.

THE WORLD BANK'S ENGAGEMENT: SUSTAINABLE RURAL DEVELOPMENT THROUGH INTEGRATED LANDSCAPE MANAGEMENT

The World Bank's Environment and Natural Resources Management engagement in Mozambique, through the Integrated Landscape and Forests Management (ILFM) portfolio, adopts a programmatic landscape approach and promotes forest-smart investments. The integrated landscape approach recognizes particularly the link between agricultural development and natural resource management, both in terms of institutional management and implementation on the ground, so as to combine investments in a geographic area (landscape) to maximize impact. The central focus of engagement with the Government of Mozambique is *sustainable rural development*, which captures the programmatic approach well and is an important topic for the national agenda. In this way, the Bank's support is integrated with the Government's strategic priorities and investments are mainstreamed into GoM programs, in line with approaches advocated in the Forest Action Plan.

The GoM and the Bank have established a high-level, rapidly growing partnership to promote rural development and sustainable management of natural resources. The graph below demonstrates the evolution of the Bank's engagement and illustrates the blending of several sources of financing, including a robust IDA allocation along with trust funds, most of which related to climate finance (CIF, FCPF, GEF). An innovative financing instrument being used is performance-based payments for emissions reductions (REDD+). Mozambique is also one of the few countries that has implemented a climate change Development Policy Operation which achieved some significant progress on key policy initiatives. This partnership also leverages financing from the private sector, including from the IFC (see Box 10).



Figure 13. Evolution of financing and sources in the Bank's support to the GoM on integrated landscape and forest management

Client orientation is at the heart of this landscape approach, promoting a new way of doing

Box 10: Maximizing Finance for Development in the Bank's GoM ILFM support

- Strengthening commercial resource mobilization for agriculture and forestry value chains: A matching grants scheme under the US\$80 million (IDA) Sustenta project provides financing to 'emerging commercial smallholders'. It enabled Mozambique's National Investment Bank to establish in 2017 a concessional credit line to co-finance smallholders in climate-smart agriculture and forestry.
- Leveraging private equity and technical expertise to enable PPP in protected areas management. Renowned multinational operators have engaged with the GoM on PPP for Protected Areas management, in the Bazaruto Archipelago Park, and the Maputo Special Reserve. They have brought over US\$20 million from private resources and technical expertise (including on nature-based tourism), supported by the US\$46 million MozBio project.
- **Promoting community-private joint ventures for natural forest management and plantation.** The Uapé community was awarded a forest concession and partnered with an international company (Obtala) to have access to market and timber processing technology and expertise. MozFIP (US\$47 mi) established a performance-based commercial plantation scheme to incentivize smallholders to engage in commercial forestry, and facilitated market access and technical support from IFC-owned Portucel.

business and has solidified the strong partnership with the Government to advance Mozambique's development agenda. MITADER's leadership regards the Bank as a strategic partner and seeks the Bank's technical and financial assistance on key policy issues as well as leadership on leveraging financing and partnerships toward the Ministry's vision and strategic plans. Through agile technical assistance and analytical advice supported by development partners and trust funds, the Bank is able to support the Government in advancing its reform and strategic investments on the ground.

The GoM has asked the Bank to lead coordination of Development Partners (DPs) around natural resources management. Key partners have affirmed and supported this role through establishment of the Multi-Donor Trust Fund for Integrated Landscape and Forest Management, with contribution from Sweden, and potential contribution from other partners in the future. Galvanizing support from DPs and other stakeholders, the Bank has been able to rally strong backing for the Government's bold efforts to deal with politically sensitive issues, such as combating illegal logging.

To grow development partnerships and support for the GoM's vision, the Bank is actively promoting South-South knowledge exchanges on rural financing mechanisms (with Brazil, Mexico, South Africa and Namibia), and signed a tripartite agreement with Mozambique and Brazil to further promote programmatic S-S exchanges on rural development and natural resource matters.

Under the coordination of the ENRM GP, the integrated landscape and forest management engagement encompasses lending and non-lending operations in collaboration (and comanagement) with other GPs, including agriculture, SURR, Governance, Finance, Competitiveness and Innovation (FCI); Macro, Trade and Investment (MTI), Disaster and Risk Management (DRM), transport (rural roads), and energy (biomass energy).

RECOMMENDATIONS AND CONCLUSIONS

While many challenges persist in the sector, the GoM has identified the opportunities available and is actively pursuing a bold program of reforms in the forest sector and applying the integrated landscape management approach, as described in this Note. The main policy recommendations for the GoM are in the following areas, many of which are currently supported through the World Bank's operations but could be expanded and mainstreamed into other sectoral interventions:

1) Natural forest management

- i. Re-envision the concept of sustainable forest management shift the notion of forests as timber to include the non-economic and non-market uses of the resource so as to capture the full value of the forests, particularly for local communities
- ii. Reform the legal and concessions framework
- iii. Build institutional capacity to improve planning and management
- iv. Provide incentives and technical assistance to the private sector
- v. Develop value chains for a wider range of products and seek new markets
- vi. Enhance law enforcement

2) Biomass energy

- i. Improve charcoal management and increase efficiency of charcoal production
- ii. Promote alternative biomass and non-biomass sources establish wood fuel plantations for charcoal production, accelerate adoption of alternative fuel options in urban areas, such as gas
- iii. Promote improved, more efficient stoves that also reduce indoor air pollution

3) Agriculture

- i. Promote climate-smart and conservation agriculture, including agroforestry systems, to encourage sedentarization
- ii. Support value-added activities in more productive and better spatially planned value chains that integrate sustainable practices and engage rural households
- iii. Restore degraded lands

To further build on the success of the integrated landscape and forest management approach in support of the GoM's sustainable rural development vision, the Bank and other development partners seeking to support Mozambique can:

- Leverage additional to scale up and replicate the successes of the landscape approach to additional districts and provinces by preparing investment packages for different source of finance (climate finance, development partners, national budget);
- Mainstream forest and NRM issues into other sectoral investments, including particularly agriculture (climate smart, plus more productive and properly planned/located) and energy (household level/charcoal / stoves), and improve coordination to enable implementation of activities at the landscape level;

- Continue policy reforms in the forest sector, with stronger emphasis to community management of natural resources (including through strengthening their rights with community land delimitation and long-term capacity building support), often in partnership with the private sector, and an overhaul of the concessions / simple licenses logging system;
- Strengthen forest sector governance transparency on data about logging, wood transport, processing and export, control of logging and charcoaling operations, positive incentives to value addition to wood products, and support to exploring new markets;
- Build national capacity through the FNDS to attract, manage and disburse funds for sustainable rural development and improved natural resource management, especially at the local level (matching grant schemes and credit lines to private actors and local communities);
- Build partnerships beyond the Government with academia, civil society, and with regional and global networks
- Continue supporting capacity building efforts and institutional development for the Government, civil society organizations and communities.

ANNEX 1: THE WORLD BANK'S ENGAGEMENT





Time Frame: 2017-2018

Land Use Planning for Enhanced Resilience of Landscapes (LAUREL)

Time Frame: 2017-2019 Time Frame: 2017-2019 Objective: Support integrated decision making for landscape management across sectors and levels of government through improved spatial data on land degradation and developing prototype platforms for simulating, evaluating, and re-orienting land use and land use change processes. TECHNICAL ASSISTANCE

FCPF REDD+ Readiness Grant

Amount: \$8.6 million Time Frame: 2013-2018 Objective: To strengthen national

Objective: To strengthen national REDD+ readiness management, and support legal and institutional framework.

Key Themes: REDD+ institutional framework; technical assistance and strategy; capacity building.

ILFM Programmatic Technical Assistance

Objective: To strengthen GoM institutional capacity in managing forests and landscapes while promoting rural development Pillar 1: FNDS technical assistance Pillar 2: Analytical work to strengthen forestry management and climate change adaptation Pillar 3: Strategic outreach and partnership strengthening between the Government, civil society and academia.

PERFORMANCE-BASED

PAYMENTS.



Zambezia Integrated Landscape Management Program (Emission Reduction Payments)

Amount: up to \$50 million (contingent on results) Time Frame: 2018-2025

Objective: The Carbon Fund of the Forest Carbon Partnership Facility (FCPF), managed by the Bank, has made a commitment of up to \$50 million USD to the Zambezia province, should the province be able to reduce the emissions of greenhouse gases from deforestation. In other words, the FCPF will pay Zambezia for success in mitigating climate change by reducing the ongoing high loss of forest cover.



ANNEX 2: PRIORITY LANDSCAPES IN MOZAMBIQUE

Figure 14. The Sustainable Development (SD) portfolio in Mozambique

Cabo Delgado Landscape

- Total Area: 4 million ha ٠
- Population: 611,538 ٠ ٠
- Rural Population: 78.4% •
- Total Forest Area: 1,756 ha •
- Deforestation Rate: 0.32%

The Cabo Delgado Landscape hosts a variety of key terrestrial and marine biodiversity habitats, each with different geographic features. The area includes the Quirimbas National Park, which is home to 135,000 people, as well as a rich array of terrestrial and marine fauna and flora such as elephants, turtles and miombo forests. Working with civil society and community-based organizations, the ILFM Portfolio is helping communities who depend on potentially destructive practices, such as slash-and-burn agriculture and charcoal exploration, find alternative income-generating activities that decrease deforestation and forest degradation.

Nampula Landscape

- Total Area: 3 million ha
- Population: 926,621 .
- Rural Population: 79% .
- Poverty: 49% below the poverty line •
- Total Forest Area: 797,000 ha ٠

Due to its fertile soils, high altitude and multiple river heads, the Nampula Landscape has great agriculture and forestry potential. Since many rural households still use traditional and often inefficient agriculture practices, the ILFM Portfolio is helping to direct substantial private investments into sustainable agriculture and forest-based value chains.

Zambezia Landscape

- Total Area: 6 million ha
- Total Population: 2,286,988
- Rural Population: 74%
- Poverty Level: 56% below poverty line
- Forest Area: 3,225 ha
- Deforestation rate: 0.62%

The Zambezia Landscape hosts forests and woodlands, agricultural lands and the Gile National Reserve, protecting several biodiversity hotspots. The ILFM portfolio is helping to mitigate key threats to the landscape by strengthening natural and planted forest management, increasing land tenure security, enhancing the sustainability and productivity of agriculture and biomass energy, and improving spatial planning. This landscape has been chosen as an Emissions Reduction Program Area under the Forest Carbon Partnership Facility's Carbon Fund.

pillars of the FAP.

SUSTAINABLE FORESTRY

ANNEX 3: World Bank Engagement According to the Forest Action Plan – Sustainable Forestry and Forest-Smart Interventions

The ILFM portfolio is highly aligned with the Forest Action Plan. The tables below provide examples of the interventions that respond to the

	Protect and Optimize the Management of Natural Forests			Sustainable Plantations	Sustainable Forest Value Chains		
	Sustainable Management of Production Forests	Sustainable Production of NTFPs	Forest Biodiversity Protection	Nature- Based Tourism	Performance- based payments for REDD+	Smallholder Plantations and Tree Planting, Reforestation	Private Investments in Forest and Agriculture Value Chains to support SMEs
MozFIP	TA implemented by FAO - institutional capacity building of DINAF to improve forest administration and management; developing a forest information system; concessions framework review	Small enterprise development focused on forest-based value chains	Strengthened governance; forest law enforcement; alternative incomes to illegal harvesting of trees or charcoal		Activities across the portfolio promote emission reductions. The FCPF Carbon Fund has committed up to US\$50M in performance- based payments	Planted forest grant scheme - results-based payments for small- scale outgrower plantations, including subsidies for obligatory restoration within planted area	Planted forest grant scheme: results- based payments for small-scale plantations; partnerships between forest operators and communities to develop community forest concessions

MozDGM	Capacity building of communities and CBOs in integrated landscape management; grants to be awarded for community subprojects that include NTFP production and business development; alternative incomes to illegal harvesting of trees or charcoal; nature-based tourism			for emission reductions in the Zambezia landscape.	Community subprojects should promote restoration and tree planting	Community subprojects should promote forest- and ag-based value chains and are preferred if they include partnerships between communities and the private sector for SME development	
MozBio1 and 2		Community projects that promote honey, bamboo production	Improved governance and enforcement within the protected area system; and establishment of community projects	Conservation area co- management agreements; private tourism operators engaged in PPPs; improving the collection and distribution of revenues from tourists and sport hunting		Agroforestry and multi-purpose reforestation through community projects around the Gile National Reserve and Quirimbas National Park	Fair-trade pricing of cashew nuts to incentivize REDD+ actions around the Gile National Reserve; honey production around the Chimanimani National Reserve, linking beekeepers with a market and providing business development services such as market research, feasibility studies, business planning and training.
Sustenta 1 and 2	Plantation forests	Matching grants for value chains in NTFPs, both for small emerging commercial farmers (SECFs) and Micro Small and Medium Enterprises (MSMEs)	Protection of natural habitat and restoration of productive, degraded areas			Restoration of productive land plots in priority areas, training of government officials and extensionists in restoration	Matching grants to support SECFs and MSMEs develop agricultural value chains, create employment and provide TA to communities

FOREST-SMART INVESTMENTS IN OTHER SECTORS

	Inform Decisio	Delivering on forest-smart operations	
	Forests as a Key Element of the Sustainable Development Agenda	Land Use Planning	Cross-sectoral collaboration [Water, ag, transport, extractives <u>,</u> hydropower, energy]
MozFIP	Largest investment made in the forest sector, policy dialogue with the government during reforms elevated the importance of forests for sustainable development	Development of the National Land Use Plan; community land delimitation of about 160 communities including Community Agendas and Development Action Plans; multi-stakeholder landscape forums in Zambezia and Cabo Delgado; training in development and use of land use planning tools	Agroforestry systems to increase yield of agricultural crops; sustainable biomass energy production
MozDGM	Advocacy around community-base natural resources management, of which community forest management is key	Subprojects may include land delimitation and planning projects	CBNRM includes management of resources such as fisheries, wildlife, agriculture, tourism.
MozBio1 and 2	Forest protection within protected areas	Conservation areas as a key feature within the landscape necessitates planning not just within boundaries of the protected area but also within the entire landscape (<i>Rethinking Quirimbas</i> seeks to consider land use and values to reconsider the park's limits)	Tourism and wildlife management, including developing infrastructure and private tourism operations
Sustenta 1 and 2	Land restoration and forest ecosystem rehabilitation	Improving land tenure security and community land use planning, multi-stakeholder landscape forums in Zambezia and Nampula	Matching grants for agricultural value chains and supporting key investments of agribusinesses along the value chain; infrastructure development (roads, irrigation)

CROSS-CUTTING THEMES

	Climate change and resilience	Rights and participation	Institutions and governance
MozFIP	Building resilience against climate change, especially in rural areas, and contributing to mitigation, particularly by reducing deforestation, promoting sustainable land management practices in agriculture, and restoration.	Multi-stakeholder landscape forums encourage broad participation of actors for decision-making about the landscape	Strengthening the enabling environment for sustainable forest and land management – institutional capacity building and support to institutions; law enforcement;
MozDGM	Capacity building on climate change; subprojects that promote livelihoods opportunities builds resilience of local communities; mitigation through forest and land management	Strong focus on increasing participation of communities and CBOs in decision-making on landscape management; providing voice to vulnerable populations, women and youth.	Increased participation of a key stakeholder group (communities and CBOs); trainings for civil society groups and local decision-making bodies
MozBio1 and 2	Protecting key habitat and resources, promoting planning of protected areas in the face of climate change risk	Environmental education; savings schemes for women	Direct support to the Conservation Areas Agency; institutional strengthening; capacity building in raising conservation finance
Sustenta 1 and 2	Alternative income sources build resilience, mitigation through restoration of degraded lands. Building resilience against climate change, especially in rural areas, and contributing to mitigation, particularly by reducing deforestation, promoting sustainable land management practices in agriculture, and restoration.	Strengthening of the central farmer to be an anchor (for employment, investment, TA) for surrounding communities	Institutional strengthening in the land sector on land tenure regularization, cadastral services and spatial/territorial planning