



1. Project Data

Project ID P160033	Project Name Mozambique Forest Investment Project	
Country Mozambique	Practice Area(Lead) Environment, Natural Resources & the Blue Economy	
L/C/TF Number(s) IDA-59590, TF-A4201, TF-A4295, TF-A4296	Closing Date (Original) 30-Jun-2022	Total Project Cost (USD) 45,098,071.61
Bank Approval Date 07-Mar-2017	Closing Date (Actual) 30-Jun-2022	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	47,000,000.00	32,000,000.00
Revised Commitment	47,000,000.00	31,935,597.45
Actual	45,098,071.61	31,935,597.45

Prepared by Cynthia Nunez-Ollero	Reviewed by Vibecke Dixon	ICR Review Coordinator Avjeet Singh	Group IEGSD (Unit 4)
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2. Project Objectives and Components

a. Objectives

According to the Financing Agreement (FA, p 5) and the Project Appraisal Document (PAD, paragraph 29) the Project Development Objective (PDO) of the Mozambique Forest Investment Project was "to improve the practices and enabling environment for forest and land management in targeted landscapes."

This project was to be the first of three in a 'Series of Projects' (SOP) that would implement the Mozambique Sustainable Rural Development Program to improve the livelihoods of rural households and to achieve



sustainable natural resources. This project was expected to be scaled up by expanding its geographic coverage. This first of three SOPs was to focus on landscapes with high levels of poverty and forestry potential in two provinces - in the central (nine districts in Zambezia) and northern (seven districts in Cabo Delgado) regions of the country.

This review will assess the project performance against the following objectives:

- To improve the practices for forest and land management in targeted landscapes
- To improve the enabling environment for forest and land management in targeted landscapes

b. Were the project objectives/key associated outcome targets revised during implementation?

Yes

Did the Board approve the revised objectives/key associated outcome targets?

No

c. Will a split evaluation be undertaken?

Yes

d. Components

1. Promoting Integrated Landscape Management (US\$19.1 million at appraisal, US\$21.0 million at restructuring, US\$21.0 million actual) This component was to finance the regularization of land tenure; develop and promote community-level land use planning and integrated landscape management tools; and promote multipurpose planted forests (*Esquema de Fomento Florestal* or EFF), agroforestry systems (*Sistemas Agroflorestais*, or SAF), and sustainable charcoal production by local communities and small and medium landholders.

2. Strengthening the Enabling Conditions for Sustainable Forest Management (US\$20.2 million at appraisal, US\$18.4 million at restructuring, US\$18.4 million actual) This component was to finance activities to develop Mozambique's National Land Use Plan that promoted balanced, long-term land use decisions. It was also to finance a dynamic modeling platform for evaluating interventions for improved land use management, forest sector patrolling and inspections to reduce the forest crimes and illegal activities, a forest information system (*Sistema de Informacao Florestal* or SIF), dialogue in the forest management sector, train forest operators, and support small-scale sustainable forest businesses.

3. Project Coordination and Management (US\$7.7 million at appraisal, US\$7.6 million at restructuring, US\$7.6 million actual) This component was to finance the project management costs of the unit within the National Sustainable Development Fund (*Fundo Nacional de Desenvolvimento Sustentavel* or FNDS) of the Ministry of Land, Environment and Rural Development (*Ministerio de Terras, Meia, Ambiente e Desenvolvimento Rural* or MITADER) and costs of the Landscape Coordination Units in each province. This included financing project coordination and management, including fiduciary and safeguards management, monitoring and evaluation (M&E), and communications.

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates



Project Cost: The original total project cost was US\$47.0 million. The credit disbursed US\$45.1 million. The balance was canceled.

Financing: The International Development Association (IDA) provided a credit of US\$15.0 million. The Strategic Climate Fund Trust Fund (Forest Investment Program of the Climate Investment Funds or CIF), administered by the World Bank on behalf of its donors, provided a loan of US\$13.2 million and a grant of US\$8.8 million. The Integrated Landscape and Forest Management (ILFM) Multi-Donor Trust Fund (MDTF) provided a grant of US\$10.0 million.

Borrower Contribution: None

Dates: The Board approved the project on March 7, 2017. The credit was made effective on August 9, 2017. The Mid Term Review (MTR) was conducted on August 4, 2020. The project closed on June 30, 2022, as initially planned. The Bank approved a level 2 restructuring on March 16, 2021. Emergencies, such as the intensification of conflict in Cabo Delgado in 2018, Cyclone Kenneth, which hit Cabo Delgado in April 2019, and the 2020 COVID-19 pandemic beginning in 2020 led to adjusting the target areas, cost allocations of the components, and corresponding changes to the indicators of the results framework.

Split Rating: A split rating of the outcome is to be undertaken. The PDO and the financing envelope remained unchanged throughout project implementation, but the scope of activities was revised at restructuring and some outcome indicator targets were reduced.

3. Relevance of Objectives

Rationale

Context: Mozambique is rich in natural resources, with 36 million hectares of arable land and 40 million hectares of natural forests. Forests contribute to the country's economy. Many households derive their income from agricultural and forest-related activities. However, small-scale agriculture, biomass energy production, weak governance, and unsustainable forest management contribute to a rapid annual deforestation rate of 0.23 percent or an annual loss of almost 140,000 hectares (ha) of forest. Insecure land tenure, inadequate land use planning, and demographic pressures also contributed to deforestation. For example, the target province of Zambezia reported a high rate of deforestation due to shifting cultivation, illegal logging, and wood extraction for biomass.

Country Plans: The PDOs were highly relevant to the country's plans to combat forest losses contained in its Five-Year Development Plan for 2020–2024 (*Programa Quinquenal do Governo* - PQG), the National Development Strategy (*Estratégia Nacional de Desenvolvimento* - ENDE) for 2015–2035, the Action Plan for the Conservation of Biological Diversity in Mozambique, the Strategic Plan for Development of the Rural Sector (PEDSA 2011–2020), and the Five-Year Government Plan (2020–2024). The project also contributed to the Biomass Energy Conservation and Sustainable Use Strategy (2014–2025) and the Renewable Energy Development Policy (Resolution No. 62/2009), promoting modern and efficient renewable energy resources.

The government established a new Ministry of Land, Environment, and Rural Development (MITADER) to consolidate responsibilities across several ministries and coordinate cross-sectoral challenges. MITADER



adopted a 'National Sustainable Development Program to enhance the livelihoods of the rural population and improve the management of natural resources. In 2016, MITADER established an independent law enforcement agency, the National Agency for Environmental Quality Control (*Agencia Nacional para o Controle da Qualidade Ambiental*, or AQUA), and set up a National Sustainable Development Fund (*Fundo Nacional de Desenvolvimento Sustentável*, or FNDS). FNDS has a current portfolio of more than US\$1 billion, mainly from World Bank financing.

World Bank Country Partnership Framework: The PDOs were relevant to the World Bank Group (WBG) Country Partnership Framework (CPF) for Mozambique for FY 2023 to FY 2027. The CPF supported Mozambique's progress toward greener, more resilient, and inclusive development. This project was to contribute to achieving Objective 4 - enabling green growth through the sustainable use of natural resources; and Objective 5: Growth of small enterprises in selected labor-intensive sectors and new industries. This project's objectives were to implement the integrated forests and landscape portfolio and operationalize the Mozambique Sustainable Rural Development Program (MozRural or P174002) and Mozambique's Forest Investment Plan.

World Bank Experience in the Country and the Sector: The World Bank implemented an "Integrated Forests and Landscape Portfolio" in Mozambique financed by the International Development Association (IDA), trust funds such as the Forest Carbon Partnership Facility ((FCPF), the Program on Forests (PROFOR), and the Mozambique Multi-Donor Trust Fund (MDTF) for Integrated Forests and Landscape Management. By January 2023, this portfolio had committed US\$5.2 billion to finance 35 active projects and another US\$486.4 million to finance 23 trust-funded operations. Ongoing Bank-financed operations include two SOPs - the IDA/Global Environment Facility (GEF) financed Phase 1 of the Mozambique Conservation Areas for Biodiversity and Development project (MozBio I), the IDA-financed Agriculture and Natural Resources Landscape Management project, the FCPF-financed Reducing Emissions from Deforestation and Forest Degradation (REDD+) Readiness Support project, the Dedicated Grant Mechanism for Local Communities (MozDGM), and the Programmatic Advisory Services and Analytics on Forests and Landscapes.

Overall, the relevance of the PDO is substantial. The project aligned with the country's plans and commitment to addressing deforestation and rural poverty. The PDOs directly supported the objectives of the World Bank CPF for the country, and and complimented the other forests and landscape portfolio of projects in Mozambique.

Rating

Substantial

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

To improve the practices for forest and land management in targeted landscapes



Rationale

Theory of Change: No Theory of Change (TOC) was presented at the appraisal since it was not required. A TOC was prepared for the ICR. **Inputs** were to include the financing of activities to improve practices in managing land and forests by delimiting land, regularizing tenure, strengthening land use planning, planting new multipurpose forests (*Esquema de Fomento Florestal* EFF), establishing agroforestry systems (*Sistemas Agroflorestais*, SAF), engaging local communities to form partnerships, including with the private sector, to explore economic opportunities for food security and reduce slash and burn agricultural expansion, promoting sustainable biomass/charcoal production, and increasing local investments. **Outputs** were to include land delimitation certificates awarded to communities, titles given to forest landholders for concessions, agroforestry system holders, land users who have adopted sustainable land management practices, charcoal producers associations; kilns and woodlots for charcoal production in use, dialogue platforms for multi-stakeholder land use forum (MSLF), community-level land use planning and integrated landscape management tools; GIS system developed for forest management planning, and staff trained. **Outcomes** included the size of land (in ha) using sustainable land management practices, with concessions for organized or restored forests, established agroforestry systems, forests managed for charcoal production, and conservation areas under improved landscape management. The TOC expressed these outcomes as (i) the land area that adopted sustainable management practices and (ii) the number of land users who have adopted sustainable management practices. These contribute to the long terms outcomes of reduced deforestation and enhanced and diversified sustainable income and livelihood opportunities.

The TOC made the following critical **assumptions**, which, if actualized, would increase the likelihood that the outcomes would be achieved: (i) availability of critical inputs (seedlings and markets) was adequate, and (ii) communities were willing to adopt alternative livelihood models.

ORIGINAL OUTPUTS: In improving forest and land management practices, the following were the outputs:

- Planted forests (EFF) were established in 3,020 ha exceeding the original target of 3,000 ha
- 7,195 ha in Zambezia and Cabo Delgado of agroforest systems (SAF) were established, exceeding the target of 1,500 ha. These smallholder plots were to improve yields and food security while reducing slash-and-burn agriculture. Thirty-five percent of women from Zambezia participated in the SAF scheme, while another 31-41 percent were from Cabo Delgado, not meeting the 50 percent target.
- Forest management allocated 7,675 ha in the Cabo Delgado landscape for charcoal production, exceeding the original target of 2,000 ha. Charcoal production was to increase wood transformation efficiency into charcoal and reduce the overall use of native wood species. Two legalized producer associations were created with their own sales stations and 639 and 439 members, respectively. These two associations were legally allowed to exploit the wood for charcoal production. Seedlings were also provided to the two associations to establish 20 ha of eacwoodlots. The technology helped formalize charcoal production and provide sustainable use of noncommercial tree species.
- 27,059 ha of conservation areas under improved landscape management did not achieve the original target of 850,000 ha, i.e., achieving less than 5 percent of the original target value. This indicator measured the area that incorporated or improved sustainable land management practices to track progress toward sustainability at the farm and landscape level within the agroecological zones, watersheds, or basins. The target area was reduced because the insurgency in the Cabo Delgado area beginning in 2018 led to the withdrawal of other activities in QNP, which covered at least 50 percent of the original target area.



- The original target of awarding two forest concession holders was not achieved. Restructuring dropped this indicator. This indicator was dropped because forest certification became less relevant during implementation as market conditions did not favor certified timber from Mozambique. There was also a lack of interest from the private sector.
- The original target of 50,000 ha to have been under forest concessions was not achieved and dropped (see below)
- 223 landholders of planted forests exceeded the original target of 100; 36 percent were female, exceeding the 30 percent target.
- 3,100 individual land titles (DUATs) to small and medium landholders engaged in forest plantation and agroforestry system landholders exceeded the original target of 3,000. Data was obtained from 32,693 individual producer plots, of which 29,255 underwent community consultation, 28,916 were cleared and registered in the Land Titling Information System (SIGIT) and were issued DUATs, 48 percent of these DUATs corresponded to plots that were exclusively owned by women and another 5 percent were co-owned by women. 19,757 DUATs were delivered to project beneficiaries, exceeding the original target of 16,000.
- 3,170 agroforestry system landholders exceeded the target of 3,000; 34 percent were female and did not achieve the 50 percent target.
- 200 charcoal producers met the target, of which 37 percent were female exceeding the target of 10 percent.
- 189 certificates of communities were delimited, exceeding the target of 160.
- Strategic Action Plans were prepared and implemented to promote the dialogue between the various stakeholders regarding the sustainable development of landscapes and to monitor this project. Funding for the plans only came in the third year of the project. By the time of closing, implementation had only reached 30 percent, not achieving the target of 80 percent. This rate of implementation constrained the project's ability to raise funds from other sources to implement planned activities not covered by the project.

The ICR reported the following additional results were reported in the ICR which were not part of the results framework and thus without target values:

- Geo-spatial tools and GIS systems were developed and used with analytics and plans shared with provincial and district decision-makers to improve land use planning. Beneficiaries perceived a relative increase in fertility and productivity in their fields. However, the late delivery of crop inputs led to a lower-than-expected survival rate of fruit tree seedlings, averaging 51 percent in Zambezia and 46 percent in Cabo Delgado.
- The project trained 172 Natural Resources Management Committees on law and land ownership rights and trained 439 community leaders on land tenure legislation.

ORIGINAL OUTCOMES:

- Land area where sustainable land management practices were adopted reached 39,949 ha against an original target of 906,500ha
- Landholders adopting sustainable land management practices reached 3,593 against a target of 3,310
- Sustainable forest management continued by developing a Forest Management Unit (FMU) model as an alternative approach to concessions management.



The project's efficacy in achieving this objective is rated Modest, given the shortcomings in achieving the targets.

Rating
Modest

OBJECTIVE 1 REVISION 1

Revised Objective

To improve the practices for forest and land management in targeted landscapes

Revised Rationale

Beginning in 2018, safety concerns due to the rising insurgency in Cabo Delgado led to the withdrawal of significant conservation activities in the Quirimbas National Park (QNP). QNP provided at least 50 percent of the target conservation area. The project area was expanded to include the remaining districts of Zambezia province but not equal to the reduced area. Hence, the target values of the affected indicators were reduced. The cyclone in Cabo Delgado in 2019 and seasonal droughts during the same period further reduced the target values of the original indicators. The COVID-19 pandemic in 2020 reallocated funds toward emergency support, reduced the original scope and introduced new activities and new targets.

Theory of Change: The TOC did not change. However, the target values of an outcome and output indicators were adjusted.

REVISED OUTPUTS: In improving forest and land management practices, the revised outputs included the following:

- Area where planted forests (EFF) were established reached 3,020 ha exceeding the revised target of 2,000 ha
- More than 2,280 ha of commercial plantations (EFF-planted forests and sustainable biomass production) were established in the Zambezia landscape, and 800 ha was restored, exceeding the revised target of 2,000 ha. The target was revised due to procurement delays. This led to the loss of a rainy season for planting.
- 223 landholders of planted forests exceeded the revised target of 110, of which 36 percent were female exceeding the target of 30 percent.
- The Management Effectiveness Tracking Tool (METT) used to assess improved conservation area management had 13 indicators, such as law enforcement, staff capacity, and monitoring and evaluation (M&E) systems in place. Managing the conservation of biodiversity was to target a score of 8.5 points. Still, it scored only 5 points because of two factors: activities in the Quirimbas National Park, which constituted half of the original target, had to be withdrawn due to continuing armed conflict, and the criteria used to calculate the target area was redefined. METT used a rapid assessment based on a scorecard questionnaire. A score was associated with the area covered by the conservation activity. With the withdrawal of the QNP land area, the score had to be redefined against the reduced area from 906,500 to 43,000 (PAD, Annex 4 and ICR, Table 2).
- US\$1.02 million of Contingency Emergency Response was disbursed, almost achieving the target of US\$1.1 million.



- Matching grants added at restructuring encouraged the adoption of land management strategies with delayed benefits, including forest planting and agroforestry. MGS supported new income-generating activities. US\$0.79 million was approved for 26 community grants and six grants for small and medium-sized enterprises, but these were not disbursed before the project ended. US\$1.2 million was approved but not disbursed. Community groups and enterprises provided 10 and 40 percent matching funds, respectively.

REVISED OUTCOMES:

- In improving forest management practices, sustainable land management practices were adopted in 39,949 ha of land area, slightly below the revised target of 43,000 ha.
- 27,059 ha of conservation landscape areas improved its management but did not achieve the reduced target of 37,500 ha.

The project's efficacy in achieving the revised outcome targets is rated Substantial, given the substantial achievement of the revised targets.

Revised Rating
Substantial

OBJECTIVE 2

Objective

To improve the enabling environment for forest and land management in targeted landscapes

Rationale

Theory of Change: At the national level, activities were to improve the enabling environment toward sustainable land and forest management through an integrated landscape approach. The project results were expected to indicate that the forest and land use practices in targeted landscapes would be more sustainable and benefit the local communities. At the same time, an improved enabling environment would support and sustain local, landscape, and national project activities by building institutional capacity and policy development. **Inputs** included preparing the national land-use plan; strengthening forest governance through transparent dialogue in the sector, inspection, detection, and compliance; supporting the reform of natural forest management regulations and practices through training of forest operators, and support for sustainable small-scale forest businesses. The expected **Outputs** were the following: a National Land Use Plan, a National Forest Program Agenda 2035, a Forest Policy and Strategy, and a draft Forest Law. Other outputs included a dynamic modeling platform for evaluating interventions for improved land use management, a strengthened forest sector patrolling and inspection to reduce forest crimes and illegal activities, a new digital forest information system (SIF), small-scale forest businesses established, community on-job training delivered, MRV Unit created, operators evaluated, national forest forum institutionalized, matching grants delivered, and OCBs legalized. **Outcomes** were an improved enabling environment for land and forest management measured by (i) the average score received from forest governance assessment of targeted landscapes and (ii) the share of target beneficiaries satisfied with the information about and their participation



in forest and land use decisions that affect them. This was expected to lead to a reduced incidence of forest crimes and illegal activities, even though this was not reflected explicitly in the ToC.

The TOC made the following critical assumptions, which, if actualized, would increase the likelihood of achieving outcomes: (i) Community willingness to adopt alternative livelihood models, and (ii) the government introducing adequate incentives and measures to address illegal deforestation.

The TOC was clear, and the causal link between inputs and outcomes was logical.

OUTPUTS:

Achievements to improve the enabling environment for forest and land management outputs included:

- A national forest information system (SIF) was operational, as targeted. The system and data were accessible to relevant users and stakeholders. The United Nations Food and Agricultural Organization (FAO) developed the SIF to increase transparency and accountability. Five modules were in the initial stages of operationalization. The central data center and the National Directorate of Forests (*Direcção Nacional de Florestas*, or DINAF) offices in Zambezia and Cabo Delgado were completing the basic equipment specifications at closing for the Sustainable Rural Economy Program (MozRural) to purchase.
- 100 percent of forest concessions were inspected annually, achieving the original target of 100 percent. This measured the effectiveness of forest and enforcement institutions and an aspect of legality through compliance and forest management plans.
- With a baseline of 40 percent, 65 percent of forest operators in targeted landscapes who scored at least 80 in government assessments achieved the original target of 65 percent overall. The Zambezia forest operators scored 75 percent exceeding the original target of 70 percent, coming from a baseline of 50 percent. No score was reported to have been achieved for the Cabo Delgado forest operators, with an original target of 60 percent from a baseline of 30 percent. This indicator measured the performance of forest operators against legal and basic sustainability requirements. A multi-stakeholder group defined these criteria. They covered the following: compliance with fiscal obligations, social security, having an approved management plan, qualified rangers, concession contracts, availability of statistical information, an inspection of industrial plants, technical capacity, delimitation of areas and harvesting blocs, and reforestation. Operators would be scored up to a maximum of 100.
- A national land use plan was submitted and adopted, as targeted. The first National Plan for Territorial Development (PNDT) outlined the priorities of various land uses. Several ministries led by the National Directorate of Territorial Planning participated in developing the PNDT. The Assembly of the Republic approved the legal instrument on December 28, 2021. The FMU system was established, and a pilot unit was created in Zambezia Province. A manual was prepared to operationalize its approach to be implemented in the other ten provinces to promote the sustainable use of forest resources and manage the restoration of productive forests using community participation.
- A National Forest Program Agenda 2035, Forest Policy and strategy, and draft Forest Law was developed, as targeted. FAO also provided technical assistance to draft a Forest Law, completed public consultations, incorporated comments to improve the bill, and submitted the proposed law to the Council of Ministers in July 2022, after the project closed.
- 189 community delimitation certificates were issued, exceeding the original target of 160 certificates.



- 45 percent completion of activities in the annual strategic action plans of the Multi-Stakeholder Landscape Forums (MSLF), lower than the original target of 80 percent.

In addition to the indicators in the results framework, the ICR reported the following achievements at the output level without target values:

- Forest concessions for sustainable charcoal exploitation were legalized. The provincial Services of Geography and Registration (SPGC) identified 1,932 ha in the Ancuabe district and 5,815 ha in the Metuge district, both in Cabo Delgado, for legalization as concessions for the exploitation of charcoal. Inventories were conducted, and DINAF approved management plans for coal exploration in each area
- Forest operator assessments were conducted. Technical assistance was provided to forest operators to obtain forest certification and add value to forest products. DINAF conducted a structured evaluation process of operators in 2018 and 2021, covering 63 percent of operators. DINAF agreed to reform the legal framework for forest concessions, incorporating provisions prohibiting the awarding of forest exploration permits to operators who were not evaluated, had preliminary evaluations, or with scores below 80 points.
- The management of two conservation areas, the Gile National Park and QNP) improved surveillance of natural forests in the protected areas through improved patrolling, inspection, prevention of infractions, and detection of poachers by supporting AQUA, the national forest law enforcement institution. This included the establishment and operationalization of delegations of AQUA in both Zambezia and Cabo Delgado landscapes. AQUA provincial teams in Zambezia and Cabo Delgado conducted the annual surveillance of 47 forest concessions in both provinces at the fixed posts and through mobile brigades to ensure the legality of the wood being transported to markets or ports. 42 AQUA rangers were trained in Zambezia and Cabo Delgado. As a result, ANA and AQUA joint surveillance resulted in illegal wood seizure (5,750 m³ of logs and about 300 m³ of sawn wood) and the ban, elimination, and relocation of all forest operators surrounding the park. The project also contributed to improved interagency coordination in processing illegal exploitation of forest resources, including the Police of the Republic of Mozambique (PRM), Attorney General's Office (PGR), Tax Authority (AT), National Criminal Investigation Services (SERNIC) State Information and Security Services (SISE) and the courts.

OUTCOMES:

- The forest governance assessment received a score of at closing 3 (on a scale of 1-5), achieving the original target. This score was an aggregate of various issues that measured the strength of forest governance as perceived by forest holders. The assessment methodology was adapted from the FAO and PROFOR framework for assessing and monitoring forest governance. Strengthened forest governance by forest law enforcement institutions strengthened surveillance, detection, and control activities. The ICR notes that these reduced forest-related crimes and illegal activities and increased benefits for the government and local communities.
- 69 percent of target beneficiaries, of which 70 percent were female, expressed satisfaction with information about and their participation in forest and land-use decisions that affected them. This almost achieved the original target of 70 percent overall and exceeded the 30 percent female target.



The project made substantial progress towards improving the enabling environment for forest and land management in targeted landscapes based on the above forest governance assessment and beneficiary satisfaction. The efficacy is rated as Substantial.

Rating
Substantial

OVERALL EFFICACY

Rationale

The efficacy of the project to achieve the original PDOs is rated Modest. Severe climatic events (Cyclone Kenneth and seasonal droughts), armed conflicts in a significant project area, and the operational restrictions imposed by COVID-19 led to a reduced scope, implementation delays, and the reallocation of project funds to emergency support. The first objective was rated as modest, and the second as substantial based on the original targets. Overall, efficacy was rated as Modest.

Overall Efficacy Rating
Modest

Primary Reason
Low achievement

OVERALL EFFICACY REVISION 1

Overall Efficacy Revision 1 Rationale

Given the substantial achievement of both objectives, the project's efficacy against the revised targets is rated Substantial.

Overall Efficacy Revision 1 Rating

Substantial

5. Efficiency

Economic and Financial: At appraisal, economic and financial analysis using a cash flow model concluded that the project interventions were economically feasible and would generate benefits at a Net Present Value (NPV) of US\$188 million and internal rate of return (IRR) of 27.3 percent (PAD, paragraph 72). Two principal benefit categories were quantified: carbon sequestration and livelihood benefits. The livelihood benefit streams were derived from four activities: natural forest management, forest plantations, agroforestry, and charcoal. The carbon sequestration economic benefit stream was estimated at US\$ 179 million and the financial benefit



stream at US\$33 million at 6 percent, reflecting the difference between the economic (US\$30 per ton) and financial (US\$5.5 per ton) carbon values. With the overall ENPV estimated at US\$188 million, conservative price projections and a sensitivity analysis confirmed that significant benefits outweighed costs and estimated the economic benefit-to-cost ratio at 4.9.

In closing, the economic and financial analysis replicated the methodology used at appraisal. Actual costs included changes to investment costs due to emergencies that affected the target areas. The cost-benefit model calculated the incremental net benefits between 'with' and 'without' the project. The financial discount rate was 20 percent, and the economic discount rate was 6 percent (ICR, Annex 4, paragraph 9). Benefit streams were similar to those identified at appraisal but with actual values at closing. The quantified benefit streams at closing included forest plantations, agroforestry, matching grants, improved charcoal production, reduced illegal logging, reduced greenhouse gas (GHG) emissions, and a counterfactual for annual cropping on areas where deforestation has been avoided. The following benefit streams were excluded from the calculations (i) impact from tax revenues, job creation, long-term impact from regulating land tenure, improved nutrition from food consumption, improved capacity, and other downstream impacts.

Without GHG emissions, the economic IRR of the project was estimated at 7 percent, and the financial IRR was at 6 percent during appraisal. The low rates of return were reported to be common in forestry projects because benefits were further in the future. The estimated returns were also conservative because benefit flows that could not be quantified were excluded from the benefit streams. Without GHG emissions, there were no comparable estimated IRRs at closing. With GHG emissions, the economic IRR of the project at appraisal was 27 percent, while the financial IRR was estimated at 9 percent; with GHG emissions, the economic IRR at closing was estimated at 217 percent, and no comparable estimate was presented for the financial IRR. The ICR notes that due to the time value of money, the social value of carbon is higher than in the PAD due to avoided deforestation on 42,000 ha being accounted for in the project implementation years (ICR, para 58).

Administrative and Operational: The budget envelope remained the same throughout implementation but was reallocated among the components due to the conflict and instability in Cabo Delgado, the cyclone in Cabo Delgado in 2018, and COVID-19 beginning in 2020. Funds (US\$1.3 million) were used to finance emergency response to the disasters. Other key project activities such as land delimitation and titling, forest law enforcement, and implementation of SAF also affected implementation in target districts of Cabo Delgado. Activities including sustainable charcoal production, SAF, the multi-stakeholder platform, and support to the provincial land administration agency continued in Metuge, Ancuabe, and Pemba. In the last year of project implementation, safeguards performance was affected significantly because the safeguards specialist was not replaced after resigning in 2021, causing delays in subproject screening, elaboration of ESMPs, lack of monitoring, and grievance redress mechanism (GRM)-related issues (ICR, paragraph 87).

Implementation delays also reduced the project efficiency: difficulties in securing a service provider, reported problems with a low survival rate of seedlings, and trampling of planted trees were resolved with replanting to meet targets within the planned budget; the agroforestry initiative was delayed by initial problems with low survival of tree seedlings during transport, slow seed distribution, and delayed e-voucher system – these problems were corrected by the third season. The matching grant facility was not introduced until restructuring after the MTR (ICR, paragraph 63).

Overall, the efficiency of the project is rated Substantial. The project's economic efficiency was substantial, and the delays in implementation were compensated by the project being completed as originally planned, with most of the project resources used and the outcomes substantially achieved.



Efficiency Rating

Substantial

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	27.00	0 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	217.00	0 <input type="checkbox"/> Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

A split rating of the outcome is presented below.

Rating Dimension	Original	After Restructuring
Relevance of Objective	Substantial	
Efficacy		
Obj 1- To improve practices for the forest, land management	Modest	Substantial
Obj 2 - To improve the enabling environment for forest and land management	Substantial	Substantial
Overall Efficacy	Modest	Substantial
Efficiency	Substantial	
Outcome Rating	Moderately Unsatisfactory	Satisfactory
Outcome Rating Value	3	5
Amount Disbursed (US\$ million)	31.22	13.88
Disbursement (%)	69.22	30.78
Weight Value	2.08	1.54
Total weights	3.62 = 4	
Overall Outcome Rating	Moderately Satisfactory	

a. **Outcome Rating**
Moderately Satisfactory

7. Risk to Development Outcome



The following pose risks to the development outcomes:

- **Security risks.** This is a substantial risk. In this project, the security situation in certain project areas caused suspension of activities and reduced target values of outcome indicators. Restructuring addressed the security risk by reallocating resources. After the project closed, this risk remains.
- **Technical risks.** This is a moderate risk. In this project Innovative practices and technologies were introduced (e.g., the Forest Information System (SIF), the e-voucher system to facilitate access by SAF beneficiaries to agricultural inputs, the provincial and district levels' use of geo-spatial tools to improve land use planning, and use of low-cost equipment as an income generating service). This is a moderate risk because resources were to be allocated from the National Directorate of Forests (*Direccao Nacional de Florestas*, DINAF) offices in Zambezia other World Bank operations, such as Sustenta, MozRural and MozNorte. For example, MozRURAL was set to procure the equipment to make SIF operable after the project closed
- **Financial risks.** This is a moderate risk. In this project, financial flows and viability at farm level operations affected production schemes introduced by the project. This risk is also mitigated by the availability of resources from other ongoing Bank-financed projects in Mozambique. For example, MozNorte would need to provide operational support to the legalized charcoal producers with their own sales stations to continue its operations, assess adoption rates of using the improved kilns; scale up the initiative; develop marketing plans for the sale stations; and issue DUATs for the woodlots to sustain the initiative.
- **Stakeholder ownership and social risks.** This is a moderate risk. In this project, several beneficiaries with DUATs had not received the actual titles by the time the project closed. Beneficiaries agreed that the DUATs would protect them against potential land conflicts and need to have these titles on hand. MozLand reported that DUAT printing continued after project closing but not disaggregated to show beneficiaries attributable to this project. Community meetings to inform members and promote the participation of women and young people in implementing sustainable charcoal production and SAF may not continue after closing. This risk is mitigated by community participation aspects in ongoing Bank-financed projects. Stakeholders asked for further training on regularizing of land tenure and SIF.
- **Political and institutional risks** These are moderate risks. In this project, political and institutional commitment at the federal and provincial levels allocated the human and financial resources to implement reforms. The World Bank is supporting FNDS' to expand this project's results by allocating resources from other ongoing projects (e.g., MozRural, MozNorte, Sustenta, and MozLand) (ICR, Annex 5).
- **Institutional support.** This is a moderate risk. In this project, the sustainable charcoal production was legalized. Beneficiaries asked for continued training and links to market. The newly established law enforcement agency (AQUA) improved its presence and inspectors reduced illegal logging, collected fines, and sold confiscated forest products. Preventing logging too early and reducing illegal logging, require continued enforcement work by AQUA. A lack of technical assistance and maintenance of equipment may provide difficulties because public financing is scarce SIF was established staff training would be required to maintain the system. There will be a need for ongoing technical assistance to ensure viability and continued forest planting efforts. The agroforestry initiative was also reliant on continued technical assistance. Crop failure due to poor management, or low or irregular rainfall, may make it difficult for farmers to purchase improved seeds and inputs in future years. The sustainability of forest plantations relies on the skill of the producers in managing the forests, connecting with markets, and obtaining viable seedlings from local nurseries. The



sustainability of several parts of the project may benefit from support through other Bank-financed projects.

8. Assessment of Bank Performance

a. Quality-at-Entry

The Project was relevant to the Government strategy and the Bank team designed this project to implement the Mozambique Forest Investment Plan. This ambitious, modular government program framework addressed deforestation and promoted sustainable rural development. Projects were to be implemented in three phases (i) readiness under the National Reducing Emissions from Deforestation and Forest Degradation (REDD+) Strategy, (ii) implementation and investments, which included this project, and (iii) the results and performance payments phase. Financing under all three phases has been secured from various sources. Three projects were to implement the REDD+ strategy: (i) this project, (ii) the Emissions Reductions in the Forest Sector through Planted Forests, and (iii) MozDGM (P161241). The Bank team designated MITADER's FNDS, the main interlocutor of the forest investment plan, to implement this project.

The Bank team designed this project as the first in a "Series of Projects" (SOP) that would implement Mozambique's National Sustainable Development Program to improve the livelihoods of rural households and the sustainability of natural resources (PAD, paragraph 29). The Bank team designed the project informed by lessons from similar activities worldwide, environmental sector experience in the country, and analytical studies at the national and provincial levels (Zambezia and Cabo Delgado) under the REDD+ Readiness process (ICR, paragraph 93). The PDO was simple, and the outcome indicators were well-defined. The Bank team adequately assessed the technical, financial, economic, safeguard, and fiduciary aspects of the project, except for the impact of the insurgency risk on the project's outcomes. However, the mitigating measures to address readiness to implement, sequencing of the interventions, procurement capacity, and introducing participatory decision-making at the landscape level proved insufficient. The Bank team acknowledged that the project design was ambitious and complex, and the implementation period was short (ICR, paragraph 76).

Overall, the Bank's performance at entry is rated as Moderately Satisfactory. The project was highly relevant to the country's deforestation approach and the Bank's environmental sector strategy. There were moderate shortcomings in risk assessment and mitigating measures to address these.

Quality-at-Entry Rating

Moderately Satisfactory

b. Quality of supervision

The Bank team conducted 13 supervision missions over the five-year project period, including virtual missions during COVID-19. Experts in technical and fiduciary requirements of the project and locally based financial management, procurement, and safeguards specialists participated in these missions. The



Bank staff from the country office also conducted technical field missions to supervise specific activities or locations. Early environmental and social safeguards compliance training was conducted. Three task team leaders supervised the project, with one of them based in the country office until the project closing. Close coordination allowed for the adoption of corrective measures during implementation, such as reallocating funds from reduced activities in five districts in Cabo Delgado due to conflict to finance disaster response from Cyclone Kenneth, which hit Cabo Delgado in April 2019, and the COVID-19 pandemic. The Bank team also reallocated financing to help the Integrated Development Agency of the North to prepare a larger regional program to increase the resilience of local communities. The Bank team used the Mid Term Review (MTR) to introduce three changes to the project: (i) expand the Zambezia target area from nine to all 16 districts of the province, (ii) add to the Matching Grants Scheme (MGS), a government program financed by the MozBio and Sustenta; and (iii) modify indicators in the results framework. However, there was insufficient time to implement the MGS.

Bank supervision was hampered by the following outside its control: (i) COVID-19 pandemic limited mobility; (ii) armed insurgency in the target areas of Cabo Delgado; and (iii) cyclones that affected implementation and required disaster response. In addition, the SOP series did not materialize as designed, MTR and restructuring were delayed, and difficulties were encountered at project closing. The Bank team addressed the institutional changes after the elections in October 2019, delays in FNDS financial management system, and procurement in a Management Letter. Many project activities were completed at, or shortly before, the project closing date (ICR, paragraph 50).

Overall, the Bank's performance at supervision is rated as Moderately Satisfactory. There were moderate shortcomings in supervision reflected in the delayed corrective measures introduced after the MTR, with little time to implement these. In closing, the Bank team coordinated with other ongoing Bank-financed natural resources portfolio project teams to allocate resources that would continue the interventions started in this project (ICR, Annex 5).

Overall, the Bank's performance is rated Moderately Satisfactory. Bank performance at entry and supervision were both rated Moderately Satisfactory.

Quality of Supervision Rating

Moderately Satisfactory

Overall Bank Performance Rating

Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The M&E used the indicators in the results framework at appraisal, including core gender disaggregated beneficiary indicators. The PDO was simple and specified "improving practices" and "improving the enabling environment." In preparation, the methodology used for the outcome indicator, the METT approach, measured land areas where sustainable land management practices were adopted in protected areas. But measurement complexity and attribution factors proved difficult. The intermediate results



indicators adequately captured the contribution of the operation's components and outputs toward achieving the identified PDO-level outcomes. The indicators were specific, measurable, achievable, relevant, and time-bound. The baseline data collection was planned to be conducted during the first year of project implementation. The M&E design and arrangements were institutionally well-embedded.

b. M&E Implementation

MITADER's FNDS , through its International Funds Management Unit (UGFI), implemented the M&E system. Tools were developed and standardized to consolidate field data at the national level for decision-making, planning, and reporting. FNDS UGFI developed a database with real-time geographic information implemented for public access. However, delayed contracting of service providers, the primary source of project data at the field level led to initial reporting delays. Data was reported to be reliable. Beneficiaries participated in defining targets and assessing achievement, evident in the surveys conducted as planned. M&E functions and processes were likely to be sustained after the project closing because the same institution was engaged in implementing the other projects under this portfolio.

c. M&E Utilization

M&E data was reported to stakeholders and used to assess progress on achieving targets. M&E data was also used to inform the suggested implementation changes covered by the restructuring. To address the impact of the seasonal drought, the cyclone, and COVID-19, funds were reallocated to respond to these emergencies, and indicators were added to report on their use. M&E data was used to provide evidence of achieving outcomes in addition to achieving progress. M&E data informed the Bank team's efforts to pursue continuity of the project interventions in the other Bank-financed projects under the portfolio. The end-of-project assessments were conducted as planned (ICR, paragraph 83).

Overall, the quality of project M&E is rated Substantial despite the weaknesses in selecting some indicators and the initial difficulties in data collection.

M&E Quality Rating

Substantial

10. Other Issues

a. Safeguards

Environmental: The project was classified as Category "B" because potential environmental and social impacts were expected to be localized, reversible, temporary, and manageable. The project triggered seven Bank Operational Safeguards Policies: five from the Environmental side, Environmental Assessment (OP/BP 4.01), Pest Management (OP/BP 4.09), Natural Habitats (OP/BP 4.04), Forests (OP/BP 4.36), and Safety of Dams (OP/BP 4.37) and two from the social safeguards side (see below). Civil works under the project were limited and mainly consisted of the rehabilitation of existing SPGC offices, which generated limited environmental and social impacts as these works were implemented on existing sites that fully



complied with these requirements; the Environmental and Social Framework and corresponding ESMP were prepared and cleared by the World Bank.

Social Safeguards: The project triggered Physical Cultural Resources (OP/BP 4.11) and Involuntary Resettlement (OP/BP 4.12). A joint Environmental and Social Management Framework was prepared for the entire Forest Investment Program, including this project, the Mozambique Dedicated Grant Mechanism for Local Communities Project, and the Emission Reduction Program. These projects adopted a Process Framework from the related MozBio project for any access restrictions to natural resources used in protected areas to meet the requirements of Involuntary Resettlement (OP/BP 4.12). A Strategic Environmental and Social Assessment was prepared. These instruments were disclosed both in-country and through the World Bank website. All site-specific subprojects had Environmental and Social Management Plans (ESMPs) prepared and implemented. The Process Framework was not activated because no restrictions on access to natural resources were identified in the protected areas. FNDS developed a joint Grievance Redress Mechanism (GRM), called the 'Dialogue and Grievance Mechanism,' for use by projects under the Bank-financed integrated landscape management portfolio in Mozambique, including this project (ICR, paragraph 89). Overall, the project satisfactorily resolved 180 cases, of which 143 were grievances. These claims concerned land conflicts between neighbors and delays in the arrival of inputs in the last year of project implementation; the safeguards performance delayed subproject screening, elaboration of ESMPs, lack of monitoring, and grievance redress mechanism (GRM)-related issues when the safeguards specialist was not replaced after the resignation in 2021 (ICR, paragraph 81).

According to the ICR, the project complied with all triggered safeguards policies (ICR, paragraph 85). The E&S Safeguards compliance rating at project closing was rated as Satisfactory. (based on the last approved ISR, Dec 2021).

b. Fiduciary Compliance

Financial Management. According to the ICR, financial management procedures were periodically reviewed, and the FM arrangements were found to be compliant with the Bank systems. The Bank team found the PIU FM system adequately staffed and managed, with adequate accounting, internal controls, and reporting. The quarterly unaudited interim financial reports were submitted on time and were acceptable to the World Bank (ICR, paragraph 91). The ICR did not report any issue regarding audited financial reports. The last ISR in the Bank's Operations Portal noted delays in submitting audited reports that may result in returning undocumented funds to the Bank. The poor coordination between financial management (FM) and procurement units of the PIU and the limited engagement of public extension agents from SDAE at the district level significantly affected the sustainability of project activities in the field. These factors affected the post-project continuity and adoption of improved practices by project beneficiaries (ICR, paragraph 80). The project closed with a Moderately Satisfactory FM rating (based on the last approved ISR, December 2021).

Procurement The ICR reported that the procurement under the project complied with the World Bank's guidelines. FNDS established a procurement unit before project effectiveness. Trainings on procurement were delivered during the initial stages of project implementation. Initial procurement delays affected the recruitment of key resources, such as service providers who collected primary data and service providers for the forest planting and agroforestry initiatives, which in turn negatively affected the project's



achievements (see Section 4 Efficacy above). These were subsequently addressed. There were noted delays in documenting the completion of project activities in the Systematic Tracking of Exchanges in Procurement (STEP) tool. The implementing agency resolved these shortcomings (ICR, paragraph 92). The project closed with a Moderately Satisfactory procurement rating.(based on the last approved ISR, December 2021).

c. Unintended impacts (Positive or Negative)

d. Other

11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Moderately Satisfactory	Moderately Satisfactory	
Bank Performance	Moderately Satisfactory	Moderately Satisfactory	
Quality of M&E	Substantial	Substantial	
Quality of ICR	---	Substantial	

12. Lessons

The ICR provided five lessons, four of which are slightly paraphrased below (ICR, paragraphs 103-107):

- **Support for forest plantations may require rotation periods longer than the project period.** In this project, beneficiaries experienced management challenges in undertaking long-term plantations, e.g., in maintaining sales stands, marketing forest products, and adopting sustainable forest systems after the project closed. Designing forestry sector interventions may consider lengthier implementation periods with corresponding support for continuing plantation activities through existing institutional arrangements or other operations.
- **Specifying targeting criteria for smallholders and emerging producers may ensure their participation and benefit over subsidizing established commercial enterprises.** In this project, questions were raised against allocating subsidies to established enterprises. The subsidies were expected to generate a multiplier effect for similar forest/agroforestry



undertakings. Incentives to smallholder communities and emerging producers who have strong market-oriented production and who may have financial capacity to implement and adopt the improved agroforestry and plantation schemes may generate the same multiplier effect. These smaller businesses may use the subsidies to expand their production schemes and contract out to other subsistence farmers. The contract production schemes could include technical and financial support for these farmers to generate the desired multiplier effect.

- **Innovative solutions like hiring specialized service providers and recruiting local facilitators may improve the adoption and sustainability of new practices.** In this project, innovative solutions including the hiring of private, specialized service providers such as MOZBAMBÚ, and Verde Azul, may be a cost-effective way to support beneficiaries of field-intensive projects. These specialized service providers conduct surveys and support beneficiaries. By hiring these providers early, deliverables may be integrated into local government and extension services. In the case of smallholder farmers, another innovation was the selection of facilitators from within the beneficiary communities. They were trained to support fieldwork directed at adopting improved agroforestry systems practices. This approach complemented the service providers and farmer-to-farmer technical assistance. Another innovative feature was the provision of low-cost equipment, such as manual sprayers, for facilitators to develop an income generating service for the other community members.
- **Mainstreaming the Gender Action Learning System (GALS) initiative may be effective in addressing gender equality in agroforestry projects.** In this project, FNDS included women in SAF and biomass activities. The project promoted co-titling of DUATs (land titles) to ensure that women do not lose the right to the land in the event of the husband's death. Women's participation in EFF was limited due to the financial contribution required in this program. But women's association were actively supported. The participated in the planted forest scheme. The GALS initiative in the Uape community of Zambezia Province expanded in 2020. GALS beneficiaries increased from an initial 27 to 6,887 people (of which 2,631 were women) by 2022. An estimated 74 percent of GALS beneficiaries reported some degree of behavioral changes, improved cohesion and harmony within households, a decrease in gender-based violence incidents, redistribution of domestic tasks, reduction in alcohol consumption, and women's improved sense of assets ownership. MozRural and MozNorte, have adopted the initiative for its agroforestry systems. Other projects designed for rural, and fisheries communities may also benefit.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR was comprehensive, candid, and consistent with the guidelines. The ICR presented the evidence base for the reported achievements. Annex 6 (Borrower's ICR) reflected useful information about actions undertaken by the government to address the sustainability of improvements made in forest management, including the



mandated use of planning instruments developed under the project was useful. Lessons were practical and based on the implementation experience.

There were minor shortcomings. There was a mistake in using the split rating methodology. The achievement under the original outcome targets should be assessed at the end of the project (across the entire project duration) and not what was achieved at restructuring. The ICR also did not report on Safeguards and Fiduciary compliance ratings at project closing. Overall, the ICR quality is rated as substantial.

a. Quality of ICR Rating
Substantial