REPÚBLICA DE MOÇAMBIQUE

MINISTÉRIO DA TERRA, AMBIENTE E DESENVOLVIMENTO RURAL (MITADER)

Environmental and Social Management Framework (ESMF) for (i) the Mozambique Forest Investment Project (MozFIP), (ii) the Dedicated Grant Mechanism to Local Communities (MozDGM) and (iii) REDD+ Initiatives

(PROJECTS: P160033**,** P161241 and P129413)

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

Final Report

Maputo, January 2017

LIST OF ACRONYMS

ANE	National Roads Administration
ANRLMP	Agriculture and Natural Resources Landscape Management Project
CA	Conservation Area
CBNRM	Community-Based Natural Resource Management
CBO´s	Community Based Organization´s
CC	Climate Change
CESMP	Contractor's Environmental and Social Management Plan
CTR	National Steering Committee
DA	District Administration
DCC	District Consultative Council
DGM	Dedicated Grant Mechanism
DLA	Department of Environmental Licensing
DNA	National Directorate of Environment
DNA	National Directorate for Water
DNAS	National Directorate of Agriculture and Planted Forests
DNE	National Directorate for Energy
DNOTR	National Directorate of Land Planning and Resettlement
DPASA	Provincial Directorate of Agriculture and Food Security
DPOPHRH	Provincial Directorate of Public Works, Housing and Water Resources
EA	Environmental Assessment
EDM	Electricidade de Moçambique/Electricity Company
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ESC	Environmental and Social Clauses
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESSS	Environmental and Social Safeguard Specialist
FAO	Food and Agriculture Organization
FIP	Forest Investment Program
FNDS	National Sustainable Development Fund
FUNAE	National Energy Fund
GDP	Gross Domestic Product
GOM	Government of Mozambique
IDA	International Development Association
IDCF	Innovation and Demonstration Catalytic Fund
LMU	Lanscape Management Unit
MEF	Ministry of Economics and Finance
MDP	Municipal Development Project
MICOA	Ministry for the Coordination of Environmental Affairs
MASA	Ministry of Agriculture and Food Security
MIREME	Ministry of Mineral Resources and Energy
MISAU	Ministry of Health
MITADER	Ministry of Land, Environment and Rural Development
MOPHRH	Ministry of Public Works, Housing and Water Resources
MozFIP	Mozambique Forest Investment Program
MSME	Micro Small and Medium Enterprises

MZM	Mozambique Metical (national currency)
NCSD	National Commission for Sustainable Development
NEA	National Executing Agency
NEMP	National Environmental Management Program
NGO	Non-Governmental Organization
NLUP	National Land Use Plan
NSC	National Steering Committee
PARPA	Action Plan for the Reduction of Absolute Poverty
PEDSA	Strategic Plan for Agricultural Development
PCU	Project Coordination Unit
PDD	District Development Plans (Plano Distrital de Desenvolvimento)
PDPF	Provincial Directorate of Planning and Finance
PDUT	District Land Use Plan
PEPA	Environmental Quality Standards of Mozambique Projects
PLPP	Provincial level project personnel (with monitoring responsibilities)
PNI	National Irrigation Program
PNISA	National Agriculture Investment Plan
PNQ/QNP	Quirimbas National Park
PP	Urban Detailed Plan/Plano de Pormenor
PPP	Public Private Partnership
PPU	Partial Urban Plan/Plano Parcial de Urbanização
PROIRRI	Sustainable Irrigation Development Project
PRS	Poverty Reduction Strategy
RAP	Resettlement Action Plan
REDD	Reducing Emissions from Deforestation and Forest Degradation
REDD+	REDD plus sustainable management of forest, forest conservation, enhancement of carbon stocks
RFG/GFR	Gilé Forest Reserve
RPF	Resettlement Policy Framework
SDAE	District Services of Economic Activities
SDMAS	District Services of Women, Social Affairs and Health
SDPI	District Services of Planning and Infrastructure
TOR	Terms of Reference
UCA	Coordination and Support Unit
UGFI	International Funds Management Unit
UNDP	United Nations Development Program
UNO	United Nations Organization
USD	United States of America Dollar
WB	World Bank
WHO	World Health Organization
ZVDA	Zambezi Valley Development Agency

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EXECUTIVE SUMMARY

Introduction

Mozambique was selected as a REDD+ country participant in the Forest Carbon Partnership Facility in 2012, based on the development and approval of a REDD+ Preparation Proposal (R-PP). The Government of Mozambique received a US$3.8M grant in 2013 and an additional US$5M grant in 2016 from the FCPF Readiness Fund. This process supported the preparation of the Readiness Package, which includes the National REDD+ Strategy; safeguards instruments to guide its implementation; a Reference Emissions Level and a Monitoring, reporting, and verification system (MRV). Taking into consideration the drivers of deforestation and forest degradation, the National REDD+ Strategy adresses these drivers and aims at a consequent reduction of emissions with the promotion of rural development including agriculture, forest and energy.

Considering these developments, the Climate Investment Fund (CIF) has committed to finance a five-year (2016-2020) Forest Investment Program (FIP), made up of different projects, including the Mozambique Forest Investment Project (MozFIP) and the Mozambique Dedicated Grant to Local Communities (MozDGM). MozFIP aims to to improve the enabling environment for, and practices of, forest and land management in targeted landscapes in Mozambique.

To support the implementation of the National REDD+ Strategy and the Forest Investment Program, the following **safeguards instruments** were prepared: an Environmental and Social Management Framework (ESMF – this document). In addition, the Process Framework (PF) from a related project (MozBio) will be updated and adopted for this project to deal with any access restrictions to natural resources used in protected areas (PAs). In addition, a Strategic Environmental and Social Assessment (SESA) was prepared to inform the preparation of the National REDD+ Strategy.

The implementation of Mozambique's National REDD+ strategy and its Forest Investment Program will trigger seven of the 10+2 World Bank Operational Safeguards Policies, namely, Environmental Assessment (OP/BP 4.01), Pest Management (OP 4.09), Involuntary Resettlement (OP/BP 4.12), Natural Habitats (OP/BP 4.04), Forests (OP/BP 4.36), Physical Cultural Resources (OP/BP 4.11) and Safety of Dams (OP/BP 4.37).

The consultation process is continuous; hence the present report contains information from the 3rd of March 2013 to 18th of November 2016. The consultation process during this period of time covered six provinces across the three main regions of Mozambique; South (Maputo and Gaza), Center (Zambézia and Sofala) and North (Cabo Delgado and Nampula). The process included 61 (sixty one) public consultation meetings, of which 10 (ten) were community consultations. In total, 3370 participants were involved, of which 978 were female.

The preparation of the Environmental and Social Management Framework (ESMF)

The ESMF is defined as a guide to the screening of the proposed Program interventions to ensure that they do not negatively affect the natural and social environment. This management instrument is particularly relevant in a situation where there is still an unclear definition of the program interventions, as is the case of this program at this stage. The ESMF is considered the best management instrument for WB-funded projects.

The ESMF outlines several principles, which include:

- A systematic procedure for participatory screening of project sites and subproject activities for environmental and social considerations;
- A step-by-step procedure for predicting the main potential environmental and social impacts of the planned project and subproject activities;
- A typical environmental and social management plan for addressing negative externalities during project/subproject implementation (planning, construction and operation);
- A step by step monitoring and evaluation system for implementation of mitigation measures;
- An outline of recommended capacity building measures for environmental and social planning and monitoring of the subproject activities; and
- A budget to ensure that the Program has adequate resources to meet its own interests, especially financial resources for the preparation and implementation projects' and subprojects' ESIAs and ESMPs.

The ESMF basic principles and requirements will be applied throughout the entire Program life cycle.

Forest Investment Program (FIP)

The FIP is subdivided into two projects, namely MozFIP and MozDGM, in addition to a third project to be implemented with support of the IFC.

MozFIP comprises three components:

Component 1: Monitoring, Information and Incentives in the Forest Sector with the objective of improving the enabling environment and governance in the forest sector to promote sustainable forest management;

Component 2: Integrated Landscape Management in Cabo Delgado and Zambézia, which seeks to promote integrated landscape management in the Cabo Delgado and Zambézia landscapes, to address the most important drivers of deforestation in the landscapes while reducing rural poverty; and

Component 3: Project Management, Monitoring and Evaluation, Safeguards Management and Communications, which includes activities related to project coordination and management, fiduciary management, consultations, safeguards management, M&E, training and communications**.**

MozDGM is currently under preparation. The expected project components are:

Component 1: Capacity Strengthening for Sustainable Natural Resources Management, to strengthen the capacity of communities and civil society organizations on natural resources management and on sustainable production and business and grant management.

Component 2: Promotion of Sustainable Local Community Initiatives to generate revenues and improve local communities' livelihood, while conserving the resource base on which these initiative depend.

Component 3: Project Management, Monitoring and Evaluation, Safeguards and Communication to finance the operational costs incurred by the National Executing Agency to carry out its responsibilities.

Program Preparation and Implementation Arrangements

The Forest Investment Program was formulated jointly by the Government of Mozambique (through several institutions) and and the World Bank (WB). The Ministry of Land, Environment and Rural Development (MITADER) will be responsible for the Program implementation, including MozFIP and MozDGM. The lead unit for Project coordination in MITADER will be the National Sustainable Development Fund (*Fundo Nacional de Desenvolvimento Sustentável*, FNDS).

The FNDS will also ensure the involvement of relevant National Directorates in other line ministries: Ministry of Agriculture and Food Security (MASA), through the National Directorate of Agriculture and Planted Forests (DNAS), the National Directorate of Agrarian Extension (DNEA), and the Ministry of Mineral Resources and Energy (MIREME) through the National Energy Fund (FUNAE). Each Agency and National Directorate will appoint a focal point who will participate in Project activities including in the preparation of the annual work plans and budgets, annual progress reports, prepare terms of references (TORs) in their respective areas of expertise, and contribute to the supervision of the actions under their areas of responsibility.

There will be a Program Steering Committee comprising government organizations, the private sector, research institutions and civil society organizations, with the overall mandate of supporting FNDS in strategic decision-making. The **National Steering Committee** will coordinate activities under the overarching investment plan; approve annual work plans, budgets and reports; ensure alignment between the FIP and other government programs; liaise with development partners and relevant stakeholders; and advise on strategies and mechanisms for conflict resolution and improved management of forest resources.

In line with the FIP Design Document, the MozDGM Program administrative organization and structure will involve two levels: (i) global and (ii) country-based. The National Steering Committee (NSC) and the National Executing Agency (NEA) will operate at the country level to provide orientation and to: (i) provide oversight to the MozDGM in the country and the functioning of the NEA, (ii) review and make funding decisions on eligible project proposals, (iii) liaise with and participate in meetings of national REDD+ and FIP institutions, (iv) raise funds through other programs/mechanisms, (v) report to the GSC on national activities, (vi) mediate

conflicts related to MozDGM funding proposals and establish additional eligibility criteria for the MozDGM in the country.

Development Context

The Program happens at a time when Mozambique is starting to show signs of a significant level of deterioration of the main economic and financial indicators such as inflation, exchange and interest rates. These are informed by unfavorable domestic and external circumstances particularly (i) a reduced level of demand and prices for commodities that the country is and was becoming a potential exporter (e.g. coal, gas and other high value mineral resources), (ii) continued low domestic production, as well as (iii) reduced level of foreign assistance. Deceleration meant that in 2015 the economic growth went down to 6.5% and in 2016 is expected to not go beyond 4.5% (IMF, 2016). However, for the past decade and half the country's economy witnessed accelerated growth rates on an annual average of 7% in real term. This has been supported by high levels of assistance from Development Partners, efforts in the field of macroeconomic policy management and strengthening the enabling environment for promotion of domestic and foreign private investment including (i) foreign direct investment in mega projects and operating large-scale high-value agricultural products such as cotton, sugar and tobacco, (ii) the favorable agricultural growth at the family sector level, and (iii) infrastructure rehabilitation projects, including roads.

Despite that remarkable growth, the country continued and continues to be among the poorest in the world. Mozambique is placed in the 180th position among 188 countries in terms of human development index. Many institutional and other constraints continue to hamper the delivery of basic social services and poverty alleviation remains as the main challenge.

The two provinces that define the project area, i.e. Cabo Delgado and Zambézia, are rich and diverse in terms of the receiving physical, biological and socioeconomic environment. These provinces have the largest and diverse forests resources in the country and consequently well-positioned to test the envisaged changes in forests and land use management. For this to be achieved, interventions need to be adequately planned, implemented, monitored and evaluated to ensure that such environment is not adversely affected.

World Bank Safeguards Policies and GOM Regulations

The objective of the ESMF is to ensure that relevant World Bank Safeguards Policies and GOM environmental and social applicable regulations are strictly adhered to. The MozFIP and MozDGM Projec and REDD+ initiatives as triggered seven of the 10+2 World Bank Operational Safeguards Policies, namely, Environmental Assessment (OP/BP 4.01), Pest Management (OP 4.09), Involuntary Resettlement (OP/BP 4.12), Natural Habitats (OP/BP 4.04), Forests (OP/BP 4.36), Physical Cultural Resources (OP/BP 4.11) and Safety of Dams (OP/BP 4.37), as well as adhered to the World Bank Group General Environmental, Health and Safety Guidelines (EHS), namely i) General EHS Guidelines; ii) Perennial crops EHS Guidelines (2015); iii) some of the Agribusiness/Food Production EHS Guidelines; and (iv) Sawmilling and Wood-based Products / Forest Processing EHS Guidelines (2007). In addition to including elements of the Integrated Pest Management Plan (IPMP) to satisfy OP 4.09 requirements, the

ESMF has made provisions to address potential concerns afferent to OP/BP 4.04 (Natural Habitats), OP/BP 4.36 Forest, OP/BP 4.37 (Safety of Dams,) including possible impacts under OP/BP 4.11 (Physical Cultural Resources). To meet Involuntary Resettlement (OP/BP 4.12) Safeguard Policy requirements a Process Framework (PF) from a related project (MozBio) will be updated and adopted for this project. The PF covers PAs in the MozFIP and MozDGM Project areas, uses the same Government site teams for implementation, and its use will avoid instrument replication. The Process Framework is a separate document, however it should be used together with this ESMF. Given the nature, scale and scope of the proposed investments, the potential adverse environmental and social impacts of the project are expected to be moderate, reversible and temporary, the project classified as Category B type.

Selection of forest operators, Training and Capacity Building, Project and Subproject Formulation and Selection

As part of the ESMF extensive publicity, awareness creation, capacity building, environmental and social clearance continuous assistance on the ground will be given prominent position in the entire program, projects and subprojects cycles. Community, landholders, micro- and small enterprises and forest operators/concessionaries candidates will be carefully identified, trained and assisted to implement MozFIP project activities.

The ESMF will also ensure that a social and environmental screening process will help (i) determine which forest activities, infrastructure construction or rehabilitation and forest restoration activitiesare likely to have potential negative environmental and/or social impacts; (ii) determine the level of environmental and social work required, including whether an ESIA/ESMP or a site specific ESMP will be required or not; (iii) determine appropriate mitigation measures for addressing adverse impacts; (iv) incorporate mitigation measures into the activities financed by MozFIP; (v) will indicate the need for preparation of Community Development Action Plans in line with the PF; (vi) facilitate the review and approval of the subproject proposals; and (vii) **create**, **enhance or protect** the same type of natural resources at another suitable and acceptable location, compensating for lost resources.

Safeguards implementation arrangements will build on the existing structure already in place at the FNDS under MITADER. The FNDS has been recently strengthened in safeguards capacity by hiring four (4) dedicated Safeguards specialists to oversee all existing projects implemented by the Fund. These specialists will team up with two Safeguards technicians at the provincial level, i.e. one per province that will work closely with a focal point for environment and social issues identified within the Provincial Directorate for MITADER. The provincial safeguards team will respond to the Project Provincial Coordinators and will work in a tandem with a Communication Officer with a good knowledge of environmental and social safeguards to be based in Maputo. The FNDS team will count on MITADER support at both central and provincial levels and relevant ministries for the timely and adequate handling of Environmental, Social and Communication dimensions of the Program throughout its life cycle. These staff will be trained by WB Safeguards Specialists, and in close collaboration with MITADER.

Environmental and Social Management Plans (ESMP)

Where relevant, site specific Environmental and Social Impacts Assessment (ESIA) with a costed Environmental and Social Management Plan (ESMP) or just an Environmental and Social Management Plans (ESMP) will be prepared so that the Project **(i) avoids activities** that could result in adverse environmental and social impacts on resources or areas considered as sensitive; (ii) **prevents the occurrence** of negative environmental and social impacts; (iii) **prevents any future actions** that might adversely affect environmental and social resources; (iv) **limits or reduces the degree**, extent, magnitude or duration of adverse impacts by scaling down, relocating, redesigning elements of the project; (v) **repairs or enhances affected resources**, such as natural habitats or water resources, particularly when previous developments have resulted in significant resource degradation; (vi) **restores affected resources** to an earlier (and possibly more stable and productive) state, typically 'background/pristine' condition; and (vii) **creates**, **enhances or protects** the same type of resources at another suitable and acceptable location, compensating for lost resources, including involving people potentially or actually experiencing restrictions of access to natural resources in protected areas (PAs) in planning alternative livelihoods activities as defined under WB OP/BP 4.12 on Involuntary Resettlement.

Moreover, the ESMF includes standard Environmental and Social Clauses (ESC), which will be included in all bidding documents and in the various contracts (contractual clauses) for the design, implementation and appropriate operation of project activities.

Pest Management Plan (PMP) and a Process Framework (PF)

Essential aspects of the Pest Management Plan (PMP) have been included in this ESMF and a Process Framework (PF) from the MozBio Project updated and adopted for this project along with the ESMF/PMP. The documents will be reviewed and cleared by the World Bank and then publicly disclosed both in-country and at the InfoShop prior to project appraisal.

The critical aspects of the PMP will assist in the implementation of the WB approach/vision and the GOM's strategy towards integrated pest management (IPM) approaches, such as biological control, cultural practices, and the development and use of crop varieties that are resistant or tolerant to pest. In addition to agricultural insect pests and plant diseases, pests also include weeds, birds, rodents, and human or livestock disease vectors. Finally, they also include mitigations measures to reduce the impacts on human health, such as the adequate selection and safe use of pesticides, safe storage of pesticides and the safe disposal of pesticide containers. People who are vulnerable are elderly people, children, women and illiterate farmers, and require special attention.

MozFIP triggers the social safeguard OP/BP 4.12 (Involuntary Resettlement) since activities financed by the Project may restrict communities from accessing and using natural resources in designated PAs. Physical resettlement will not be supported by the MozFIP project. Only economic displacement (restricted access to and use of natural resources) is anticipated, which may be caused by Project activities in the Quirimbas National Park and Gilé National Reserve and their buffer zones. A PF must be developed to deal specifically with communities living within and adjacent to these PAs who may be affected by changed access to and use of resources inside them. The

MozFIP will use the PF that was approved, disclosed in July 2014 and is currently implemented under the MozBio Project and will be updated for this project. This PF is adequate because the two protected areas to be supported by MozFIP are already supported by MozBio and guidance provided in the MozBio PF will be similarly applicable. The Government teams applying safeguards instruments in PAs and working with communities in identifying the restrictions and designing appropriate mitigation plans will also be the same. Applying a single PF will avoid instrument replication, and make it easier for the Government to implement applicable safeguards.

Training and Capacity Building

Extensive training and capacity building will be carried out to prepare relevant institutions, beneficiaries (community, landholders, MSMEs, NGOs) to plan, implement, monitor and evaluate the different aspects involved in sound environmental and social management as elaborated in this ESMF and in in the PMP and the PF.

Based on needs identification, a specific institutional and human capacity building program for environmental and social management, as well as human health and safety will be developed as part of the MozFIP. Beneficiary institutions will be the Ministry of Land, Environment and Rural Development (MITADER), especially at its provincial and district levels, relevant line ministries at its provincial and district levels (e.g. agriculture, and energy), including local authorities (e.g. districts and others such as CSOs). The details of the capacity-building program and the institutions to be supported at provincial and/or local level, still should be developed once specifics of the subproject and beneficiaries are known.

Practical ways of reaching out to all target groups will need to be devised for training and capacity needs assessments as well as for delivery of the training. The "*Learning by Doing*" approach will be given utmost priority.

Monitoring

Monitoring will also be fundamental to ensure that the objectives set forth in the Program, ESMF and the ESIAs/ESMPs are being achieved satisfactorily and where there are nonconformities, timely corrective action can be taken. The safeguard specialist at central level landscape level, will have the overall responsibility for coordinating and monitoring implementation of the ESMF. They will ensure that: (i) all critical people/entities (at local, district and provincial) levels have the necessary knowledge and skills to perform their duties and were needed identify and carry out remedial actions; (ii) all project activities are implemented per the environmental and social management requirements of this ESMF/PMP and PF and, where applicable, specific Environmental and Social Management Plans (ESMPs); and (iii) problems arising during implementation are being addressed early enough to avoid any spill-over that could subsequently hinder the outcomes of the project (e.g. issues of Grievance Redress Mechanism and other); and (iv) environmental and social mitigation or enhancement measures, designed as per this ESMF or additional environmental and social mitigation measures identified during project implementation and/or ESIA/ESMP preparation, are reflected within specific ESMPs, CESMPs and monitoring plans.

Among other support tools quarterly progress reports will be prepared and circulated to all relevant entities dealing aspects such as: (i) implementation schedule; (ii) extent of officers' knowledge, involvement and actions; (iii) extent of community involvement; (iv) allocation of funds; (v) problems arising as well as solutions devised, during implementation; (vi) efficiency of contractors in fulfilling their environmental, social, health and safety management contractual obligations; and (vii) efficiency of Supervising Engineers in fulfilling their environmental, social, health and safety monitoring contractual obligations.

Estimated ESMF Implementation Budget

The total cost for implementing this ESMF also includes the budget provision for the implementation of PF and for preparing and implementing site specific PMP, ESIAs and ESMPs, staffing, dissemination and public consultation process, GRM, training and capacity building stands at **US$ 2,450,000.00** (**two million, four hundred fifty thousand American Dollars**), estimated as five percent (5%) of the overall project cost.

ESMF Implementation	**US$**
Institutional Development and Community Entities formalization	$73 500,00
Training and Capacity Building	$245 000,00
Technical Assistance	$857 500,00
Preparedness and Implementation of ESIAs, ESMPs, RAP, PMP and CDAPs	$367 500,00
Grievance Redress Mechanism	$245 000,00
Communication and Public Consultation	$318 500,00
Monitoring and Evaluation	$122 500,00
Audit and Annual Reviews	$147 000,00
Other Studies and Plans	$73 500,00
TOTAL	**$2 450 000,00**

SUMÁRIO EXECUTIVO

Introdução

Moçambique foi seleccionado para ser um dos países participantes no REDD+, Fundo de Parceria para o Carbono Florestal em 2012, com base no desenvolvimento e aprovação de uma Proposta de Preparação de REDD+ (R-PP). O Governo de Moçambique recebeu uma subvenção de US$ 3,8M em 2013 e uma subvenção adicional de US $ 5M em 2016 do Fundo para a Preparação do FCPF. Este processo apoiou a elaboração do Pacote de Preparativo, que inclui a Estratégia Nacional REDD +; Instrumentos de salvaguarda para orientar a sua implementação; Um Nível de Emissões de Referência e um Sistema de Monitoramento, Relatórios e Verificação (MRV). Tendo em consideração os factores que condicionam o desmatamento e a degradação florestal, a Estratégia Nacional do REDD+ combina a luta contra esses factores e a consequente redução das emissões com o desenvolvimento rural em geral, incluindo agricultura, floresta e energia

À luz destes desenvolvimentos, o Fundo de Investimento para o Clima (FIC) comprometeu-se a apoiar um programa de investimento florestal (FIP) de cinco anos (2016-2020) mais conhecido como MozFIP, que apoiará o desenvolvimento de florestas plantadas, a promoção do desenvolvimento rural integrado sustentável e aumentará as sinergias entre BIRD e IFC. O programa também incluirá um Mecanismo de Doação Dedicado (DGM), que se constitui numa iniciativa global especial no âmbito do FIP para fornecer subsídios para aumentar a capacidade e apoiar iniciativas específicas de Povos Indígenas e Comunidades Locais (IPLCs) em ações piloto do FIP. Isso formará o projeto MozDGM.

O programa apoiará a transformação em todo o país e pilotará a maioria das intervenções em duas paisagens selecionadas nas províncias de Cabo Delgado e Zambézia.

Como parte do programa e com o apoio FCPF, três **instrumentos de salvaguardas** estão a ser preparados: uma Avaliação Social e Ambiental Estratégica (SESA), um Quadro de Gestão Ambiental e Social (QGAS - este documento) e um Quadro do Processo (QP) de um projecto relacionado (MozBio) será actualizado para tratar de quaisquer restrições de acesso a recursos naturais usados em áreas de conservação (AC).

O Programa REDD + de Moçambique irá desencadear sete das 10 + 2 Políticas de Salvaguardas Operacionais do Banco Mundial, nomeadamente, Avaliação Ambiental (OP/BP 4.01), Gestão de Pragas (OP 4.09), Reassentamento Involuntário (OP/BP 4.12), Habitats Naturais 4.04), Florestas (OP/BP 4.36), Recursos Culturais Físicos (OP/BP 4.11) e de forma preventiva a Segurança de Barragens (OP/BP 4.37).

Ao longo de cerca de dois anos, a partir de 2015, um **extenso processo de consulta** foi realizado para desenvolver o conjunto de instrumentos para materializar o REDD +. O processo abrangeu seis províncias, 41 reuniões de consulta pública envolvendo 2.288 pessoas, das quais 1.462 eram do sexo masculino e 826 eram do sexo feminino. O processo foi utilizado para explorar questões relacionadas com os fatores de

desmatamento e degradação florestal, uso e posse da terra, protecção social e ambiental e maneio florestal sustentável.

A preparação do QGAS

O QGAS é definido como sendo um guia para a triagem das intervenções propostas do Programa para garantir que elas não afectem negativamente o ambiente natural e social. Este instrumento de gestão é particularmente relevante numa situação em que ainda existe uma definição pouco clara das intervenções do programa, como é o caso deste programa nesta fase. A preparação do Quadro de Gestão Ambiental e Social é considerada como sendo a melhor forma de gestão para os projectos financiados pelo Banco Mundial.

O QGAS descreve uma série de princípios, que incluem:

- Um procedimento sistemático para a selecção participativa dos locais para os subprojectos e actividades dos subprojectos de forma que se tenha em consideração as questões ambientais e sociais;
- Um procedimento faseado para prever os principais potenciais impactos ambientais e sociais das actividades dos subprojectos previstos;
- Um plano de gestão ambiental e social típico para abordar as externalidades negativas no decurso da implementação dos subprojectos (planificação, construção e operação);
- Um sistema faseado das acções de monitoria e de avaliação para a implementação de medidas de mitigação; e
- Um esboço de medidas de reforço das capacidades recomendadas para a planificação e monitoria ambiental e social das actividades dos subprojectos; e
- Um orçamento para garantir que o projecto tenha recursos adequados para atender aos seus próprios interesses, especialmente recursos financeiros para a preparação e execução dos EIASs e PGASs dos subprojectos

Os princípios e requisitos básicos do QGAS serão aplicados ao longo de todo o ciclo de vida do Programa.

Desmatamento e degradação em Moçambique e os principais factores

Em Moçambique, as principais fontes de perda e degradação florestal incluem:

- Agricultura de subsistência e comercial devido às práticas insustentáveis de uso da terra, incluindo o uso de queimadas em desmatamento e caça;
- Aumento da procura de energia de biomassa nas zonas rurais e urbanas;
- Exploração ilegal de madeira e não-implementação de planos de manejo de terras e florestas;
- Mineração associada ao desmatamento de terrenos para habitação (em particular mineiros artesanais); e
- desenvolvimento de infra-estrutura, incluindo estradas, linhas-férreas e expansão das áreas urbanas.

As causas subjacentes incluem:

- Acesso limitado a tecnologias de alta produtividade ou meios para implementá-las pela maioria dos pequenos agricultores, incluindo uma rede de extensão escassa;
- Má governação e fraca aplicação da legislação sobre terras, florestas e ambiente; e
- Demanda por alimentos e produtos madeireiros nos mercados nacionais e internacionais e emprego inadequado e oportunidades de renda nas áreas rurais.

A Estratégia Nacional REDD +, bem como o Programa de Investimento Florestal (FIP) e o seu Mecanismo de Doações Dedicadas (DGM) em Moçambique têm como objectivo inverter estas tendências negativas e promover o uso sustentável dos recursos naturais, incluindo a terra e as florestas nas zonas rurais. Dada a importância atribuída ao planeamento e uso dos recursos naturais no processo, o programa inclui a formulação do Plano Nacional do Uso da Terra.

Opções da Estratégia REDD + propostas para Moçambique

O objectivo da Estratégia Nacional REDD + é o de reduzir as emissões líquidas de gases de efeito de estufa pela via da redução de emissão de 170 MtCO2/ano até 2030 e promover o desenvolvimento rural no país. Os seis principais pilares da Estratégia Nacional REDD + (MITADER, 2016) são:

Objectivo Estratégico 1: Acções transversais: estabelecer uma plataforma institucional e legal para a coordenação interinstitucional para garantir a redução do desmatamento.

Objectivo estratégico 2: Agricultura de Conservação: promoção de práticas sustentáveis alternativas à agricultura itinerante, que garantam maior produtividade das culturas alimentares e comerciais.

Objectivo Estratégico 3: Energia: aumento de acesso a fontes alternativas de biomassa em áreas urbanas e aumento da eficiência da produção e utilização de energia de biomassa.

Objectivo Estratégico 4: Áreas de Conservação: fortalecer o sistema de áreas protegidas e encontrar formas seguras de geração de renda.

Objectivo Estratégico 5: Gestão Florestal Sustentável: promover o sistema de concessões florestais, gestão da comunidade e fortalecimento da governança florestal.

Objectivo Estratégico 6: Restauração de florestas degradadas e plantio de árvores: o estabelecimento **de** um ambiente favorável para as empresas florestais, restauração de florestas naturais e plantio de árvores para diversos fins, produção e utilização de energia de biomassa.

Componentes do Programa

O Programa é subdividido em três projectos, a saber, MozFIP, MozDGM e IFC. O presente ESMF é desenvolvido para os projectos MozFIP e MozDGM e as actividades de ambos os projetos se encontram agregadas por componentes para cada Projecto.

O MozFIP compreende três componentes:

Componente 1: Monitorização, informação e incentivos no sector florestal com o objetivo de melhorar o ambiente e governança propícios ao setor florestal para promover a gestão sustentável das florestas;

Componente 2: Gestão integrada da paisagem em Cabo Delgado e Zambézia, que visa promover a gestão integrada da paisagem nas províncias de Cabo Delgado e Zambézia, para abordar os mais importantes factores do desmatamento nas paisagens ao mesmo tempo reduzir a pobreza rural; e

Componente 3: Gestão de Projectos, Acompanhamento e Avaliação, Gestão de Salvaguardas e Comunicação, que inclui actividades relacionadas com coordenação e gestão do projecto, gestão fiduciária, consultas, gestão de garantias, M&A, formação e **comunicação.**

No âmbito do Projecto MozDGM estão previstas as seguintes componentes:

Componente 1: Capacitação e Fortalecimento para a Gestão Sustentável dos Recursos Naturais, para financiar o desenvolvimento de capacidades e actividades institucionais de fortalecimento para as comunidades e organizações da sociedade civil em todo o país cobrindo aspectos como o reforço de consciência das comunidades, formação de redes, advocacia e capacidade técnica em assuntos relacionados Às alterações climáticas e à gestão das florestas e das terras, bem como às suas competências de gestão de concessões e de subvenções.

Componente 2: Promover iniciativas comunitárias locais sustentáveis relacionadas com a implementação dos subprojectos. A Agência Nacional Executora (ANE) irá monitorar e financiar Comité de Gestão de Recursos Naturais (CGRNs) ou OCBs formais que tenham experiência confirmada na implementação de subprojectos ou um Plano de Acção de Desenvolvimento Comunitário validado preparado através do processo mencionado na componente MozDGM 1 na área alvo. As organizações candidatas podem candidatar-se às subvenções do MozDGM apresentando propostas que contribuirão directa ou indirectamente para reduzir o desmatamento e, ao mesmo tempo, melhorar os meios de subsistência locais, incluindo, mas não se limitando a: actividades de melhoria da segurança alimentar; Produção e comercialização de produtos florestais artesanais e não-madeireiros; Lotes comunitários para produção de energia de biomassa; Restauração de áreas degradadas; Produção agro-ecológica sustentável; E ecoturismo.

Componente 3: Gestão de Projectos, Acompanhamento e Avaliação, Salvaguardas e Comunicação para financiar os custos operacionais incorridos pela Agência Executora Nacional para levar a cabo as suas responsabilidades, que incluem, entre outros: (i) actuar como secretaria ao NSC; (ii) assegurar a coordenação técnica, monitoramento e avaliação do projecto; (iii) relatar ao Banco Mundial e ao Comité de Coordenação; (iv) assegurar a gestão financeira, aquisições e auditoria do Projecto; (v) operar o Mecanismo de Solução de Queixas do Projecto; (vi) supervisionar a implementação de iniciativas comunitárias e avaliar resultados; e (vii) assegurar a comunicação, a consulta pública e as actividades de divulgação. Esta componente também financiará estudos, o desenvolvimento de um manual de administração de

subsídios, viagens e aquisição limitada de equipamentos para actividades de escritório e monitoramento.

O custo total do programa é estimado em US $ 47,0 milhões para o MozFIP e US $ 4.5 milhões para o MozDGM

Formulação do Projeto e Arranjos de Implementação

O programa está a ser formulado conjuntamente pelas instituições moçambicanas relevantes e pelo Banco Mundial (BM). O Ministério da Terra, Ambiente e Desenvolvimento Rural (MITADER) é a instituição anfitriã do GdM e será responsável pela orientação estratégica global. Coordenará a implementação do projeto MozFIP. A unidade de líder para a coordenação de projectos no MITADER será a sua Unidade de Gestão de Fundos Internacionais *(Unidade de Gestão de Fundos Internacionais,* UGFI), que se encontra sediada no recém-criado Fundo Nacional de Desenvolvimento Sustentável *(Fundo Nacional de Desenvolvimento Sustentável,* FNDS).

A UGFI assegurará também que as Direcções Nacionais relevantes de outros ministérios: Ministério da Agricultura e Segurança Alimentar (MASA), através da Direcção Nacional de Agricultura e Florestas Plantadas (DNAS), Direcção Nacional de Extensão Agrária (DNEA) e Ministério dos Recursos Minerais e Energia (MIREME) através do Fundo Nacional de Energia (FUNAE) estejam activa e adequadamente envolvidos. Cada Agência e Direcção Nacional nomeará um ponto focal que participará nas actividades do Projecto, incluindo na preparação dos planos de trabalho e orçamentos anuais, relatórios anuais de progresso, preparação de termos de referência (TORs) nas respectivas áreas de especialização e contribuirá para a Supervisão das acções sob as suas áreas de responsabilidade.

Haverá um Comité de Coordenação do Programa composto por organizações governamentais, o sector privado, instituições de investigação e organizações da sociedade civil, com o mandato geral de apoiar a UGFI na tomada de decisões estratégicas. O **Comitê Nacional de Coordenação** irá coordenar actividades no âmbito do plano de investimento global; Aprovar planos de trabalho anuais, orçamentos e relatórios; Assegurar o alinhamento entre o FIP e outros programas governamentais; Estabelecer contactos com os parceiros de desenvolvimento e as partes interessadas; E aconselhar sobre estratégias e mecanismos para a resolução de conflitos e melhor gestão de recursos florestais.

De acordo com o Documento de Concepção do FIP, a organização e estrutura administrativa do Programa DGM envolverá dois níveis: (i) o Global e o (ii) Nacional. O Comité Nacional de Coordenação (CNC) e a Agência Nacional de Execução (ANE) operarão ao nível nacional para orientar e (i) supervisionar o MozDGM no país e o funcionamento da ANE; (iv) mobilizar fundos através de outros programas/mecanismos, (v) informar ao CNC sobre as actividades nacionais, (vi) mediar Conflitos relacionados com as propostas de financiamento MozDGM e estabelecer critérios adicionais de elegibilidade para o MozDGM no país.

Contexto de desenvolvimento

O programa acontece num momento em que Moçambique está a começar a mostrar sinais de um nível significativo de deterioração dos principais indicadores macroeconómicos e financeiros, como a inflação, as taxas de câmbio e as taxas de juro. Estes desenvolvimentos são informados por circunstâncias internas e externas desfavoráveis, particularmente (i) um nível reduzido de demanda e preços para as *commodities* de que o país é e estava a tornar-se num potencial exportador (por exemplo, carvão, gás e outros recursos minerais de alto valor); (ii) contínua redução da produção doméstica, bem como (iii) redução do nível de assistência externa. A desaceleração significou que em 2015 o crescimento económico tenha descido para 6,5% e em 2016 não deverá ultrapassar os 4,5% (FMI, 2016). No entanto, durante a última década e meia a economia do país tinha estado a testemunhar taxas de crescimento aceleradas a uma média anual de 7% em termos reais. Este crescimento foi apoiado pelos altos níveis de assistência dos parceiros de desenvolvimento, esforços no domínio da gestão da política macroeconómica e fortalecimento do ambiente propício para a promoção de investimentos privados nacionais e estrangeiros, incluindo (i) o investimento directo estrangeiro em mega projectos e produtos agrícolas de grande escala e de alto valor como o algodão, açúcar e tabaco, (ii) o crescimento agrícola favorável ao nível do sector familiar, e (iii) projectos de reabilitação de infra-estruturas, incluindo estradas.

Apesar desse notável crescimento, o país continuava e continua a ser um dos mais pobres do mundo. Encontra-se na posição 180 entre 188 países em termos de índice de desenvolvimento humano. Uma série de constrangimentos institucionais e outros que continuam a dificultar a prestação de serviços sociais básicos e a redução da pobreza permanecem como sendo o principal desafio.

As duas províncias que definem a área do projecto, ou seja, Cabo Delgado e Zambézia, são ricas e diversificadas em termos do ambiente físico, biológico e socioeconómico receptor. Estão entre as províncias mais ricas do país em termos de recursos florestais e, consequentemente, bem posicionadas para testar as transformações previstas nas florestas e na gestão do uso da terra. Para que isso seja alcançado, as intervenções precisam de ser adequadamente planificadas, implementadas, monitoradas e avaliadas para garantir que esse ambiente não seja afectado de forma adversa.

Políticas de Salvaguardas do Banco Mundial e Regulamentos do GdM

O objectivo do QGAS é o de assegurar que as políticas relevantes de salvaguardas do Banco Mundial e os regulamentos ambientais e sociais aplicáveis do GOM sejam estritamente observados. O Projecto desencadeou sete das 10 + 2 Políticas de Salvaguardas Operacionais do Banco Mundial, nomeadamente, Avaliação Ambiental (OP/BP 4.01), Gestã de Pragas (OP 4.09), Reassentamento Involuntário (OP/BP 4.12), Habitats Naturais (OP/BP 4.04), Florestas (OP/BP 4.36), Recursos Culturais Físicos (OP/BP 4.11) e de forma preventiva a Segurança de Barragens (OP/BP 4.37), para além de cumprir as Diretrizes Gerais sobre o Meio Ambiente, Saúde e Segurança do Grupo do Banco Mundial, Nomeadamente: i) directrizes gerais de SSMA; ii) algumas das Directrizes de AHS para o Agronegócio/Produção Alimentar; iii) Operações de Exploração Florestal; e, possivelmente, (iv) Serrações e Produtos à Base de Madeira, de abril de 2007. Para além de incluir elementos do Plano de Gestão Integrada de Pragas

(PGIP) para atender aos requisitos da OP 4.09, o QGAS tomou providências para tratar de possíveis preocupações aferentes ao OP/BP 4.04 (Habitats Naturais), OP/BP 4.36 Floresta, OP/BP 4.37 (Segurança de Barragens) incluindo possíveis impactos sob OP/BP 4.11 (Recursos Físicos e Culturais). Foi considerado um Quadro de Processo do project relacionado (MozBio) para satisfazer os Requisitos de Política de Salvaguarda do Reassentamento Involuntário (OP/BP 4.12) dado que este cobre as mesmas AC nas áreas do MozFIP e o projecto MozDGM, irá utilizar a mesma equipa de implementação do governo nas AC e o seu uso evitará a replicação de instrumentos. O Quadro Processual é um documento separado, no entanto, deve ser usado em conjunto com este QGAS. Dada a natureza, escala e escopo dos investimentos propostos, espera-se que os potenciais impactos ambientais e sociais adversos do projeto sejam moderados, reversíveis e temporários, o projecto foi classificado como sendo de Categoria B.

Selecção de Operadores, Formação e Capacitação, Formulação e Selecção de Projetos e Subprojetos

Como parte do QGAS, a divulgação extensiva, conscientização, capacitação, licenciamento ambiental e social e a assistência contínua no terreno serão colocados em destaque em todo o ciclo do programa e dos subprojectos. Os operadores (da comunidade e das MPME) serão cuidadosamente identificados, treinados, certificados e assistidos para que os seus projectos se desenrolem de forma satisfatória.

O QGAS também assegurará que um processo de rastreio social e ambiental ajude (i) a determinar que projectos de floresta/construção de infraestruturas ou actividades de reabilitação e restauração ambiental são susceptíveis de ter potenciais impactos ambientais e/ou sociais negativos; (ii) determinar o nível de acção ambiental e social necessário, incluindo se será necessário ou não um EIAS/PGAS ou um PGAS específico do local; (iii) determinar medidas de mitigação apropriadas para enfrentar impactos adversos; (iv) incorporar medidas de mitigação nos subprojectos financiados pelo MozFIP; (v) indicará a necessidade da elaboração de um Plano de Acção de de Desenvolvimento Comunitário, que seria preparado de acordo com o QP do MozBio; (vi) facilitar a revisão e aprovação das propostas dos subprojectos; e (vii) **criar, melhorar ou proteger** o mesmo tipo de recursos em outro local adequado e aceitável, compensando pelos recursos perdidos.

Os mecanismos de implementação de salvaguardas basear-se-ão na estrutura já existente na Unidade de Gestão de Fundos Internacionais (UGFI) sob o MITADER. A UGFI foi recentemente fortalecida na sua capacidade de se ocupar pelas questões das salvaguardar por intermédio da contratação de quatro (4) especialistas especializados em Salvaguardas para supervisionar todos os projectos existentes ancorados na Unidade. Esses especialistas irão trabalhar com dois técnicos de Salvaguardas a nível provincial, isto é, um por província que trabalharão em estreita colaboração com um ponto focal para questões ambientais e sociais identificadas na Direcção Provincial do MITADER e Responderão perante os Coordenadores Provinciais do Projecto e (ii) um Oficial de Comunicação com um bom conhecimento sobre salvaguardas ambientais e sociais, com base em Maputo. A Equipa da UGFI do MITADER contará com o apoio aos níveis central e provincial dos ministérios relevantes e serão responsáveis pelo bom tratamento das dimensões ambiental, social e de comunicação do projecto ao longo do seu ciclo de vida. Esses funcionários serão treinados pelos especialistas de salvaguardas do BM e em estreita colaboração com o MITADER.

Planos de Gestão Ambiental e Social (PGAS)

Quando pertinente, serão preparadas Avaliações de Impacto Ambiental e Social (AIAS) de subprojectos específicos, com um Plano de Gestão Ambiental e Social (PGAS) orçamentado ou apenas Planos de Gestão Ambiental e Social (PGAS) para que o projecto **(i) evite actividades** ambientais e que possam resultar em impactos ambientais e sociais adversos sobre recursos ou áreas consideradas sensíveis; (ii) **impedir a ocorrência** de impactos ambientais e sociais negativos; (iii) **impedir que eventuais acções futuras** que possam afectar negativamente recursos ambientais e sociais; (iv) **limitar ou reduzir o grau,** extensão, magnitude ou a duração dos impactos adversos pela via do redimensionamento, deslocalização, redesenho dos elementos do projecto; (v) **reparar ou melhorar recursos afectados,** tais como habitats naturais ou recursos hídricos, particularmente quando desenvolvimentos anteriores tenham resultado em degradação dos recursos significativos; (vi) **restaurar recursos afectados** para um estado anterior (e, possivelmente, mais estável e produtivo), tipicamente repondo a condição de 'partida/intocada'; e (vii) **criar, melhorar ou proteger** o mesmo tipo de recursos em outro local adequado e aceitável, compensando recursos perdidos, incluindo o envolvimento das pessoas potencialmente ou actualmente a sentir a restrição de acesso ao uso de recursos naturais em ACs na planificação de actividades de meios de vida alternativas, conforme definido na PO do BM 4.12 sobre Reassentamento Involuntário.

Para além disso, o QGAS inclui cláusulas ambientais e sociais (CAS) padrão, que serão incluídas em todos os documentos de relacionados com os projectos e nos diversos contratos (cláusulas contratuais) para a concepção, instalação/construção e operação adequada das intervenções a serem adoptadas para subprojectos simples. Os empreiteiros de projectos simples serão responsáveis pela implementação destas Cláusulas Ambientais e Sociais durante a instalação/construção e precisarão de recrutar pessoal qualificado, responsável pelas questões ambientais/sociais e de saúde e segurança, para fazer isso.

Plano de Gestão de Pesticidas (PMP) e um Quadro de Processo (PF)

Os aspectos essenciais do Plano de Gestão de Pragas (PGP) foram incluídos neste QGAS e um Quadro de Processo (QP) do Projecto MozBio será usado junto com o QGAS/PGP. Estes últimos serão revistos e aprovados pela ASPEN e seguidamente divulgados publicamente tanto no país quanto no InfoShop do BM antes da avaliação do projecto, dado que o QP de MozBio já está aprovado.

Os aspectos críticos do PGP ajudarão na implementação da abordagem/visão do Banco Mundial e da estratégia do GdM que defendem a gestão integrada de pragas, com base em técnicas tais como controlo biológico, práticas culturais e o desenvolvimento e uso de variedades de culturas que sejam resistentes ou tolerante às pragas. Para além de pragas de insectos e doenças de plantas, as pragas também incluem ervas daninhas, aves, roedores e vectores de doenças humanas ou de gado. Nisto também se incluem medidas de mitigação para reduzir os impactos sobre a saúde humana, tais como a selecção adequada e o uso, armazenamento seguro de pesticidas e sua deposição segura de recipientes de pesticidas. As pessoas vulneráveis são constituídas pelas pessoas idosas, crianças, mulheres e agricultores analfabetos, que requerem uma atenção especial.

O MozFIP desencadeia a salvaguarda social OP/BP 4.12 (Reassentamento Involuntário) uma vez que atividades financiadas pelo Projecto podem vir a restringir o acesso e uso pelas comunidades dos recursos naturais em parques e AC designados. O reassentamento físico será evitado no Projeto por meio de mecanismos de rastreio e planificação que proporcionem acesso a atividades alternativas de desenvolvimento sustentável. Prevê-se apenas o deslocamento econômico (acesso e uso restrito de recursos naturais), que pode ser causado pelas atividades do Projecto no Parque Nacional de Quirimbas e na Reserva Nacional de Gilé e suas zonas-tampão. Um QP deverá ser desenvolvido especificamente para tratar das comunidades que vivem dentro e adjacentes a essas ACs que podem ser afectadas por mudanças no acesso e uso de recursos dentro delas. O Projecto utilizará o PF aprovado, divulgado em Julho de 2014 e atualmente implementado no âmbito do Projeto MozBio. Este PF será actualizado para ser usado nesse projecto. Este documento é adequado porque as duas AC a serem apoiadas pelo MozFIP já estão suportadas pelo MozBio e as orientações fornecidas no PF do MozBio serão igualmente aplicáveis. As equipas do Governo que aplicarão os instrumentos de salvaguardas nas AC e que trabalham com as comunidades na identificação de restrições aos recursos e na concepção de planos de mitigação adequados serão igualmente as mesmas. A aplicação de um PF único evitará a replicação de instrumentos e facilitará a implementação das salvaguardas aplicáveis pelo Governo. O QP do MozBio foi avaliado por assessores de salvaguardas e considerado adequado, tendo sido assim adotado para o Projeto actual.

Formação e Capacitação

Será realizado uma vasta acção de formação e capacitação para preparar as instituições relevantes, operadores comunitários e privados, incluindo ONGs nos vários níveis, para planificar, implementar, monitorar e avaliar os diferentes aspectos envolvidos na gestão ambiental e social, conforme elaborado neste QGAS em particular, e quer em aspectos do PGP quer do QP.

Com base na identificação das necessidades, será desenvolvido um programa específico de capacitação institucional e humana para a gestão ambiental e social, bem como para a saúde e segurança humana como parte do MozFIP. As instituições beneficiárias serão o Ministério da Terra, Ambiente e do Desenvolvimento Rural (MITADER), especialmente a nível provincial e distrital, ministérios competentes a nível provincial e distrital (por exemplo, agricultura e energia), incluindo autoridades locais (por exemplo, distritos e outros) e OSCs. Os detalhes do programa de capacitação e das instituições a serem apoiadas a nível provincial e/ou local ainda precisam de ser desenvolvidos uma vez conhecidos os aspectos específicos dos subprojectos e dos beneficiários.

Serão necessárias formas práticas de contactar todos os grupos-alvo para a formação e avaliação das necessidades de capacitação, bem como para a prestação da formação. Será dada prioridade máxima à abordagem do *"aprender a fazer fazendo"*.

Monitorização

O acompanhamento será também fundamental para garantir que os objectivos estabelecidos no Programa, no QGAS e nos AIAS/PGAS estejam a ser alcançados de forma satisfatória e em caso de não haver conformidade, poderem ser tomadas medidas correctivas atempadas. A Equipa de Gestão do Programa (EGA), especialmente o

pessoal designado para a gestão ambiental e social estacionado a nível provincial terá a responsabilidade geral de coordenar e monitorar a implementação do QGAS. Por intermédio do seu trabalho com todas as partes interessadas e envolvidas relevantes do projecto este pessoal irá assegurar que: (i) todas as pessoas/entidades críticas (aos níveis local, distrital e provincial) tenham os conhecimentos e habilidades necessários para desempenhar as suas funções e onde for necessário que possam identificar e realizar ações correctivas; (ii) todas as actividades do projecto sejam implementadas de acordo com os requisitos de gestão ambiental e social deste QGAS/PGP e QP e, quando aplicável, Planos de Gestão Ambiental e Social (PGAS) específicos; e iii) os problemas que surgirem durante a implementação sejam abordados suficientemente a tempo para evitar qualquer demora que possa, subsequentemente, dificultar os resultados do projecto (por exemplo, questões relativas ao mecanismo de reparação de queixas e outros); e iv) medidas de mitigação ou de reforço ambiental e social, concebidas de acordo com este QGAS ou medidas adicionais de mitigação ambiental e social identificadas durante a implementação do projecto e/ou preparação dos EIAS/PGAS, sejam reflectidas nos PGAS e PGASE específicos e planos de monitorização.

Entre outras ferramentas de apoio, serão elaborados e divulgados junto de todas as entidades relevantes relatórios trimestrais de progresso que tratem de aspectos tais como: (i) cronograma de implementação; (ii) grau de conhecimento, envolvimento e acções dos oficiais; (iii) grau de envolvimento da comunidade; (iv) alocação de recursos; v) problemas decorrentes da, bem como soluções concebidas durante a execução; (vi) eficiência dos empreiteiros no cumprimento das suas obrigações contratuais de gestão ambiental, social, de saúde e segurança; e (vii) eficiência dos Engenheiros de Fiscalização no cumprimento das suas obrigações contratuais de monitoramento ambiental, social e de saúde e segurança.

Orçamento Estimativo de Implementação do QGAS

O custo total para a implementação deste QGAS/PMP também inclui meios para a implementação do QP e elaboração e execução das AIASs, PGAS e CDAPs específicos, despesas com o pessoal, divulgação do programa, formação e capacitação é de **US$ 2,450,000.00 (dois milhões, quatrocentos cinquena mil dólares americanos),** que se constituem numa percentagem (5%) do custo de todo o projecto.

Implementação do QGAS	**US$**
Formalização de Desenvolvimento Institucional e de Entidades Comunitárias	$73 500,00
Formação e Capacitação	$245 000,00
Assistência Técnica	$857 500,00
Prontidão e Implementação dos EIAS, PGAS, QP, PGP e PADCs	$367 500,00
Mecanismos de Tratamento de Queixas	$245 000,00
Comunicação e Consulta Pública	$318 500,00
Monitoria e Avaliação	$122 500,00
Auditoria e Revisões Anuais	$147 000,00
Outros Estudos e Planos	$73 500,00
TOTAL	**$2 450 000,00**

1- INTRODUCTION

Mozambique is one of the countries to receive financing through the Forest Investment Program (FIP) of the Climate Investment Funds (CIF). In a new round of financing in 2015, based on a successful Expression of Interest, Mozambique was selected to develop a Forest Investment Plan. In July 2016, Mozambique had its Forest Investment Plan approved by the FIP Sub-Committee. The government since then has started to design the Mozambique Forest Investment Project (MozFIP) which included the Dedicated Grant Mechanism for Local Communities (MozDGM). MozFIP will implement part of Mozambique's REDD+ Strategy, and will address the main causes of deforestation and start a transformation process in the forest sector towards more sustainable forest management with enhanced benefits to rural communities. Guided by the National REDD+ Strategy and other Government strategies, the MozFIP represents the Government's ambition for transformational change to address the drivers of deforestation and promote sustainable rural development

For the REDD+, MozFIP and MozDGM consultation extended from the 3rd of March 2013 to 18th of November 2016. The consultation process is continuous and will be continued moving foward. The consultation process covered six provinces across the South, Center and North of Mozambique, in Maputo, Gaza, Zambézia, Sofala, Cabo Delgado and Nampula provinces. The process included 61 public consultation meetings, of which 10 were community consultations. In total, 3370 participants were involved, of which 978 were female. The process was used to explore issues around the drivers of deforestation and forest degradation, land use and land tenure, social and environmental protection and sustainable forest management. See Annex 1 for a summary of the public consultations that were carried out.

1.1 The ESMF

The ESMF is meant to guide the screening of the proposed interventions by the MozFIP, MozDGM and other future potential REDD+ initiatives to ensure that they do not negatively affect the natural and social environment. The ESMF is particularly relevant in a situation where there is still an unclear definition of Program interventions, as is the case of this program at this stage. Under such circumstances the preparation of the Environmental and Social Management Framework is considered a best management instrument.

The ESMF outlines several procedures, including:

- A systematic procedure for participatory screening for project sites and subproject[1] activities for environmental and social considerations;

[11] Subprojects are defined as the projects identified for implementation in the target landscapes within the context of FIP through MozFIP and MozDGM.

- A step-by-step procedure for predicting the main potential environmental and social impacts of the planned project activities;
- A typical environmental and social management plan for addressing negative externalities during project implementation (planning, construction and operation);
- A step by step monitoring and evaluation system for implementation of mitigation measures;
- An outline of recommended capacity building measures for environmental and social planning and monitoring of the project activities; and
- A budget to ensure that the Program (and associated projects) has adequate resources to meet its own activities, especially financial resources for the preparation and implementation of projects' Environmental and Social Impact Assessments (ESIAs) and Environmental and Social Management Plans (ESMPs).

The ESMF basic principles and requirements will be applied throughout the entire Program life cycle.

In addition to this introductory chapter, this ESMF comprises twelve (12) chapters:

1. Program description;
2. Program initiative implementation arrangements - MozFIP and MozDGM;
3. MozFIP and MozDGM project areas: Natural and social environment;
4. WB safeguards policies;
5. Legal and institutional framework for environmental and social management in Mozambique;
6. Environmental and social concerns of targeted areas;
7. Potential environmental and social impacts and mitigation measures;
8. Guidelines for subproject activities screening, preparation, appraisal, approval and monitoring;
9. Guidelines for environmental and social management plan and monitoring requirements;
10. Training and capacity building requirements;
11. ESMF monitoring requirements;
12. Proposed and estimated implementation budget.

A series of annexes complement issues presented and discussed throughout the ESMF document.

The data and information in this document are drawn from the following main sources (i) literature review; (ii) interviews and discussions with key informants including experts in relevant project sectors (agriculture, forests, climate change, community development, gender and institutional and policy issues, etc.) and other key informants in the field as well as from public consultation meetings that took place throughout the country, as detailed in Annex 1; (iii) review of similar and interrelated projects[2], mainly

[2] As it will be explained later REDD+/FIP will have strong relations with these other projects particularly in what concerns promotion of rural development and poverty alleviation.

ANRLMP (Agriculture and Natural Resources Landscape Management Project), Mozambique Consevation Areas for Biodiversity and Development Project (MozBio), Forest Carbon Partnership Facility (FCPF), Reduction Emissions from deflorestation and Forest Degradation Initiatives (REDD+ initiatives) and PROIRRI (Sustainable Irrigation Development Project); and (iv) direct observations in the project areas, which are combined with a rapid assessment by the Consultant.

2 PROGRAM DESCRIPTION

2.1 REDD+ in Mozambique

Mozambique's REDD+ Strategy is a key feature of the Government's response to climate change and its effort to promote sustainable rural development. The REDD+ initiatives[3] contributes to the GoM's efforts to access and apply global climate finance to address development challenges. Mozambique has been engaged in the REDD+ agenda since 2013, with strong support from the WB through a Forest Carbon Partnership Facility (FCPF) REDD+ Readiness grant (P129413), through a $3.8 million grant in 2013, and additional $5 million in 2016. Among others, it supported the preparation of the Readiness Package, which includes the National REDD+ Strategy; safeguards instruments to guide its implementation; a Reference Emissions Level and a Monitoring, reporting, and verification system (MRV system).

Mozambique's REDD+ Strategy comprises six strategic objectives translated into equal number of main sets of activities, namely: **1: Cross-cutting actions:** establish an institutional and legal platform for inter-agency coordination to ensure the reduction of deforestation; **2: Agriculture:** promoting alternative sustainable practices to shifting cultivation, which ensure increased productivity of food and cash crops; **3: Energy:** increase access to alternative sources of biomass in urban areas and increase the efficiency of production and use of biomass energy; **4: Conservation Areas:** strengthen the system of protected areas and find safe ways of generating income; **5: Sustainable Forest Management:** promote the system of forest concessions, community management and strengthening forest governance; and **6: Restoration of degraded forests and planting trees:** establishing a favorable environment for forest businesses, restoration of natural forests and planting of trees for various purposes, production and use of biomass energy.

MozFIP will implement part of the National REDD+ Strategy to improve the enabling environment and forest and land management practices in targeted landscapes in Mozambique.

With the FCPF support, the GOM conducted a Social and Environmental Strategic Assessment (SESA) to ensure the National REDD+ Strategy would consider the social and environmental risks from the proposed strategic options, and to identify mitigation actions (the full report can be found on www.redd.org.mz). In addition, an Environmental and Social Management Framework (ESMF – this document) was

[3] Interventions for the reduction of carbon emissions associated with the changes in use of land affecting its cover through the application of sustainable management principles for forest ecosystems (natural and planted) contributing to the global efforts to mitigate and adapt to climate change and integrated and sustaianble rural development.

prepared to manage the social and environmental risks from concrete interventions on the ground, including the MozFIP project.

In addition a Resettlement Policy Framework (RPF), will be prepared to address displacement risks raised by the REDD+ initiatives outside of the MozFIP.

The Mozambique's Forest Investment Program

Mozambique's Forest Investment Program will start a transformation process in the forest sector towards more sustainable forest management with enhanced benefits to rural communities. Guided by the National REDD+ Strategy and the Government strategies, the Forest Investment Program represents the Government's ambition for transformational change to address the drivers of deforestation and promote sustainable rural development. Mozambique's Forest Investment Program[4] is a large-scale, modular framework for implementing the National REDD+ strategy across the country, including supporting ambitious reforms in the forest sector. The Program includes three projects: i) Mozambique Forest Investment Project (MozFIP), to be implemented with World Bank support; ii) the Dedicated Grant Mechanism for Local Communities (MozDGM) to be implemented by a civil society organization (under identification) with support from the World Bank; iii) IFC's "Emissions Reductions in the Forest Sector through Planted Forests with Major Investors", implemented with IFC[5] support, which is not considered under this ESMF. MITADER will be coordinating all the planned interventions. MITADER will coordinate the implementation of the FIP.

The Mozambique Forest Investment Project (MozFIP) and the Mozambique Dedicated Grant for Local Communities (MozDGM)

2.1.1 MozFIP

MozFIP will finance activities at two levels: (i) a national level focused on strengthening forest governance and incentives to create the enabling conditions for transformative change in the forest sector; and (ii) a sub-national level (landscape level) focused on promoting integrated management of two landscapes (in two different provinces, i.e. Cabo Delgado and Zambézia). Interventions at these two levels form a holistic approach: they create conditions to foster the implementation of activities on the ground in the two landscapes, while initiating transformation in the forest sector. At the same time, it creates a model for engagement which could be expanded to other provinces. MozFIP promotes an integrated landscape management approach and as such promotes activities in different sectors (forestry, agriculture and energy – linked to the major drivers of deforestation), and across different stakeholders (government, local communities, private sector and civil society). The landscape approach recognizes that

[4] The Investment Plan was approved by the FIP Sub-Committee in May, 2015.

[5] This third project, Emissions Reductions in the Forest Sector through Planted Forests with Major Investors, is managed by IFC. The IFC project is focused on leveraging the private sector to support community forest management and outgrower schemes around planted forests.

forest and natural resource management, agriculture development, and energy use are inextricably linked, institutionally at the local technical level and at a policy level, and that interventions need to be made at scale to have an impact on rural poverty and natural resources sustainability. Such an approach results in a complex project design, but it is needed to effectively address the most significant drivers of deforestation in a comprehensive manner. On the other hand, by focusing on two clearly-defined landscapes, the project reduces implementation complexity.

2.1.2 MozDGM in Mozambique

The Dedicated Grant Mechanism (DGM) is a special global initiative under the FIP to provide grants to enhance the capacity and support specific initiatives of Indigenous Peoples and Local Communities (IPLCs) in FIP pilot actions in order to strengthen their participation in FIP and other REDD+ processes at the local, national and global levels. The DGM Design was developed in a participatory way by a working group of IPLCs. The DGM has been under implementation in 14 countries where governments are implementing FIP investment projects with support from Multilateral Development Banks (MDBs). DGM objectives consider (i) a series of DGM country projects; (ii) a Global Component for knowledge exchange and strengthening networks of Indigenous Peoples and Local Communities**.** A defining feature of the DGM is that IPLCs have a key decision-making role and comprise most of the two Steering Committees; the National Steering Committee (NSC) – in each FIP pilot country – and the Global Steering Committee, which are the main decision-making bodies of the initiative.

In Mozambique, the DGM does not include Indigenous People as the country is not acknowledged to have such a category of people distinctive from other populations.

MozDGM aims to strengthen the capacity of local communities, community-based and civil society organizations to participate actively in sustainable forest and land management and REDD+ processes at the local, national and global levels. It will operate at two levels: (i) the national level focusing on capacity building and institutional strengthening; and (ii) the landscape level focusing on the implementation of activities in the two selected landscapes, Zambézia and Cabo Delgado.

2.2 Program Justification

In the context of the Forest Investment Program the Government developed a REDD+ Strategy Action Plan (2016-2030[6]) and a "National study of the Drivers of Deforestation and Strategic Options to address them[7]". The MozFIP and MozDGM responds to the main sources of forest loss and degradation which include:

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6 MITADER (2016) Plano de Acção da Estratégia de REDD+ 2016-2030

7 http://www.redd.org.mz/uploads/SaibaMais/ConsultasPublicas/Estudo%20sobre%20Causas%20Directas%20e%20Indirectas%20do%20Desmatamento%20e%20Degrada%C3%A7%C3%A3o%20Florestal.pdf

- Subsistence and commercial agriculture due to unsustainable land use practices including the use of fire in land clearing and hunting;
- Increasing demand for biomass energy in the rural and urban areas;
- Illegal harvesting of timber and non-implementation of land and forests management plans;
- Mining associated with land clearing for settlement (artisan miners); and
- Infrastructure development including roads, railways and expansion of urban areas.

Underlying causes include:

- limited access to high productivity technologies by the majority of smallholders or means to implement them including sparse extension network;
- poor governance and weak enforcement of land, forests and environmental legislation; and
- demand for food and wood products in the domestic and international markets and inadequate employment and income opportunities in the rural areas.

The National REDD+ Strategy aims at reversing these negative trends and promoting the sustainable use of forests by all stakeholders, and will be implemented through various projects, including MozFIP and MozDGM.

2.3 Development Objectives

The Forest Investment Program supports Mozambique's efforts to reduce deforestation and forest degradation (REDD+) and promotes sustainable forest management. This helps make forests a central component of low-carbon development. It also contributes to other benefits such as biodiversity conservation, poverty reduction and protection of the rights of indigenous peoples and local communities.

2.4 Program Activities

The Forest Investment Program will be implemented through various projects, including the MozFIP, MozDGM. The activities of those projects are detailed below.

2.4.1 MozFIP

The MozFIP Project Development Objective is to improve the enabling environment for, and practices of, forest and land management in targeted landscapes in Mozambique.

In addition to overall coordination and management this Project is structured in two main components as detailed below (refer to Annex 1 of the Project Appraisal Document – PAD for further details):

Component 1: Promotion of Integrated Landscape Management

Regularizing land tenure, promoting community-level land use planning and promoting integrated landscape management tools to strengthen land tenure of local communities and of small and medium landholders., to improve local communities' capacity to plan the use of natural resources over which they have rights and to enhance

the capacity of local actors on land use planning and on multi-stakeholder planning, through:

Provision of support for the land delimitation of about 160 communities, including the issuance of about 160 community delimitation certificates, preparation of about 160 community-level land use plans, and strengthening of natural resources committees (CGRNs). The Project will finance consultancy, operational costs and equipment acquisition;

- Issuance of about 3100 DUATs to small and medium landholders engaged in forest plantation and agro-forestry. The Project will finance consultancy and operational costs to ensure DUAT issuance;

- Provision of institutional support to the provincial land administration service in Cabo Delgado province. The Project will finance office equipment and the maintenance of the land management system.

- Strengthening of the multi-stakeholder landscape forums (MSLF) in Zambézia and Cabo Delgado to facilitate multi-stakeholder coordination and dialogue, and landscape-level monitoring. The Project will finance the operational costs of such Forums;

- Promotion of the use of geo-spatial tools at the provincial and district levels to improve land use planning through the acquisition of equipment and training to targeted provinces and districts.

Promoting multi-purpose planted forests, agroforestry systems and sustainable biomass production to establish commercial tree planting for several purposes (sawn wood, poles, wood chips, charcoal, pulp) among local communities, small- and medium-landholders, to restore degraded areas on productive land, to promote the adoption of agro-forestry practices among small landholders as a way to improve food security and reduce slash-and-burn agriculture expansion, and to produce charcoal in a more sustainable way.

Promoting the Planted Forests Grant Scheme, a performance-based grant scheme to promote the establishment of around 5,000 hectares of sustainable, multi-purpose plantations amongst communities and small and medium landholders, and of 500 hectares of restored lands, through:

- Provision of performance-based grants to small and medium landholders and inputs to communities for the establishment of multi-purpose plantations; and
- Provision of technical assistance on tree planting and maintenance to beneficiaries.

The implementing agency (FNDS) and the service provider to be hired will monitor the grant scheme on the ground.

Establishing agroforestry systems over about 1,500 hectares by smallholders to enhance yield productivity and food security and reduce slash-and-burn agriculture, through the provision of technical assistance and agro-forestry inputs to beneficiaries.

In regards to the agroforestry activities in Cabo Delgado Province, it is important to highlight that the Quirimbas National Park is zoned into strict protection areas and

community use areas. Hence, agro-forestry activities would only be supported in the community use areas. In other words, the location of agro-forestry activities will always follow the approved management plan of the Park. Moreover, the community use areas are areas already converted and currently under use by communities. It is also important to highlight that the Government is currently considering reclassifying the Park as a multiple use landscape (following the recently-approved new Conservation Law) to better reflect the multiple use nature of this area, and improve biodiversity conservation and community development.

Supporting Sustainable Charcoal Production to increase wood transformation efficiency into charcoal and to reduce the overall use of **wood**, through:

- Provision of support for (i) the elaboration of 10 forest management plans in 10 associations for charcoal production; (ii) acquisition of licenses for biomass exploration; and
- The provision of training and assistance in the use of more efficient charcoal-making kilns to 750 charcoal producer organizations and/or individual producers. The Project will finance consultancy, operational costs and equipment acquisition.

Component 2: Strengthening of the Enabling Conditions for Sustainable Forest Management

Developing Mozambique's National Land Use Plan to promote more balanced and long-term land use decisions, through support to the preparation of a National Land Use Plan prepared in close consultation with relevant stakeholders. The Project will finance consultancy and operational costs.

Strengthening of forest governance to reduce forest-related crimes and illegal activities in the sector, to increase benefits to government and local communities from forest management, and to ensure compliance with sustainable forest management practices, through:

- **Strengthening of inspection, detection and control in the forest sector** through support to the Recipient's forest law enforcement institutions (particularly AQUA and ANAC) [8], so as to improve forest areas patrolling and inspecting, infractions prevention, detection and prosecution. This support includes: (i) capacity strengthening of forest rangers at AQUA and ANAC; (ii) establishment of AQUA's provincial delegations in Zambézia and Cabo Delgado[9], including equipment acquisition, staff financing and training and

[8] The financing will categorically exclude any kind of support for activities that are prohibited by the Bank's policies and rules as outlined in "Legal Vice Presidency Annual Report FY 2013: The World Bank's Engagement in the Criminal Justice Sector and the Role of Lawyers in the "Solutions Bank"".

[9] No construction works will be financed.

operational costs; (iii) strengthening the management of two conservation areas (Gilé National Reserve and the Quirimbas National Park) through equipment and operational costs; (iv) promoting inter-agency coordination to tackle forest illegal activities.

- **Implementation of a forest information system** to increase transparency and accountability in the sector system by providing updated geo-referenced information on forest licensing, forest management plans implementation, inspection and law enforcement. The support will include equipment and data management infrastructure acquisition, and capacity building.
- **Strengthening of multi-stakeholder forest sector decision making** to improve forest policies and regulations through a well-functioning National Forest Forum. The Project will support the operational costs of such a Forum.
- **Regular assessment of forest governance** to monitor progress on implementation of the forest governance reforms. The Project will finance the costs associated with carrying out these regular assessments at the national level, including the assessment of forest operators' compliance with regulations.

Strengthening natural forest management to ensure sustainable use of forest resources, to increase benefits to local communities and to government and to add value to forest products, through:

- **Provision of technical assistance to forest operators** engaged in sustainable forest management, so as to support them in obtaining forest certification and in adding value to forest products. The project will finance the costs of training and skill development initiatives through consultancies and operational costs;
- **Strengthening of the capacity of forest administration authorities**, particularly at the provincial level on different aspects of forest management, including on forest management plan implementation and on piloting new forest concession allocation systems. The project will finance staffing and operational costs, consultancies and equipment acquisition;

Promotion of sustainable small-scale forest businesses (timber and non-timber forest products), including support to community enterprises, to community-private sector partnerships and to participatory forest monitoring. The Project will finance capacity building, staffing, operational costs, equipment acquisition and consultancies.

2.4.2 The MozDGM[10]

The Project Development Objective is "to strengthen the capacity of local communities, community-based and civil society organizations to participate actively in sustainable forest and land management and REDD+ processes at the local, national and global levels".

It is being prepared as a stand-alone project that complements the MozFIP and operates at two levels: (i) national level focusing on capacity building and institutional strengthening; and (ii) landscape level focusing on the implementation of activities in the two selected landscapes, Zambézia and Cabo Delgado. It is designed to promote the active participation of Local Communities in Mozambique's Forest Investment Program.

The MozDGM will have the following main components:

Component 1: Capacity Building and Strengthening for Sustainable Natural Resources Management.

This component will finance capacity-building and institutional-strengthening activities for communities and civil society organizations[11] across the country. The activities aim to strengthen community awareness, network, advocacy and technical capacity on matters related to climate change, forest and land management, as well as their managerial and grant-making competencies. At national level the activities will address short term trainings related to climate change resilience, comprehensive management of natural resources, inclusive business, and land tenure; promote interaction and engagement of communities and civil society through exchange of experiences and the development of an Information, Education and Communication strategy.

At Landscape level the activities will be focused on activities addressing a **Community Development Action Plans (CDAP).** The action plan is manily supported by the elaboration of a Community Agenda which highlights a social preparedness process as part of community land delimitation, and the CDAP will take this forward in identification of a market value chain for local products and potential stakeholder partnerships. The component will also work on community governance regarding benefit sharing, forest monitoring, community participation on law enforcement and training in fire management and fire management plans.

Component 2: Promoting Sustainable Local Community Initiatives

[10] MozDGM is still under early stages of preparation, hence its description is very likely to change based on further discussions with the stakeholders and technical work.

[11] Natural Resource Management Committees (CGRNs), Associations and Unions could be considered community-based organizations. The definition of CBOs will be determined by the National Steering Committee and National Executing Agency.

This component is related to subproject implementation. The National Executing Agency (NEA) – which will be selected through a competitive process among non-governmental, non-profit organizations – will screen and finance proposals presented by local communities that have a validated Community Development Action Plan (CDAP). The main rationale is connecting the community proposals to the preparation of CDAPs would contribute to better integrate components 1 and 2; would contribute to a more systematic approach, ensuring the community proposals will make a contribution for the medium and long term community development; would avoid the criticisms often associated with CDD approaches related with (a) punctual investments without long-term goals and (b) about how to ensure/justify that the supported proposal is the best for the community Candidate organizations can apply for the MozDGM grants by presenting proposals which will contribute directly or indirectly to reduce deforestation while enhancing local livelihoods and increasing resilience to climate change, including, but not limited to: food security improvement activities; production and commercialization of artisanal and non-timber forest products; community woodlots for biomass energy production; restoration of degraded areas; sustainable agro-ecological production; and ecotourism.

A Service Provider will provide technical assistance to help grantees with implementation and reporting, tailored to the needs of the grantee and the technical area of the proposed activity. Such training would be designed to facilitate success of the activity during the project life and into the future. Technical assistance would be provided by agents well acquainted with participatory methodologies, and made available early on, taking into consideration traditional local knowledge, governance mechanisms, cultural values and vulnerable groups concerns.

Component 3: Project Management, Monitoring and Evaluation, Safeguards and Communication.

This component will finance the operational costs incurred by the National Executing Agency to carry out its responsibilities, which include, among others: (i) serving as secretariat to the National Steering Committee (NSC); (ii) ensuring project's technical coordination, monitoring and evaluation; (iii) reporting to the World Bank, the coordination of the MozFip, and the Global Steering Committee; (iv) ensuring Project's financial management, procurement, and auditing as well as compliance with environmental and social safeguard policies; (v) operating the Project's Grievance Redress Mechanism; (vi) supervising the implementation of community initiatives and assessing results; and (vii) ensuring communication, public consultation and outreach activities. This component will also finance studies, the development of a grant administration manual, travel and limited procurement of equipment for desk and monitoring activities.

2.5 Beneficiaries of the MozFIP and MozDGM

Approximately 160 communities[12] are expected to be assisted in community land delimitation, representing close to 805.000 individuals[13], in the targeted districts who utilize agricultural and forestry resources for their livelihoods. Rural communities, including women and youth, will benefit from economic opportunities, improved productive inputs through access to technical assistance, training in efficient production technologies, access to financing, land titles (individual and community) and community land use planning, and other market opportunities linked to natural resources.

The direct beneficiaries of MozFIP are approximately 167,000 households in the targeted districts who utilize forest and agriculture resources for their livelihoods. Rural communities, including women and youth, will benefit from land titles (individual and community) and community land planning, economic opportunities (including from forest plantation and agro-forestry), improved productive inputs through access to technical assistance, training in efficient production technologies, and other market opportunities linked to natural resources.

Other direct beneficiaries include

Approximately 4000 **small and medium enterprises (SMEs**) and small- and medium landholders in timber, non-timber forest, charcoal and agricultural products, who will receive support in preparing management and business plans, training in technologies and improved land use and product processing techniques, and access to markets.

Key government institutions at the national levels, specifically MITADER (including: National Forest Directorate (DINAF), National Directorate of Land (DINAT), National Agency for Environmental Quality Control (AQUA), National Protected Areas Agency (ANAC), National Directorate of Land Use Planning and Resettlement (DINOTER), and the Ministry of Agriculture and Food Security (MASA), National Directorate of Agriculture and Silviculture (DINAS), National Directorate of Agriculture and Extension DNEA), who will receive support for strategic planning, improving governance, technical assistance for policy and operations implementation.

Government institutions at the provincial and district levels in Zambézia and Cabo Delgado, more particularly MITADER's Provincial Directorates (DPTADER), the provincial forest services (SPF), AQUA's provincial delegations, a few national parks

[12] Total nr of communities in need of delimitation taking account 4 districts in Zambézia (Mulevala, Maganja da Costa, Mocubela e Pebane) and 7 districts in Cabo Delgado. The remaining 5 districts in Zambézia will be assisted by Agriculture and Natural Resource Landscape Management Project (ANRLMP)

[13] The Program has assumed a calculation of 5 individuals per household and about 1000 households per community, in line with studies done by ITC (Instituto de Terras Comunitárias).

within the landscape (ANAC), the provincial land administration in Cabo Delgado (SPGC).

The Project also reaches a significant number of indirect beneficiaries through: (i) improved governance and sustainability in the forest and natural resources sectors; (ii) economic opportunities and improved livelihoods; and (iii) reduced deforestation and improved land and forest management, enabling more productive landscapes; (iv) reduced erosion, more stable water flows. At the global level, the population will benefit from reduced GHG emissions and protected and restored habitat for biodiversity.

Project Affected People: Under MozFIP and MozDGM, Project Affected People (PAPs) can be defined as those who will be affected by activities which may cause direct risks to their livelihoods resulting from restrictions of access to and use of, natural resources and other community assets. The subproject identification process will enable joint identification of impacts and remedial measures together with these PAPs. In line with the GOM and WB policies, efforts will be made to avoid and minimize the creation of such risks but in some cases this might be unavoidable. In such cases, remedial actions will ensure that PAPs are not made worse off than they were before the start of the project and ultimately that their livelihoods are improved.

2.6 Linkages with Other Projects, Management, Funding and Focus

MozFIP and MozDGM will have strong ties with (a) the Agriculture and Natural Resource Landscape Management Project (**ANRLMP**), which focuses on agricultural development and land tenure rights being implemented in Zambézia province (and Nampula); (b) Sustainable Irrigation Development Project **(PROIRRI**), which is a program aimed at reactivating irrigation in Mozambique. This project is active in Zambézia province (but also in Manica and Sofala); and (c) **MozBio** that offers community incentives for conservation in parallel to the existing livelihoods systems and conservation compliance at a scale sufficient to impact families at household level, being active in PAs in Cabo Delgado and Zambézia province as well as in other provinces. The three initiatives are led by MITADER in close partnership with MASA and other ministries/sectors (e.g. MOPHRH, MIREME, MIC, etc.). At the provincial level, the DPTADER is the coordinating institution; and they all have their own Management Units at national and sometimes at provincial levels.

At provincial level the DPTADERs in collaboration with relevant sectors will ensure that the sectoral aspects of each project are consistently respected and streamlined in the systems and procedures built for each program/project and contribute to fulfil common interests.

2.7 Project activities ineligible for funding

Projects activities that will not be eligible for funding include those that:

- *Involve conversion of critical natural habitats*. Where forest interventions can contribute to restore degraded areas, activities may be financed but these cannot contribute to the degradation or deforestation of any critical natural habitats. Coarse grain analysis of land cover has indicated potential areas where no forest

cover exists. However, a ground-truthing analysis will be undertaken by service provider (or project safeguards specialist) to avoid conversion of any forest fragments or non-critical natural habitats, The Project´s service provider may provide this analysis supported by the government, before any plantation or agriculture activity is implemented. Monitoring will involve local authorities and community members linked to the service provider and local government. *Project activities which need land acquisition from communities and individuals* or curtail their access to natural resources they were using previously without documented agreement between the parties for benefit sharing or viable alternatives.

- *Introduction of invasive species* (see Chapter 9).
- *Tobacco production* and/or the production of any other drugs.

Financing of Genetically Modified Organisms will need to comply with Mozambican legislation and will need an in-depth analysis of their beneficial or negative impacts before a decision on financing will be taken. It is recommended that these subprojects should not be eligible.

3 INSTITUTIONAL ARRANGEMENTS FOR MozFIP and MozDGMINE, 20 IMPLEMENTATION

3.1 MozFIP institutional arrangements

MITADER's National Sustainable Development Fund (*Fundo Nacional de Desenvolvimento Sustentável* - FNDS[14]) will be responsible for overall strategic guidance and will coordinate Project implementation, particularly through its Unit to Manage International Funds (UGFI). FNDS will be responsible for the technical and financial coordination of the Project, and will work closely with some of MITADER's technical directorates, mainly the National Directorate of Forests (DINAF), the National Directorate of Land (DINAT), the National Agency for Environmental Quality Control (AQUA) and the National Agency of Conservation Areas (ANAC). FNDS will also coordinate with the following National Directorates in other line ministries: Ministry of Agriculture and Food Security (MASA), through the National Directorate of Agriculture and Planted Forests (DNAS), the National Directorate of Agrarian Extension (DNEA), and the Ministry of Mineral Resources and Energy (MIREME) through the National Energy Fund (FUNAE). Each Agency and National Directorate has appointed a Project Focal Point who will participate in Project activities including in the preparation of the annual work plans and budgets, annual progress reports, prepare terms of references (TORs) in their respective areas of expertise, and contribute to the supervision of the actions under their areas of responsibility.

[14] FNDS was created on Feb 24, 2016, and it has the objectives to promote and finance programs and projects that support the sustainable development. FNDS has 4 units: finance, investments, planning and the International Funds Management Unit.

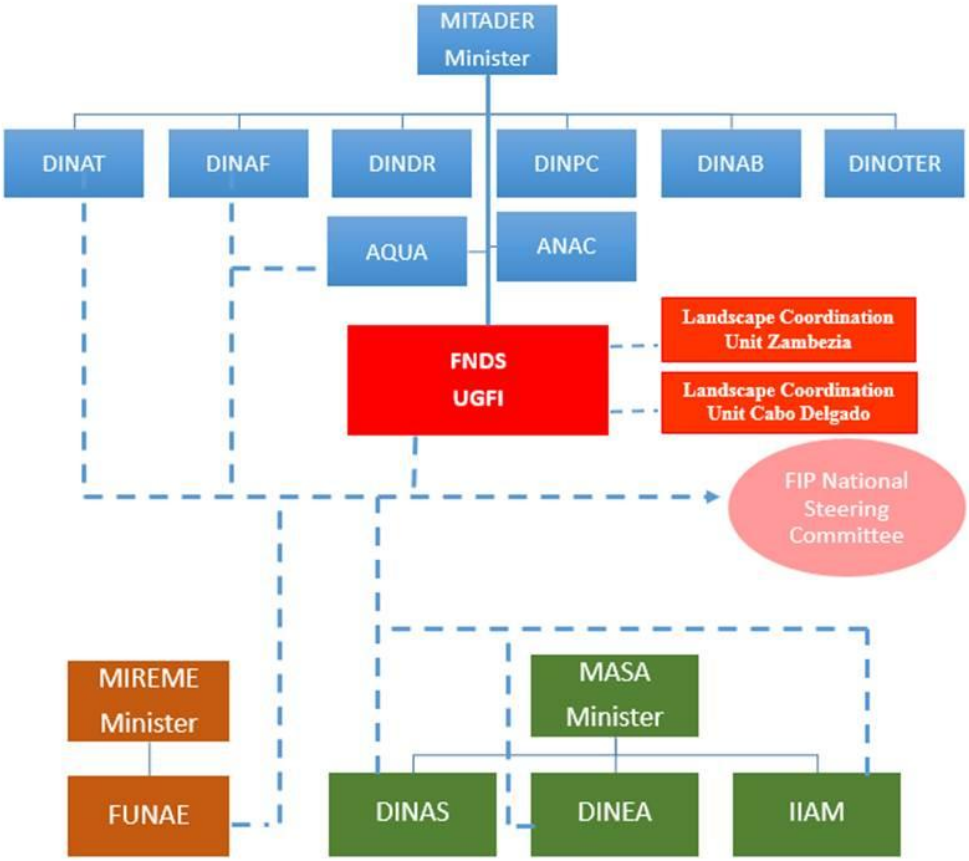


Figure 5: UGFI's linkages to other Ministries and Directorates

Project Oversight. The FIP National Steering Committee comprises government organizations, the private sector, research institutions and civil society organizations, and has the overall mandate to support FNDS/UGFI in strategic decision-making around the FIP. The FIP National Steering Committee will serve a technical advisory role, and provide technical inputs to the MozFIP project, ensure alignment between the project and other government programs and liaise with relevant stakeholders. To further strengthen the link between FIP and DGM-financed efforts, the FIP Steering Committee will work with the DGM National Steering Committee on a regular basis.

Project implementation will be carried out by the FNDS/UGFI at the central level. The FNDS/UGFI will be tasked with the implementation of all Project activities, including technical supervision and coordination, overall Project planning, quality oversight, communication, safeguards management, reporting, procurement, financial management, monitoring of Project activities and monitoring and reporting on its progress on a regular basis. At the central level, the FNDS will be responsible for the management of fiduciary issues, in conformity with the standards and requirements contained in the legal agreement and agreed upon with the WBG. The FNDS/UGFI Coordinator has appointed a full-time Project Coordinator for the MozFIP. The FNDS/UGFI project management team will include a financial manager, a procurement specialist and an accountant, as well as a monitoring and evaluation officer, a communication specialist, a safeguards specialist, and technical specialists for coordination of the following areas of expertise: natural forests; plantations and

reforestation; land; agriculture; biomass. The FNDS/UGFI will coordinate the work of the Focal Points from the Ministries to ensure their regular participation in project implementation. In addition to participating in the preparation of Project annual work plans, the Focal Points will participate in site visits and in discussions with Service Providers and local authorities.

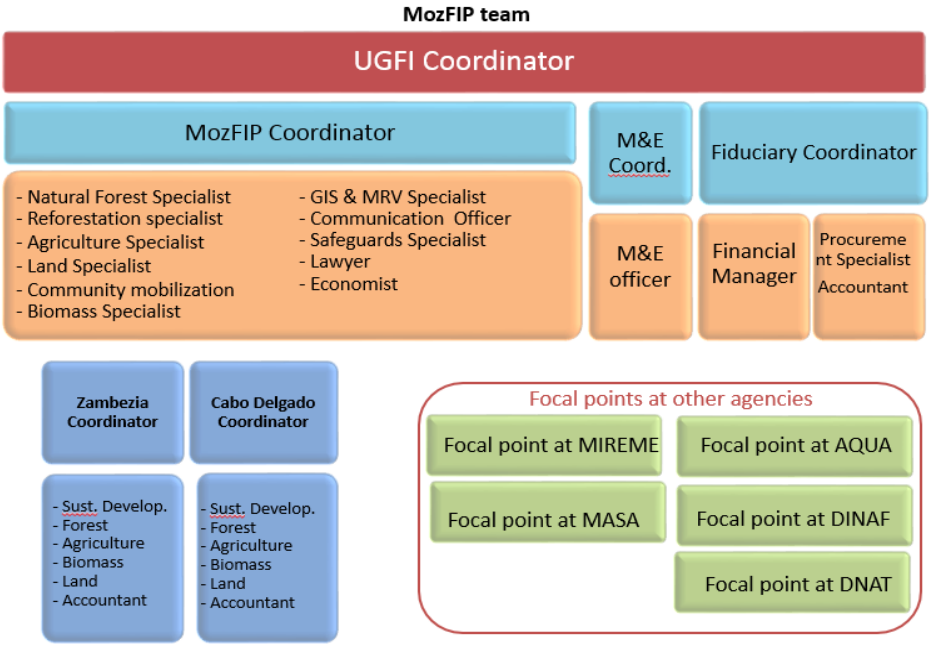


Figure 6: MozFIP team under FNDS/UGFI

At the provincial level, Project activities will be coordinated by the Landscape Management Units (LMUs), under the supervision of MITADER's Provincial Directorate (*Direcção Provincial de Terra, Ambiente e Desenvolvimento Rural*, DPTADER). The LMUs will coordinate and monitor Project implementation progress at the provincial level and interface with the District authorities, both the District Service of Economic Activity (*Serviço Distrital de Actividade Económima*, SDAE) and the District Service for Infrastructure and Planning (*Serviço Distrital de Planeamento e Infraestructura*, SDPI)) in the targeted districts. The Provincial LMUs are presently fully staffed and composed of one provincial coordinator and staffed with technical specialists (forest specialist, agriculture specialist, biomass energy specialist, land specialist, and a sustainable development specialist, who will be responsible for the safeguards activities) and administrative support (accountant). They report to the national FNDS/UGFI Coordinator and to the MITADER Provincial Directors, and have regular meetings with the Provincial Governors.

The existing Provincial Multi-Stakeholder Landscape Forums (MSLFs) will play an important role in Project coordination and in promoting integrated landscape management. The provincial MSLFs bring together stakeholders around relevant issues in the landscape, including land-use trade-offs, NRM and agriculture management, and foster cooperation and coordination across actors. The Provincial LMU serve as the Forum secretariats, and assist their members in developing annual strategic action plans (SAPs) to monitor activities and track performance against clear targets established in participatory manner. MSLFs are also expected to promote better coordination of

projects and other initiatives present in the Landscape, by facilitating the establishment of a common vision to manage the landscape and a space for knowledge exchange. MSLFs and their SAPs will thus contribute to fostering Project ownership and awareness among landscape stakeholders, as well as orient strategic efforts and create synergies within the Project area.

Activity implementation on the ground will primarily be handled by Service Providers under the supervision of the FNDS/UGFI and the LMUs. Service Providers will be hired through a competitive process. The FNS/UGFI has already been working with some SPs on similar tasks to the ones requested in the MozFIP project, particularly with SPs working for the Agriculture and Natural Resources Landscape Management project, and hence acquired experience. The FNDS/UGFI has an extensive roster of SPs (domestic and international) that could deliver on the tasks required by MozFIP.

At district level the FNDS/UGFI, LMUs has already been working with SPs and the District Service of Economic Activities (SDAE) will be the agency coordinating the Forestry Services and Agricultural Extension activities. The District Service of Planning and Infrastructure (SDPI) is will support environmental inspection and will support sub-project screening. The District Service of Women, Health and Social Action (SDSMAS) supports women's community organizations and vulnerable people.

Each Agency and National Directorate has appointed a Project Focal Point who will participate in Project activities including in the preparation of the annual work plans and budgets, annual progress reports.

The UN Food and Agriculture Organization (FAO) will provide technical assistance to the Government to implement the project, through a Technical Assistance Agreement[15] to be signed between FAO and the Recipient. FAO will provide technical assistance on forest management activities, which will be detailed in the Agreement.

Implementation arrangements for the *Planted Forests Grant Scheme*. The Scheme will be implemented by a Service Provider (SP) hired competitively. The SP will work closely with a financial institution, such as a bank or mobile company that can disburse funds to the selected beneficiaries. Payments to beneficiaries will be made in regular installments, against demonstrated results on the ground, assessed by the LMUs.

3.2 MozDGM Institutional arrangements

The DGM Program administrative organization and structure revolves around two levels: (i) the Global and the (ii) Country-based. This structure is defined in the FIP Design Document, and will complement the FIP investment plans and programs in each country. At the Global level, there is the FIP-Committee, Global Steering Committee (GSC), and Global Executing Agency (GEA). The National Steering Committee (NSC) and the National Executing Agency (NEA) will operate at the country level.

[15] The standard Technical Assistance Agreement agreed between the WB and FAO will be used.

The FIP Sub-Committee is the governing body for the FIP and makes policy and funding decisions on the FIP as well as the DGM. Fund utilization and delivery progress for the DGM will be ultimately reported to the FIP SC by the World Bank through the Climate Investment Fund Administrative Unit (CIF AU). The CIF AU provides secretariat functions to the FIP SC and, in that capacity, is responsible for communicating the decisions of the FIP SC and reporting back on implementation of those decisions.

At the country level, the National Steering Committee (NSC) will provide to MozDGM an oversight and will be assisted by a National Executing Agency (NEA). The NSC's main functions will be to: (i) provide oversight to the MozDGM in the country and the functioning of the NEA, (ii) review and make funding decisions on eligible project proposals, (iii) liaise with and participate in meetings of national REDD+ and FIP institutions, (iv) raise funds through other programs/mechanisms, (v) report to the GSC on national activities, (vi) mediate conflicts related to MozDGM funding proposals and establish additional eligibility criteria for the MozDGM in the country The NSC will prepare, with support by the NEA, an annual work plan and funding portfolio for approval by the relevant MDB. Currently, the World Bank is the implementing MDB for the DGM in all the FIP Pilot countries and in this role, serves to steer all aspects of administration and management for the DGM with specific global and country level (MozDGM) implementing organizations and agencies.

The MozDGM's National Steering Committee (NSC) is composed by two chambers: (i) the **Deliberative Chamber** formed by Natural Resources Management Committee (CGRN) members (6 chairs) and local civil society representatives (5 chairs); and (ii) the **Consultive Chamber** formed by Academy (2 chairs), GoM (3 chairs), national and international NGOs (3 chairs minimum) and World Bank (1 chair) which aims to provide a multidisciplinary advisory and advocacy support.

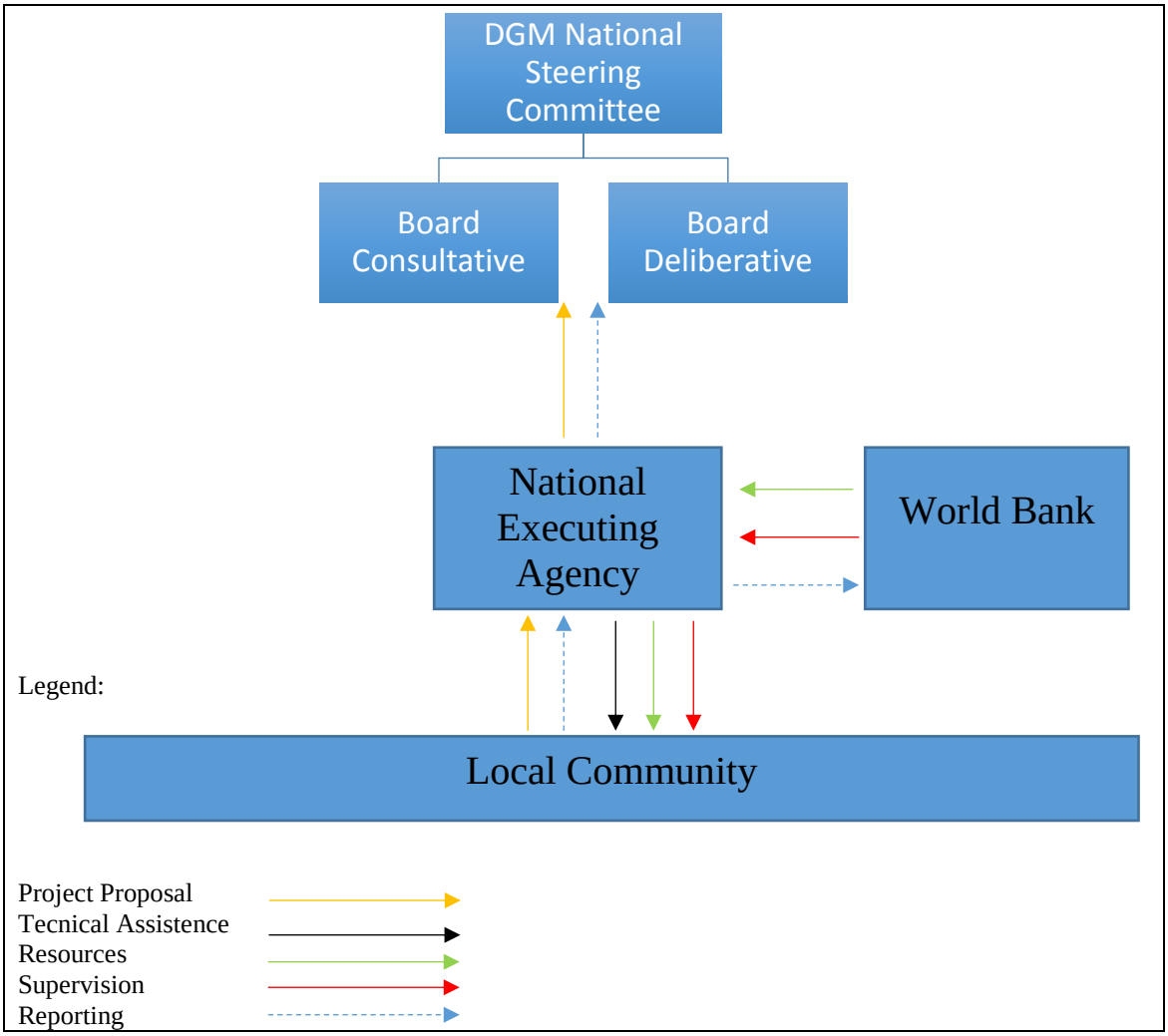
Within the NSC, members from Deliberative Chamber will be elected through landscape forum elections and might consider CGRN and civil society representatives as candidates considering vulnerable groups and territorial coverage. The south, center and north of Mozambique should be represented in the NSC. The Chamber members will be indicated by the Deliberative Chamber through a numeric voting process following a list of criteria previously validated. This arrangement plays in favor of a national wide and multidisciplinary representativeness of NSC. The network created by this multidisciplinary NSC is a high value feature, through it, NSC will be able to inform, consult, advocate and address community issues from the bottom to the top decision-making spheres.

At provincial level the NSC representatives will be engaged in the Multi-Stakeholder Landscape Forum having active voice to interact with GoM, private sector and other interest parts. And at District level the MozDGM represented by CGRN members will link with other relevant forums in place such as Water Management Committees, Mining Management Committees and forum of CGRNs. A Multi-Stakeholder Landscape Forum has been under discussion to be implemented headed by district administration authorities mainly Serviços Distritais de Actividades Económicas (SDAE) and Serviços Distritais de Planeamento e Infra-estrutura (SDPI).

The National Executing Agency (NEA) will be the secretariat for the NSC. Selection of

the NEA will be through a competitive process administered by the NSC and overseen by the MDB responsible for channeling DGM resources into the country. The NEA will be a not-for-profit and non-state organization that meets the programmatic, fiduciary and safeguards requirements of the World Bank. The NEA will facilitate the work of the NSC, develop country-specific review and risk assessment criteria, and provide operational and financial reporting to the relevant MDB. The NEA will be responsible for: disbursing funds to grant projects selected by the NSC as well as for monitoring grant- funded projects and ensuring appropriate use of DGM funds, in accordance with the operational and safeguards policies of the respective MDB, and will report to the MDB. The NEA will also maintain documentation of the MozDGM projects, follow the communications strategy in coordination with the GEA, manage grievance and complaints redress processes, respond promptly to queries, and coordinate with and send information as requested to the GEA. Key staff will be requested to compose NEA team which considers specialists upon: project management, community mobilization, climate change and natural resources management and procurement. Is encouraged to NEA have a support team with large expertise on fiduciary aspects, **safeguards** and monitoring and evaluation.

Diagram 1: Institutional arrangement for MozDGM



4 MozFIP AND MozDGM PROJECT AREAS: NATURAL AND SOCIAL ENVIRONMENT

During MozFIP and MozDGM implementation, two main interventions will run in parallel. One of the interventions will target the national level with a focus on policy and legal reform, governance and strengthening of capacity that will create the enabling conditions for change. This line of intervention will cover the whole country and institutions relevant in the overall transformation in land and forests management including rural development. This will enable the GOM to expand the objectives of the REDD+ Strategy to other areas of the country as the conditions become favorable to do so. The second line of interventions will target the landscape level focusing on the implementation of activities on the ground in specified geographic landscapes in Cabo Delgado and in the Zambézia Province.

The ESMF draws on relevant parts of a Strategic Environmental and Social Impact Assessment (SESA) document prepared as part of the National REDD+ Strategy in Mozambique, funded by the FCPF. For additional information on the Project environment, the SESA document should be consulted.

4.1 Projects (MozFIP and MozDGM) Location and Broad Biophysical and Socioeconomic Traits

The Projects' area was established based on a combination of indicators related to core objectives of the project and particularly the potential to demonstrate transformation that meets what is intended under REDD+, MozFIP and MozDGM. This includes the districts of Ancuabe, Macomia, Metuge, Quissanga, Meluco, Montepuez and Ibo, in **Cabo Delgado province** and Gilé, Ile, Pebane, Alto Molocué, Maganja da Costa, Mocubela, Mulevala, Mocuba and Gurue in **Zambézia province**. The map below also shows the geographical location of the two provinces within Mozambique and the sixteen districts within the provinces to which they belong. From the Cabo Delgado map, the seven districts in this province have areas of intersection with either the Quirimbas National Park (QNP) or its buffer zone. The same applies to the districts of Pebane, Mocubela and Gilé regarding Gilé National Reserve in Zambézia province.

Conservation areas such as Gilé National Reserve and Quirimbas National Park, have biodiversity conservation importance and that of other niches and natural habitats that allow for the maintenance of ecological interactions. The practice of shifting cultivation, fuelwood extraction, and timber exploitation, are some of the economic activities practiced by communities within the buffer zones of both as well as in the Quirimbas National Park itself. It is important to highlight that the Quirimbas National Park is zoned into strict protection areas and community use areas. The project activities would only be supported in the community use areas.

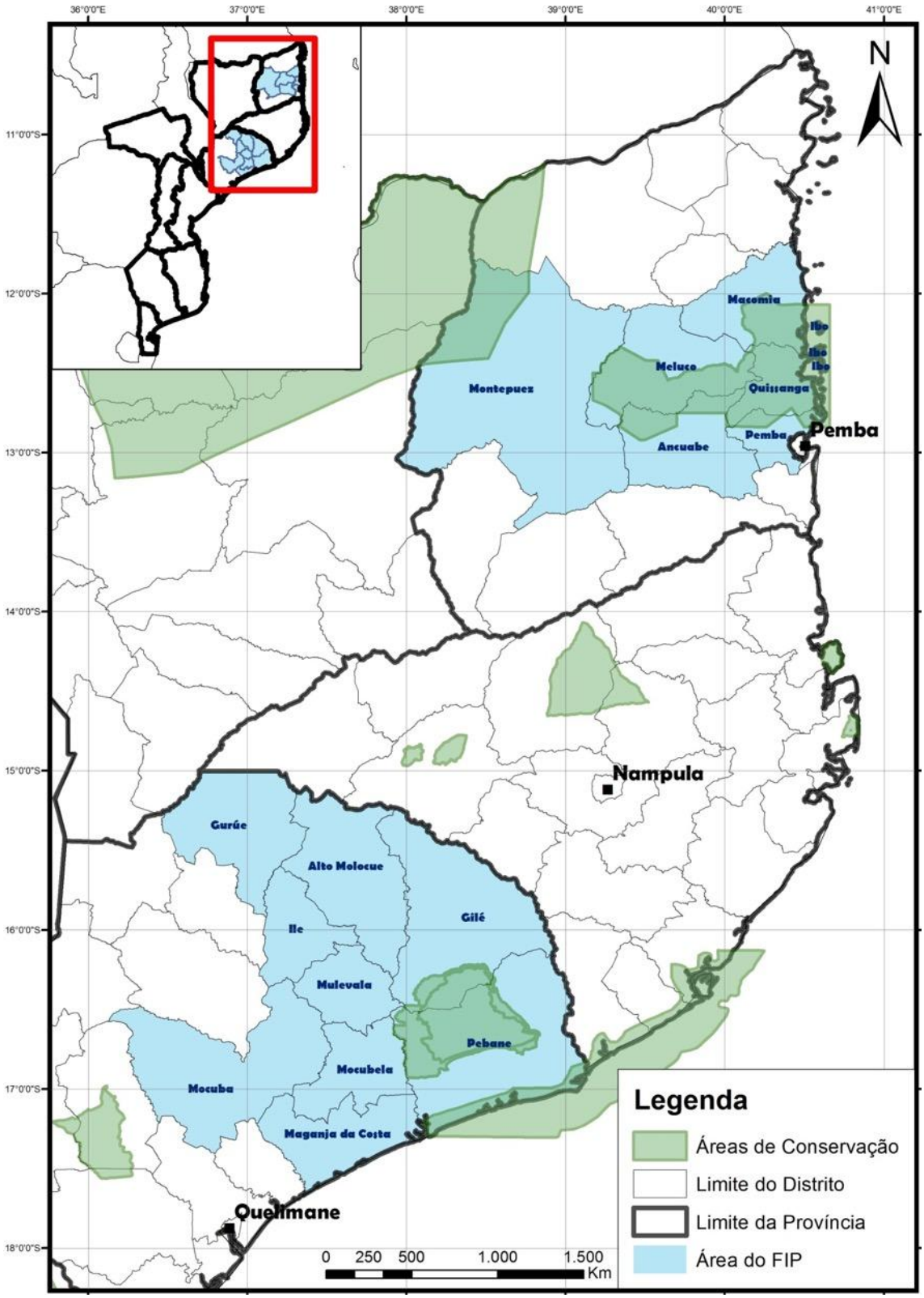
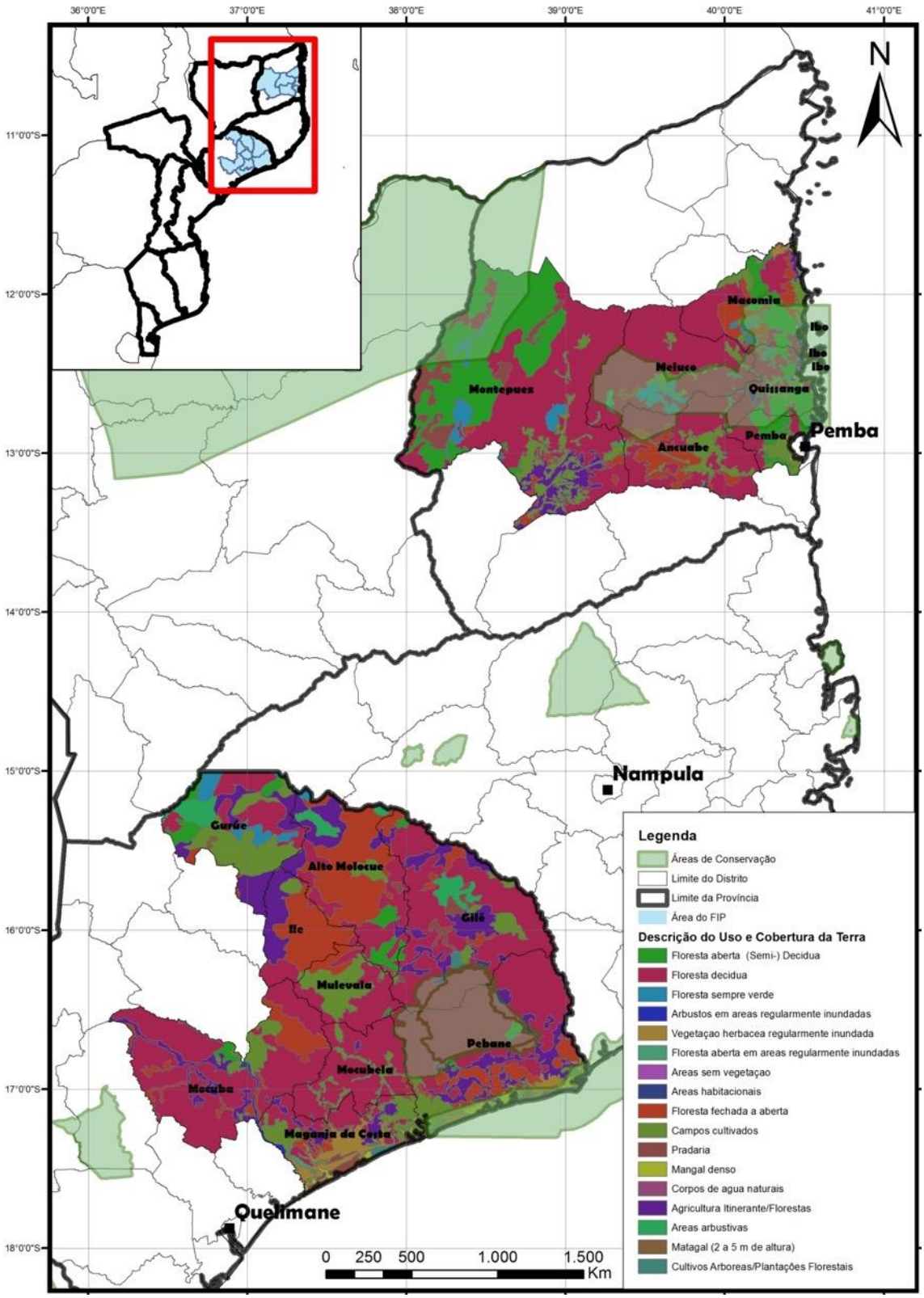


Figure 1: Project area and intersection with the conservation areas

The project area has several types of vegetation contributing for the existence of several habitats, environmental goods and services as well as other elements important for ecosystem services and dynamics.

Figure 2: Broad biological characteristics of the Project districts



In the last 10 years, the contribution to the country's GDP of Cabo Delgado has been lower and Zambézia province.

Table 1: GDP by Regions, Provinces and the Country, 2006 - 2013[16]

Regions/Provinces	Current Prices (10^6 MT)		
	2006	2010	2013
North	**45,812.8**	**79,177.3**	**106,766.8**
Niassa	6,220.6	10,724.5	14,533.6
Cabo Delgado	**9,497.5**	**16,569.7**	**22,223.1**
Nampula	30,094.7	51,883.1	70,010.1
Centre	**61,238.7**	**101,553.9**	**138,608.9**
Zambézia	**19,332.2**	**33,287.2**	**44,904.1**
Tete	12,667.2	18,988.6	26,920.0
Manica	7,606.2	13,182.3	17,672.5
Sofala	21,633.1	36,095.8	49,112.3
South	**100,396.6**	**164,485.2**	**225,096.4**
Inhambane	16,329.9	27,709.5	37,768.6
Gaza	9,508.9	16,913.5	22,598.4
Maputo provincia	36,443.8	55,543.6	78,045.8
Maputo cidade	38,114.0	64,318.6	86,683.7
Mozambique	**207,448.1**	**345,216.4**	**470,472.1**

Cabo Delgado had 1,606,568 inhabitants - slightly less than 42% of the population of Zambézia province (3,849,455 and 36.7 inhabitants/km²) in the latest national population and housing census (INE, 2007). Cabo Delgado stands at 19 inhabitants/km², which is slightly below the country's average (25) in 2007 (INE, 2007).

The sixteen districts selected to form the project area share a lot of common physical, biological and social traits. Both regions share a long coastal line and districts situated in areas of high elevation although the western districts of Zambézia, particularly Alto Molocue, Gilé and Ile at a higher altitude.

More details about other socioeconomic traits of the two provinces will be presented in the subchapter dealing specifically with these aspects.

4.1.1 Physical Traits

4.1.1.1 Cabo Delgado

In Cabo Delgado, the study area comprises two topographic regions, i.e. the coastal and the interior. A considerable part of the interior possesses an altitude ranging between 200 and 900 meters, with undulated relief, interrupted from time to time by the rock formations of "Inselbergs".

The low plateau gradually changes to a more dissected relief over intermediate steep slopes of sub plateau transition zone to the coastal lands. The interior lands have a hill

[16]Source: INE, Department of National Accounts and Economic Studies.

form orientation in the NNE to SSW direction in regional geological units. The coastal area is characterized by N-S hill form orientation, with an altitude from 0 to 200 m, representing almost flat and low lands of the study are.

Below, is a generalized topographic map, which shows clearly the two topographic zones from east to west.

Figure 3: Topographic map of the project area in Cabo Delgado province

4.1.1.1.2 Geology

The geology of this area is related firstly with the Proterozoic age, with high-grade metamorphic rocks and late granites intrusion, all forming the crystalline rocks. The second area is Phanerozoic in age and is composed by hard cretaceous to Permic rocks and quaternary sand, limestone intercalations and clays. The two units are separated by escarpment from one unit to the other.

In the Proterozoic geology, it is important to mention the Meso Proterozoic Marrupa, Montepuez, Nairroto and Meluco generally composed of granitic to tonalitic gneiss, amphibolitic gneiss, quartz-feldspar-gneiss and banded magmatic gneiss. The Montepuez and Meluco Complexes are well represented is the study area and they are elongated and well-foliated rocks at North of the Lurio Belt rocks, within the study area. Quartzite, quartz feldspatic and biotitic gneisses are the most frequent rocks, accompanied by marble in most places. On the other hand, the Neo Proterozoic Xixano Complex (western zone), show a north direction hill orientation, and is composed of mafic granulites, para-gneisses, micaschist, marble and granitic to tonalitic gneiss.

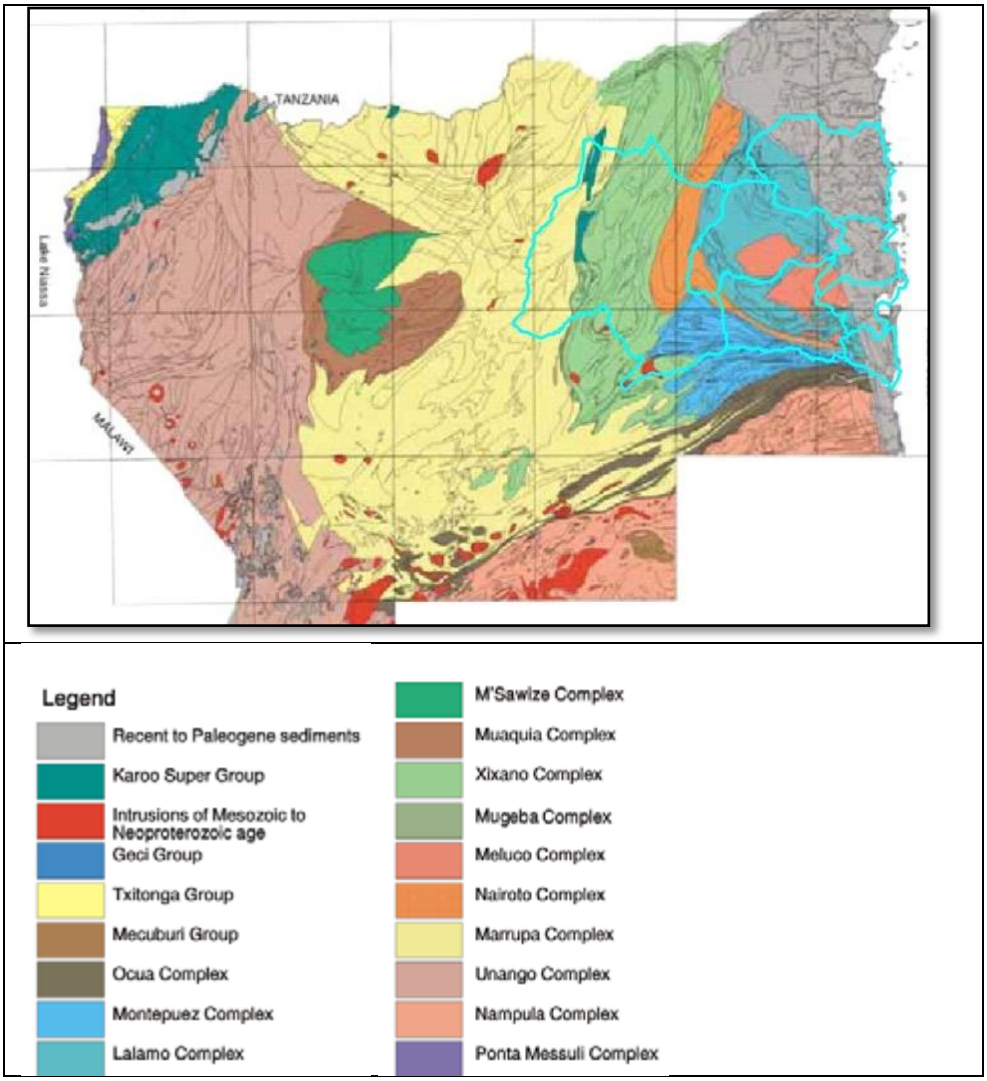
The near flat southern terrain is mostly occupied by granulite and basic to ultrabasic gneisses of Ocua Complex (ENE-WSW orientation). Within this terrain, granites form the most prominent icebergs of the area from Chiure to Namuno Districts.

The Phanerozoic geology is composed by hard and soft lithologies. The hard rocks are formed by Macomia, Pemba, Mifume, Alto Jingone, Quissanga and Mikidane Formations. The mains rock units within these formations, are sandstone, conglomerates and mudstones. Thin layers of limestone are known in the area and the most important deposits are Macomia-Quissanga to Mocimboa da Praia districts.

The soft rocks within Phanerozoic Era are the Quaternary costal sands, red aeolian sand, beach sands, marine reef, alluvial and fluvial mud.

The geology with economic value is marked by Montepuez marble and the very complex and rich pegmatite with rubies, aquamarines and tourmalines. There are reports of artisanal miners involved in gold panning in the area. One old marble mine and operational ruby mine are the most important examples, within Montepuez Complex. Prospecting of base metal is in progress in the Xixano Complex. Graphite also represents a great potential in the area, with an old mine at Ancuabe District and several ongoing exploration projects around Ancuabe and Chiure Districts. The limestone occurrences represent a good potential for cement industry in the province. For a simple illustration, the figure below shows the simplified geological map of northern part of Mozambique.

Figure 4: Simplified geological map of northern part of Mozambique



4.1.1.1.3 Soils

The interior lands are predominantly constituted by medium textured red soils and clay grayish brown soils. The westernmost part is associated with red clay soils, characterized by depth and high capacity for water retention.

In the Xixano Complex, black soils are predominant produced by deep weathered mafic rocks. Most of the cotton farms are found in these areas. Cassava, maize, varieties of beans are also produced in these soils. Most of the soil has a medium texture to sandy loam and is generally well drained.

The river valleys are dominated by alluvial soils (Fluvisols), dark, deep, of heavy texture, moderately to poorly drained, subject to regular flooding. In the valleys areas, hydromorphic soils of varying texture from sandy, sandy clay, layered clay soils, gray to dark colors are found (mollic, Gleyic and Dystric Gleysols and Haplic and Luvic Phaeozems).

The tops of the hills and slopes of elevations are dominated by complex soils, from red and Orange (Rhodic ferralsols, Chromic Luvisols), and yellow (Haplic Lixisols and Haplic ferralsols). Most soils are medium heavy textures and deep, well to moderately well drained. In the intermediate slopes of elevations, the soils range in color from soils with brown-brown color to brown-yellow, clayey and moderately well drained.

The soils of the coastal area are characterized by light soils - clayey sand, brown well-drained, stratified alluvial soils and coarse textured, yellowish sandy soils with good to excessive drainage.

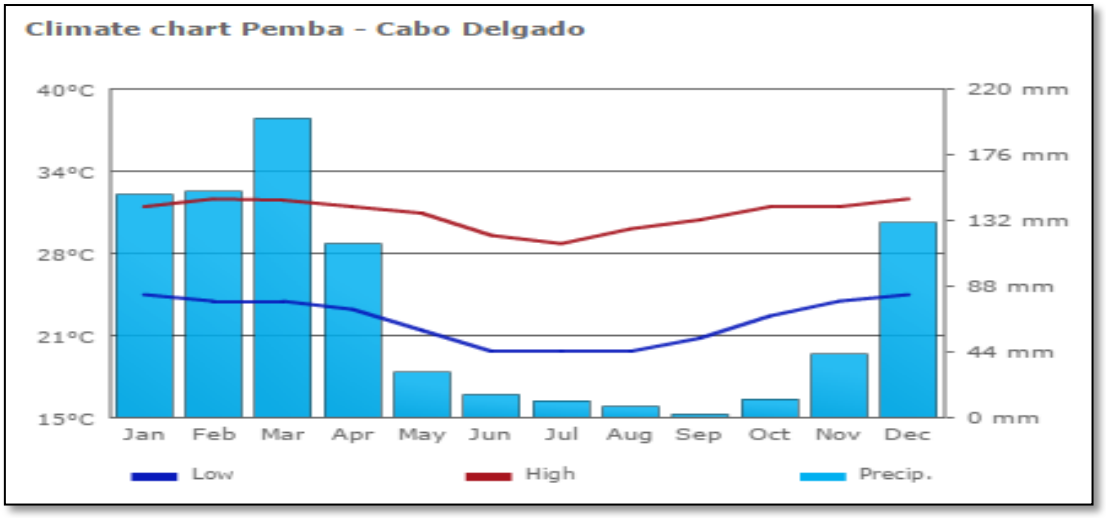
4.1.1.1.4 Climate

The northern region of Mozambique has a humid equatorial climate with a dry winter (April to September). Temperatures fluctuate several degrees throughout the year due to the tropical location.

The wet season spans from December to April, and brings prodigious and reliable rainfall, with the wettest month of the year typically being March, showing almost 200 mm of average total monthly precipitation. Conversely, the dry season stretches from May to November and brings marginally cooler temperatures, with the driest month of the year typically being September, showing less than 2.2 mm of average total monthly precipitation.

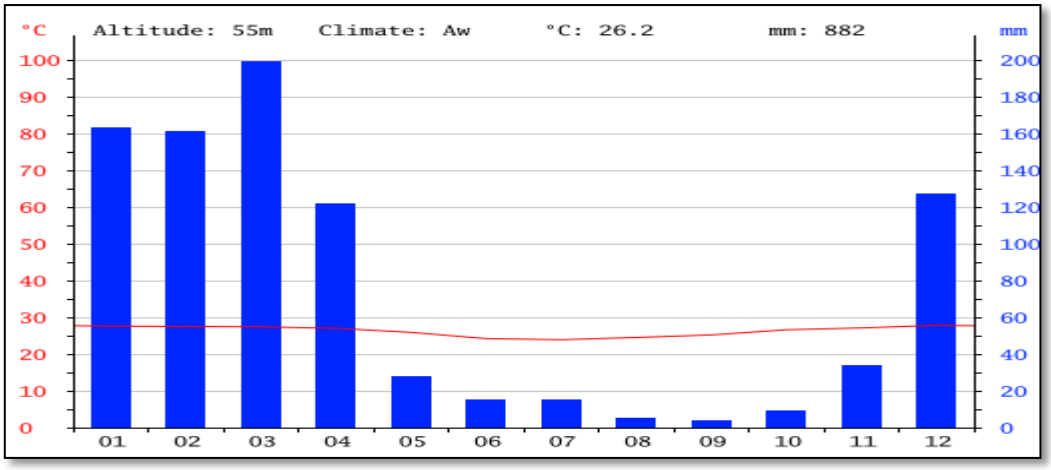
Humidity is very high during the wet season, averaging 80-90%, but is much lower in the dry season. The warmest and coolest months of the year are January/February and July respectively. Below, the graph shows the precipitation and temperature variations.

Graph 1: Precipitation and temperature variations



The eastern region, comprising Quissanga, Pemba-Metuge, Macomia and Mecufi Districts is affected by humid and tropical climate with dry season from June to September and influenced by the monsoon regime of the Indian Ocean and the hot current of the Mozambique Channel. Summers are much wetter than the winters in the area. The average temperature in this area is around 26.4°C. The annual average high temperature stands at 30.5° C and the annual average low temperature at 22.4° C. The average annual rainfall is 882 mm. It is during the period of concentration of rain that the potential for erosion increases. For illustration purpose of the local climate conditions, Pemba Municipal Town has been chosen and data are presented in the figure below.

Graph 2: Average temperatures and precipitation in Pemba, Cabo Delgado Province

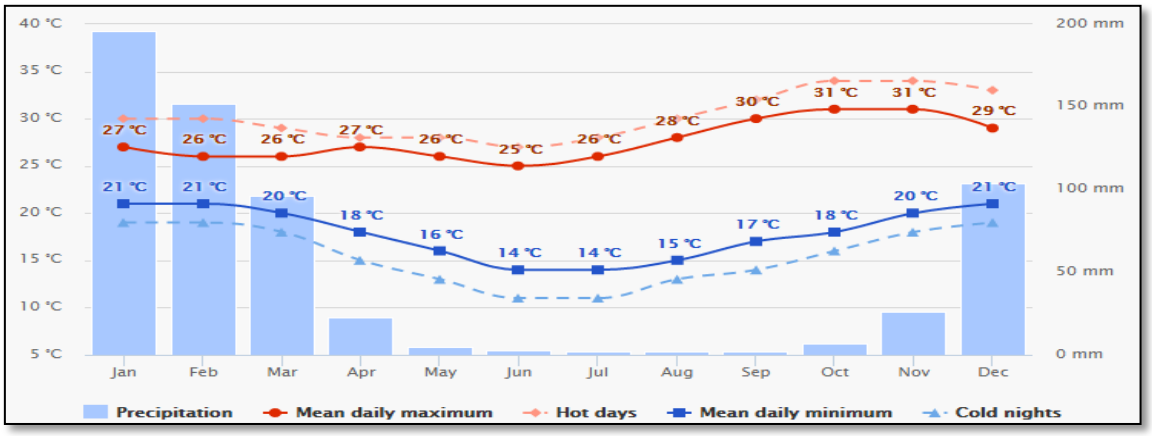


Source: pt.climate-data.org. 12.08.216

The second area, comprising Montepuez, Meluco and Ancuabe Districts, and neighboring areas, the climate is influenced by high altitude. Summers have temperatures between 18° C and 31° C. Winters have temperatures in the order of 14° C to 25° C. As for tropical climates, they comprise only two seasons: the rainy season during the warmer season and the dry season during the cooler season. The average

annual rainfall is 945 mm, typically with the rain season at some period as above (December to April). For illustration purpose of the local climate conditions, Montepuez Municipal Village has been chosen and data are presented below.

Graph 3: Average temperatures and precipitation in Montepuez, Cabo Delgado Province



Source: meteoblue.com 12.08.216

4.1.1.1.5 Hydrology and Water Resources

The **water resources in the province need special attention**. In the proterozoic areas, the water is predominantly found in the major faults and deep weathered granites and light gneisses and for exploration, geophysical studies must be completed in a professional manner. In the province, very few dams are found and examples are of Chipembe and Ngúri, all for agricultural purpose.

Permanent rivers in the region are Lúrio, Montepuez and Mesalo, all flowing in the west to east direction. The Niorenge, Muvo, Riti and Moataze represent the secondary group of permanent rivers.

4.1.1.2 Zambézia

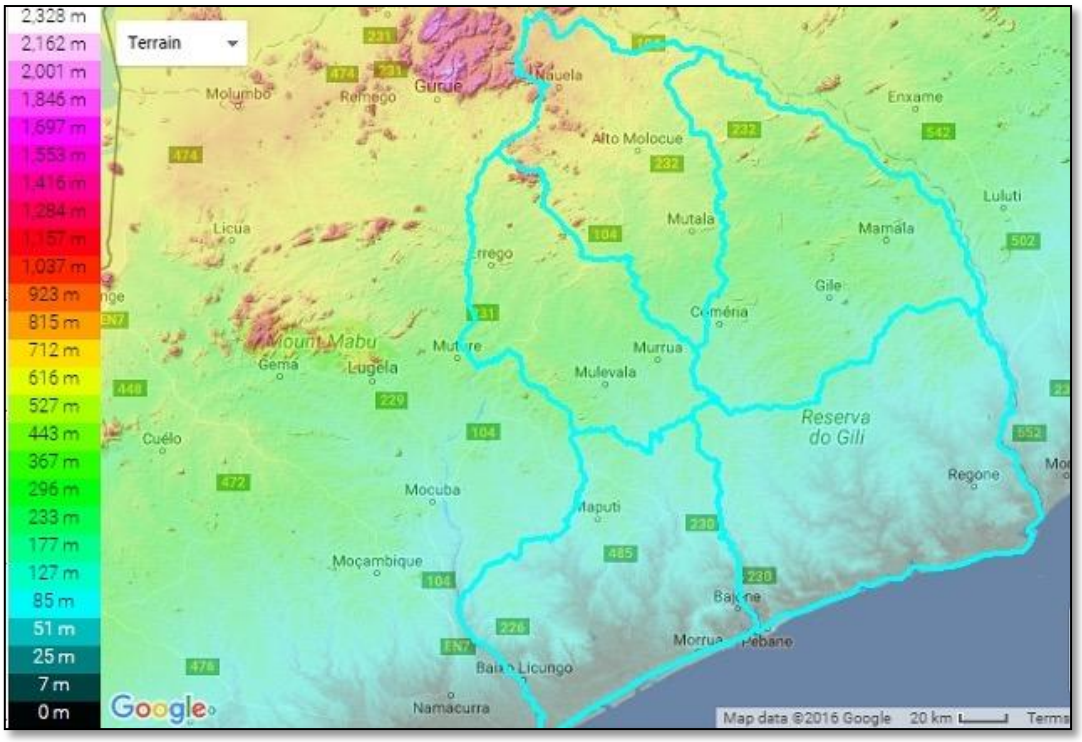
4.1.1.2.1 Altitude

The coastal topography ranges from 0 to 200 m, rising to 200 to 500 m in the midland plains and 500 to 2000 m of altitude in the highland plateau.

The high topographic region of Alto Molocue and Ile districts are covered by about three altimetry areas including: low plateau area (400m - 700m), which occupies the largest portion of the districts; the transition zone (700m - 1000m), and the last small portion, which reaches higher altitudes of more (1000 -2000 m), called mountain zone.

The figure below shows the topographic map of part of Zambézia Province, with study area highlighted.

Figure 5: Elevation map of part Zambézia Province

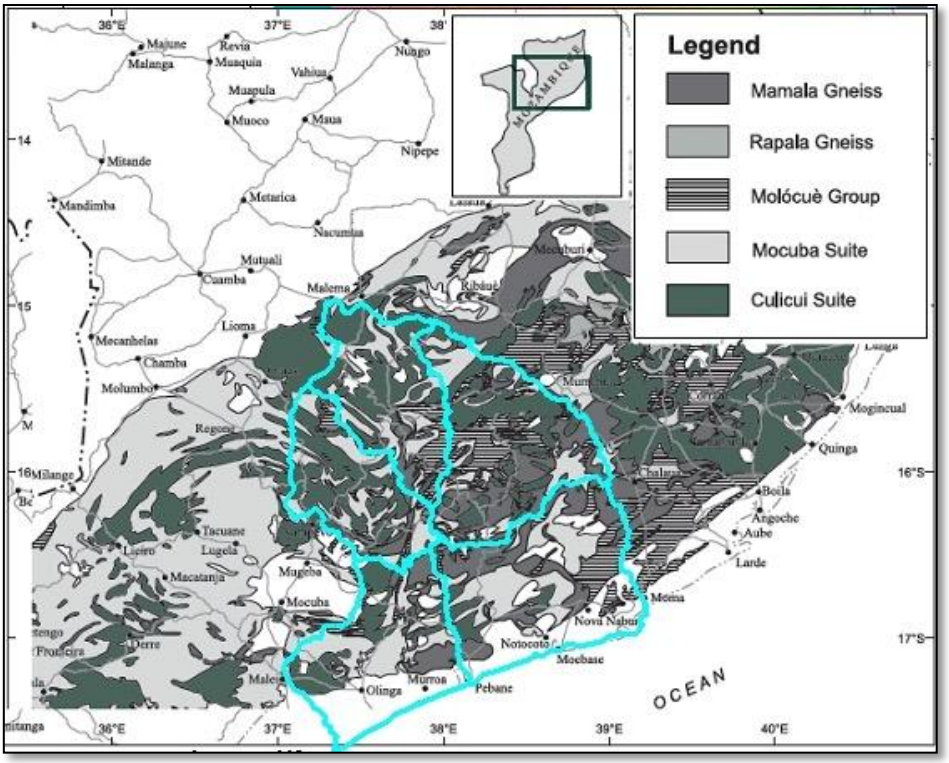


Source: en-ca.topographic-map.com. 12.08.2016

4.1.1.2.2 Geology

The geology of Districts of Ile, Gilé, Alto Molocué, Mulevala are fully characterized by the tectonically homogeneous Nampula Sub Province structure defined by CGS (2006) and a small part occupied by Ocua Complex. The quaternary sedimentary rocks of coastal regions are predominant in the Districts of Mocubela, Maganja da Costa and Pebane. Below, the simplified geology map of the area is shown.

Figure 6: Lithological units of the Nampula Complex



Source: Grantham, G.H., et al. 2011

From the economic point of view, the mineral resources with importance and/or potential for such are pegmatites, containing a complex mineralogy, of which the following have been recovered in the past:

a) rare-metals, especially columbotantalite;
b) lithium minerals;
c) rare earth and radioactive elements;
d) gemstones (aquamarine, morganite, rubelite, verdelite, emerald, etc.);
e) rare minerals specimens and attractive mineral crystals;
f) raw materials for glass and ceramic industries, i.e. quartz, feldspar and kaolin, and
g) industrial minerals, i.e. mica, beryl and others.

Recent exploration activity in the region has focused on and around previously mined pegmatites and on gold and base metal potential. Artisanal mining in the study area is well known to occurring in Gilé, Alto Molocue, Mocuba and Ile. Artisanal workers have also been mining in many old abandoned deposits, resulting in an increase in the production of tantalum minerals that are also found in the area. Recently, Morrua, Marropino, Nampoça and Mita (Mecossa) mines have been recommissioned.

The economic geology for the quaternary terrain is marked by heavy sands of Muebase and Pebane, with an ongoing exploration projects. Limestone deposits around Maganja da Costa and Mocubela have a limited geological knowledge.

Other important resources found within the study area, are construction material, including aggregates and dimension stones.

4.1.1.2.3 Soils

The interior land (Ile, Gilé, Alto Molocué, Mulevala) is predominantly formed by medium textured deep red clay soils high retention capacity for water and grayish brown soils, produced from the weathering of granitic rocks and resulting from residual or limited transported soils. Most of the maize farms are found in these areas. Cassava, pineapple plant, varieties of beans are also produced in these soils.

The river valleys are dominated by alluvial soils (fluvisols), dark, deep, heavy texture and average to moderately drained, subject to regular flooding (FAO, 1995).

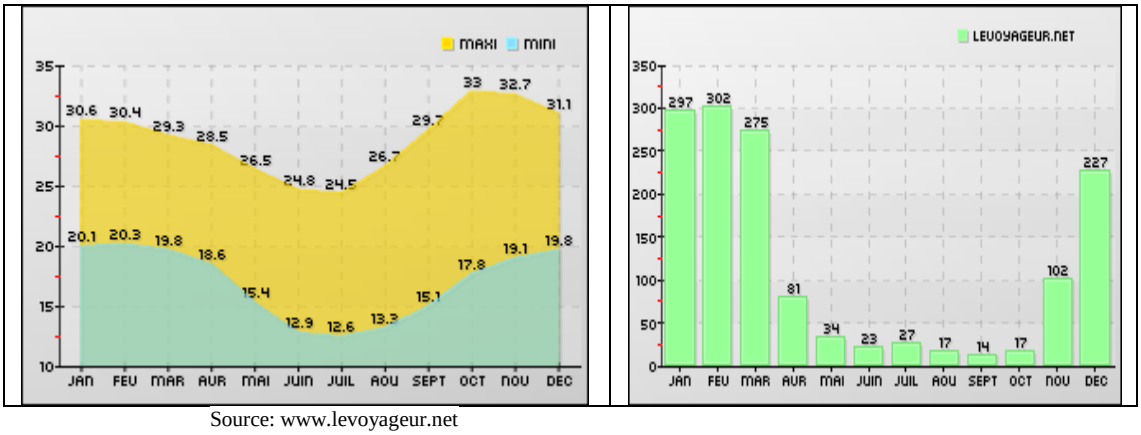
The coastal zone (Pebane, Maganja da Costa and Mocubela) further to the SE, comprises yellow sandy soils, gray and locally modified by hydro morphism. The coastal line is formed by loose, high permeable sandy soils, with scarce vegetation.

5.1.1.2.4 Climate

The climatic classification of Thornthwaite of the high plateau is wet with a moderate water deficiency in winter (April to September/October). The annual average rainfall in this area is 1402.6 mm with an evaporation or transpiration of 1258.1 mm. This pattern of rainfall provides for only one good agricultural season per year.

The wet season spans the high plateau is from December to April, with reliable rainfall. The wettest month of the year typically is February and the average total monthly precipitation is over 300 mm. Humidity is very high during the wet season, averaging 80-90%, but is much lower in the dry season. The warmest and coolest months of the year are January/February and July respectively. Below, are presented the graphs for temperature and precipitation for Alto Molocue town in the plateau area.

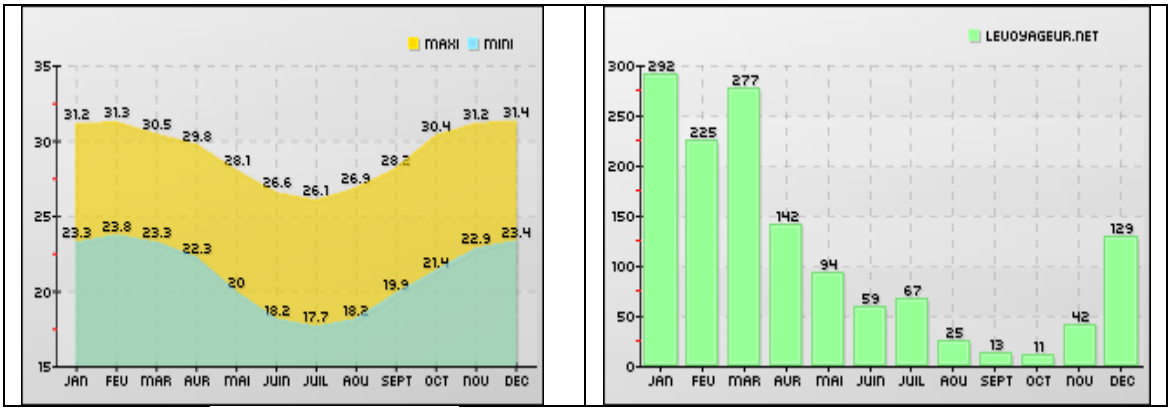
Graph 4: Temperature and precipitation in Alto Molocue (hinterland)



Source: www.levoyageur.net

In the Pebane District (as an example of the coastal zone), most rainfall occurs in the period between December of one year to April of the following year (75-80%). Rainfall is strongly influenced by proximity of the sea. The figure below shows the temperature monthly variation and precipitation. Warmest moths are January and December, with temperatures rising to 31.4 ^{o}C and the coolest month is July, when the temperature drops to 17 ^{o}C. The highest precipitation occurs in January (292 mm) and the lowest at October (11 mm).

Graph 5: Temperature and precipitation in Pebane (coastal areas)



Source: www.levoyageur.net

5.1.1.2.5 Hydrology and Water Resources

Underground water resources have limited potential and are predominantly found in the major faults and deep weathered granitic gneisses.

The project area is traversed by many rivers including on the plateau: Molocue, Luaia, Namirrué, Lice, Melela, Errequete, Mutuasse, Licungo, Raraca, Nipiodi, Miniga and Ligonha. These rivers have hydro electrical power plants potential and dams for agriculture irrigation.

Among various important rivers, the Licungo flowing from Gurué drains an area of 27,700 km^2 and is more than 336 km along the Districts of Gurué, Ile, Namaroi, Lugela and Mocuba.

4.1.2 Biological Traits of the Entire Project Area

4.1.2.1 Flora

The project area is located between Swahilian-Maputaland transitional zone and Zambézian Centre of Endemism.

Swahilian-Maputaland transitional zone extends from the Rovuma River (at the border with Tanzania) to the Limpopo mouth (10º 28' 5.61" S e 40º 28' 8.36" E to 25º 12' 4.68" S e 33º 31' 21.3" E, respectively) comprising about 147, 000 km^2. The climate is tropical with rainfall standing mostly between 800-1200 mm per year, and the elevation is about 200 m above sea level (asl) (White, 1983). The major part of the coast has a tropical humid to sub-humid climate, with little rain in the dry winter season. It is mostly occupied by coastal forest. According to Timberlake *et al*., (2011) the coastal forests of Eastern Africa, including Mozambique, have, over the last 20 or so years, been recognized as forming the most important part of a distinct ecoregion – the Eastern Africa Coastal Forests Ecoregion. It has particularly high levels of endemism. "Although small, this ecoregion is often regarded as a globally important conservation priority area" (Burgess & Clarke, 2000).

The **Zambézian Regional Centre of Endemism** extends from 3° S to 26° S and almost from the Atlantic Ocean to the Indian Ocean, occupying all Mozambique's hinterland provinces and part of the coastal. The climate is tropical, continental, with one rainy season from November to April (500 and 1400 mm per year, generally decreasing from north to south). Mean air temperature is related to altitude and varies from 18° to 24° C. The Zambézian center is the second largest phytocorion (Phytogeografical region) in Africa, probably having the richest and more diversified flora. There are at least 8,500 species, 54% of which endemic (e.g. of endemic genera, which are *Diplorhincus*, *Bolusantus* and *Cleistochlamis*) (White, 1983). Some of the vegetation types are dry, swampy, riparian and montane forests, woodlands, thickets and grasslands.

The biological environment is primarily shaped by the climate, altitude and by the soil types and textures throughout the districts located in the project area. An additional factor which strongly influences the state of the environment is the human use of biological resources (deforestation for timber, construction, source of energy and subsistence such as agriculture, livestock, hunting and fishing, etc.).

As shown in the Figure 2 (above) there are mainly 4 types of vegetation in the region: coastal mosaic, dense afro mountain vegetation, undifferentiated woodland and miombo vegetation.

Nevertheless, at the local scale there are other vegetation types such as coastal dune and littoral vegetation such as Mangroves and Acacia vegetation in the lowland (Albano 2008). Also along most of the river beds there are discontinuous stands of reed vegetation throughout most of the length. Dambos (vegetation in low and wet land) are another vegetation formation, which are very common at the base of the inselbergs and act as a buffer, capturing water and releasing it slowly throughout the year (MAE, 2005). Most of the dambos have been converted into rice fields, which are cultivated during the rainy season (MAE 2005).

The miombo vegetation occurs in diverse forms, from evergreen, semi-decidous and deciduous through the area (UN_REDD 2011). In most areas the miombo and the coastal mosaic have been cleared for agriculture (UN_REDD 2011). The coastal mosaic has been transformed mainly into cashew orchards and cassava fields, while the miombo woodland was converted into cultivated fields for maize, peanuts beans, sorghum and cassava, but also mainly for cotton and sesame as well as tobacco (MAE 2005). Sisal was once also another cash crop extensively cultivated in Cabo Delgado for fibers until 1975 but was later discontinued (MAE 2005). Most of the area in the low land (0-200 m) has been transformed for agriculture (UN_REDD 2011, Appendix 1). The flood plains in Maganja da Costa and Pebane in Zambézia province are known for extensive rice fields, which contribute to making this province into the largest rice producer in the country, i.e. representing more than 40% of all the rice produced nationally.

The north-eastern plain and plateau (altitude >400 m) is dominated by coastal mosaic, known as Swahiliean Regional Centre of Endemism, where endemic plant species are *Stuhlmania, Hymenaena* and *Bivinia* (MIC0A 2009). Inland, at the altitude between 400 m and 1000 m, is occupied by the Miombo vegetation dominated by *Brachystegia* and *Julbernardia*, but incorporates species such as *Pleteopsis, Pterocarpus, Vitex payo, Vitex donicela* and *Cussonia spicata* (MICOA 2009). The Miombo woodlands are composed mainly of deciduous woody vegetation where *Brachystagia spp* and *Strichnos spinosa* are the dominant species in some locations. Sometimes they appear in the pure stands. *Brachystagia* is commonly associated with *Julbernadia globiflora, Pterocarpus angolensis* (Umbila), *Burkea africana, Bridelia micrantha, Cynometra* sp., *Dalbergia melanoxylon, Swartizia madagascariensis, Millettia stuhlmannii* (Panga-Panga, etc. while *Strichnos* is usually associated with *Combretum spp, Terminalia spp, Pteleopsis myrtilifolia* etc (Soto, 2007).

The dense afro-mountain vegetation occurs in the highlands (altitude > 1000 m), where the temperate climate, modified by altitude occurs. The rocky soils allow for the development of several hardwood species. This afro-mountain vegetation has not yet been fully described. However, it appears to be part of the recently described Namuli, Chiperoni and Mabu complex (located in the Zambézia Province). These Afro-mountain complexes share plant species such as *Widdingtonia cuppressoides, Podocarpus milanjianus, Khaya sp. Macaranga sp* and *Zanha golungensis* (MICOA 2009). The medium altitude forest below 1600 m has an increased presence of *Albizia gummifera* and *Newtonia buchananii, Ficus* spp. and various Sapotaceae trees such as *Chrysophyllum gorungosanum, Englerophytum magalismontanum* and *Synsepalum* sp (Timberlake et al 2009). Grassland occurs along most of the river beds.

Towards the west, the type of vegetation is undifferentiated woodland which is dominated by *Afzelia quanzensis, Sclerocarya birrea, Albizia versicolor, Terminalia sericea and Petophorum africanum* (MICOA 2009).

Most intact forests and woodlands occur at the mountains slopes, which can be classified as low moderately dense forest, open forest, high, median and low woodland. In addition, there are several riverine forests (Cumbi 2007, MAE 2005). *Albizia adianthifolia* is common (1,250–1,450 m), along with *Bersama abyssinica, Parinari excelsa* and *Newtonia buchananii (Timberlake* et al *2009)*. Slightly higher up at 1,450–1,500 m *Bridelia micrantha, Tetradenia riparia, Maesa lanceolata, Schrebera alata,*

Nuxia congesta, *P. excelsa* and *S. cordatum* were noted, with *Trema orientalis* in between the gaps (Timberlake et al 2009).

The recently recognized areas of biological importance (mountain forests of Namuli complex) are in the proximity of this region (at Gurue, Zambézia Province) (MICOA 1997) and may share important biodiversity with the set of inselbergs located in the area, mainly in Cabo Delgado.

All these rivers systems are bordered by a riverine forest while at the lowland the river beds are covered by aquatic vegetation consisting of reed (*Phragmithes australis*) and bamboo (Ooxanthela zansibarica). The fauna species inhabiting the dambos have not been described extensively, but reptiles, amphibians, reedbuck and water birds are common (MICOA 1997).

Coastal Areas

Mozambique's coastline of about 2,770 km has a wide diversity of habitats, which include sandy beaches, coral reefs, estuarine systems, bays, mangroves and sea grass beds. The coral coast eco-region, spans from the Rovuma River in the north to Pebane in the South (at latitude 17˚20'S) comprising 770 km, characterized by dominating limestone and corals. It is in this habitat that the project area in Cabo Delgado is found. The swamp coast which extends from Angoche (16˚ 14'S) in the north to Bazaruto Archipelago (21˚ 10'S) in the south, with the length of 978 km characterized by occurrence of several estuaries and extensive mangrove formation. This part of the coast has the largest continental shelf and the very turbid water highly influenced by the sediment discharged by river and an intense wave action. The coastal areas of Zambézia province are found in this habitat.

The Delta coast is the fourth eco-region observed at the Zambezi and Save River Deltas, and consists of mangrove forests and adjacent inland inundated grassland and palm woodlands.

The tidal range pattern achieves a maximum of 6.3 m at Beira, Sofala Bank, reducing to 2m in Maputo and 3m in Cabo Delgado. In Inhambane, Zambézia and Nampula and Pemba the tidal range attains a maximum of 4 m (Lundin and Lindén 1996).

In the project area, the **coastal dune vegetation** includes *Sesuvium portulacastrum, Cyperus maritimus, Ipomea-pes-caprae, Canavalia maritime* among others. These species create conditions for the establishment of littoral thickets and forest. The thicket becomes sometimes taller to a dense evergreen forest with climbers forming a patch of coastal forest. Dominant tree species include *Diospyros sp., Euclea natalensis, Mimusops caffra, Brachylaene discolour Bridelia sp., Commiphora schlechteri* as well as *Brexia madagascariensis (Albano 2008).* Another subsidiary species includes *Sideroxylon inerme, Afzelia quanzensis, Tabernaemontana elegans, Sclerocarya birrea, Albizia sp., Commiphora s*p., *Trichilia sp*., and *Breonadendron carvalhoi* (Albano 2008).

Immediately inland, after the dune and littoral vegetation, the other formation is the **Acacia woodland**. It occurs on lowland areas on soils derived from basalt which are generally shallow or skeletal black and heavy or from cretaceous to recent deposits with

sandstones and conglomerates with the rainfall between 500 -1,000 mm. It comprises communities of scattered trees and shrubs where *Acacia xanthophloea, A. nigrescens* and *A. polyacantha* are common (Albano 2008).

The dominant species include *Acacia nigrescens, Adansonia digitata, Albizia spp., Combretum spp., Terminalia sericea, Bolusanthus sp., Mundulea sp., Acacia nilotica, Pelthophorum africanum.* The grass cover is dominated by *Themeda triandra* on black heavy soils. Bamboo *(Oxynanthera abyssinica*) occurs on elevated terrains with clayey heavy soils (Albano 2008).

On light loams or clayey loams species such as *Burkea Africana, Pseudolachnostylis maprouneifolia, Pterocarpus sp., Lonchocarpus capassa, Acacia nigrescens, Combretum imberbe, Cassia abbreviata* become important. The grass layer on these soils are associated with *Andropogon spp.* and *Hyparrhenia spp (Albano 2008).*

Inland from the Acacia woodland, there is the ***deciduous miombo***, which is a narrow belt between sub littoral lowlands and the beginning of the mesoplanaltic zone. The soil is derived from granite-gneissic formations and the rainfall is about 800-1,000 mm per year (Albano 2008). This vegetation unit comprises patches of tall dense woodland of *Pteliopsis myrtifolia*, *Millettia stuhlmannii*, *Cordyla africana*, *Milicia excelsa, Bombax rhodognaphalon, Afzelia quanzensis* on loamy or clayey soils interspersed with savana tree in shallow or skeletal soil with *Adansonia digitata, Sterculia appendiculata,Lonchocarpus capassa*, S. *quinqueloba,* etc. and small deciduous savanna woodlands of *Brachystegia boehmii*, B. *allenii*, B. *spiciformis*, *Julbernardia globiflora, Erythrophleum africanum, Pterocrapus angolensis* generally in orange soils (Albano 2008).

Secondary woodlands contain *Markhamia obtusifolia, Fernandoa magnifica, Trema orientalis*, *Erythrina* sp.In lower areas this type of vegetation turns into savanna tree with *Combretum* sp., *Commiphora* sp., C.africana, *Dalbergia melanoxylon*, interspersed with a layer of Andropogonaceae and Poaceae or into Acacia savanna with A. *nigrescens*, A. *polyacantha*, *Tamarindus indica*, occuring commonly on termite mounds with *Oxythenanthera abyssinica* in lower areas with clayey grey soils (Albano 2008).

Therefore, it is highly likely that mounts located in Malema and Lalaua districts may therefore share some of the biodiversity considering the similar climate and ecological conditions.

4.1.2.2 Fauna

Although faunal studies are poorly developed in northern and central regions of Mozambique and many montane areas are still largely unexplored including some in the project area, Zambézia has been recognized as one of the richest provinces due to its edaphic and climate conditions e.g. Inselbergs.

In the districts of Cabo Delgado several wildlife species are reported. These include elephants (*Loxodonta africana*), lions (*Phantera leo*), leopards (*Panthera pardus*), Cheetah (Acinonyx pardus) buffalos (*Syncerus caffer*), kudu (*Tragelapus strepiceros*), sable (*Hippotragus equinus*), bushbuck (*Tragelapus scriptus*), grey duiker (*Sylvicappra grimmia*), impala (*Aepyceros melampus*), reedbuck (*Redunca arundinum*), Zebra

(*Equus burchelli*), bush pig (*Potamochoerus porcus*), warthog (*Phacochoerus aethiopicus*) and scrub hare (*Lepus saxatilis*) and fowls such as the guinea fowl (*Numida meleagris*). In the Lurio River there are hippopotamus (*Hippopotamus amphibius*). In the lower reaches of Lurio River there are also crocodiles (*Crocodylus niloticus*). Fish fauna has not yet been fully described described, but fish species are reported to be part of food supplement of the people inhabiting these all the districts in the project area.

In terms of birdlife, little is known about the entire region, as no assessment has been carried out. Nevertheless, the inselberg archipelago may share part of the 155 bird species that have been recorded (including the endemic *Namuli Apalis*) and 42 mammals (including the endemic Vincent's Squirrel). Reptiles and amphibians were surveyed only briefly, but 13 are recorded, including a new un-described species *ofpygmy chameleon* and a forest viper. Butterflies were looked at in more detail with 126 taxa being recorded, including seven new to science (Timberlake et al 2009). Most of the forests in Zambézia province are especially important for birds, including the Namuli Apalis species and Dapple-throat (both described as Vulnerable on the IUCN Red Data List), the latter being due to their climate condition represented by an endemic race. They also contain significant numbers of the Cholo Alethe (endangered, endemic to southeastern Malawi and adjacent northern Mozambique) and the race *belcheri* of the Green Barbet. Since the only other locality for this species, on Mt Thyolo, in S Malawi, has been totally dilapidated in recent years, Namuli has become its only refuge. Namuli, Chiperone, and Mabu Mountains all in Zambézia Province and others in the adjacent districts of Nampula province are an Important Bird Area based on the presence of these three species. This area also forms a significant part of the Tanzania–Malawi Mountains Endemic Bird Area. Other birds of conservation concern are the Spotted Ground Thrush (Endangered) and White-winged Apalis (Vulnerable) – the former is only known to breed in a few mid-altitude forests in eastern Africa whilst the latter is otherwise known from mid-altitude forest in central Tanzania, southeastern Malawi (Timberlake, et al 2009).

In addition, the broad transformation that has occurred over miombo and coastal mosaic for agriculture and logging may have reduced the bird and other fauna species diversity. The bird diversity of the region may be comparable to that of other sub-tropical miombo woodlands. Biogeographically, of the Afromontane endemic or near-endemic bird species, 27 are known to occur in Namuli, which compares favourably with 31 on the larger Mt Mulanje. One is found only on Namuli (Dapple-throat) (Timberlake et al 2009). In the Lurio River system, mainly towards downstream of Lurio River crocodiles are common (People's Republic of Mozambique, 1988).

Threats and Conservation Issues

The Gilé National Reserve is mainly made up of miombo forest, dambos, reforested savannah and riverine vegetation along various rivers and rivulets. Of great interest are the inselberg habitats, which are either inside or around the area.

In Cabo Delgado Province a considerable part of the project areas is located in and/or around the Quirimbas National Park including the Quirimbas Archipelago. On the coastal side the Quirimbas National Park supplies crucial habitat for feeding turtles, crab plovers and migratory birds and is also an important nursery area for bottlenose

and humpback dolphins and whales. Diverse corals grow in the National Park due to several underwater channels running deep near Quilalea, Ibo and Matemo Islands. Mangroves, sea grasses, sandy and rocky shores all have high biodiversity value in the Archipelago. On the continental side three important migratory routes for elephant transverse the area, following the coast and the Montepuez and Messalo river systems. The Quirimbas Archipelago, specially the Stone Town of Ibo Island, are evidence of cultural interaction and harmonization of European-Arabian-Indian-African heritage, which is also object of protection.

Fauna: There are listed 95 mammal species, amongst which elephants, lions, leopards, wild dogs (wolves), spotted hyenas (crocutacrocuta), pala-palas, kudos, impalas. There are also listed 114 bird species.

Most of the inselbergs in Zambézia and Cabo Delgado can be an Important Bird Area (IBA) based on the presence of globally significant populations of the endemic Namuli Apalis, Cholo Alethe and Dapplethroat (Parker 2001), and now also the Spotted Ground Thrush and White-winged Apalis. The nearby Mt Chiperone is also an IBA (Parker 2001). Moreover, Namuli Mt found in Gurue District forms part of the Tanzania–Malawi Mountains Endemic Bird Area (EBA) as three of the seven species of this EBA occurring in Mozambique were recorded from here, although these figures have changed somewhat considering more recent research. It also forms part of the Afrotropical Highlands biome. As part of inventory updated it can be expected that for both plant and animal species and mapping will be redefined and used as part of project management.

Neither the peat grassland nor the montane forest is under major threat, although fire and selective logging for *Faurea wentzeliana* are having an impact and there appears to be an increasing number of patches within the forest cleared for cultivation of Irish potato. In most of the inselbergs in this region the main threats concern the increasing destruction by cultivation and fire of medium-altitude forest and riparian forest along the main streams below 1,600 m. Other significant threats are feral pigs rooting up rich species of vegetation over seepages, and heavy hunting pressure on mammals; edible species are now scarce and predators mostly absent.

According to (Bayliss et al., 2010) the biodiversity found in the forests in the project area is globally and nationally important, for example the new species of pygmy chameleon, *Cymothoe* butterfly, freshwater crab and the possible new species of cycad, along with rare birds such as the Endangered Thyolo Alethe and Near Threatened Gunning's Akalat.

Since the end of the civil war, particularly over the last two decades, local populations have been moving away from the coastal margins into the wooded and forested interior plateau. Although deforestation resulting from agriculture, logging and fuelwood collection is leading to environmental problems, some authors (e.g., Moyo *et al.*, 1993) do not consider it a major national problem, but rather a localized concern. Regions with high timber potential include the central and Northern provinces Niassa, Sofala, Zambézia and Cabo Delgado. Zambézia is the second region after Niassa (Marzoli et al 2007) where most forest concessions areas are concentrated. In October 2006, according to the then National Directorate for Land and Forest (DNTF), 135 forest concessions

had been requested nationwide, totaling 5.5 million ha. Of these, 94 are located in these three provinces, and total 3.7 million ha (Sitoe et al., unpublished).

According to Timberlake et al (2011) the extent to which vegetation returns to what it was before being cleared if only slash & burn practices are used, is not quite clear. Bush meat is a source of protein for rural communities. Although hunting of animals for commercial purposes is illegal, the practice is widespread across the country (Albano, 2004). Hunting of some species for household consumption such as *Neotragus moschatus*, *Sylvicapra grimmia* and *Redunca arundimon* is granted by the Decree 12/2002 (DNFFB, 2002)

Use and management of natural resources such as forests and wildlife makes a major contribution to rural livelihoods in Mozambique. This calls for well-thought and integrated strategies to deal with existing and pressing problems. Forests, woodlands, and savannas provide poles and construction materials, firewood, grazing for livestock, bush meat, wild fruits, honey, mushrooms, edible insects, and medicinal plants. In addition, some forest is used as burial grounds, for traditional ceremonies and provide environment for ecotourism opportunities

All mountains and their forests in the project area have no formal protection status. Consequently, it is hoped that the visibility to be given to the area by this project will lead to sustainable conservation initiatives. Attention should also be given to endemic, rare or threatened species, as well as to Important Bird Area (IBA). Monte Namuli located at Gurué is the only one IBA , located in the Zambézia Landscape.

4.1.3 Socio-economic Situation

4.1.3.1 Overview

As shown in the table below the two provinces targeted for on the ground interventions represented roughly 5,056,023 inhabitants (the figure should be around 6.0 million people today at an annual growth rate of 2.8%, on average), i.e. close to 25% of the overall country's population, in 2007. In its capacity as the second most populated province in Mozambique, Zambézia province alone represents close to 19% of the country´s population

The sixteen selected districts represented close to 12% of the country's population and close to 31% of the population of the two provinces together. The seven districts in Cabo Delgado represented above 32% of the province's population while those from Zambézia close to 49%.

Table 2: Population in the project's provinces and districts

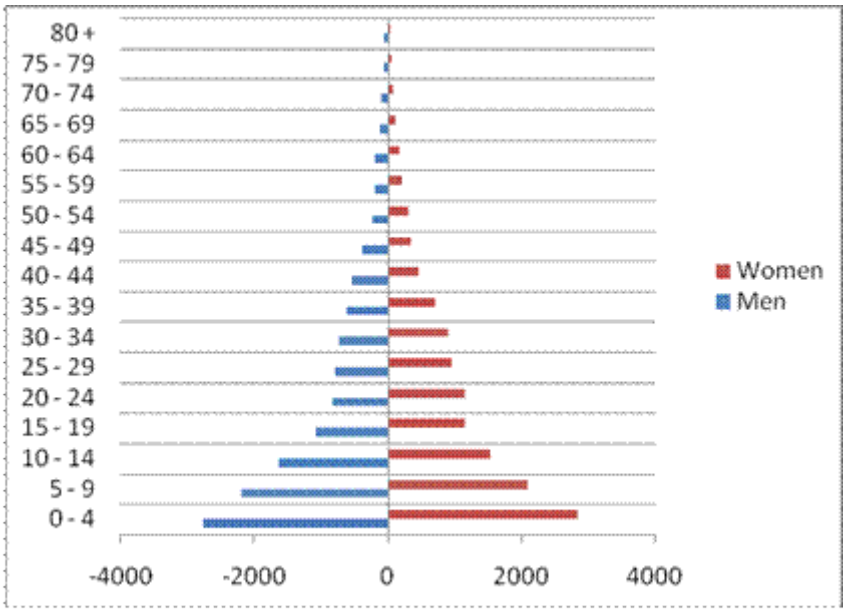
Country	Inhabitants	Provinces	Inhabitants	Districts	Inhabitants
	20,252,223				
		Cabo Delgado	1,606,568		
				Meluco	24,637
				Macomia	79,825
				Quissanga	37,771

				Metuge	63,100
				Montepuez	193,602
				Ancuabe	107,238
				Ibo	9,344
Subtotal Districts of Cabo Delgado Province					**515,517**
		Zambézia	3,849,455		
				AltoMolocue	272,482
				Ile	289,891
				Gilé	169,285
				Mulevala	74,665
				Maganja da Costa	276,881
				Pebane	185,333
				Mocuba	300,628
				Gurue	297,935
				Mocubela	34,964
Subtotal Districts of Zambézia Province					**1,902,064**
Total	**20,252,223**		**7,835,068**		**1,819,018**

Source: INE, 2007

Slightly more than 60% of people in the two provinces are less than 19 years old and over half (51%) of the total are women. This is the typical population age and sex structure in Mozambique and particularly in the two provinces in the project area. A young population also means that the demand for social services (education, health, and water supply), housing, employment, natural resources, etc. is high and is likely to be on the increase in the years to come.

Graph 6: Age and sex pyramid in the project area



Source: INE, 2007

Most of these people live in small villages situated along local roads and/or water courses. They share a common past and are governed by formal and/or traditional and locally established authorities. In a few cases dispersed and isolated households can be found. But even in the latter case allegiance of such households to a certain local authority is prevalent.

In the Project districts is in many parts of Mozambique a vicious cycle consisting of natural conditions, lack of capital and adequate financial services, production technologies and services responsible for development and dissemination of such technologies, poor marketing systems among others define the environment in which local economic activities are carried out. The prevailing subsistence economy is based on direct and integrated exploitation of natural resources, with very little transformation. Plant and animal production, forests and fisheries are integrated in a single economic system. These are combined to guarantee the survival of individuals, families and communities. Households generally only have food reserves to cover between 2.5 to 4 months.

Data also shows that at least 5% of households are generally vulnerable. The most vulnerable families are usually headed by women, children, elderly and/or chronically-ill or disabled persons. To counteract the food vulnerability, a considerable proportion of households' resort to survival strategies that include participation in "food for work" initiatives promoted by various development assistance agencies e.g. the World Food Program, Save the Children, INGC, as well as in some IDA/Donor-funded operations, especially in the field of infrastructure/civil works development.

Families resort to collecting wild fruits, collection and/or sale of firewood, charcoal, reed, cuttings, preparation of traditional beverages, hunting and sometimes formal employment, mainly by men, in the surrounding townships and villages. One reason for this situation is the nonexistence and relative weakness of rural markets, weak agricultural technologies and yields.

4.1.3.1.1 Cabo Delgado Province

Cabo Delgado, has the second largest forest area in the country, after Niassa, and a little over 66% of this forest is productive, i.e. 3.2 million hectares. The Province of Cabo Delgado has 27 processing companies operating timber, of which 15 have concessions and 3 single licenses[17]. Focus is on natural forests and limited plantations that are at their inception phase.

Cabo Delgado is inhabited by three main ethnic groups, namely Makonde, Macuas and Mwani. The biggest urban center is Pemba, a historical city situated on the bay with the same name, which in the last few years has become an important tourist center.

[17] PED de Cabo Delgado (2010-2014)

To the North of Cabo Delgado, along the 200 km of coastline, extends the Archipelago of Quirimbas (7,500 km²), along the districts of Macomia and Quissanga, which are in the project specific area in this province. The QuirimbasArchipelago has 32 islands, including "Ibo Island", with interesting history, natural beauty and magnificent beaches. In the past it was an important commercial center. The Archipelago of Quirimbas has been defined as a conservation area.

In more recent times, Cabo Delgado in addition to having been emerging as an important tourism destination it has become the center of gas explorations. There is now enough evidence to the effect that along its coast the Indian Ocean holds one of the largest gas reserves in the world, which has the potential of drastically changing the face of the province and the country in general.

Food crops in the province are mainly cassava and maize. Sorghum is the third staple food crop being cultivated intercropped with maize, beans and peanuts. In the lowlands rice is also grown. The cultivation of sugar beans is restricted to a small area, while cowpeas and pigeon peas are widespread in hot areas. Because its coastal districts have very high temperatures, the production of vegetables is very limited.

Cash crops are represented by cashews, cotton and sesame. Cotton is produced in rain fed conditions and promoted by Plexus, a locally established company. Cabo Delgado has a cotton processing factory in Montepuez (in the project area) with capacity to process 31.2 tons / year. Unproductive coconut plantations are common along the coastal areas and cashew trees are the most frequent fruit trees in the province. Cabo Delgado has 12% of the country's productive cashew trees and three processing factories although at present only one is operating.

Table 3: Cashew nut processing units in Cabo Delgado

Nr	**Name**	**District**	**Installed Capacity (tons/year)**	**Real capacity (tons/year)**	**Labour**		**Status**
					Male	Female	
1	Korosho	Chiure	1 600	1 205	100	175	Operational
2	Dingaloshe	Nangade	1 000	340	0	0	Out of operation
3	Cabo Caju Lda	Pemba	1 000	0	0	0	
		TOTAL	**3 600**	**1 205**	**100**	**175**	

Source: INCAJU (2014)

Fisheries is the second largest economic activity in the entire province of Cabo Delgado and particularly in the coastal districts of Macomia, Quissanga and Metuge for local people and communities.

A small-scale fishery is the only subsector of fisheries industry activities contributing to the economy of the province. Other fisheries subsectors are active south of the province and, in terms of commercial activities, industrial tuna fishing takes place beyond 12 nautical miles with no direct contributions to the provincial economy.

4.1.3.1.2 Zambézia Province

Zambézia Province has about 5.1 million hectares of forests, representing just over 49% of the area of the province. Of these, 4.1 million hectares are productive forests, i.e. more than 81%. Zambézia's forests are the most productive in the country with the average of 57.8 m3/ha and a commercially available volume in the order of 7.7 m3/ha. Allowable annual cut is 91 200 m3/year. Less than 50% of this availability is explored annually.

Derre forest reserve - with an area of 170.000ha, is the only formally constituted area for wood conservation in Zambézia.

Plantations are not yet expressive in the country. Notwithstanding, Portucel has a DUAT of 173,000 hectares. In this province, indications are that they will not plant in the whole area, but this can be expected to be significant as starting point.

With 3.85 million people (INE, 2007), Zambézia is the second most-populous province of Mozambique. Zambézia Province can produce almost all the most common food crops in Mozambique and has the largest cultivated area nationally. Maize and cassava are the most common crops. Rice cultivation is very important in the province and it represents above 40% of the cultivated area for this crop in the country. Zambézia Province is the leading producer of sweet potatoes contributing 28% of the area with this crop. Pigeon peas are also widely cultivated in this province.

As for cash crops sesame is the most widely cultivated in an area of 6.5 thousand hectares. Second most important cash crop is tea. The extensive tea plantation in Gurué, makes Zambézia Province the leader in the production of this crop.

Unlike the Northern provinces, tobacco and cotton are cultivated but are not the most important crops. The province has two units of cotton ginning. The main cotton fomenting companies in Zambézia Province are OLAM, Palopique and Nova Algodoeira. A new investment was approved in 2012 for the production, promotion and processing of cotton in the District of Mocuba by China Agriculture Co Ltd.

Coconut and cashew are the most widely grown fruit trees in Zambézia Province. There are three (out of operation) factories processing cashew nuts in Zambézia Province.

Despite its strong potential the province has been relatively neglected in the last few years in terms of development initiatives. The MPD[18] report of 2010 of increased incidence of poverty showed that Zambézia has been one of the hardest hit by this phenomenon.

[18] The extinct Ministry of Planning and Development (MPD).

4.1.3.2 Other Development Programs/Projects in the Project Area

4.1.3.2.1 Cabo Delgado

Investments in Cabo Delgado are increasingly being channeled to the gas, tourism, infrastructures and services sectors. Few investments are being implemented in agriculture, forestry and fishery sectors. For example **ADM Cabo Delgado** – is investing US$ 3.5 million to promote, produce and processing jatropha in an out-growing scheme using local traditional farmers. It is based in four districts of Cabo Delgado Province, three of which are in the project area, namely: Macomia, Meluco, Ancuabe and Quissanga. Approximately 10000 small farmers have been working with ADM since 2012.

Other prospective investments in the Project area CATin agriculture, forests and fisheries as per the CPI data base (2014) can be seen in the table below.

Table 4: Possible investments in agriculture, forestry and fishing sectors (Cabo Delgado, 2009-2013)

Project	Sector	District	Investment ($x10^6$ USD)
OURO VERDE Organic sugar (1000Ha, 1000 Ton/year) and ethanol (3million litres)	Agriculture and Agroindustry	Chiure/ Balama	0.73
HUNTERS MOZAMBIQUE	Agriculture and Agroindustry	Nangade	2.80
PATÚ	Agriculture and Agroindustry	Pemba	0.05
EVERGREEN MOKA Agribusiness	Agriculture and Agroindustry	Pemba	1.60
	SUB-TOTAL 2009		5.18
AFROILS CORPORATION Palm plantation for extraction of vegetable oil	Agricultura e Agro-indústrias	Nangade	96.00
MONTARA MOZAMBIQUE Groundnut and sunflower cropping Jatropha and sugarcane for biodiesel production	Agricultura e Agro-indústria	Namuno	3.80
AGRO-PECUÁRIA DE OCUA - JACARANDÁ AGRICULTURA Livestock farming. Maize, banana, beans, potato, etc.	Agricultura e Agro-indústrias	Chiúre	1.33
	SUB-TOTAL 2010		101.13
AGROPEC – LURIO Agribusiness	Agriculture and Agroindustry	Chiúre	0.83
	SUB-TOTAL 2011		0.83
DD INVESTIMENTOS Maize and soybean cropping	Agriculture and Agroindustry	Chiúre	5.20

Project	Sector	District	Investment ($x10^6$ USD)
	SUB-TOTAL 2012		6.86
MAGON AGRICULTURA Maize, sorghum and cassava cropping	Agriculture and Agroindustry	Pemba	0.01
ADM CABO DELGADO Jatropha curcas plantation and biofuel production	Forestry	Quissanga	3.50
	SUB-TOTAL 2013		3.51
TOTAL			**116.68**

Source: CPI (2014)

4.1.3.2.2 Zambézia Province

In this province, between 2009 and 2013 CPI approved 29 investment projects in the sectors of Agriculture and Agribusiness, Forestry and Fisheries valued at $2.6 billion. The ones in the Project area are shown in the table below.

Key observations include the following:

- Forestry is the lead sector, with a total of US$ 2.4 billion (or 93.6%) of all investments, but this is dominated by one major investment. Portucel, Mozambique;
- Agro-Processing makes up the balance of investment, estimated at US$ 300 million (6.3%); and,
- Fishery investments, estimated in US$ 3 million (0.1%).

Table 5: Approved projects by CPI in the project area in Zambézia Province (2009-2013)

Nr.	Sector	Project	District	Total ($x10^3$ US$)
1	Agriculture and Agroindustry		Gurue	5 000
2	Forestry	**PORTUCEL MOÇAMBIQUE, LDA**	Ile	186 000[19]
		Eucalyptus plantation and production of cellulose pulp for paper industry and energy		
3	Agriculture and Agroindustry	**QUIFEL NATURAL RESOURCES MOÇAMBIQUE, LDA**	Gurue	17 535
		Cultivation and industrial processing of soybeans and sunflower seed to produce vegetable oil		
4	Forestry	ATFC (MOÇAMBIQUE) MADEIRAS E AGRICULTURA, LDA	Gurue	5 000

[19] ESIA Zambézia Plantations Project, Portucel; by Impacto, September 2014

Nr.	Sector	Project	District	Total ($x10^3$ US$)
		Agricultural production and planting trees for commercial timber		
		Planting *Jatropha curcas* for the subsequent production of biofuel		
5	Agriculture and Agroindustry	REI DO AGRO, LIMITADA	Gurue	5 673
		Production, processing and marketing of agricultural products, including maize, soybeans and other		
6	Forestry	MADEIRAS S. L., LDA	Gilé	2 000
		Culling, processing and marketing of wood		
		SUB-TOTAL 2010		**221 208**
7	Forestry	SUSTAINABLE CAPITAL GROUP MOZAMBIQUE, LIMITADA	Mocuba	5 000
		Biomass processing of dead coconut trees for manufacture of solid fuels, pellets and wood chips.		
8	Forestry	TECTONA FORESTS OF ZAMBÉZIA, LIMITADA	Gurue	101 419
		Processing and exploitation of wood and its derivatives		
9	Forestry	WOODEN WORLD - SOCIEDADE UNIPESSOAL, LDA	Mocuba	2 000
		Installation and operation of a sawmilling		
		SUB-TOTAL 2011		**108 419**
10	Agriculture and Agroindustry	POLOPIQUE MOCAMBIQUE, LIMITADA	Mocuba	1 000
		Cotton promoting, cultivation and ginning		
11	Agriculture and Agroindustry	MURRIMO MACADAMIAS , LDA	Gurue	8 685
		Macadamia cultivation and processing		
12	Agriculture and Agroindustry	CHINA AFRICA AGRICULTURE Co, LIMITADA	Mocuba	1 000
		Cotton cultivation and ginning		
13	Forestry	WINNUA, LIMITADA	Mocuba	1 329
		Agroforestry, including the planting native species, forest management, wood processing and marketing		
14	Agriculture and Agroindustry	AGROMOZ - AGRIBUSINESS DE MOÇAMBIQUE,SA	Gurué	1 567
		Agribusiness: soybeans, maize and cotton cultivation		
		SUB-TOTAL 2012		**13 581**
15	Agriculture and Agroindustry	AFRICAN CENTURY AGRICULTURE MOCAMBIQUE, LIMITADA	Gurue	3 200
		Agribusiness: soybean, maize and wheat cultivation		
16	Agriculture and Agroindustry	-	Molocue	9 000
		SUB-TOTAL 2013		**12 200**
		TOTAL		**355 408**

Source: CPI (2014)

The main districts within the influence of the Nacala corridor are the Northern Gurué and Alto Molocué (the latter is in the project area). These districts have very high agriculture potential.

The main potential anchor projects in agriculture sectors in Zambézia are:

- Tea plantation and processing in Gurué;
- Cultivation and processing of macadamia by Murrimo Macadamias Lda, District of Gurue;
- Cultivation and processing of soyabean and sunflower for vegetable oil production by Quifel Natural Resources in Gurué;
- Various other projects in Zambézia outside the Northern Districts: (i) rice cultivation and processing in Namacurra, Nicoadala, Mopeia Districts; (ii) cotton promotion and ginning in Morrumbala (OLAM Moçambique) and Mocuba (Palopique Moçambique Lda); (iii) cashew nuts promotion and (potential) processing in Alto Molocue and Maganja da Costa Districts; (iv) other agribusiness projects.

The anchor forestry projects in Zambézia Province are:

- Portucel Moçambique Lda is investing more than US$ 2.3 billion in eucalyptus plantation and processing unit to produce paper pulp and electricity generation in Ile District (in the project area);
- Moçamgalp Ecoenergias Moçambique Lda is investing US$ 19 million to establish a plantation of *Jatropha curcas* for biofuel production in District of Gurue;
- Various other small investments for wood processing.

Zambézia Province is actually implementing very few projects in the fisheries industry. Only one project was approved in last five years worth US$ 3 million in Quelimane city.

Note should be taken of the fact that while CPI has a good record of intended investments it does not do the necessary follow up and there are no concise data about what then happens after applications for investment have been submitted to CPI. It is recommended that the necessary due diligence be done under REDD+/FIP/DGM, particularly in regard to relevant projects. This will be important particularly in order to make an assessment of the cumulative impacts that actual interventions will have when seen from the light of MozFIP/DGM.

5 - WORLD BANK SAFEGUARDS POLICIES

Due to its focus on rural development, forests and agriculture, the Program (and the two projects – MozFIP and MozDGM) will trigger seven of the 10+2 World Bank Operational Safeguards Policies, namely, Environmental Assessment (OP/BP 4.01), Pest Management (OP 4.09), Involuntary Resettlement (OP/BP 4.12), Natural Habitats (OP/BP 4.04), Forests (OP/BP 4.36), Physical Cultural Resources (OP/BP 4.11) and preemptively Safety of Dams (OP/BP 4.37). Despite the project's association with agricultural and forestry development, no major water related infrastructure is expected, nevertheless the OP/BM 4.37 on Safety of Dams is considered as triggered mainly on a precautionary note. The World Bank GroupEnvironmental, Health and Safety Guidelines (EHS)are also relevant for this program. The ESMF has made provision to address potential concerns afferent to OP/BP 4.04 (Natural Habitats), OP/BP 4.36 Forest, including possible impacts under OP/BP 4.11 (Physical Cultural Resources) based on "chance findings". A PF prepared under the related MozBio Project covering the PAs in the program area will be updated to meet the requirements of the Involuntary Resettlement (OP/BP 4.12) Safeguard Policy requirements related with ways of dealing with restrictions of access and use of natural resources by local people. This ESMF also contains elements of an Integrated Pest Management Plan (IPMP) to satisfy OP 4.09 requirements to streamline the best ways of dealing with the potential use of pesticides. MozFIP and MozDGM are not drawing water or impacting on international waterways neither affecting indigenous people (not applicable in Mozambique) or working in disputed areas.

Applicable Safeguard Policies are identified and briefly described below while Annex 6 makes a summary of one of them for reference.

Table 6: Safeguard Policies Triggered by the Project

Safeguard Policies Triggered	Yes	No
Environmental Assessment (OP/BP 4.01)	X	
Natural Habitats (OP/BP 4.04)	X	
Forests (OP/BP 4.36)	X	
Pest Management (OP 4.09)	X	
Physical Cultural Resources (OP/BP 4.11)	X	
Indigenous Peoples (OP/BP 4.10)		X
Involuntary Resettlement (OP/BP 4.12)	X	
Safety of Dams (OP/BP 4.37)	X	
Projects on International Waterways (OP/BP 7.50)		X
Projects in Disputed Areas (OP/BP 7.60)		X

5.1 Environmental Assessment (OP/BP 4.01)

The World Bank's environmental assessment operational policy requires that all proposed Bank-funded programs/projects, no matter the source of funding be screened for potential environmental and social impacts. The policy is triggered if a project is likely to have adverse environmental and social risks and impacts in its area of influence. Similarly, each proposed subproject activity is required to undergo the same social and environmental screening process to qualify for funding. This is done through

the systematic use of the Environmental and Social Screening Form (ESSF). The OP/BP 4.01 the Bank classifies proposed subprojects into one of four categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of their potential environmental and social impacts:

Category A: This is the Category for programs/projects likely to have significant adverse environmental and social impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. Environmental and Social Impact Assessment (ESIA) for a Category A project examines the project's potential negative and positive environmental and social impacts, compares them with those of feasible alternatives (including the "without project" situation), and recommends any measures needed to prevent, minimize, mitigate or compensate for adverse impacts and improve environmental and social performance. For a Category A project, the borrower is responsible for preparing safeguards documents, normally either an Environmental and Social Management Framework (ESMF) when the physical footprint of a project is unknown by appraisal, or an Environmental and Social Impact Assessment (ESIA with an Environmental and Social Management Plan [ESMP]), or an Environmental Audit/Risk Assessment whenever the physical footprint of a project activity is known prior/by appraisal stage.

Category B: Is for programs/projects with potential adverse environmental and social impacts on human populations or environmentally and socially important areas, including wetlands; forests, grasslands, and other natural habitats. Impacts under this Category are less adverse than those of Category "A" projects. These impacts are site-specific and easier to deal with; few if any of them are irreversible; and in most cases, appropriate mitigation measures can be readily designed. The scope of ESIA for a category "B" project may vary from project to project, but it is narrower than that of a category "A" ESIA. Like Category A ESIAs, it examines the project's potential negative and positive environmental and social impacts and recommends any measures needed to prevent, minimize, mitigate or compensate for adverse impacts while improving the project environmental and social performance. For simple Category B projects with very limited/low social and environmental impacts the preparation of Environmental and Social Management Plan (ESMP) that builds upon an ESMF might be sufficient. By the same token, the preparation of CDAPs that build on the PF will suffice.

Category C: Is for programs/projects likely to have minimal or no adverse environmental and social impacts. Beyond screening, no further ESMF/ESIA or ESMP or RPF/RAP action is required for a Category "C" project. Nonetheless, being a category C project doesn't necessarily prevent a project from ensuring adequate monitoring of both environmental and social aspects of projects that are beyond safeguards.

Category FI: A proposed project is classified as Category FI if it involves investment of Bank funds through a financial intermediary, in subprojects that may result in adverse environmental and social impacts.

MozFIP and MozDGM have been categorized under B, considering that they will focus mainly on small and medium size operations including those to be in the hands of the communities and individual households in rural areas. Moreover, it is intrinsic to the project approach that it should not embrace initiatives with sizable implications on the

receiving natural and social environment, which further highlights its categorization under B. All indications are that most of the activities will fall either under Category B or C, as it will be seen in the following chapters that deals with the Mozambican legislation and contrasts it with the WB systems and procedures.

Activities also need to follow the applicable World Bank Environmental, Health and Safety (EHS) Guidelines for industry good practice of April 2007. These are i) General EHS Guidelines; ii) some of the Agribusiness/Food Production EHS Guidelines; iii) Forest Harvesting Operations; possibly (iv) Sawmilling and Wood-based Products; and, Perennial crop prodution of November 2015.

5.2 Pest Management (OP 4.09)

Any World Bank financed project that stimulates the use of pesticides will need to prepare and disclose prior to project appraisal a Pest Management Plan (PMP). Additionally, the procurement of any pesticide in a Bank-financed project is contingent on an assessment of the nature and degree of associated risks, considering the proposed use and the intended users. With respect to the classification of pesticides and their specific formulations, the Bank refers to the World Health Organization's Recommended Classification of Pesticides by Hazard and Guidelines to Classification (Geneva: WHO 1994-95). The following criteria apply to the selection and use of pesticides in Bank-financed projects:

a) They must have negligible adverse human health effects;
b) They must be shown to be effective against the target species;
c) They must have minimal effect on non-target species and the natural environment. The methods, timing, and frequency of pesticide application are aimed at minimizing damage to natural enemies;
d) Their use must consider the need to prevent the development of resistance in pests.

At a minimum, pesticide production, use and management should comply with FAO's Guidelines for Packaging, Use and Storage of Pesticides, Guidelines on Good Labeling Practice for Pesticides, and Guidelines for the Disposal of Waste Pesticide Containers on the Farm. The Bank does not finance formulated products that fall into WHO classes IA and IB, or formulations of products in Class II, if (a) the country lacks restrictions on their distribution and use; or (b) they are likely to be used by, or be accessible to, lay personnel, farmers, or others without training, equipment, and facilities to handle, store, and apply these products properly.

The proposed project triggers OP 4.09 the World Bank Safeguard Policy on Pest Management, since certain forest operations foreseen under the program have the potential of being associated with the use of pesticides. The program will also support agricultural development and post-harvest pest control to minimize post-harvest pest damage through the program's improved technology adoption by farmers. Procurement of pesticides will not be financed until it becomes evident that local capacity exists to adequately manage their environmental and social impacts in compliance with OP 4.09 as described above, particularly with regards to health and safety aspects that are directly linked to human health conditions affecting women, the poor and most vulnerable groups of the community, such as toddlers, elderly and handicapped.

Given the pest management issues to be dealt with under this project this ESMF includes a series of provisions and a subchapter (please see 9.7) that sets forth the main elements of the Pest Management Plan (PMP) applicable to the project.

5.3 Involuntary Resettlement (OP/BP 4.12)

Land acquisition for public interest will systematically be avoided by the program as will all other activities discovered during subproject screening that under the World Bank Safeguard Policy (OP/BP 4.12 - "Involuntary Resettlement") might require resettlement or compensation. All MozFIP activities with candidate participants selected at landscape level aim to be achieved through voluntary agreements between communities, interest groups or individuals as necessary and the Project.

Proposals from people interested in participating in the Project will need to show documental proof of DUAT or community land use certification of the proposed subproject site. Any claimants to use of the natural resources in this area – such as the land, should have their their right to use and the location of this area identified. Proposals, in these cases, will also need to include documented agreements reached with any third parties resident or using natural resources in a proposed site at the time, concerning the conditions for a subproject to proceed. These conditions may include ceasing to continue resource and adequate demonstrated livelihood alternatives, or agreements on benefit sharing, participating in activities or in spin-offs of the main proposed activities. During field verification of subproject sites potential PAPs will be consulted and their free consent and agreement verified.

Where program activities may involuntarily restrict access to legally designated parks or PAs without acquiring the land outright these will require a PF. The purpose of a PF is to describe the process by which communities or parties potentially losing subsistence benefits from natural resources will participate in planning mitigation of this. Displaced persons should be meaningfully consulted and should have opportunities to participate in designing the restrictions, as well as in proposing the mitigation measures critical for success.

Potentially displaced people should be assisted through community development action planning (CDAP) to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.

A PF should contain elements to guide to the management of the proposed Program interventions to ensure that they do not negatively affect people and their legitimate rights to access to and use of natural resources in the program areas. For MozFIP an amended version of the PF for MozBio is being prepared concurrently with this ESMF. The amendment in the form of an Addendum will update the PF for Mozbio approved in 2014 by adding:

- The scope of MozFIP and description of relevant Project components;
- Geographical inclusion of two of the PAs covered by MozBio (the latter covers a much larger area);
- Results of ongoing consultations as part of the REDD+ Program and initiatives MozFIP and MozDGM;

- Lessons learned from MozBio implementation of the PF.

In order to learn from lessons from MozBio, one or more public consultation meetings will be organized during the MozFIP pre-appraisal mission, where the updated PF and clarification of the Project's safeguards documents will be disclosed and discussed.

The PF will thus cover the entire program and subproject cycle of MozBio as well as MozFIP. The known design of MozDGM will also be presented in the Addendum, but the details of this initiative will only be added once the Project has been prepared. Since these two REDD+ initiatives will have to follow the PA Management Plan in any subproject design, the principles and guidelines in the MozBio PF will cover them both.

It provides the principles and prerogatives the Borrower should follow in program and subproject management to ensure compliance with the WB policies. The PF is particularly relevant in a situation where the selected program/project interventions have not yet undergone the respective feasibility studies and design, as is the case with the Program at this stage. The PF outlines several principles, which include:

- A full understanding of the Program components, particularly those that translate into restrictions to access to natural resources by local people;
- Public consultation and participation;
- Determination of land use and access to resources rights;
- Screening of the Program sites and activities;
- Effective redress of complaints and grievances;
- Monitoring and evaluation of Program effects on living standards of the Program affected people and communities; and
- A budget to ensure that the Program has adequate resources to support the smooth and sustainable implementation of the participation process.

Thus, this document (i.e. the ESMF) will not elaborate on the participation process, however, the subproject screening procedure described in this ESMF should also screen for restrictions to resources in PAs and determine if OP/BP 4.12 will need to be further triggered. The Project overall budget should include in addition to the implementation of the Program related PF, sufficient funds to finance the preparation and implementation of site specific CDAPs to be prepared for subprojects.

5.4 Natural Habitats (OP/BP 4.04)

This policy applies to activities, which could have a potential impact on important natural habitats outside and inside protected areas. Significant conversion of natural habitats is allowed under this policy if there are no viable alternatives, but the affected natural habitat needs to be compensated by an ecologically similar area of the same or larger size and the area needs to be better managed and protected. Activities involving the significant conversion of critical natural habitats, i.e. protected areas or critical natural habitat areas outside protected areas where endemic or endangered species mentioned on the IUCN Red List species are living and which could be severely

affected or made extinct cannot be financed. Not only nationally protected areas, habitats and species but also international recognized sites such as under Ramsar Convention (no sites at project implementation area) or under Important Bird and Biodiversity Areas (IBA)[20] from Birdlife International shall be taken into consideration on assessing each investment proposal. Once there are major protected areas sites included in MozFIP and MozDGM implementation area, such as Quirimbas National Park and Gilé National Reserve, this OP/BP is being triggered. It is believed that the series of measures recommended under this ESMF in terms of activities being selected and designed to avoid, minimize, restore resources in proposed areas will ensure that adequate measures are taken to minimize the negative impacts that may occur, even where interventions will take place in conservation areas. Main activities in these conservation areas will be institutional support, technical assistance to forest sustainable management, law enforcement strengthening. However in terms of activities on the ground at Quirimbas National Park only related agro-forestry activities to promote more sustainable land use practices will take place. The Quirimbas National Park is zoned into strict protection areas and community use areas. Hence, agro-forestry activities would only be supported in the community use areas. In other words, the location of agro-forestry activities will always follow the approved management plan of the Park. Agroforestry activities will be implemented on agricultural areas, and not on forest areas.

As the objective of this program is to reach sustainable resource management in the forestry sector in Mozambique, institutional support, technical assistance and support to activities on field will be financed such as equipements, multi-use plantations, restoration of degraded areas, agro-forestry activities, inputs and operational infrastructure (AQUA)[21]; construction works may only be expected for small earth dams to increase productivity under agro-forestry activities. In order to develop these activities, no conversion of critical natural habitat will be financed (please also see next section 6.5, Forest). As **critical natural habitats** the Program must consider: legally protected areas, wetlands, riparian forests (100m from water bodies) forests with known high biodiversity value (costal forests and afro-montane forests), sacred forests and areas with slopes of more than 25%. These formations must represent the program's Negative List of natural habitats to be negativelly affected. Eventual conversion of non-critical natural habitats (or fragments of non-natural habitats) or degraded natural habitats (including miombo forests), due to activities and subprojects on the ground (e.g. plantation, agro-forestry), must be with the objective to enhance sustainable development of the area/community, improving landscape and land use sustainable management and must also include restoration of degraded areas, (as mitigation or compensation measure), hence enhancing ecosystem services. For the promotion of forest plantations and agro-forestry, degraded areas (including degraded miombo forest) will be prioritized through the use of GIS-based tools, participatory land use approaches

[20] Only Mont Namuli site, in Gurué, Zambésia province, exists in project implementation área.

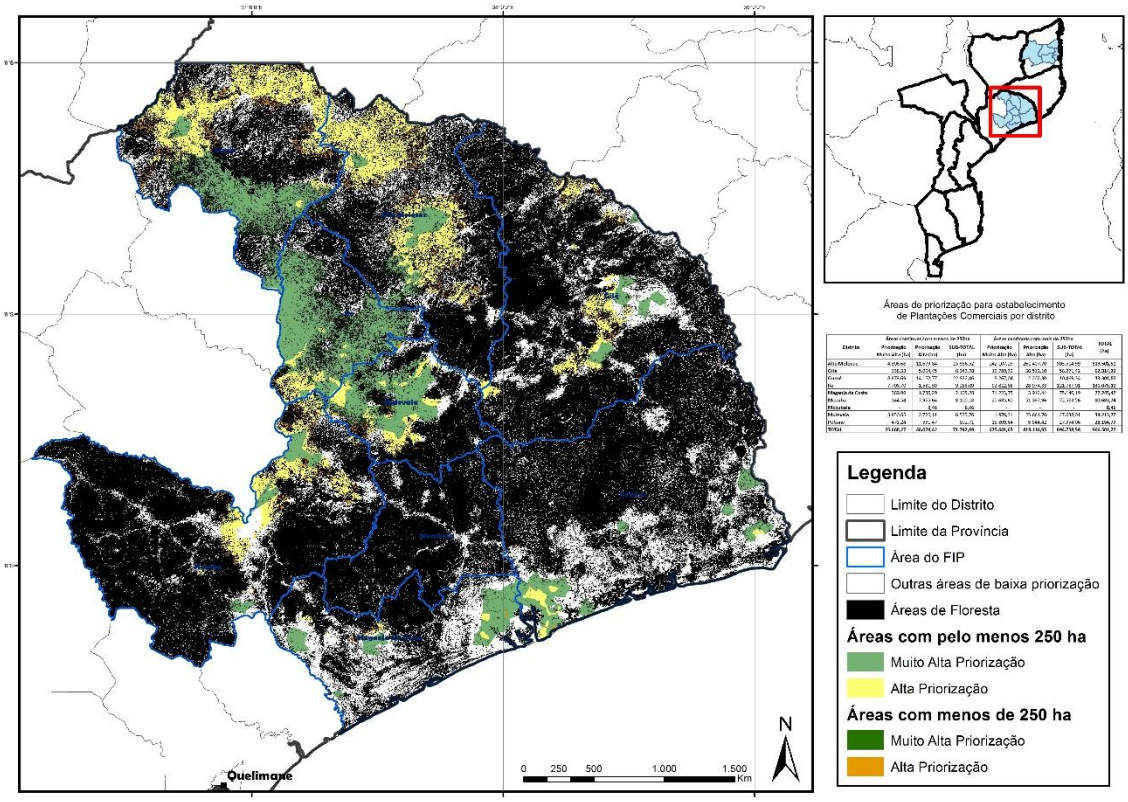
[21] No construction works will be financed.

and complemented by High Conservation Value Forests (HCVF)[22] assessment, if needed. All plantations and agro-forestry activities, as already considered under the program, must adopt a simplified management plan following internationally recognized forestry good pratices to mitigate impacts and enhance environmental value.

5.5 Forests (OP/BP 4.36)

This policy is aimed at reducing deforestation, enhancing the environmental contribution of forested areas, promote afforestation, reduce poverty, and encourage economic development. These are at the heart of the REDD+/MozFIP/MozDGM under consideration in this document. Of particular interest for this project is the fact that "the Bank does not finance plantations that involve any conversion or degradation of critical natural habitats. When the Bank finances plantations, it gives preference to siting such projects on sites without forest coverage or lands already converted (excluding any lands that have been converted in anticipation of the project). FNDS has prepared maps (see figure below and Annex 13) of the 2 landscapes with "go" and "no-go" areas. The "go" areas were identified using satellite images and does not contain significant forest cover (other criteria are: acessibility, proximity to forest fragments, and precipitation). However, considering that the pixel is 30 metres per 30 metres, there is a possibility of some forest fragments in these areas, hence before any activity to be implemented, an on-the-ground HCVF assessment will be made by the service provider (or safeguard specialist) and will be monitored by the government. The "no-go" areas are protected areas, or areas with significant forest cover.

[19] Further assesses on the ground, by qualified person (from service provider and PIU), natural habitats and/or fragments of natural habitats of critical value or of non-critical value, under certain criteria (to developped at Project Implementation Manual stage), which will include those previously defined as critical natural habitats, but also those related other water resources and species included in Decree nº 96/2003, July 28, the List of Protected Species of flora an fauna.[23] Invasive species are not eligible for project financing.



In view of the potential for plantation activities to introduce non-native species and threaten biodiversity, such activities must be designed to prevent and mitigate these potential threats to natural habitats[23] (paragraph 7 of the Operational Policy Manual 4.36).

The current OP/BP 4.36 has been in force since 2002 and it is felt that a lot of developments have occurred ever since and that these need to be better considered in the policy. Success in establishing sustainable forest conservation and management practices is something that can only be achieved by a combination of interventions involving all critical stakeholders who need to change their attitudes and behavior but also on a wide range of partnerships. The Bank's forest strategy includes three interdependent pillars, which will guide future Bank involvement with forests, namely: (i) harnessing the potential of forests to reduce poverty; (ii) integrating forests in sustainable economic development; and (iii) protecting vital local and global environmental services and forest values. This policy also goes hand in hand with that of Natural Habitats OP/BP 4.04 (see above).

The Project does not promote harvesting operations, rather it promotes plantantions and and agro-forestry. Only the activities pertaining to natural forests management (and not to plantation or agro-forestry activities) should be subject to OP 4.36's certification requirement. Indeed, Technical assistance is being proposed on natural forest

[23] Invasive species are not eligible for project financing.

management, including TA to private sector operators towards obtaining forest certification (hence, in line with OP 4.36 requirements).

There are reasons to believe that a lot of the elements that will form the updated WB OP/BP 4.36 on Forests have been widely considered in the Mozambique's REDD+/FIP/DGM and as described.

In Mozambique and in extensive areas of the project area in the last few years there have been multiple episodes of unsustainable use of forests resources including exclusion of local people from beneficiating from this rich natural resources. Since its establishment in January 2015, MITADER has been at the forefront of counteracting this tendency. Program will make concerted efforts to demonstrate that negative practices can be reversed and that forests resources can be used in an inclusive and sustainable manner and ultimately meet the core objectives of REDD+ of reducing deforestation and forest degradation and forest GHG emissions.

5.6 Physical Cultural Resources (OP/BP 4.11)

This policy applies to subprojects where important physical cultural resources (i.e. archeological sites, special architecture, important cemeteries, forests or where unique immaterial cultural resources) exist or are affected. In case none of these physical cultural resources exists in a subproject area, the bidding documents and the contractor contracts need to include a "Chance Find Procedure", which specifies that in case that during construction/installation an important arte-fact is found, construction should be stopped and the responsible Mozambican authorities be warned and involved in an investigation of the site. Construction/installation can only resume after the green light has been given by the responsible Mozambican authorities. The ESMF has made some provisions to ensure that adequate measures are considered to minimize the negative impacts that may occur. Especially because it is normal in Mozambique and many other African countries and beyond to find forests that have special value for local communities, groups or families. The importance of identifying and recognizing such forests in project development and particularly in forests and other agricultural programs/projects has been part of the standard practice and is streamlined in this ESMF document and related PF.

5.7 Safety of Dams (OP/BP 4.37)

Enough evidence has been gathered over the years to the effect that the safe operation of dams has significant social, economic, and environmental relevance. Under this project dam safety could be a matter of significant importance because of the possible construction and operation of small size dams to boost agricultural value chains and where essential even forests operations. Although most of the MozFIP and MozDGM initiatives involving dams will be passed on to other programs/projects that will deal more directly with agricultural development (e.g. ANRLMP and PROIRRI in Zambézia province) precautionary measures need to be taken under this program to ensure that where dams will be called upon specifically under this program the defined safeguard regulations are ready to be put in place.

The Bank's involvement in dam financing requires that experienced and competent professionals design and supervise construction, and that the borrower adopts and

implements dam safety measures throughout the project cycle. The policy also applies to existing dams where they influence the performance of a project. In this case, a dam safety assessment should be carried out and necessary additional dam safety measures implemented.

OP 4.37 recommends, where appropriate, that Bank staff discuss with the borrowers any measures necessary to strengthen the institutional, legislative, and regulatory frameworks for dam safety programs in those countries.

In any case where dams will be involved under this or other directly related programs/projects these will be limited to small irrigation schemes upgrade and maintenance, rehabilitation of water storage facilities, and other types of priority water control structures that can be expected to cause minimal adverse impacts in the project area. Although impacts will be minimal all precautions will need to be taken not only to deal with the physical aspects but also the biological and social, such as maintaining environmental flows to preserve the health of the ecosystems and to avoid disturbance to the social activities (water for humans, livestock, etc.), downstream the infrastructures including avoiding interfering negatively with people's life styles and assets.

Best practices included in FAO's manual on small earth dams (2010) shall be followed.

6 LEGAL AND INSTITUTIONAL FRAMEWORK FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT IN MOZAMBIQUE

Since the Rio Conference on Sustainable Development in 1992; Mozambique has been undertaking an enormous legal and institutional reform movement to improve the country ability to management the environment and turn it into a more sustainable process. The reform has been under implementation in the form of: (a) adherence to and adoption of a series of international and regional environmental protection and conservation conventions and protocols; (b) approval of a significant set of legislation with direct and indirect implications to environmental protection; (c) creation of specific public institutions or strengthening of existing institutions dedicated to both environmental and social management.

There are reasons to believe that this process has reached a considerable level of maturity. At present the country is more concerned about ensuring that the existing legal and regulatory provisions are reasonably adhered to in practical terms rather than formulating new sets of such instruments.

However, the recent institutional transformation in the management of the environmental components in Mozambique that culminated with the establishment of a a new ministry of environment with a wider mandate over land, forests, conservation areas and rural development (MITADER), as described in Chapter 2 of this document, also means that a number of legal and institutional changes and adjustments are identified as needed.

In addition to the recent updating of the Regulation on the Environmental Impact Assessment[24]. The Program is informed about the desire of the GOM to update some of its environmental legal provisions such as those governing land, forests and wildlife. The extent to which the process will go ahead and have practical effects for this project is still to be determined. However, while looking at how things are governed at present, which is what is and legally valid, the need and possibility for changes to occur should not be ignored. The decision was made during the negotiation of this Program for it to fund the formulation of the National Land Use Plan. The NLUP can be expected to have positive repercussions on the program itself and beyond.

Relevant and valid aspects to the Program and respective management of environmental and social aspects are summarized below.

[24] Decree Nº 45/2004 has been replaced by Regulation 54/2015, as from 1st April 2016 (date of enactment after publication in January 2016)..

6.1 Legal Framework

6.1.1 Adherence to International and Regional Conventions and Protocols

In terms of adherence to and adoption of a series of international and regional environmental protection and conservation conventions and protocols the following should be mentioned:

General principles:

Mozambique has been adhering to a series of international legal instruments that relate to the need of being proactive in environment protection and conservation. Under line 2 of article 18 of the country's Constitution, the rules of international law have the same value in domestic law and once ratified by the Parliament and Government they become constitutional normative acts. As per point 1 of article 18, of the Constitution "*treaties and international agreements duly approved and ratified, are enacted in the Mozambican legal order*".

A number of international and regional Conventions, Protocols and Treaties with relevance for the **Program** and not only have been ratified, namely:

- The **UN Convention on Biodiversity** ratified by Resolution n.º 2/94, of 24 of August: this is aimed at "the conservation of biological diversity, the sustainable use of its components and fair and equitable sharing of benefits arising from the use of genetic resources, including by appropriate access to genetic resources and appropriate transfer of relevant technologies, taking into account all rights over those resources and technologies, as well as through adequate funding". This international instrument, advocates the conservation of ecosystems and natural habitats and maintenance and recovery of viable populations of species in their natural surroundings. It is an essential foundation for the creation, development and protection of conservation areas in the country, which sometimes can be endangered by carrying out oil and gas operations and other industrial operations without due regard to the provisions of environmental legislation. The Convention is underlined as it is of extreme relevance for **the Program** when taking into consideration that forests in Mozambique and elsewhere are the most biologically diverse systems. They represent some of the richest biological areas in the World. It is in the forests that the largest diversity of habitats for plants, animals and micro-organisms can be found. Many sections of this text show that forests sustain important aspects of natural and socioeconomic life in countries like Mozambique while they offer global goods including contributing to climate change, which depending on how forests resources are used can be a positive or negative contribution. At present, it remains that forest biodiversity is increasingly threatened as a result of deforestation, forest degradation and other stressors that could combine the Projects under the Program with other interventions such as "Floresta em Pé" in general, seeks to assist to reverse.
- Convention on the Protection, Management and Development of Marine and Coastal Environment in East Africa, ratified by Resolution n.º 17/96, of 26 of November: it highlights a series of measures to protect and conserve the marine and coastal environment of the Party States, particularly in terms of preventing

and combating pollution and the protection of the regions' flora and fauna against the growing threats caused by many human activities.

- **African Convention on Nature and Natural Resources Conservation** ratified by the Parliament's Steering Committee through Resolution n.º 18/81, of 30 December: is aimed at ensuring the conservation, use and development of land, water, forest and wildlife resources of Member States, bearing in mind not only the general principles of nature conservation, but also the best interests of the communities themselves. The importance of this convention for Program can be at the same level as the **UN Convention on Biodiversity**, described above.
- Protocol related to **Wildlife Conservation** and its application in the **SADC**, ratified by Resolution n.º 14/2002, of 5 of March: it is aimed at establishing common approaches and support to conservation and sustainable use of wildlife resources relating to the effective enforcement of laws in the region and within the domestic laws of each Party State. This as well as other SADC regional protocol on natural resources such as water and shared water courses and other is also an important Protocol for Program and should be highlighted and its implementation supported under this Program. The SADC region has been instrumental in its attempts to bring about practical elements to protect resources of common interests in the region. This involves information sharing, technical cooperation, joint efforts to mobilize resources and to make strategic investments and to take concerted actions, including joint monitoring of the state of resources and the environment. It is a known fact that biodiversity and ecosystems know no boundaries. What is done in each country has the potential of affecting a wider geographical space.
- **Ramsar Convention on Wetlands of International Importance**[25], ratified by Resolution No. 45/2003 of 5 November. Under these Conventions countries, including Mozambique prepare a list of Wetlands of International Importance. The governments commit themselves to sustainably use such areas by promoting territorial planning, policy development and publication of legislation, management actions and education of their people, as well as the proper and effective management of such areas in an integrated approach *vis a vis* international cooperation particularly regarding transboundary wetlands, the shared wetland systems, common species and development projects that may affect wetlands. Zambézia province has a renowned Ramsar area, i.e. the Zambezi Delta/Marromeu in the confluence zone between the Shire River and the Zambezi River. It supports 119 species of waterfowl and partially aquatic, including species of global interest, large breeding colonies of various species, and numerous migrants *Palaearctic* and intra-African (Benedict, 2000). Species in the Red List include world *carunculatus Grus* and *Rynchops flavirostris* (Bento, 2000; IUCN 2002). Thousands of pairs of white pelicans in the delta, and large breeding colonies of storks and herons, including *Anastomus lamelligerus, Threskiornis aethiopicus, Ardea cinerea, Squacco Heron, Platalea alba and Egretta spp*. The populations of waterfowl, probably declined in the last 30 years because of the loss of natural flood cycle due to Kariba and Cahora

[25] None exist at MozFIP and MozDGM implementation are.

Bassa dams. Floods that affected the extensive mosaic of habitats in the delta now rarely occur and thus the quality and quantity of waterfowl habitat decreased (Bento, 2000). The Zambezi Delta is a Wet Land of International Importance under the Ramsar Convention ratified by the Government of Mozambique. It is not directly in the project area. The other important Ramsar site in Mozambique is the Lake Niassa, in Niassa province.

- **Resolution n.º 21/81**, of 30 of December, by the Cabinet that turns Mozambique into an **UICN member**: among other it is aimed at encouraging and facilitating cooperation amongst governments, international organizations and people interested in nature conservation and its resources.
- Mozambique is one of the 196 countries that signed and ratified the new international agreement in Paris, in December 2015, in order to reduce greenhouse gas emissions to contain global warming to 2°C. COP 21 was a decisive meeting, 3 years after the end of the commitment period of the previous international agreement, the Kyoto Protocol (COP 3). Indications are that this is yet to be turned into a specific resolution in order for the adherence to be enacted as a national legal provision. Irrespective of what the future has got on hold the country's Intended Nationally Determined Contribution (INDC), of September 2015, is clear about the fact the country's mission is to "**reduce climate change vulnerability and improve the wellbeing of Mozambicans through the implementation of concrete measures for adaptation and climate risk reduction, promoting mitigation and low-carbon development, aiming at sustainable development, with the active participation of all stakeholders in the social, environmental and economic sectors**". The implications of this commitment can be expected to have repercussions on the REDD+ National Strategy and Plan of Action as well as for Program final design and implementation.

Other important international and regional conventions and protocols ratified by the Mozambican State include:

- Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer (Resolution No. 8/93 of 8 December);
- United Nations Framework Convention on Climate Change – UNFCCC (Resolution No. 1/94 of August 24, 1994);
- Kyoto Protocol (Resolution No. 10/2004 of 28 July);
- Convention on International Trade in Endangered Species – CITES (Resolution No. 20/81 of December 30);
- Cartagena Protocol on Biosafety (Resolution No. 11/2001 of 20 December);
- United Nations Convention to Combat Desertification and Drought (Resolution No. 20/96 to November 26);
- Stockholm Convention on Persistent Organic Pollutants and (POPs) (Resolution No. 19/96 of November 26, 1996);
- Basel Convention on the Control of Trans boundary Movements of Hazardous Wastes and Their Disposal (Resolution 18/96 to November 26, 1996);
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Resolution

10/2009 of 29 September. The Convention entered force in Mozambique in July 2010).

Particularly for those Conventions, Protocols and Treaties with relevance for **the Program** efforts should be made under this Program to assist the GOM to give them more visibility and prominence and to find ways of materializing them as part of the ongoing legal and regulatory reform around land, forests and other resources as well as other initiatives.

6.1.2 Approval of Domestic Policy and Legal Instruments

General Legislation

The Constitution

Mozambique's 2004 Constitution includes two fundamental environmental pylons, namely: "the right of every citizen to live in a clean environment and the responsibility to protect this right" as well as recognition of environmental protection as a public interest.

The country's fundamental law contains a series of general legal provisions aimed at preventing and controlling pollution and erosion; integration of environmental concerns into sectorial policies; promotion of the integration of environmental values in educational policies and programs; ensuring the rational use of natural resources while maintaining their capacity for renewal, ecological stability and human rights of future generations. It is also concerned with the promotion of land use planning with a view to ensure an adequate location of activities and a sensible socio-economic development. The expected formulation of the NLUP under this project embodies such concern particularly in what is related with transformation in the forest sector.

The Environmental Law n.º 20/97, of 1 of October 1997

This Act is "*aimed at defining the legal bases for a correct use and management of the environment and its components for the realization of a system of sustainable development in the country*".

Article 4 of the Environment Law establishes a range of basic legal principles, which highlight: the principle of rational use and management of environmental components, with a view to further improve the quality of life of citizens and the maintenance of biodiversity and ecosystems; the precautionary principle, whereby the environmental management should prioritize the establishment of systems to prevent acts that could be harmful to the environment, to prevent the occurrence of significant negative environmental impacts or irreversible damage, regardless of the existence of scientific certainty about the occurrence of such impacts, and the principle of global and integrated vision of the environment as a set of interdependent natural ecosystems, which must be managed so as to maintain their functional balance.

Environmental Law (Law No 20/97) also provides for the participation of local communities in the formulation of policies and laws related to natural resource management, management of protected areas, which is of relevance for Program.

This law has formed the basis for defining specific environmental laws and regulations.

The Environmental Impacts Assessment (EIA) Regulation, approved by Decree 54/2015 to regulate the same process

Mozambique has developed comprehensive regulations to cover the EIA process, which are included in the Regulation of the Process for Environmental Impact Assessment. The regulations are in line with the world's environmental and social management best practices, including World Bank recommendations and procedures.

There are three main specific objectives of any EA exercise:

- Screening and scoping of the proposed developments in terms of their potential impacts on the natural and social receiving environment, indicating both the beneficial outcomes and adverse effects. The initial screening is meant to determine the scope of the Environmental and Social Impacts Assessment (ESIA) required prior to approval of interventions. If any investment is likely to have significant adverse environmental impacts that are sensitive, diverse or unprecedented (Category A), the ESIA will be more stringent than if the investment has impacts which are less adverse, site-specific, mostly reversible and where adequate mitigation measures can be designed (Category B). For investments with multiple subprojects, this screening is often done in the form of a checklist of potential impacts included in standard Environmental and Social Management Frameworks (ESMFs). The new Decree (54/2015), which was enacted on the 1st of April 2016 has introduced a new category, which is A+ followed by a simple Category A. The two Category A projects (i.e. A+ and A) include all the interventions that require stringent ESIA process due to their expected severe impacts. One of the differences is that A+ projects should be reviewed by independent (and more professional) assessors, while simple A projects are expected to be reviewed by the normal review process that has been in use, comprising mainly MITADER technicians and those of other sectors (e.g. agriculture, mining, energy, fisheries, water, etc.) seen as relevant in each specific case. Under the new Decree the two A Category projects are required to assess their impact on biodiversity and present and plan to offset any potential biodiversity losses. Screening is done by the Provincial Directorates of Land, Environment and Rural Development (DPTADER), while projects under Category A and A+ are then supervised by the central MITADER and Category B and C (exemptions) are the domain of the provinces.;
- The actual Environmental Impacts Assessment (ESIA), which assesses the potential impacts of the investment in detail and evaluates alternatives.
- Proposal of measures to be taken in order to avoid, mitigate and/or eliminate adverse effects both at the planning, design and installation stages, and during operation and eventual decommissioning of the project. This is generally done in the form of an Environmental and Social Management Plan (ESMP), which is normally an intrinsic part of the ESIA.

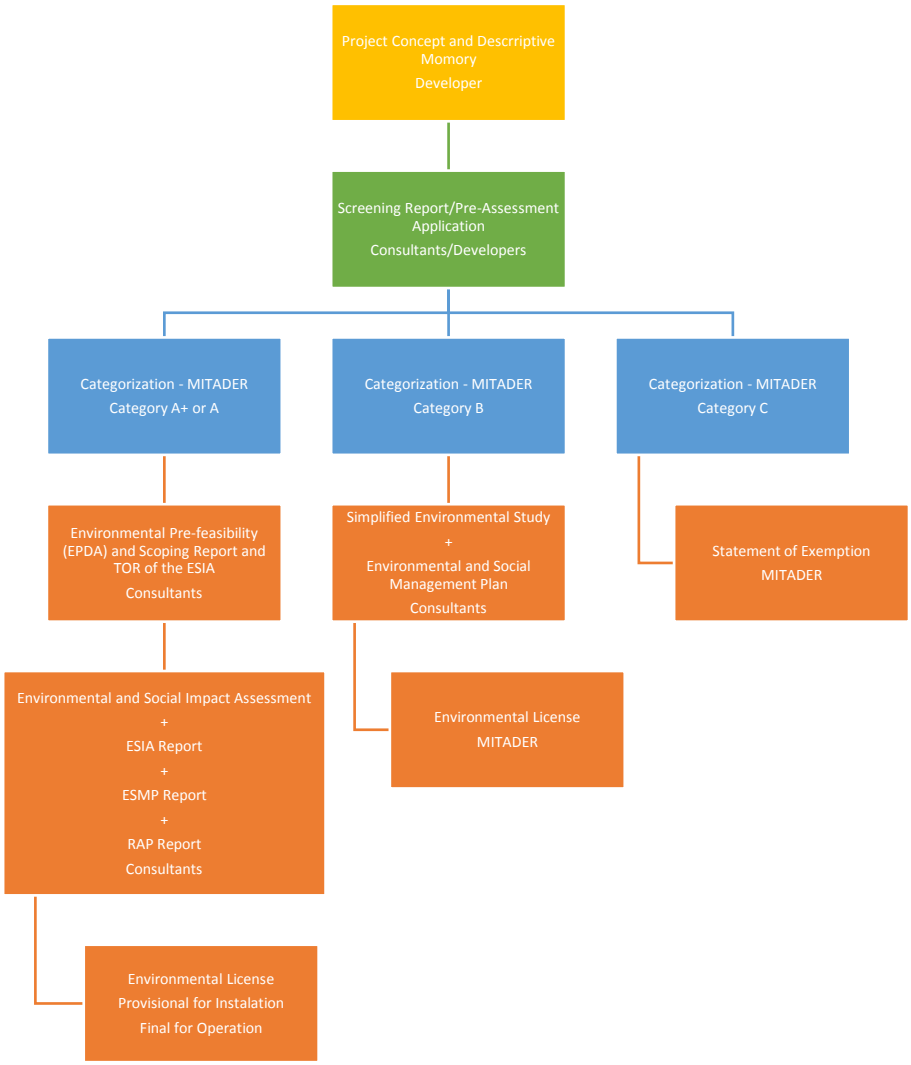
The following activities are included as Annex III of the Decree N.º 54/2015 that regulates the environmental impact assessment process:

- Wood processing units

- Transformation, clearance of native forests/vegetation in areas between 100 and 200 ha, without irrigation
- Industrial carpentries
- Activities in Conservation areas proposed by the entity managing such areas with the aim of improving management

In line with the system adopted in Mozambique activities under Annex III fall under Category B. This further suggests that most of the program activities will fall under this Category or that subprojects under the program should be designed to be in line with the GOM definitions for categorization.

Figure 7: The ESIA process in Mozambique



The Scoping Exercise, ESIA and the Environmental and Social Management Plan (ESMP) are components of importance in any EA process. Scoping primarily explores fundamental issues and identifies any potentially significant positive and negative environmental (and social) impacts associated with the proposed development, helping to determine the scope of the Environmental and Social Impacts Assessment. An ESMF and an ESMP include in an annex Environmental and Social Clauses (ESC), which serves as a guide for the contractor during construction. One of these clauses is the

"Chance Find Procedure" mentioned earlier. These ESC should be included in the bidding documents and in Constructions Companies Contracts for systematic compliance during project construction. Annex 16 provides an example of the ESC that can be adjusted to the project's subprojects.

The ESIA regulation also foresees that the Draft Scoping/TOR and Draft ESIA/ESMP should be subject to public debate with the objective of:

- Keeping Interested and Affected Parties (PI&As) informed about key issues and findings of each stage of the ESIA;
- Gathering concerns and interests expressed by various project stakeholders;
- Obtaining contributions/opinions from stakeholders in terms of avoiding/minimizing possible negative impacts and maximize positive impacts of the project; and
- Supporting the social dialogue and identifying from the onset, stakeholders' perceptions and expectations. This can contribute to the action planning and effective communication to minimize the impacts of the project. The process also allows for rethinking the project's technical aspects

Specific public participation aspects are regulated by Diplomas 129/2006 and 130/2006 and other related regulatory instruments.

Resettlement Issues

MozFIP and MozDGM as described in this ESMF will not carry out land acquisition causing involuntary resettlement according to the decree 54/2015 on the Environmental and Social Impacts Assessment Process, which governs the EIA process in Mozambique. The decree says very little about resettlement, except that Article 20, points b) and c), indicate that an environmental license for construction (point b)) will be issued after approval of the ESIA/ESMP and RAP for projects that require resettlement and that an environmental license for operation (point c)) will also be issued upon approval of the of the ESIA/ESMP and RAP for projects that require resettlement. Annex I from this regulation specifies the factors that determine the classification of a project under Category A+ also indicate it its point b) that projects located in populated areas that require resettlement will fall under Category A+. Seen from a different perspective this also means that projects with resettlement implications fall under Category A+ i.e. the most stringent category.

After many years of not having a single instrument to guide resettlement planning and action on August 8, 2012 the Cabinet approved ***Decree 31/2012,*** the new "*Regulation on the Resettlement Process Resulting from Economic Activities*". This regulation fills a longstanding void in this regard. The Conservation Areas Law 16/2014 of 20 June while permitting resettlement out of PAs under specific conditions does not directly address projects causing access and use restrictions on natural resources in PAs to local residents. Indeed, aside from recognizing the basic right to compensation for loss of private assets neither the Resettlement Regulation nor the Conservation Areas Law provide any specific recognition of this socio-economic impact.

On the other hand, the Land use Planning legislation incuding the Resettlement Regulation, the Conservation Areas Law and the Land and Forestry and Wildlife

legislation all promote ample community participation in creating new PAs, natural resource management plans (including land-use) and in changing any of these.

While it is not always easy to identify and use legislation in Mozambique that has gaps and some overlaps, World Bank investments in PAs such as MozBio for example have systematically followed the World Bank OP/BP 4.12 on Involuntary Resettlement in to define mitigation actions for restrictions of local peoples' access to means of livelihood in designated PAs.

Whenever an investment is likely to result in restrictions of local peoples' access to means of livelihood in designated PAs, a Policy Framework (PF) should be elaborated establishing how the affected communities will participate in the design of project components, in the determination of measures necessary to achieve resettlement policy objectives, and in the implementation and monitoring of relevant project activities. Once the Social Screening process (also included in the ESMF environmental and social screening form – ESSF) has determined with certainty that livelihoods impacts may result from restrictions of access to PAs, before enforcing the restriction, the borrower prepares a plan of action, acceptable to the WB, describing the specific measures to be undertaken to assist the displaced persons and the arrangements for their implementation. The plan of action could take the form of a natural resources management plan or a community development action plan (CDAP) prepared for the project.

Regulation to Prevent Pollution and Protect Marine and Coastal Environment, approved by Decree n.º 45/2006, of 30 of November

This instrument has, as its aim: to prevent and limit pollution from illegal discharges from ships, platforms or land-based sources, off the coast of Mozambique and the establishment of legal bases for the protection and conservation of areas in the sea, lake and river, beaches and fraGilé ecosystems that are public domain. It also categorizes the various activities and determines the levels of their acceptability. It also deals with land-based sources of marine pollution.

The Forests and Wildlife Law (Law n.º 10/99, of 7 of June) and specific regulations

Among other aspects, the law defines the protection and conservation of specific biodiversity components as well as certain flora and fauna species found in certain places.

The law also identifies the principles of local community participation in sustainable natural resources management in and outside protected areas. Among other aspect related with community participation and involvement it proposes that 20% of concession fees should go to local communities' resident in a concession area. Local Participatory Management Councils (COGEPs) constituted as associations with representation of all stakeholders with interests in the use of natural resources in each area are encouraged to be created as a mechanism for articulating and defending the interests of local communities and all relevant stakeholders. The mechanisms for channeling and utilizing the 20% of fees to benefit local communities was created in 2005 through Ministerial Diploma n.º 93/2005 of May 4th. Beneficiaries can only

receive money if their community is organized in a legalized association with a bank account.

This law is likely to be updated and eventually split in two, i.e. one to deal with forests and the other with wildlife. The acknowledgement of the fact that the COGEPs have not been effective and the mechanisms to collect and use the 20% by people living around the concessions also suggests that Ministerial Diploma n.º 93/2005 of May 4th is also likely to be revised and updated. At the practical level, it is noted that COGEP have not been formed or where they exist have not been effective, in some cases the collection of the 20% is done but how it is used has been open to debate and due to the limitations of the country's financial institutions a significant number of communities do not have access to financial services to open bank accounts.

For the time being and after acknowledging that the rate at which forests are being devastated in Mozambique in November 2015 the Cabinet passed a decree suspending the issuing of new permits for logging for a period of two years to contain the intense deforestation occurring in the country. The Decree is also being aimed at saving endangered species in Mozambique's forests, due to strong pressure on timber.

The prohibition of unprocessed timber is likely to be turned into law shortly following a submission, in 2016, of an important bill in that regard to the Parliament, by the Government.

The Land Law (Law n.º 19/97, of 1 of October)

The law and its Regulation 66/98, provide the basis to define access rights, land use rights and procedures for the acquisition and use of land title by the communities and individuals. The same law and the regulation embodies key aspects defined in the constitution in relation to the land such as the maintenance of the land as state property and that land cannot be sold as well as the absence of a "land market" per se in the country. Among other aspects it defines "areas meant to meet public interest" as belonging to public domain. It also protects customary and community rights over land.

The Law defines that the right to use and benefit of the land may be acquired through occupation by Mozambican individuals who have been using the land in good faith for at least ten years, and by local communities whose right to use and benefit of the land (DUAT) will comply with the principles of co-titularity. This means that most of the land in Mozambique is covered by community-held and managed collective DUATs.

A delimitation process is defined in the Technical Annex of the Land Law as a participatory mechanism through which local communities confirm their right to occupy and use land. Delimitation can be applied to traditional social or family units, or simply a group of neighbours and achieves two key legal and practical objectives: (a) it proves the existence of the DUAT by occupation and (b) it establishes the spatial characteristics of that right, including its limits and the presence of public and customary rights-of-way or of any other interests over the land in question. A map of the community DUAT with any other information (for example, rights-of-way) is subsequently registered in the cadastral atlas, and a Community Delimitation Certificate is issued in the name of the community.

Anyone who is seeking a new DUAT by authorization must consult occupants of the area first. The Land Law (article 13(3) and article 24(1)(c)) and the Land Law Regulations provide the legal basis for the mandatory consultation of the 'local community,' which is the holder of the DUAT. If the land is occupied, the consultation is to determine 'the conditions of partnership' through which the holder (community) gives up its right (to the investor).

This is also a law that might be updated considering the evidence gathered to the effect that many of its principles are cumbersome and open to endless conflicts that are detrimental to a good business environment and even protection of the poor and vulnerable groups, which form the majority of the people in Mozambique. The formulation of the NLUP will certainly offer a lot of useful element to update this legal provision and many other related with land and natural resources.

The Land Planning Law (Law n.º 19/2007 of 18 of July) and its regulation

It establishes many of important principles for environmental protection in the context of regional planning. Line 1 of article. 5 of this Act, states "land use planning aims to ensure the organization of national space and sustainable use of natural resources, noting the country's economic legal, administrative, cultural and material conditions favorable to social development and, to promote the quality of life, the protection and conservation of the environment. It establishes hierarchical responsibilities among central, provincial, district and local governments in land use planning processes.

National Water Law in 1991 and the National Water Policy from 1995[26]

In regards to the environment, the Water Policy also addresses the following water and water use issues: (a) Economics: in relation to economic development (irrigation, hydroelectric power, industry, tourism, fisheries, reforestation, livestock, and navigation, among others). (b) Conservation: ecological flows for rivers and estuaries, water quality standards for effluent discharge into water bodies, intakes and catchments, and measures to prevent and mitigate the impact of pollution. (b) Disaster risk reduction: reduction of vulnerability to floods and drought by better coordination and planning, use of structural and non-structural measures and consultation with and training of people, communities and institutions in affected areas.

In regard to water supply and sanitation, under the water law and policy the following principles are adhered to: (i) water supply and sanitation services should be provided in accordance with the demand and economic capacity of the users; (ii) tariffs should allow for the recovery of operational and maintenance costs, and later contribute to investment and sustainability of the systems; and (iii) in as far as possible water supply and sanitation services should be decentralized to autonomous local agencies. Under the water law and policy, water and sanitation are formally dealt with as a unity although sanitation is still being in a situation of relative disadvantage.

[26] Updated in 2007

Water and sanitation policy is further elaborated in the National Water Policy (PNA), adopted in August 2007. It covers the 2015-2025 timeframe, providing specific targets for the period. The policy's goals fall into two main areas: a) Water: providing the basic needs of humans, based on the supply of safe and reliable water in urban, peri-urban and rural areas; b) Sanitation: improved sanitation as an essential tool for preventing water-related diseases (malaria, cholera, diarrhea), improved quality of life and environmental conservation. It focuses on different areas and aims at ensuring access to sanitation services (ranging from improved latrines to connection to an urban sewerage system and improvement of storm water and drainage systems).

A process of separation of functions and roles and responsibilities of the various role players has been underway. In water, water resources and bulky water production roles have been separated from water supply asset holding and from water services management. A regulatory entity has also been established with the mandate of keeping a balance between government and private sector management while consumers are given a voice in infrastructure planning and management. The government retains the role of policy formulation and general promotion. However, in practical terms the country is still going through a transition process with government interfering across the entire sector doing cumulatively policy formulation, regulation, implementation and management of services. Nonetheless, there has been enormous progress made in both implementation and institutional adaptation.

The Law on Local State Administration n^{o} 8/2003 and Decree n^{o} 15/2000 on Local Authorities

These legal instruments expand the level of control and responsibility to local authorities for local development and decentralization.

Mine (14/2002) and Oil (3/2001) Laws

The Law n. º 14/2002 of 26 June regulates the terms of exercising the rights and duties relating to the use and exploitation of mineral resources with respect for the environment, considering their rational use and benefit to the national economy. The same law stipulates that "the right to use and exploit mineral resources shall be exercised in accordance with the best and safest mining practices, in compliance with the environmental quality standards established by law and with a view to developing a long-term sustainability". Specific areas in which sustainability should be materialized include: a) reconnaissance b) exploration and research; c) mining; d) treatment and processing, e) marketing or other uses of the mineral product, and f) other related purposes. In its turn Law 3/2001 of February 21 is governed by the same principles as stipulated above and regulates oil production in the country.

Pesticides Regulation (Ministerial Diploma n.º 153/2002, of 11 of September)

This is a joint regulation between the ministries of agriculture, health and environment aimed at regulating the importation, distribution, production, disposal and use of agrarian pesticides for the protection of animal and public health purposes. It requires all operators active in the importation, distribution, production of pesticides to be registered. It also classifies the various pesticides in three major categories, where those of Class III and II are the least lethal and those of Class I are the most lethal. It also

regulates the labeling and packaging of pesticides, as ways of facilitating identification and protecting the environment and particularly public health.

Occupational Health and Safety

Occupational health and safety combine provisions from different legal instruments namely: The Constitution, the Labor Law and a series of provisions from subordinate legislation, much of it inherited from the colonial period. ILO conventions, especially Convention no 17, related with compensation for workplace accidents as well as ILO Convention no 18, regarding compensation for occupational illnesses, also apply.

The Constitution (Article 85) states that all workers have a right to a fair wage, rest and vacation and to a safe and hygienic work environment. The Labor Law (Articles 216 through 236) indicates that workers have the right to work under hygienic and safe conditions and that employers have the obligation to create such conditions and to inform workers regarding the risks associated with specific tasks that they are supposed to perform. This could be in the form of safety equipment and work clothing to prevent accidents and negative effects on workers' health. Under the Labor Law employers and workers are expected to work together to ensure health and safety at the work place. Companies with high risk of accidents or occupational hazards are required to establish workplace safety committees to ensure compliance with health and safety norms investigate the causes of accidents and organize preventive measures. Such committees must include representatives of both the employer and the workers.

The Labor Law also stipulates that industry-specific regulations on health and workers' safety may be established by ministerial diploma, by the Minister of Labor, the Minister of Health or the Minister in charge of the specific sector. It is worth mentioning that in 2008 (December) the Ministry of Health approved its specific guidelines in this regard (MISAU/DNAM (December 2008) – "Guidelines on Safety and Health in the Workplace", Maputo, Mozambique).

Large size companies (i.e. with more than 100 employees) and companies carrying out strenuous, unhealthy or highly dangerous activities must have health units on site. Medical professionals are supposed to regularly examine workers to determine, among others, if they are well enough to do the work called for in their contracts. HIV/AIDS tests fall outside such a provision. For certain sectors and in line with their specific provisions regular health checks are mandatory. Such is the case of workers dealing with food and beverages.

Conservation Areas Law

In April 9, 2014 the Parliament approved the Conservation Areas Law, which will fill a void that prevailed for many years in the subsector. The new law provides for the legal establishment of Conservation Area Management Boards (CGAC), advisory bodies covering one or more PA composed of representatives of local communities, the private sector, associations and local state bodies for the protection, conservation and promotion of sustainable development and use of biological diversity. The new law also:

- legalizes public-private partnerships for PA management and for concession contracts.
- presents new categories for the classification of protected areas into a) total conservation areas and b) sustainable use conservation areas.
- management plans for PA must cohere with spatial planning instruments at all levels and special land use plans will be required for the ecological zoning of single or clusters of PAs and their buffer zones, ecological corridors and other areas critical to the preservation of the ecological balance and spatial continuity elements.
- interests and involvement of communities legally inside PAs and their buffer zones, in income generating activities that promote biodiversity conservation will be considered in new PA Strategic Development Plans.
- **c**ommunity conservation areas with land use rights will provide communities with area management options of partnerships and concessions to third parties.
- buffer zones will be guided by PA Management Plans - instruments with the same level of juridical obligation as Land Use Plans and Environmental (and Social) Management Plans. However, **coastal/marine PAs** will be jointly administered by the **PA and the Fisheries sector**, and **terrestrial PAs** by the **PA and the Agriculture sector**. This is of importance for QNP (parts of which are found in the Coastal area of Cabo Delgado) and GNR (in Zambézia hinterland). The Quirimbas National Park was created by Decree nº. 14/2002 of June 6. It is the first public area established by the initiative of a provincial authority under the auspices of the WWF in Maputo. It occupies an area of 9,130 km² of marine and terrestrial ecosystems: Gilé National Reserve was first proclaimed as a partial hunting reserve in 1932. At present, it occupies na area of 4,436 km².
- opens the possibility for the State to resettle people outside of a PA if their presence is incompatible with the legal status of the conservation area or impedes its good management.

The effects of this law are likely to be felt in many components of this project. The legislation at present is unevenly developed and there are inconsistencies and gaps related to legal frameworks, institutional jurisdictions and approaches towards community involvement and rights vary in terms of protected areas, land and forestry legislation. MozFIP aims to work towards strengthening the overall position of communities in terms of their claims to rights and benefits from forestry concessions and promotes their greater effective involvement in decisions that affect them, longer term effective compliance in forestry and development agreements, and in more effective communication and information sharing so that natural resources can be managed in the most culturally and socially appropriate ways possible within the constraint of financial viability. The Process Framework will deal with some of such consequences, particularly those related with restrictions to access and use of natural resources in and around PA.

It is also worth mentioning that although there has been increased harmonization between the GOM Regulations and the WB Safeguards Policies, differences in certain areas and aspects remain.

The table makes a brief comparison between the Mozambican legislation and that of the WB in conducting environmental and social impact assessments while identifies existing conflicts.

Table 7: Gap assessment and comparison of legislation between Mozambique and WB requirements

Issue	Mozambique Legislation	WB safeguard requirements	Gaps/Conflicts
Forest laws and regulations	Mozambique has the Forests and Wildlife Law (Law n.º 10/99, of 7 June) and other specific regulations that deal with the (i) protection and conservation of specific biodiversity components as well as certain flora and fauna species found in certain places; and (ii) set out the principles of local community participation in sustainable natural resources management in and outside protected areas. The law and regulations are not specific about the areas in which forest operations are permited and about certification. The law and its regulations are in the process of being reviewed and updated.	The WB OP 4.36 specifies that financing of commercial harvesting operations is done only when the Bank has determined, based on the applicable environmental assessment or other relevant information, that the areas affected by the harvesting are not critical forests or related critical natural habitats. Commercial harvesting operations must also be certified under an independent forest certification system acceptable to the Bank. The Bank may finance harvesting operations conducted by small-scale landholders, by local communities under community forest management, or by such entities under joint forest management arrangements, if these operations: (i) have achieved a standard of forest management developed with the meaningful participation of locally affected communities, consistent with the principles and criteria of responsible forest management; or (ii) adhere to a time-bound phased action plan to achieve such a standard. The action plan must be developed with the meaningful participation of locally-affected communities and be acceptable to the Bank.	There are considerable differences and Moz/FIP/DGM will continue supporting the GOM to update its laws and regulation to deal with all meaningful forest operations. Under the Program the WB OP 4.36 will be adhered to in the process of change. Of particular importance, will be the preparation and engagement of forest operators in the scheme.
Project categorization	EIA required by Environment Law Nº 20/97 of October 7, 2007, and Decree Nº 45/2004 and the upcoming Decree Nº 54/2015. The Regulation for the EIA process classifies the projects into 3 categories: A full EIA and now (Decree Nº 54/2015 another A' category subject to review by professional assessors) is required for Category A. A Simplified EIA is required for category B	Under the OP 4.01, a full EIA is required for all projects screened as Category A. For Category B projects, some form of environmental assessment is required, usually less rigorous than a full EIA and often taking the form of an Environmental Management Plan (EMP). Beyond screening, no further ESMF/ESIA or ESMP or RPF/RAP action is required for a Category "C" project and a project is classified as Category FI if it involves investment of Bank funds through a financial intermediary	Despite some minor differences there are no conflicts between the two sets of legislation

Issue	Mozambique Legislation	WB safeguard requirements	Gaps/Conflicts
	and no EIA is required for Category C.		
Environmental authority must provide an environmental permit for projects prior to appraisal.	The issuing of an environmental license shall precede any other required license.	OP 4.01 requires the approval and disclosure of EIAs by the relevant government authority.	In both processes the disclosure takes place before approval and therefore any raised concern is dealt with before project approval.
National guidelines and standards exist for Occupational Health and Safety (OHS).	OHS legislation in place; (Law No. 23/2007 of 1 August 2007) and implementation the responsibility of Ministries of Labor and, Health. Safety standards guidelines for Environmental Quality and Effluent Emission are in place (Degree No. 18/2004 of 2 June 2004. and the implementation is under responsibility of MITADER.	The guidelines for OHS provided under the WB Occupational, Health, and Safety Guidelines should be applied for all infrastructure projects.	Mozambique has not prepared specific standards for management of wastes, and noise emissions for different industries. However, this program is not prone to produce those types of emissions. Therefore, World Bank standards (IFC OHS guidelines and IFC Environmental, Health and Safety guidelines) can be applied. National environmental standards (Decree No. 18/2004 of 2 June 2004 developed for other industries (air emissions, power industry, and plastic exist and can be applied).

Under this program whenever there is a conflict between national legislation and World Bank safeguards policies, the latter prevails.

6.2 Institutional Framework

The Legal and Institutional Reform

In 2015 the Ministry of Land, Environment and Rural Development (MITADER) was created consolidating the responsibilities of Land (demarcation, land use planning, and registry), Environment (regulations, enforcement and protected areas management) and Rural Development (poverty reduction in rural areas). This restructuring is a clear

indication of the Government's vision and commitment to promote a spatial planning approach to natural resources management, placing the well-being of people at the centre of sustainable rural development. Administratively MITADER is responsible for external monitoring of environmental and natural forest management and land use plans compliance. The Ministry of Agriculture and Food Security (MASA) is responsible for external monitoring of planted and agroforestry management and business plan compliance.

Notwithstanding the relative concentration of management for a vast number of natural resources will certainly extend to important sectors, which remain outside MITADER direct area of responsibility such as:

(i) Those depending directly on natural resources as their main source of raw materials (inputs) comprise:

1. Agriculture (land and planted forests)
2. Fisheries (fisheries and marine/aquatic and coastal resources in general)
3. Mines (mineral resources)
4. Public works and housing (water and land)

(ii) Those whose outputs depend largely on the supply of environmental services comprise:

1. Energy (water, mineral resources, biotic elements for bio fuels, etc.)
2. Tourism (landscape and wildlife)
3. Health (water and infrastructures)
4. Agriculture and fisheries (pollination, nutrient cycle, mangroves and nurseries and breeding grounds, etc.).

In November 2015 the issuing of new permits for logging was suspended, for a period of two years to contain the intense deforestation that occurs in the country.

Concrete reform actions likely to be materialized shortly include:

- Prohibition of unprocessed timber: in 2016 an important bill that would prohibit the export of timber logs has already been submitted to Parliament by the Government, to be assessed and, consequently, adopted by the MPs. Indications are that this bill is likely to enter force by 2017.
- As it will be better described in Chapter 7 the **Forests and Wildlife Law (Law n.º 10/99, of 7 of June) and specific regulations** is likely to be updated and eventually split in two, i.e. one to deal with forests and the other with wildlife. The acknowledgement of the fact that the mechanisms to collect and use the 20% by people living around the concessions also suggests that Ministerial Diploma n.º 93/2005 of May 4th dealing with this matter is likely to be revised and updated.
- **The Land Law (Law n.º 19/97, of 1 of October)** is also likely to be updated to turn a number of its principles less cumbersome and less prone to endless conflicts that are detrimental to a good business environment and even protection of the poor and vulnerable groups, which form the majority of the people in Mozambique.

MITADER will have two environmental roles. On one hand, it will provide environmental licensing for the various interventions including to those initiated directly by itself. The environmental and social licensing of projects falls under the National Directorate of Environment. This unit builds on the vast experience that has been developed in Mozambique for more than 20 years of conducting ESIA processes in the country for small, medium and large size projects. The same applies to the mobilization of manpower within MITADER and outside for the various functions related with the environmental and social licensing. Simple forms of adaptation and some capacity building can be expected to go a long way in terms of establishing the basic conditions that will extend to REDD+/MozFIP/MozDGM practical interventions/subprojects.

To manage resettlement, which has been an important issue lately in Mozambique, the new Ministry has established a specific national directorate (National Directorate of Land Use Planning and Resettlement) that deals with both land use planning and resettlement. Bringing together the two aspects, i.e. land use planning and resettlement, be a significant step forward towards better structured interventions (in the territorial space and time) in dealing with this sensitive and complex matter.

However, in certain situations such as under the Program initiative the current institutional set up where MITADER is a Developer and at the same time the Environmental Licensing Entity is also seen as an area in need of institutional reform to avoid the situation in which MITADER becomes its own judge. It is possible that the envisaged changes will happen during Program implementation, whereupon the necessary adjustments will need to be undertaken.

Irrespectively of the possible changes in the institutional set up it is generally acknowledged that despite the enormous progress that has been made in both implementation and institutional adaptation the country continues to face significant challenges to make its environmental and social management instruments and practices more responsive to the ultimate interests of adopting a sound management of its natural and social base. The processes downstream the issuing of environmental licenses are rather weak and/or almost non-existent. This is an area that requires serious strengthening including putting in place the various systems and procedures to make public and private developers as well as community and CSO more compliant with sound environmental and social management requirements.

7 ENVIRONMENTAL AND SOCIAL CONCERNS IN TARGETED AREAS

7.1 **Local perceptions about sources of deforestation and forests degradation**

The drivers of deforestation and forests degradation recognized by the communities are coincident from those identified in the literature, namely:

a) slash & burn agriculture;
b) illegal logging;
c) firewood dependency for charcoal;
d) areas endowed with wildlife, burning is conducted to flush out game for bush meat.
e) Wildfire mainly during drought season;
f) Mismanagement of bushfire conducted for road rehabilitation and road clearing;

Also, large scale development projects, infrastructure projects and mining projects were considered to have a significant impact on deforestation and degradation.

7.2 Issues Emanating from the Public Consultation Process

For the REDD+, MozFIP and MozDGM consultation extended from the 3rd of March 2013 to 18th of November 2016. The consultation process is continuous. The consultation process covered six provinces across the South, Center and North of Mozambique, in Maputo, Gaza, Zambézia, Sofala, Cabo Delgado and Nampula provinces. The process included 61 public consultation meetings, of which 10 were community consultations. In total, 3370 participants were involved, of which 978 were female. The process was used to explore issues around the drivers of deforestation and forest degradation, land use and land tenure, social and environmental protection and sustainable forest management, and the activities that could be implemented to address the drivers of deforestation. For MozFip 9 public consultations sessions were held while for MozDGM 8 public consultations were performed. Specifically on safeguard issues 10 consultations were held at communities to address MozFIP, MozDGM and REDD+ Initiatives. Based on the consultations, the MozFIP and MozDGM activities were defined and refined. See Annex 1 a summary of the public consultations that were carried out. In addition, at the government website, a complete and detailed list of all consultations held so far is available: http://www.redd.org.mz .

Emerging issues from consultation process was divided into three categories: (i) consultation conducted at community level. This consultation involved mainly rural communities who were directly affected by REDD+ activities, (ii) consultations at provincial level which targeted stakeholders with direct interest in the forest sector either as civil society organizations, government or private sector locally and (iii) consultation at central level targeting national wide CSOs, government and private sector. The analysis outlined the risks and opportunities associated with the implementation of the proposed REDD+ strategy options, and the MozFIP project components and activities were derived by the REDD+ Strategy.

Areas and groups of people using forests products.

a) Among other aspects the use of the forest products is age and gender sensitive. Young men in general (18-35 years of age) use forests products intensively for market purposes and increasingly this involves illegal logging. The intensive use of forests by this group (young and male) seems to be associated with the need to generate cash for early marriages (dowry payment), starting a family and the responsibilities they have resulting from women and children they should take care of. Unemployment and low income from traditional agricultural products in rural areas coupled with poor law enforcement is perceived as a good justification for illegal practices. Demand for illegal logs is domestic and international (mainly linked to the Asian markets in the latter case). Under such a high demand trading in forest products becomes a quick cash relief scheme into which opportunistic groups also get involved. Together with poaching for wildlife (that in some areas include rhino horns, ivory, etc.) and illegal mining this has been a practice known to contribute to the creation of overnight "millionaires" in many rural communities, mainly in Gaza, Zambézia, Sofala, Tete and Niassa. Operators from neighboring countries and far afield are also involved. If left unattended it has the potential of attracting increasingly more operators of this category and render the sector ungovernable. In this regard the law enforcement elements foreseen by Program activities is timely and relevant. While curbing the current illegal practices can be expected to face opposition from those who have been benefiting from them, it also has the potential of being welcome by those who have been left out that could be involved to develop more sustainable operations. Communities living within and around the areas with such resources have many reasons to join the latter group.
b) Older people, both men and women, tend to have a traditional connection to the forest products. They do not use them as intensively as the young men. As most of these people and the households they head suffer from labor deficit, the demand for forest resources is limited by the level of consumption (food preparation and others) but also by their physical capabilities.
c) The use of forest is also reported for food, firewood, furniture production, building fences and homes, ovens to prepare bricks and other clay products (household utensils, ornaments, etc.), handcrafting and this is reported to be associated with all groups of people and communities.
d) Domestic furniture making and selling including that of components for housing (doors, windows and respective frames, parquet, etc.) is strongly associated with considerable demand for rich wood species that contribute to encouraging legal and illegal logging as already characterized above. At the same time lack of innovative systems and technologies to produce these goods in the domestic markets is being negative as local operators find it hard to compete with regional and international imported goods that are in high demand due to the good look and feel as well as lower prices. Moreover, this works yet another incentive for logs to be exported. The need to have a more competitive and modern furniture industry is felt strongly across all sectors including public and private institutions as well as by individuals.
e) Charcoal is widely used in urban and peri-urban areas to cook food as the sole source of energy under current level of development and low willingness and ability to pay for other sources of energy (e.g. gas and electric stoves) but also because the taste of charcoal cooked food is perceived as imparting. Most people in rural communities use firewood due to convenience and the real and perceived prohibitive cost (monetary and labor) for these people to acquire other

sources (same as above). In the short to medium term there are no visible viable alternatives to this source of deforestation, which makes it more relevant to devise and adopt ways of saving as much wood as possible in charcoal making and using and developing plantations specifically for charcoal making. Coupled with this is the fact in an increasingly significant number of cases charcoal makers resort to rich wood species to accomplish their interests. They are not selective.

a) Forests for medicinal purposes was reported across all demographic groups. This is closely associated with tradition but also to the limited coverage of health services in Mozambique in general. Mozambique possesses many plant species diversity with medicinal importance, locally playing a key role for rural and sub-urban people. They provide basic health care for more than 60% of the population. In Mozambique, up to 10% of the total plant species have been identified as utilized in traditional medicine (Bandeira et al. 2001). These plant species are used for a series of diseases, ranging from simple or complex pathogens complications to psychological and mental illnesses. Almost all diseases have traditional treatment in Mozambique, except illnesses requiring major surgical intervention. Major diseases treated traditionally with plants include: diarrhea, malaria, respiratory complaints, hypertension, malnutrition/anemia, parasitic infections, sexual complaints etc. (Barbosa, 1995; Bandeira et al., 2001). Traditional medicine also plays a role in slowing AIDS related opportunistic infections. There is also the perception and reality of disappearance of medicinal plants due to indiscriminate use of forests for different purposes. Those interested in preserving certain plant species (e.g. traditional healers) welcome the introduction of demarcation and planning in the use of forest products. In many cases, they also possess the local knowledge required to assisting in related demarcation. This is and could be a proactive way of ensuring that species with special value are preserved.
b) Honey making and selling is an important livelihood component that in many areas in Mozambique contributes to improve food security and to generate some cash. The value chains around this activity are in general inadequate, which leaves existing and potential producers isolated from dynamic markets that would increase demand to meet domestic and international markets and expand their earnings.
c) Fewer bush fires occur in coastal areas than inland areas because this region is dominated by Muslims, and in these areas, they do not burn because bush meat is like pork and is not eaten by them.

Charcoal business and forests business in general

a) Charcoal production was reported and observed in all provinces and communities visited and involved in public debates but with different levels of intensity (e.g. more in the South and North, and less in the Central region). However, rural communities (producers/suppliers) appear to benefit less from charcoal production as in most cases licenses are owned by the wealthier sellers mainly from urban areas as they invariably set the final price (with few exceptions where an association acts on behalf of the producers, e.g. Mabalane district in Gaza). The licensing of external people is also seen as an open door for poor forests management as those people have little or no attachment to the resources they make money from. It is seen that it would be beneficial to provide

licenses and assist local people with the necessary means to cover the entire cycle of exploitation of forests products, i.e. from planting, transportation, storage to cash earning and reinvestment. This business approach can be expected to have positive repercussions in planting forest products to feed charcoal making.

b) Money likely to be earned through carbon trading is perceived as being less than that acquired through other operations including illegal logging, for example. The whole process of carbon trading and its associated measurement, monitoring and evaluation is seen by many as rather cumbersome. In the short term the use of REDD+ to generate cash has slim chances of being widely attractive. Other incentives are required.
c) Communities have been finding it hard to receive the 20% foreseen under the forest and wildlife Ministerial Diploma n.º 93/2005 of May 4th mainly because the Local Participatory Management Councils (COGEPs) usually do not exist and/or are not well organized. But also, because the whole system to receive the money is cumbersome. Where the COGEPs exist and the 20% are paid by external forest operators the systems and procedures for communities to benefit from such money have also been problematic. Lack of transparency by COGEPs leaders and other entities are reported to contributing for the money to be used in things perceived by the members of the communities in general as irrelevant. It is more one reason to advocate for the updating of the diploma and finding ways of making the receipt and use of the 20% more friendly to the prevalent institutional setting at the grassroots level. This contribution or any other similar revenue has the potential of increasing the interest of communities and their members in the sustainable use of forests.

Encroachment of parks, reserves and protected areas and other related problems

a) Around the Gilé National Reserve (GNR) and other protected areas, because forest resources are depleted in the buffer zone, communities, especially youth, tend to harvest these resources from within the protected areas with the justification of distance as the prime reason to get into the protected area (3km from their homes) whereas the alternative would be to go as far as 8 to 10 kms to get the resources they need in the buffer zone. The incentive to enter the protected areas is much greater, especially because these communities do not own any means of transportation to carry large quantities of timber or related products. Once again creating conditions for local people to cover the whole cycle (value chain) in developing forests products seems to have the potential of changing attitudes towards mismanagement.
b) The proximity of hunting/timber concessions to protected areas (e.g. GNR, QNP, etc.) poses a serious threat to resources in those areas. There was a recommendation that the tourism law should be modified to prevent the establishment of concessions for tourism and hunting immediately adjacent to the protected areas.
c) In some cases, rangers are reported to be involved in facilitating illegal logging and charcoal production. This "corruption" stand is reported to be widespread in other sectors and areas of activity in Mozambique (e.g. police, education and health) and it can be expected to pose a serious risk to the envisaged change.
d) Complaints were raised about job opportunities in the protected areas. Communities want to be given priority in access to such opportunities in the

protected areas, for positions such as rangers to supplement income while protecting their traditional land. Combined with other measures this has the potential to bring positive elements in the way of improving the sense of community ownership.

e) Program should make it clearer that it is interested in covering mangroves in the same way that it will cover the other forested areas. Local perceptions at times regard mangroves as belonging to a lower category of forests products, which is usually an open door for malpractices involving mangroves.

Towards change

a) There have been some encouraging pilot interventions that should be deepened and expanded such as (i) learning tree planting techniques, e.g. leaving gaps, fencing homes; (ii) encouraging communities to implement crop rotation, planting of fruit trees and providing alternative sources of livelihood and soil enrichment through *faidherbia* planting, although this had a downside of attracting elephants into the gardens and farms which destroyed crops. Some of the elderly people have been involved in REDD projects (especially in QNP), where they planted trees in their yards and have been since then taking good care of these plants.
b) There were no reports of land conflicts deriving from the implementation of REDD pilot projects. The few cases reported were outside REDD+ areas and they were all solved through community systems of conflict resolution. Very few cases are channeled to formal institutions to be resolved.
c) Community members note that to reduce deforestation and degradation in the area, proper management of bush fires is one of the key things that would help. They note that in addition to burning for slash & burn agriculture, and for hunting, burning for clearing road right of ways often gets out of control
d) Community members recommend establishing local committees responsible for managing all burning activities that occur in the area. Again, if couple with other measures this has a potential to bring about sustainable change.
e) In addition to controlling burning, community members state that involving community members in reforestation projects would also help alleviate deforestation and degradation in the region.

In summary, the following practical suggestions have been put forward:

- There should be a joint effort between government, private sector, civil society organizations and communities to reverse the current negative trends in the forest sector.
- The Government should update and revise forests legislation to address the issues that have been arising in more recent times
- Forest plantations are important and need to be promoted
- Civil society organizations should support communities in the delimitation of community lands to strengthen them. There are complex issues for which communities need assistance to work on them adequately
- Communities must be the owners of natural resources to be encouraged to participate in public-private partnerships.
- Associations should be created for the exploitation of firewood and charcoal with reforestation responsibility

- Solar panels (and other sources of renewable energy) should be considered as alternative energy sources
- The Government should improve monitoring of forest operators to ensure that forest legislation is adhered to in practical terms.
- Forest resource management committees should be promoted and established in as many places as possible
- Communities should be aware of existing forest resources and their importance to be able to protect them
- Charcoal makers need permanent supervision and of high fines should be imposed against illegal charcoal burners;
- Natural forest and conservation areas and parks need to be expanded
- Communities should actively participate in the monitoring of forests.
- In as far as possible promote the use electric (and gas) stoves in urban and rural areas
- The government should decrease the price of gas and electricity
- Introduce alternative activities to generate income for coal and firewood producers. Promote activities such as bee-keeping, aquaculture and other activities less harming to natural resources
- Introduce improved/energy efficient techniques for coal production (good practices)
- Expand the supply of gas and electricity to rural areas.
- Improve the production and use of fuel efficient stoves to save charcoal and firewood.
- Empower communities with entrepreneurship and income generating skills
- Intensify community forests and increase protected areas in the communities.
- Introduce good practices of using basic techniques of land use planning and urbanization
- Promote urban areas afforestation projects
- Promote construction using conventional material, and whenever possible promote vertical/high altitude constructions.

Annex 1 presents a summary of the issues emanating from the different categories of meetings, i.e. community meetings, provincial workshops, interviews with key informants and meetings with DGM stakeholders.

7.3 Preliminary Identification of Potential Opportunities and Risks

The summary of issues discussed during the public consultation shows both the opportunities and risks of embarking on a process of reversing deforestation and forest degradation as espoused by the country's REDD+ Strategy in general and Program in particular.

Despite being true that when done properly, in the long run, the benefits of sustainable forest management and conservation far outweigh the immediate and unplanned consumptive use of natural resources this is not always easy to demonstrate. A host of issues tend to militate against this simple true.

The country's experience and that of other countries in southern Africa, Africa and the world at large shows that keeping harmony between sustainable forests resources management, conservation and subsistence economies and particularly in poor countries

like Mozambique is filled with challenges. As traditional agricultural practices, such as land and crop rotation and other practices fail to keep up with the population growth and increased need for all kinds of natural resources people throw away precautions in their relationships with forests and conservation areas. The table below summarizes what is generally identified as assets and liabilities in keeping harmony between sustainable forests management, conservation and subsistence.

Table 8: Issues around forests, conservation and subsistence

Assets (strengths, opportunities)	Liabilities (weaknesses, threats, risks, etc.)
-People usually agree and accept that sustainable use of forests and conservation can be associated with high economic and social returns -People/entities farming in and around forests and the conservation areas welcome the sustainable use of the resources and are willing to be part of the process -Adequate land planning and use will expand availability of land and forests to be used by the communities in certain areas -A considerable number of villages have strong and committed leadership to promote sustainable forests and conservation	-Poverty -Subsistence economy/traditional (itinerant) agriculture (low or no use of modern and more productive inputs) -Excessive reliance on natural resources (land, water, fuel wood, fauna, etc.) and poor management -Disputes/pressure on land and water (loss of land fertility, population growth) -Greed by certain groups -Institutional weaknesses -Poor communication -Inadequate staffing and poor law enforcement -Crime, theft and vandalism in certain communities

In many parts of the country and particularly in and around the Quirimbas National Park, which forms most of the project area in Cabo Delgado province the above situation is further compounded by what is known as the human-animal conflicts. Animals most frequently involved in conflicts are crocodiles, lions, elephants and hippos. Elephants and hippos not only attack human population but also invade agricultural fields, what could be behind the extensive killing of these two species than the others. However, it was crocodiles that killed more people, and the number of attacks on people by crocodiles has been increasing. Man-animal conflict is a difficult issue to many as many times it ends up with death of problematic animals. For instance, one given recommendation to solve human-crocodile conflict was the removal of large animals from waters in rural areas. While this seems to be a solution for the conflict in one hand, it is also a threat to crocodile's survival, since large individuals constitute the breeding population. Long terms responses include the development of land use plans and creation of areas where wildlife can be managed sustainability and provide benefits to the population without competing with people for resources.

People and communities need to be provided with alternative sources of livelihood and tangible but also intangible and valuable incentives to adopt new attitudes and subsequent practices.

It follows that in the implementation of the program there will be the need to bring the positive elements to work in favor of the attainment of the objectives while the negative elements are managed carefully as part of the transition and change. A process of screening, identifying and selecting areas, people, groups (women, youth, elderly, community leaders, small, medium and large size businesses, NGOs/CSO) and institutions (public, private, community and NGO/CSO) that will help demonstrate and

sustain the value of change including the training and building of their capacity to do so, while the risky elements are managed adequately, will be put in place.

8 POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

The Program will combine soft and hard interventions. The ESMF will particularly deal with all the processes and physical interventions that will translate into (i) providing the country and all interested and affected parties with a more accurate knowledge about the land and forest resources existing in the country and the project areas; (ii) better land and forest use plans; (iii) strengthening the forests and agricultural value chains; (iv) strengthening the capacity of all actors to do better and contribute for the sustainable management of forests and other related resources (land, water, etc.) as well as (v) direct and indirect impacts on the natural and social receiving environment likely to result from physical interventions, by seeking to boost them and to ensure that the best recommended practices are adopted in a consistent manner.

The processual and physical interventions that will be the focus of the ESMF are:

Processual

- Inventories and updating the knowledge and information about the existing land and forest resources including the design and implementation of a forestry information system
- Strengthening forest governance including the strengthening of AQUA
- Periodic assessment of forest operators
- All forms of capacity building and dialogue among stakeholders
- Platform of Dialogue among stakeholders for Integrated Management
- General promotion and advertisement of forest plantations for multiple purposes and conservation agriculture
- Technical assistance to private sector beneficiaries
- Program/project management and coordination

Physical

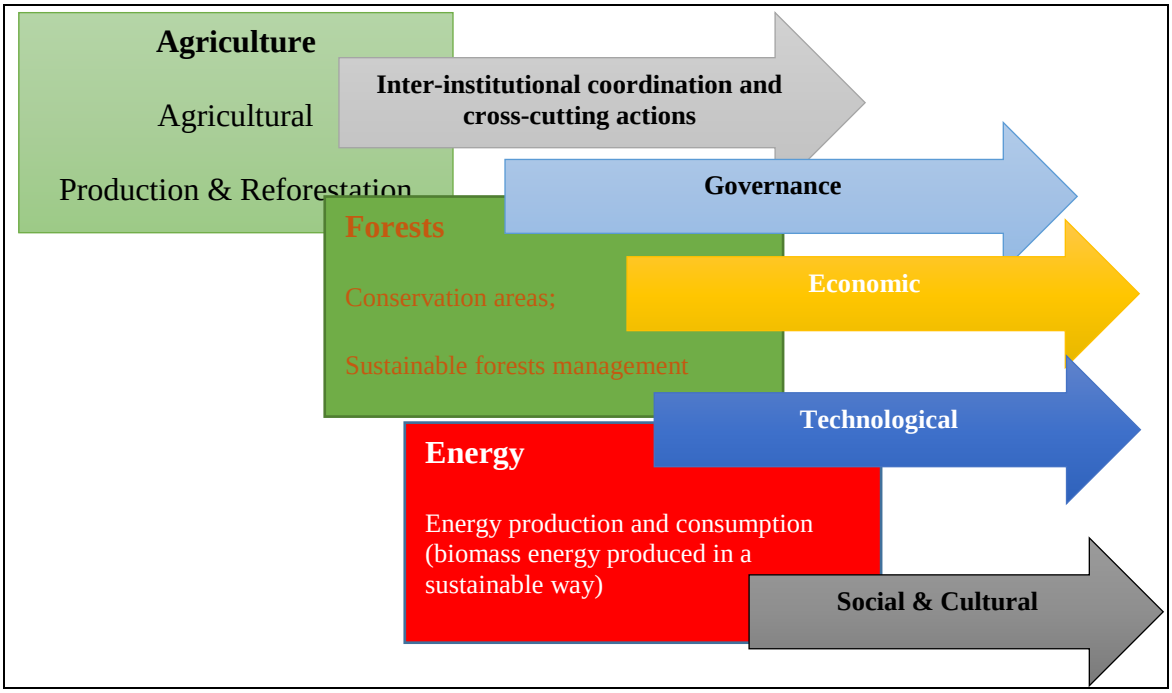
- Delimitation of community land and community land use planning (micro zonation)
- Promotion of geo-spatial planning
- Issuing of DUATs
- Forest plantations
- Community forest concessions[27]
- Sustainable production and use of biomass energy (energy efficient furnaces and stoves for charcoal/fuelwood production and use)
- Public forest concessions reform
- Technological center of forest industry

[27] Forest concession holders from private sector will only benefit from technical assistance under this program. Community forest concession holders may benefit form other activities besides technical assistance.

- Promotion of Agroforestry systems
- AQUA infrastructure and operation (no construction works)

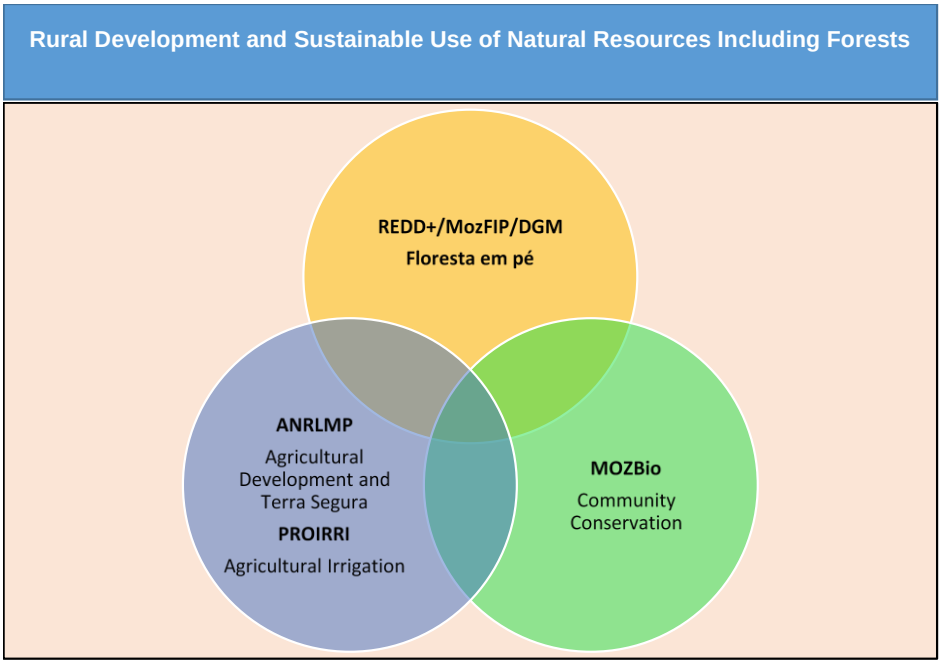
These interventions can be easily summarized using the elements presented in Table 1, Chapter 2, as shown in the diagram below.

Diagram 2: Combination of interventions to reduce deforestation and forest degradation in Mozambique



The ESMF for the Forest Investment Program will focus on forests related issues and will link and use other programs/projects (e.g. ANRLMP, PROIRRI and MozBIO) and respective safeguards instruments (ESMFs, PMPs, RPFs, PFs) to manage the other interventions (e.g. agriculture and infrastructure development) of relevance to the program but outside the core forests area. It will be only on a very limited number of cases that Program will intervene directly in those other areas, i.e. where this will be found to be indispensable and where the gaps (spatial and/or thematic) will not be filled by using other complementary programs/projects.

Figure 8: Links between REDD+/FIP and other programs



8.1 Potential adverse environmental and social impacts including reputational risks

In line with formulations under Chapters 3, 10 and 11, adequate selection criteria for all project actors, sites, design, construction/installation and operation will need to be applied to avoid the risk that communities lose access to their land and to critical resources and that program activities are associated with other harmful effects on the receiving natural and social environment.

As also explained in Chapter 4, forests in general have considerable influence on the quality of the environmental components such as air, water, soil, climate and different forms of life and biodiversity in general. They also have a strong weight on recreation, landscape scenery, noise and general wellbeing of humans and other species as well as on the health of the environment in general in vast and complex ways. These aspects should be enhanced in a consistent manner and not be compromised by the program subprojects.

Interventions will be preceded by extensive exercises aimed at (i) updating inventories of land and forests resources; (ii) delimitating and zoning the areas for different interventions including specifying what is permitted and what is not, where, how, when and by whom, etc.; (iii) land titling to provide security over land to all actors and particularly to the communities; (iv) capacity building and empowerment including development of a stronger sense of ownership, especially at community level and among men and women and the youth. Women and the youth are identified as having a strong role to play in reversing negative trends. This will be followed by (i) agreements between the various actors including between communities/government and MSMEs; (ii) activities design, screening encompassing compliance with the environment and social requirements; (iii) approval, implementation and monitoring of each activity under this program.

For example, the Projects' promotion of land-use co-titling, where the wife and husband have the same right upon the property independent whether the marriage has a legal or customary status will also strengthen the position of women. In addition, inclusive practices will be encouraged by Service Providers at all level of interfaces as trainings, meetings and forums. A Community Agenda of priorities for development / conservation / exploration and complementary community Land Use Plans are tools that will also be promoted as part of support to land delimitation and to facilitate inclusiveness. The Projects make relevant provisions to ensure vulnerable groups are not worse off and alternative sources of livelihood and income generating activities will accompany shifts in the living conditions of participating communities.

Large-scale investors, which will need to acquire large land areas, will not be supported under this program although synergies between them and the program are likely to be encouraged if they contribute to the fulfilment of essential elements of MozFIP.

The dedicated dissemination of the Program and the careful selection of candidates followed by training and capacity building for forest sustainable management have been identified as crucial in a context in which mismanagement of forests including those in the conservation areas has been widespread. The Forest Certification scheme is expected to contribute to sustainable forest management in the medium term.

It is to be expected that opportunistic forest operators who are prevalent in all forest rich provinces including the two selected provinces will try to cheat the system to benefit from the Projects and continue with their malpractices in a disguised way. The selection process adopted for MozFIP activities in support of private forest sector operators, and specified in this ESMF, needs to be applied in a consistent way to avoid and limit such trend from occurring. Failure to do so will bring reputational risks to the Program. Although powerless on their own to change the situation, communities and other positive elements of the society (in government, private sector and civil society organizations) are fully aware of the damage inflicted by opportunistic operators on the country's rich forests resources. It would be frustrating for them to realize Program failure to bring about the long-awaited changes.

Regarding the selected forest sector operators dedicated communication and other forms of delivery will be necessary to facilitate the acquisition of renewed knowledge and attitudes for all actors to adopt transformed practices.

For all environmental and social impacts the applicable World Bank Group Environmental, Health and Safety (EHS) Guidelines of April 2007 and November 2015 will need to be applied. Especially the General EHS Guidelines, the Agribusiness and Food Production EHS Guidelines like those for Perennial Crops as well as the EHS for Forest Harvesting Operations and possibly Sawmilling and Wood-based Products, where these will be applicable, especially for the units that will be storing and/or processing large amounts of local products. The applicable Agribusiness and Food Production EHS Guidelines will be applied to the Agro-processing facilities from investors who will be associated with agricultural program financed activities.

Although the expected environmental and social impacts will be limited in extension (250 ha of land will be the maximum size for plots dedicated to the various

reforestation/plantation operations, while for agriculture value chain the sizes of the plots will be smaller and commensurate with the small and medium size nature of existing operations on the ground and the proposed agroforestry systems, i.e. around 20 ha), the following negative environmental and social impacts can be expected:

Land and forests resources planning and use (plantation, commercial harvesting and other uses)

Forests are on land. For transformation as envisaged under the Program to be effective the Program will have a strong component of redefinition of land use plans that are likely to culminate with changes in existing land use plans and definition of the operational aspects around land such as defining what is done in which land and forests resources by whom, when, how, with which technologies, which species for different uses and when, etc. This will extend to the zoning of conservation areas to promote biodiversity and ecosystem services. Land use planning and delimitation will also be preceded by inventories of resources to provide the baseline for the planning.

Communities have encountered problems up to now when attempting to secure land rights; many do not understand the value of tenure security or what land delimitation process they need to carry out to secure a land use and benefit title. Others do not have the resources to obtain adequate support from organizations and government to overcome these difficulties. The capacity of organizations to facilitate community land delimitation are put to the test when several adjacent communities are delimited. In these cases, conflict resolution skills are almost always required for addressing multiple claims over areas and resources. Building community capacity and mechanisms to manage the land and its resources after delimitation was limited until the institutionalization of the 'Community Agenda' by practitioners in the past five years. MozFIP and MozDGM will build on this and support participatory micro zoning to facilitate community discussion of risks and opportunities. The MozFIP and MozDGM Projects will also promote a broader uptake of the CDAP mechanism.

Action planning is a widely-used mitigation tool for community risk management that will be promoted to take the priorities of the Community Agenda and sift through these in the micro-zoning process so that a plan of action (the CDAP) can be developed by communities for engaging with the Project or other investors or agents, in community development agreements or similar.

The Program foresees a redefinition of land and resource use plans that will try to accommodate all interests in each area such that all interest groups can continue to have access to what is vital for their livelihoods and businesses. The siting of the interventions for plantations will also be crucial as in line with the WB OP 4.36 conversion or degradation of critical forest areas or related critical natural habitats including adjacent or downstream critical natural habitats will not be financed (WB OP 4.04). Preference should be given to implementing such activities on un-forested sites or lands already converted (excluding any lands that have been converted in anticipation of the project). Please also see section 6.5 Forests (OP/BP 4.36) where additional information is provided.

The Program has developed an integrated GIS tool to pre-select areas for forest plantations and agro-forestry activities, using geo-spatial and participatory criteria

(Annex 13 – MozFIP Geographic prioritization of forest plantation and agro-forestry areas). Those maps are the first stage of analysis and need further High Conservation Value Forest (HCVF) assessment on the field to identify any potential forest fragment or other environmental and social values such as fragments of critical natural habitats, or protected species or even physical cultural resources).

Ais currently being prepared (with FCPF funds), andis expected to be ready by 2018. when**The short vs the long term**: in the long run all the restructuring actions around updated inventories, land re-delimitation, selection of operators and sites, capacity building, etc. will have positive impacts to achieve REDD+ objectives and also to meet the genuine interests of the country and communities in sustainable forest management but in the short to medium term it can be and will be associated and be perceived by local people and other players as embodying restrictions in access to and use of resources and possibly to be seen as disruptive to local livelihoods and markets as well as the economy in general. Perceptions and realities will be intertwined in complex relationships that will need to be untangled systematically. The process needs to be carefully planned, creatively implemented and monitored to harmonize all sides of the equation.

In the land and resource planning, allocation and use, there is a need to be consistent with the fact that the objective is to support local communities to restore and protect their forest lands in a way that meets their needs. Consideration should be given to the fact that many poor local communities cannot wait for so many years until they benefit from a land/forest rehabilitation project. Community forests need to produce a variety of products and services from as early as possible. Meanwhile, commercial tree plantations and poorly demarcated/managed protected/conservation areas often deny local communities from having access to critical resources. In certain situations, women sometimes must walk for miles to harvest fuel wood as they cannot enter the tree plantations and/or other re-delimited areas which have occupied the lands where they used to get these resources. These social impacts must be adequately identified and properly managed through inclusive public participatory processes under the land use plans to be developed by the program at community level, as well as for the assessment of field investments.

Improved forest management plans will be implemented through the Program that may regulate continued use of forest areas and may exacerbate the lack of benefits from forest projects in the short term. The ‘community agenda’ identified at the end of the community land use planning process will be used as an entry point to community development action planning when delimited communities wish to take up further Project investment opportunities. Action plans are an effective way of securing stakeholder inputs to the assessment of opportunities and constraints of community access to natural resources created by forest management and PA management plans. Community development action planning will need service providers to assist communities to identify strategic targets and the bases for investor interest and potential partnerships. Strategies must also link community enterprises to markets and longer term community capacity development providers to strengthen their participation and opportunities to benefit in the short and longer term.

Agro-forestry activities: this calls for support to such people, households and communities in their efforts to develop small-scale, biologically diverse agroforestry

systems, forest gardens and tree plantations which provide a diversity of goods and services to the community, including fuelwood, medicinal plants, soil fertility, wildlife, and construction materials. These communities also need market access for their products. Climate Smart Agriculture (CSA) and Agricultural Conservation (AC), under agro-forestry activities, as described in Chapter 4 may also be expected to be useful in this regard.

The land titling process that will accompany the updating of land and resource use plans also needs to be conducted in a way that creates a win-win situation among the various stakeholders.

The foreseen mosaic approach will be an integrated tool to identify, assess and avoid impacts on water resources, natural habitats of high conservation value, soil erosion and other socio-economical needs for communities.

Land use plans of larger scale such as the National Land Use Plan, or ones at province level, shall be subject of Strategic Environmental and Social Assessment in order to better integrate environmental and social risks into consideration, particularly targeting vulnerable community groups.

Habitats and biodiversity alteration and loss

Even if the focus will be on degraded or non forest areas to establish forest plantations, such operations (and consequent timber harvesting activities) are in one way or the other accompanied by the replacement of the existing vegetation cover with native and/or non-native species[28]. The plantation of non-native species has the potential of resulting in loss of habitat diversity that can extend to the loss of wildlife and plant species including rare and endangered species. A lot of factors can be behind this process of biodiversity loss. Certain plant and animal species may be unable to tolerate the disturbance caused by forest operations (such activities on the ground with heavy machinery, during construction phase) and be forced to leave the area. Other species may not survive habitat modifications caused by different forests operations such as non-native forest plantations, which can result in permanent disappearance and loss. Non-native tree plantations may reduce the abundance and diversity of mammals, birds, reptiles, amphibians, insects and other forms of life, most of the times because land shifts from some multi-type/diversified habitats (grassland/open areas, shrubs, dispersed trees) into a monoculture of a certain tree (although under this Program commercial plantations will be combined with restoration of degraded areas, such as riparian areas).

Aquatic organisms downstream of plantations may be impacted by potenctial chemical usage and erosion, if the activity is not implemented in the correct way. Water-bodies may be polluted with organic plantation waste which absorbs oxygen, creating anaerobic conditions not conducive to natural species in the aquatic environment. Together with nutrients from fertilizers (from agro-forestry activities) this can cause outbreaks of algae and invasive water plants. Increased turbidity from suspended

[28] Bio-geography defines a species as indigenous to a given region or ecosystem if and when its presence in that region is the result of only natural process, with no human intervention. In less scientific usage this is also defined as native. A species may be introduced by human activity, where it becomes an introduced species. There are introduced species in Mozambique, which over the years have adapted to local conditions. Introduced species that become established and spread beyond the place of introduction are called invasive species. Some of these species are known to have a negative effect on a local ecosystem. There are also species that are introduced intentionally to combat pests. They are called bio-controls and may be regarded as beneficial as an alternative to pesticides in agriculture for example (see Subchapter 9.7). The potential for plants to be beneficial or detrimental is a complex subject.

particles affects aquatic fauna. Additional damage to biodiversity can result from increased sedimentation in wetlands.

More specifically the use of herbicides to eliminate natural vegetative cover, which could reduce plantation growth, can cause impacts to soil health, associated wildlife and runoff into nearby streams and waterbodies. Once established, tree plantations may block the light and as leaf litter and plantation pruning accumulate, cause impacts to surviving plants from increased acidification and dehydration.

Importantly "the Bank does not finance activities that involve any conversion or degradation of critical natural habitats". Eventual conversion of non-critical natural habitats or degraded natural habitats (including miombo forests), due to any activity on the ground (e.g. plantation, agro-forestry), must be with the objective to enhance sustainable development of the area/community, improving landscape and land use sustainable management, allowing for instance conservation of other areas of high conservation value, hence enhancing ecosystem services. Activities or sub-projects that envolve convertion of non-critical natural habitats must be subject to mitigation (or compensation) measures such as restoration of degraded areas with native species. For the promotion of forest plantations and agro-forestry, degraded areas will be prioritized through the use of GIS-based tools, participatory land use approaches and also complemented (when applicable) by High Conservation Value Forests (HCVF)[29] assessment. Thus, FNDS has prepared maps (please see Annex 13) of the 2 landscapes with "go" and "no-go" areas. The "go" areas were identified using satellite images and does not contain significant forest cover (other criteria are: acessibility, proximity to forest fragments, and precipitation). However, considering that the pixel is 30 metres per 30 metres, there is a possibility of some forest fragments in these areas, hence before any activity to be implemented, an on-the-ground HCVF assessment[30] will be made by the service provider (or project safeguard specialist) and will be monitored by the government. The "no-go" areas are legally protected areas, or areas with significant forest cover. When the Bank finances plantations, it gives preference to implementing such activities on sites without forest coverage or lands already converted (excluding any lands that have been converted in anticipation of the project), even though non-

[29] The values it contains may include rare species, recreational sites or resources harvested by local residents. Where these values are considered to be of outstanding significance or critical importance, the forest can be defined as a High Conservation Value Forest (HCVF). The 6 values are: HCV1. Forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, refugia). HCV2. Forest areas containing globally, regionally or nationally significant large landscape level forests, contained within, or containing the management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance. HCV3. Forest areas that are in or contain rare, threatened or endangered ecosystems. HCV4. Forest areas that provide basic services of nature in critical situations (e.g. watershed protection, erosion control). HCV5. Forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health). HCV6. Forest areas critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

[30] Guidelines and criteria for HCVF assesment will be prepared at Project implementation manual stage, focusing on critical natural habitats, other water resources and protected species of flora and fauna.

critical forest areas may be converted as part of the mosaic plantation scheme. Impacts on legally protected areas, such as Quirimbas National Park or Gilé National Reserve, are only foreseen through agro-forestry at QNP while at GNR neither agro-forestry nor plantations will be financed. Moreover, agro-forestry at QNP will only financed activities outside strict protection areas, namely at community use areas always according to the approved management plan of the park, therefore generarting minor potential environmental and social negative impacts in these areas of the park.

Adverse impacts are expected to be of small magnitude whether on degraded forests or on other non-critical natural habitats, even if fragments of miombo forest (degraded patches or regeneration from fallow land). Additionally, forest plantations will be coupled with the restoration of degraded areas, specialy when impacting on fragments of non-critical natural habitats, again contributing to overall improvement of ecosystem services and sustainable forest management.

Eventual construction of small irrigation schemes, most likely earth small dams, must pay attention to the value of the environmental ecosystem and social issues, both at selected site and downstream, specialy social downstream uses. The environmental flow assessment might be important to ensure biodiversity and social uses downstream. Although of small size such subprojects must entail mitigation measures and an ESMP.

As shown in Table 13 and Annex 7, for both forest project and other initiatives to develop agriculture, a set of measures combining avoidance of certain practices and other management practices needs to be taken to ensure habitat loss is prevented and biodiversity is enhanced. The use of chemicals and the recommended management precautions and practices is a complex issue that is dealt with in more detail from Subchapter 9.7 onwards of this document.

Other impacts on natural resources

Mozambique has limited plantation management abilities and this can be expected to be associated with the probability of landholders to bring non-native invasive trees, once they start producing seed, and spreading into the landscape. There is also the risk of shading out natural vegetation. As plantations grow taller, the shade cast along their edges may extend further and for longer. When this happens, it may cause sun-loving species to die out locally, and increase opportunities for invasive plant species to become established. The reduced exposure to direct sunlight may cause affected areas to become cooler, and when it rains, they take longer to dry out.

The following impacts can be expected to be associated with poor plantation practices:

- Poor species selection and poor quality plants
- Poor management of plantings with a high failure rate
- Inadequate training of plantation workers
- Inadequate fire protection measures
- Inadequate management and supervision

The introduction of non-native invasive species of trees can have serious consequences and stands as an ineligible activity to be financed (see chapter 2.8). They have the potential to affect biodiversity, ecosystem function and services, and human health.

Climate change, land use, and transport vectors interact in complex ways to determine the spread of native and non-native invasive species, pathogens, and their effects on ecosystem dynamics. The ecological and societal impacts of invasive species and pathogens differ across areas of climate and land use, and in the presence of global climate change may exacerbate both their propagation and impacts. At the current stage of the country's development its ability to apprehend the interactions of invasive species, disease vectors, and pathogens with other drivers of ecosystem change to human health and economic well-being is limited, which also means that the best way of dealing with the phenomenon is taking precautionary measures from the onset and avoid/limit such practice as best as possible.

Inside and outside conservation areas, the land and resource use and planning that have been described will, among other aspects, be adopted to determine which areas are used for which plants, by whom, with which technologies, during which periods of time, which species are allowed for which uses, by whom and when, etc. These site-specific plans will need to be followed and enforced in a consistent manner, inside and outside conservation areas, however it is worthwhile to highlight that under this program no plantations will be proposed inside conservation areas.

Impacts on water resources

Usually fast growing plantation trees grow rapidly, absorbing nutrients and water from the soil. Through transpiration the planted trees have the potential to contribute to locally increased air moisture levels. This may result in more precipitation, but not necessarily at the plantation site. As tree plantations age, hydrological conditions can be altered in several ways:

- Reduced soil moisture in the immediate vicinity, which could have harmful implications on local farming and livestock production activities;
- Progressively incremental uptake of ground water via the tap-root;
- Increased local temperatures due to decomposing grassland plants.

These factors can contribute to increased evapotranspiration and the loss of soil moisture. As trees get older, other factors such as rainfall interception set in. Plantation trees with greater leaf surface areas can hold rainwater caught by their foliage long enough for it to evaporate before it can reach the soil. The same applies to the litter layer which is usually sterile and takes many years to decompose. When water does reach the litter layer, it can be held in sponge-like fashion and not reach the soil, in this manner reducing aquifer recharge. Under such conditions the surface soil layer can develop a condition known as hydrophobicity, which is caused by a combination of factors including the emergence of certain soil fungi that can deposit water resistant residues on soil particles.

Established non-native fast growing plantation trees can tap directly into groundwater so that even during dry seasons or droughts they can grow continuously by consuming water that would otherwise be retained in the soil or flow into streams and rivers. This is especially significant during the dry season, as it prevents water from reaching downstream ecosystems and human communities. High growth rate tree species may be

more prone to exhibit this kind of features. In the specific case of the project area this could be a serious problem in parts of Cabo Delgado, such as Pemba Metuge, which rely on ground water to supply water to local urban and rural communities and which are known for their relative water scarcity. Studies have been underway for many years to bring surface water to this area from rivers situated far afield as 100 km to counteract this situation but this is something that may not happen any time soon. This program should not aggravate existing problems, especially while the long-term solution is not in place.

The relationships between forest plantations and water resources require consistent and continuous management. The regional water authorities (ARAs) need be strongly involved in assessing the potential impacts including the cumulative impacts relevant for each specific site and be given a strong voice in delineating management options.

Soil

Tree plantations have the potential to impact considerably on soil fertility, and carbon storage capacity:

- Decomposing leaf litter may reduce soil pH
- An acidic environment increases nutrient solubility but increases potential for leaching.
- This also destroys soil organisms that cannot tolerate abnormal acidity.
- After the plantation canopy closes, grassland dies and groundcover is lost.
- Detritus dries/oxidizes or decays/decomposes releasing CO2 and methane.
- Altered soil pH creates conditions where alien invasive plants may thrive – often spreading out of plantations.

The above-mentioned aspects contribute to loss of soil carbon through biomass decomposition or soil erosion resulting from soil chemical changes as well as sheet erosion and scouring. The worst impacts on soils are caused by mechanical disturbance when plantations are clear-cut. The impacts of clear-cutting and log extraction may be worsened by bad plantation design and road construction methods.

Additional soil erosion factors that are related with plantations include:

Using herbicides to destroy vegetation that “competes” with plantation trees

- Burned or chemically established fire belts (especially on steep slopes)
- Displacement of community cropping and livestock grazing onto marginal areas
- Shading induced vegetation loss in grassland or forest areas next to plantations
- Increased silt load in water courses from storm run-off after clear cuts.

8.2 Other potential adverse socio-economic impacts

Alienation of local communities and people

The public consultation process brought to light a lot of issues related with the potential of alienating local communities and people in a Program of this kind. This is likely to happen particularly when these are treated as mere recipients and observers of the

processes to be developed and may be encouraged by the creation of individual land-use titles (DUAT) in, or derived from, community delimited areas. People and particularly women, youth, local leaders, traditional healers and other community representatives need to be put in the driving seat in all aspects such as land demarcation, titling, selection of partners and of activities to be embraced, access to job and business opportunities covering the entire cycle and value chain, monitoring and evaluation and feedback. It is significant that the certification process includes strong elements of meaningful participation of locally affected communities, consistent with the principles and criteria of responsible forest management, which shall include the Free, Prior and Informed Consultation processes. This is an important aspect in the sustainable management of natural resources. This is a principle to adhere to in a consistent manner throughout all program stages to reduce these potential socio-economic impacts.

Mobility and Accessibility

Planting and reforestation as well as construction of certain rural infrastructures (e.g. roads, power lines, dams, etc.), have the potential of being associated with disturbances by bringing about changes in normal mobility and access to vital areas and resources by local people. Adequate siting, sizing and general management of these interventions including community involvement in such processes is important to devise the best ways of avoiding/minimizing interferences and/or finding ways of compensating for the problems that might arise.

The adoption of the mosaic approach and/or of other similar approaches to harmonize different land and forest uses such as commercial plantations and exploitations, agriculture, timber, charcoal making, firewood, and for a wide range of non-timber forest products, including medicinal plants, food reserves, etc. is strongly recommended to deal with this potential problem. Other site specific solutions need to be considered in a creative way.

Economic Displacement

Although limited in size (250 ha of land would be the maximum), economic displacement could take place in the project intervention areas. This could be directly associated with different categories of interventions, namely (i) land requalification and demarcation; (ii) installation of forest plantations; (iii) certain commercial harvesting forest operations; (iv) construction of small rural infrastructures. People may risk losing access to or assets such as land, forests, trees, including infrastructures in the form of informal shops, temporary sale points, food vending areas, farmed areas (crops), belonging to local communities/people/entities, etc., which are in sites proposed for different interventions.

These situations should all be avoidable given the consultative and participatory nature of decision-making and the screening of proposed subprojects. Voluntary cedence of land or resource use or access will be prioritized through strengthening the capacity of communities to engage in negotiation to ensure win-win situations. In addition, documented agreements of these results will be required for subproject screening so that any apparently involuntary losses can be addressed or avoided. Efforts should be made

by the service providers working with communities to ensure sustainable development programming that focuses on sharing project benefits among all community members who contribute to the project. Women and other vulnerable groups should be especially targeted during screening to ensure they do not lose out in subproject designs.

Where people may be economically displaced due to access restrictions to use of natural resources in PAs they need to be meaningfully consulted and given opportunities to participate in the planning and implementation of programs to provide them with livelihoods alternatives that give them equal or better well-being than pre-project.

Since the project will focus on small to medium scale interventions and voluntarly adherence by beneficiaries, it is not expected to cause involuntarly resettlement.

Increase in HIV/AIDSs and STDs Cases and Communicable Diseases

The spread of HIV/AIDS and other communicable diseases is likely to increase, especially during the development of different forests business, infrastructure development and construction, when workers from outside the region are brought into to it to live for long periods without their respective spouses. During operation interaction with truck drivers and other external workers with local women could be an open door for HIV/AIDS and/or ISTs propagation, especially among poor households, women and a younger generation often used as sex-workers to be self-sustained or sustain their families. Private operators and their contractors should develop and implement HIV/AIDS-IST prevention plans, which should include the training as an awareness raising campaign of their workers and the surrounding communities, provision of sufficient and free condoms of good quality to their work force, provide treatment for workers who are infected, etc. It is also recommended to hire/involve a local specialized NGO to implement the HIV/AIDS Awareness campaign within both work force and surrounding communities.

Business opportunities and/or work/job conflicts between local people and external work force (national, regional and international)

If not adequately managed there could be real conflicts and/or misunderstandings surrounding the criteria for awarding business opportunities and/or hiring of an external work force. Without clear criteria and communication local people might look at the giving business opportunities and/or hiring of external work force as unjust and detrimental to their immediate interest. During the public consultation process this potential problem was reiterated several times. This has the potential to cause conflicts and disruptions, including violence. The environmental and social clauses of contractors' contracts as well as the ESMP will always specify that whenever local people/organizations can carry out project activities they should be given preference. External people organizations will be hired only after evidence that locally there are no capabilities.

In principle, the business/work/job opportunities must benefit the directly affected people with adequate involvement of local authorities to better manage the influx of external workforce. The local training programs must also be selective in targeting its audience amongst the local affected people as priority.

8.3 Potential positive impacts

Agri and forestry businesses and improvement of the local business environment will lead to the adding of value to local forests and agricultural products.

The host of interventions to be undertaken can also be expected to lay the foundations for the extension of telecommunication and internet networks (mobile), electricity, irrigation, and other amenities, which will contribute to making local economies more modern and competitive, as well as improve people's livelihoods, habits (i.e. way of thinking and conducting their daily lives) and way of socializing (increase inter-village/inter-community exchanges, etc.).

Implementation of the Program will, among others, stimulate private investment in the forests and agricultural sector but also in other sectors, such as tourism, particularly in and around conservation areas. Serious constraints may be lifted by the establishment of basic infrastructure while providing considerable support to the private sector institutions and national as well as foreign initiatives across value chains.

In environmental terms, the project will result in better management of natural resources surrounding planned interventions and above all it has the potential of improving land administration including land tenure systems. Establishment and protection of critical natural habitats, particularly, riparian forests, legally protected areas, forests of high biodiversity value (coastal forests and afro-montane forests), will be an important result from project implementation.

Forests prevent soil to become warmer (sun exposure) and exposed to wind, two important factors that result in water losses from the soil to the atmosphere and increasing dryness and desertification of soil. Atmosphere over/above forests (high rate of humidity) can also trap moisture from wind and turn it into rainfall, bringing more water availability in the ground and underground systems. Forests and plantations can also contribute to reverting processes of soil loss and desertification through reduction of erosion from soils that became exposed (to sun, wind and rain) after tree clearances.

Another positive impact is the restoration of natural habitats through restoration of degraded areas (promoted also in commercial plantations). Restoration opportunities assessment methodology is being developed in order enable this program's outcome. Riparian areas and areas where forest connectivity can be enhanced will be prioritized building upon the existing ecological corridors and promoting biodiversity through landscape management.

As also explained in Chapter 4 forests have a considerable influence on the quality of the environmental components such as air, water, soil, climate and different forms of life and biodiversity in general. The health of the environment in general has strong relations with forests in vast and complex ways.

The adoption of the mosaic approach and/or of other similar approaches that are already being tested and applied in Mozambique and other parts of the world could be a possible solution for this potential problem. The approach allows for a good integration and limited disturbance of different land and forest uses such as commercial plantations and exploitations, agriculture, timber, charcoal making, firewood, and for a wide range

of non-timber forest products, including medicinal plants, food reserves to cater for times of food crises that are very common in the country's rural areas, due to droughts, floods and other natural and socioeconomic adverse events. It also strives for a good alignment with local crucial environmental components such as water and soil. The figure below is an attempt of illustrating the model that is strongly recommended.

Figure 9: A general view of the mosaic approach

Source: UT-REDD, MITADER (2016) Forest Investment Plan – Version 3.1 17.5.2016

A more sustainable fuelwood and charcoal production and use; 80% of the energy consumed in the country is obtained from forest and 98% of forest products produced annually are to produce firewood and charcoal. Woodlands appear to recover relatively well following harvesting for charcoal production. Selective harvesting, where the high quality, low cost fuel production species and specimens are culled first from a piece of land, serves to maintain the viability of the woodland resource while providing charcoal. This recovery period can be prolonged through any number of human induced activities, such as heavy grazing, multiple burns and extended cultivation periods. Post-harvest management techniques, such as coppice management, sprout protection and fertilization, can also improve the ability of woodlands to recover following harvesting. The environmental history of a given area determines why certain areas continue to be strong suppliers of wood fuel while other are not. Under the program fuelwood and charcoal producers and farmers will (i) be organized into groups, licensing, training, awareness creation, improve access to markets and financing; (ii) promote technical and streamlining technologies of biomass energy production to reduce degradation rates. Less wasteful furnaces will be developed and adopted. This will be coupled with (i) checking the availability of species allowed by law for the production of coal; (ii)

involving the CGRN or community associations to provide information on areas available for production already defined by the community; (iii) verify inventories (SDAE) on existing/available species (quantity per area) for charcoal production; (iv) identification of new areas for coal production to be made by CGRN / associations and SDAE; and (v) awareness creation among coal producers on the need to follow the law, importance and use of classes of forest species allowed for this activity. Education, training and law enforcement will work hand in hand to improve efficiency in fuelwood and charcoal production and use to reduce deforestation and forest degradation and promote fuelwood/charcoal production that can significantly contribute to poverty reduction and environmental sustainability.

In social terms, the positive impacts of project activities could be brought by external (but not necessarily foreign) investors introducing new production systems, technologies and practices. It is expected that these investments will contribute to improved technology and farming systems, reduction of post-harvest losses, improving revenue and marketing conditions, a better utilization of production processing; broadening the range of products, strengthening the skills of the various actors in the forests and agricultural subsectors (producers, transporters, traders, processing units, etc.).

At the community level, in addition to increasing land and resource tenure rights the availability, accessibility and affordability of transport, electricity and telecommunication services, the expected impacts will be: improved food security, reducing the risk of hunger, improving nutrition and increased protein intake, and the creation of new and development of forests and agricultural employment (reduction of unemployment and the exodus of young people), the creation of local employment opportunities, improved living conditions.

The project will provide opportunities for development of forests and agricultural production in general in the project area: (i) private actors will develop subsectors considered profitable- including high value-added products for export, (ii) models of win-win partnership including effective variations of the “mosaic” approach between rural communities and private investors can be expected to emerge.

The project has the potential to strengthen the existing policing and protection structures to ensure forests and natural resources protection, the safety of goods and people.

In summary, the following positive impacts can be expected, and therefore further expanded:

- Updated inventories of land and forests resources, which can then be used for multiple purposes by different stakeholders, including consistent monitoring and evaluation
- Better land use planning, whichwill contribute to improved sustainable use of resources on land, including forests
- Possible expansion of natural forest as part of the land and resource demarcation and delimitation that will be conducted
- Improve and deepen collaboration between the government, private sector, civil society organizations and communities to reverse the current negative trends in the forest sector and other related sectors (e.g. agriculture)

- Update and review of forests legislation to address the issues that have been arising in more recent times and recognized as impediments to the realization of the sector potential
- Promotion of forest plantations to meet the various needs including the sustainable supply of biomass for energy
- Offer yet another opportunity for the involvement of civil society organizations in supporting communities in the delimitation of community lands in order to strengthen them. This will expand the areas of collaboration and lessons learnt between local communities and CSOs
- Increasing the sense of ownership by communities of natural resources, which will be reflected in their 'community agendas', action plans and partnerships between them and the private sector, including the government.
- Encourage and promote the establishment of associations as well as forest resource management committees in as many places as possible for the exploitation of firewood and charcoal with reforestation responsibility
- Better monitoring of forest operators by the government, with community involvement, to ensure that forest legislation is adhered to in practical terms. This will result in benefits for all and not only for the deviant elements of the society
- Increased awareness among community members and groups about the existing forest resources and their importance, which will translate into their active involvement to protect them
- Introduction of alternative activities to generate income for coal and firewood producers. Promotion of activities such as bee-keeping, aquaculture and other activities less harming to natural resources
- Introduction of improved/energy efficient techniques for coal production and use (good practices)
- Better water management through small scale irrigation systems with positive implications on the increase of crops and time availability by men and women throughout the year to engage in plant and animal production;
- Positive impacts of processing, storage and packaging facilities;
- Strengthening of Provincial and District governments' capacities to promote landscape management and value chains development, which can also be expected to generate positive "sustainability spin-off" effects at the local level;
- Significant positive impacts on natural habitats, as it will promote integrated sustainable natural resource management; restoration of degraded areas and promoting ecological corridors through improving forest connectivity.

Project positive externalities include: carbon sequestration from new forests, plantations and from the restored areas as well as from the improved land use practices (e.g., agroforestry, reduced tillage, vegetative cover), and reduced carbon emissions from forest cover loss. Restoration of critical natural areas is expected to increase water flow stability and reduce erosion to downstream water users. Restoration can also help create biological corridors, which serve as habitats for globally important biodiversity, and over time can increase tourism potential. As well as contributing to address climate change resilience.

8.4 Other potential impacts

, Mainly for plantations but also given the possibility to finance small irrigation schemes (small size earth dams[31]), the common impacts occurring under such operations should be considered and dealt with. Because of the strong association between this program and other with the typical responsibility of dealing with those interventions (e.g. ANLRMP, PROIRRI and MOZBIO) it is recommended that the ESMFs, PMPs and RPFs for those programs/projects be adopted for both characterization and management. Reference is made to: **soil; air emissions; noise; solid and liquid wastes; water quality and quantity; flora and fauna; protection of areas of special importance (conservation/protected areas and wetlands)**; **health and safety; pesticide use and management and hazardous materials management in general; land acquisition; socioeconomic in general; physical cultural resources.** A short description of such impacts is made below while Annex 7 presents a summary table of the impacts and related mitigation measures.

Soil

During plantations and/or construction of small scale irrigation schemes (most likely small earth dams), and respective construction camps, etc. soil erosion may be caused by exposure of soil surfaces to rain and wind during site clearing, earth moving, and excavation activities. Improper grading of land may also cause drainage and erosion problems. The resulting soil particles may be transported into surface drainage networks and rivers, thus, affecting the quality of natural water systems and ultimately the biological systems using the waters. Water may accumulate in excavated pits potentially leading to the breeding of insects and other infectious organisms, which could increase the prevalence of malaria and bilharzia. Accidental spill of oil or lubricant may infiltrate into the soil and enter surface or groundwater. Increased use of fertilizers and agro-chemicals (pesticides) will also affect soil quality.

Air Emissions

During plantations (but also some agro-forestry activities) and/or the construction of small scale irrigation schemesimpacts are usually associated with the release of dust generated from land clearing, excavation and movement of earth materials, cut and fill operations, contact of construction machinery with bare soil, and exposure of bare soil and soil piles to wind. The use of construction equipment and power generators is expected to release exhaust related pollutants such as carbon dioxide (CO2), nitrogen oxides (NOx), sulfur oxides (SOx), particulate matter (PM) and hydrocarbons (HCs). Agro-processing facilities can cause air pollution. The air emission standards in the applicable World Bank Group Agribusiness and Food Production Environmental, Health and Safety Guidelines, as well as the General Environmental, Health and Safety Guidelines need to be applied. In construction sites, the cleaning and rehabilitation of fuel oil tanks in oil storage facilities may generate volatile organic compound (VOC)

[31] Please follow recommendations of FAO Manual on small earth dams (2010).

emissions. For small operations as the ones expected under Project air emissions during rehabilitation/construction and operation phases tend to be confined to the immediate vicinity of the rehabilitation/construction and operation sites and will have insignificant impacts on air quality. Adequate preventive, design and management measures will suffice to prevent such emissions from being harmful to people and surrounding biophysical setting.

Noise

During plantations and/or construction/ activities related to small scale irrigation schemes, and respective construction camps, etc., noise may be caused by the operation of pile drivers and demolition machines, earth moving and excavation equipment, generators, concrete mixers, cranes as well as fuel oil tank erection and pipe laying works. The increased noise level may impact on construction workers and nearby residential areas. However, most of the impact will be limited to the works' implementation phase and will end when the works are complete. Noise levels may not exceed 55 dB during day time and 45 dB during the night in residential areas and 70 dB in industrial areas during all times during the day and night.

Solid and Liquid Wastes

Solid and liquid wastes will be produced during planatations and/or construction of small scale irrigation schemes, and respective construction camps, etc. solid and liquid waste needs to be managed. Non-dangerous wastes can be disposed of in urban landfills. Hazardous wastes, such as used oils need to be disposed in an environmentally sound manner. They are normally disposed off through a contractual arrangement with the oil suppliers, who will take the waste oils away for recycling.

In construction camps the rehabilitation of fuel storage facilities may involve the removal of contaminated soils around fuel dispensers, piping, and tanks. Depending on the type and concentration of contaminants present, such soils may need to be managed as hazardous wastes. In addition, bulky, inert and contaminated solid waste items are likely to be generated during the rehabilitation of fuel storage facilities such as damaged tanks. If improperly managed such wastes may constitute an environmental problem. These facilities will need to be removed and disposed of in an environmentally sound manner by the contractors.

Water Quality and Quantity

Due to plantation operations and/or construction of small scale irrigation schemes, and respective construction camps, etc. surface water pollution may result from uncontrolled discharges into freshwater or brackish water rivers. Accidental spills of oil, polluted runoff from polluted areas and sediment transport. The latter impact is particularly significant when rehabilitation and/or construction activities occur within or in close proximity to surface water such as in the case of the rehabilitation and/or construction of heavy fuel oil supply facilities (not foreseen). Polluted water flowing into surface water bodies could impact the aquatic organisms and affect the quality of life of downstream water users when river waters are involved. Many people are still using river water as a source for drinking water. Groundwater contamination may occur from percolation of oil and lubricants into soil. Nevertheless, waters disturbed by rehabilitation and

construction activities are likely to recover when sediment or other pollution is controlled and natural processes are permitted to replenish. Agro-processing facilities can cause water pollution. The effluent standards in the applicable World Bank Group Agribusiness and Food Production Environmental, Health and Safety Guidelines, as well as the General Environmental, Health and Safety Guidelines need to be applied.

As regards water quantity the issue of environmental flows is revisited. There are many formulas suggested by experts for the purposes of calculating the environmental flows. Most of these methods rely on information contained in the water flow series (history) related with a given section of a watercourse, in order to establish a minimum flow rate. The methods, which tend to use the average daily flow in a natural system (not monthly average flows as most methods based on hydrological records) comprise in the methodological approach a set of hydrological concepts covering different and important aspects of ecological management of rivers that in general establish a "flow regime of ecological maintenance" in order to create rational management proposals for the conservation of ecosystems in regulated rivers. Without going into much detail it is suggested that the matter be taken up in the later stages of the hydrological and environmental studies in order to arrive at an equation that will be suitable to the different interventions to be carried out. In close collaboration with the ARAs (Centro Norte and Norte) MASA/INIR (the Developer for small and medium scale irrigation) should be responsible for ensuring that this aspect is considered adequately in each and every subproject. The same applies to the transport and circulation of sediments. It will be fundamental to establish and respect the requirements for sediment transport and circulation that are essential for maintaining the health of surrounding ecosystems. These, however, will need to consider that in most cases the water management systems to be built and/or rehabilitated will be small in size. Experts also agree that for small systems complex methods of calculation of environmental flows have little or no effect.

Flora and Fauna

Plantations and/or construction of small scale irrigation schemes, and respective construction camps, etc., taking place in or close to water bodies stream pollution by sediments from construction activities often consists of suspended and settable solid particles that may coat, bury, suffocate or abrade living organisms such as eggs, larvae, fish, etc. Many aquatic invertebrates and fish may undergo changes in population density and community composition if high concentrations of suspended solids occur. Aquatic vegetation may be adversely affected by a reduction in photosynthesis due to high turbidity. Dredging may also increase turbidity and sediment load and reintroduce into suspension bottom sludge trapping toxic precipitates. The toxic sludge may be ingested or concentrated in freshwater or marine plant and animal species and biologically magnified in the food chains.

Accidental oil spills in aquatic ecosystems can cause significant mortality in aquatic organisms. These spills need to be prevented at all means by locating fueling and machine maintenance stations at least 100 meter from rivers.

The installation of construction camps and the alignment and rehabilitation of feeder roads in and around forest areas shall avoid the clearing of tall trees within the rights-of-

way/corridors. Therefore, construction activities may result in loss of forests patches or fragments and plant cover, disturbance and loss of fauna habitats, weakening and degradation of soils, disturbance of the natural landscape and morphology. Thus, the adequate selection of the location of a facility or the right of way can significantly reduce impacts on biodiversity. The losses of trees need to be compensated in the same area, commonly the principle shall be two or three trees planted by each tree loss, adequate species shall be chosen, such as native ones.

The project area comprises two areas of special conservation interest, i.e. Quirimbas National Park and Gilé National Reserve. Development activities near these areas and other areas of particular forests and wildlife wealth and diversity need to be planned and executed carefully. Depending on the sensitivity of the areas in which developments will take place the following measures, but not only, should be adopted:

(i) cutting existing natural vegetation should be avoided to the maximum and be limited to the minimum necessary;
(ii) any activity of vegetation removal must be authorized in advance by the competent environmental agency, especially to ensure destroying vegetation of any special value where it can be present;
(iii) large trees and fruit trees and those that serve as shade or have landscape value should be preserved whenever possible, provided that they do not offer security risks, due to their state of degradation or that of the soil;
(iv) shrubs must be preserved to minimize soil erosion;
(v) in the areas for deposits of various materials during construction and even during operation, shrubs should be maintained;
(vi) where possible, seed collection should be performed in order to preserve the species object of any form of disturbance intervention. This has the potential to secure necessary inputs for environmental compensation by way of replanting, which already has poor in the project area;
(vii) deforestation through the use of standard tractors or blades should be strictly prohibited. The use of fire should not be admitted in any phase of the work;
(viii) the use of herbicides, defoliants or any types of chemicals should be prohibited regardless of their degree of toxicity, for logging purposes or any purpose in the reserve areas, and access roads.
(ix) compensation measures such as three trees planted for each tree loss, as a good practice principle shall considered whenever cutting threes is foreseen due program activities inside these two conservation areas (QNP and GNR).

On the ground activities will only take place at QNP, agro-forestry ones, only where park approved land use management plan allows, therefore entailing minor adevrse impacts on biodiversity. No on the ground activities are expected or foreseen for GNR.

It is also noted that these areas have suffered significant human influence during the war and post war and are in need of special attention. It is to be expected that under this Project the areas will enjoy their rightful status with a view to play their role. WB and GOM requirements for managing those areas in a sustainable manner will have to be adhered to in all Project interventions. A site-specific list of protected species, including those in the IUCN red-list should be compiled and presented as a standalone list to be used against the various project interventions.

Health and Safety

Safety issues may arise during plantation operations, agro-forestry activities and/or the construction phases of eventual small irrigation schemes if community's access to works' sites is not controlled. People may be injured by construction machinery or may fall in open trenches.

Health and safety measures at the construction sites, as described in the World Bank Environmental, Health and Safety Guidelines need to be applied and enforced by the contractors. These include the wearing of protective clothing, masks, construction site boots, helmets, gloves and others.

Pesticide Use and Management

As highlighted under Subchpater 9.7 of this ESMF, the possible and expected expansion of the introduction of advanced agriculture and agribusiness development associated with Rural Development and MozFIP/MozDGM has a strong potential for an increase in pest populations and subsequently a raise in pesticide usage to control them, as well as an increase in the use of chemical fertilizers across the agricultural cycle. Any increase in pest populations may be detrimental to agricultural productivity or human/animal health, which in turn will increase the dependency on pesticides. Any subsequent increase in the use of chemicals has the potential to cause harm to users, to the public and to the environment

The general use and management of pesticides including transport, storage and re-use by women, illiterate and people without strong and guided tradition of managing these products including extension workers and other agricultural officers that are not adequately skilled to assist local farmers in the use of the same products can be associated with a multitude of risks to the users themselves and the social and natural environment.

The management measures foreseen in the IPMP need to be thoroughly applied to prevent any hazards from happening in the course of project implementation.

As a way of meeting the requirements of the national and World Bank ESIA/ESMP and RAP laws, regulations policies and guidelines all phases of the Project including those that will come after ESMP/PMP and PF approval should continue to make concerted efforts to derive benefits from public consultation and involvement.

Land Acquisition

Land use planning: In compliance with the Land Use Planning Law (Law n.º 19/2007 of 18 of July) and its respective regulation the districts have finalized the preparation of their district and inter-district land use plans, while towns and cities and respective autonomous governments including municipalities work on urban plans within the areas under their jurisdiction. In line with the law, the plans are aimed at:

(i) guaranteeing the right to land occupation for people and local communities;

(ii) re-qualifying urban areas, which due to a combination of factors, including the war that ended in 1992, have been growing in an unplanned way in many places;
(iii) identifying and enhancing capabilities;
(iv) preserving the ecological balance of soil quality and fertility;
(v) ensuring compatibility and coordinate environmental and social policies and strategies and socio-economic development;
(vi) optimizing management of natural resources; and
(vii) managing land conflicts.

It is also to be expected that the formulation of the NLUP to be doe in the course of this project will have significant implications in the updating of the existing PDUTs. These land use plans are important instruments in deciding the siting of interventions including those expected to fall under the Project. The Project should endeavor to support the smooth completion of the land use plans as part of the process of deciding the best location of the various interventions as highly relevant guideline. Land Use Planning falls under MITADER and "Land Delimitation and Titling" foreseen under MozFI/MozDGM will largely relay on local land use plans. The Land Use Planning Department at all levels will have to be involved in the updating of the local land use plans as a way of best implementing all MozFI/MozDGM interventions that have land acquisition implications. Annex 2 of this document presents the status quo of PDUTs in the project area, it shows that with the exception of Gurué the other 15 districts in the project area have their own land use plans.

It should also be noted that even where district (PDUT) and urban (PPU and PP) exist in some cases the quality of such instruments is not adequate. Assistance might be needed to bring them up to the required standard. This will be of particular importance for MozFI/MozDGM given its strong emphasis on land and forest demarcation and increased land tenure systems approach. Where applicable, at least at National Land Use Plan, Strategic Environmental and Social Assessment procedure shall be undertaken to the land use plans in order to better identify and integrate environmental and social concerns, particularly addressing community vulnerable groups.

Socio-Economic

The rehabilitation and construction phase will generate a number of short-term job opportunities for local people, as well as new opportunities to improve livelihoods for local communities and reduce poverty.

If adequate measures are not put in place, there will also be some potential negative socio-economic impacts, especially related to loss of land through the wrong selection of investors (land-grabbing) and/or superficial consultation by investors and even within communities so that the less powerful and less heard members of the community may lose access and use of resources. These impacts may be increased where individual DUATs are created for Project investment inside community delimited areas; experience has shown that relationships between individual title owners, and their relations with the 'host communities' are much more difficult to manage if no prior consultation and agreements with communities are reached where resources are jointly used with joint rights. There will be no compensations as the participation on MozFIP and MozDGM is based on voluntary agreements.

There is also a potential risk of disturbance of physical cultural resources, and the potential negative impact of the influx of external workers, including foreign workers.

Feeder road upgrade and maintenance; rural bridges; small and medium scale irrigation schemes; storage facilities; and other types of priority infrastructure may cause damage to cultivated crops (depending on how and when the land is taken from farmers to be passed on to the Project/subprojects and other related initiatives), housing components (e.g. fences, walls, etc.) informal businesses (kiosks/vending stalls and barracas), including on components of other public and private utilities (e.g. telecommunication and electricity poles along the roads). This could be potentially associated with social problems such as the loss of houses and structures on the land, and facilities, and the potential negative impacts on livelihoods of the communities who lived on the land or used it for cultivation and other daily activities.

At the social level, there could be increased tensions between farmers with regard to land issues or between pastoralists and farmers related to wandering livestock. In some of the districts and/or specific areas mainly around towns and cities this is already a serious problem, which, if not adequately managed, could get worse as Project progresses.

Activities that may also result in negative impacts are:

- the use of Genetically Modified Organisms (GMOs), which would make farmers for 100% dependent on multi-nationals and could have other negative impacts on poverty levels and health;
- the introduction and adoption of innovative practices (cultural itineraries, post-harvest practices), e.g. through the increased use of fertilizers and pesticides;
- support to semi-industrial processes and packaging, e.g. increased use of antibiotics to control diseases.

Overall, the project activities could have negative impacts on certain aspects of local livelihoods, housing, social and economic infrastructure and natural resources, not only because of the facilities and infrastructure that will be provided, but especially because of the influx of local, regional and even international investors and workers.

The environmental and social risk factors and challenges of the program will be: (i) unauthorized occupation (and non-consensual) of land belonging to local people; (ii) increased population, due to an increasing influx because of the economic boom in the region, which will result in increased needs of land; (iii) work conflicts and disputes for work between local people and people from other parts of the country and/or outside the country; (iv) the likely widespread of STIs including HIV/AIDS.

In addition to agriculture and housing land as described above, the influx of additional agricultural investors and of an external work force also has the potential to result in the need of increased infrastructure for water supply, sanitation, schools and health centers.

There will be no compensations as the participation on MozFIP and MozDGM is voluntary and based on voluntary agreements between parts.

Physical Cultural Resources

There is also the potential for the program activities to interfere negatively with sites of cultural, religious or historic importance (e.g. family and community cemeteries and other sacred places). Upon discovery of graves, cemeteries, cultural sites of any kind, including ancient heritage, relics or anything that might be or believed to be of archeological or historical importance during any stage of project development, such findings should be immediately reported to the LMU in order to ascertain the measures to be taken to protect such historical or archaeological resources. All forms of inappropriate removal/disposal should be avoided.

8.5 Cumulative Impacts, Climate Change and Gender Issues

Natural resource activities at different spatial and temporal scales have cumulative effects on ecosystems and biodiversity that are not always easy to understand and measure. This has implications in establishing management measures. Usually this is also exacerbated by the scarcity of information about the baseline conditions or ecological thresholds of ecosystems and how cumulative impacts affect ecosystem resilience.

Cumulative impacts describe spatially or temporally accumulated changes that result from the disturbances of one or more resource sector activities. The changes may be positive or negative and withstood by any number of wildlife and ecosystem elements in a manner that may be additive or synergistic, direct or indirect, continuous or sporadic. Cumulative effects of forestry interventions tend to be reflected on air, soils, water, aquatic organisms, and wildlife. They can also be felt in the social and economic sphere.

Ideally for each subproject the following should be done: (i) definition of goals, indices, and landscape indicators; (ii) conducting impact assessment; and (iii) preparing the final report. Weaknesses in the knowledge system described in many sections of this document, especially in what regards the definition of the baseline and indicators may make it difficult to put together all these elements in a way that they can form a useful and coherent tool.

This emphasizes the importance of using land use plans and resource inventories as planning and management tools to avoid/minimize the aggravation of cumulative impacts of multiple interventions in the same area and in different moments as well as to provide useful monitoring tools. ESIAs/ESMPs should also be used to complement the broader land use and resource use plans to achieve the same objectives. Using the land and resource use plans the provincial and district governments should endeavor to strengthen collaboration between developers and developments.

There is enough evidence and reasons to believe that the impact of the subprojects Projects under this program will be limited, with local character and confined mainly to the installation/construction phase. However, because they will take place near other interventions initiated by all sorts of operators/investors, i.e. household, micro, small, medium and large in areas such as forests, agriculture, tourism, infrastructure, gas (particularly in Cabo Delgado) etc. they will have the potential of contributing to increased significance for the receiving natural and social environment. Inside forestry sector plantations and restored areas will increase; at first glance there may also be a

probability to decrease the availability of natural habitats due to more plantations and agro-forestry, but on the other hand by promoting more efficient resource use practices of wood harvesting and processing, agriculture production and charcoal production the program is ultimately also saving important areas of natural habitats from reduction and degradation, such as forests or other ones, which is a positive effect. Amongst other sectors, specially when considering the Gas sector expansion in Cabo Delgado, demand for space and other resources such as wood energy, shelter, etc. will increase pressure on forest logging and degradation; infrastructure such as roads, bridges, etc. may also contribute to forest losses and fragmentation; this program, with all its activities, aims to bring assistance and support to a more sustainable use of resources at forestry, agriculture and landscape level, trying to put forward tolls to slow down present and future negative effects on forest reduction and degradation.

The eventual increased magnitude of some effects would in most cases have to do with the other projects and not with the Program. However, what matters is that if adequate measures are not taken there could be significant pressure on land, soil, water, forests, wildlife, air, etc., which could exacerbate social conflicts and the degradation of the ecosystems.

CO2 emissions and control are of particular importance in this regard. As stated above and described in the Program's Project Appraisal Document (PAD), under the recent INDC Mozambique has committed itself to building resilience to climate change, particularly in rural areas, and contributing to mitigation, particularly by reducing deforestation and promoting sustainable land management practices in agriculture. The country made targets for total reductions of about 23MtCO_2 from 2020 to 2024 and 53.4 MtCO2 from 2025 to 2030. Under the scope of the AFR100 launched in 2015 in support to the Bonn Challenge for restoration of degraded land, the GoM has committed to restoring 1 million ha of degraded land by 2030. This will need to be seen from a cumulative point of view instead of focusing on a project by project basis. Adequate measuring and monitoring as part of an overall management of the environment will need to be adopted with a particular link to the project's MRVs.

This is more one reason to advocate for adequate land and natural resource use planning and working together will all the entities and programs/projects that deal with this crucial aspect. It is a known fact that a good land use plan and siting of interventions goes a long way towards achieving impact avoidance and minimization. This is specifically true in the case of Mozambique and the project area, which is known for being well endowed in terms of natural resources and relatively low population densities.

Adequate coordination between the Program and other locally based projects including strengthening educational actions and active law enforcement against negative practices will constitute an added cumulative benefit.

Combined, all the measures related with adequate land and resource use planning and coordination, will contribute to reducing the project area's vulnerability and increase its resilience in relation to climate change and general degradation of the environment.

In regard to the program's contribution to increasing the role of women's potential in society it should be stressed that in the short, medium and even long term the program

encompasses elements which will help to enhance the role of women and vulnerable groups including the youth in access, use and management of natural resources through actions such as land use planning with attention to women and vulnerable groups, training and capacity building and dissemination/adoption of alternative technologies including those related with more effective use of biomass, entrepreneurship, and business opportunities, etc.

In order to better assess cumulative impacts and integrate environmental and social risks at land use plans level, strategic environmental and social assessment shall be undertaken, specialy at the national land use plan level.

98.6 Measures to mitigate negative impacts

The main adverse impacts foreseen have to be mitigated, as an example of mitigation measures to be undertaken, amonst others, tt is also recommend, in order to mitigate water resources and its biodiversity from pollution coming from sediment and excess of organic matter from plantations, to establish an adequate buffer zone to each river/stream potentially impacted by the investment, in this way river/stream margin's integrity are kept and its riparian vegetation will work as soil erosion protection, a "wall" for the excess of organic matter flowing into the water system, shelter, feeding source, reproduction habitat and ecological corridor for biodiversity (amphibians, reptiles, birds and mammals) and may be able to process or modify some chemicals before they reach the water system. If wide enough buffer zones (depending on the size of the river/stream) are kept these impacts can be significantly mitigated.

Therefore a preliminary list of measures to be adopted to mitigate potential and significant negative impacts of the program is presented in the table below.

Table 9: Measures to mitigate negative impacts in typical forest projects

Potential negative impacts	Mitigation measures
Forests development including land and forests use planning	
Land and forests resources planning and use: redefinition of land use plans and of the operational aspects around land defining what is done in which land and forests resources by whom, when, with which technologies Restrictions in access to and use of resources and possibly disruption of local livelihoods and markets as well the economy in general including food shortages Increased forest and land degradation through ill planned forest operations, particularly plantations	▪ Plans to be based on solid and participatory inventories of resources involving local communities and authorities; encourage the development of community land-use plans, 'community agenda' and where appropriate for communities that become involved in forest projects, dynamic community development action plans (CDAP) that are inclusive and promote identification of various alternative means of livelihoods development, potential benefit sharing options with investors and preferred priority project activities. These CDAP will be developed using the same procedures and participatory principles as those described in the MozBio PF with the MozFIP addendum for people potentially risking losing their subsistence use of natural resources in PAs. ▪ Legal advice and representation for new rights-based resource management activities and for mechanisms to enable communities to seek redress against what they regard as unfair practices by investment partners. ▪ Careful planning, implementation and monitoring in order to harmonize all interests ▪ Harmonize short, medium and long term interests of all groups and support people, households and communities to develop small-scale, biologically diverse agroforestry systems, forest gardens and tree plantations which provide a diversity of goods and services to the community, including fuelwood, medicinal plants, soil fertility, wildlife, and construction materials and seek Free, Prior and Informed Consultation from communities before any intervention ▪ Adoption of the "mosaic" approach and/or of other similar approaches that are already being tested and applied in Mozambique and other parts of the world could be a possible solution for this potential problem. The approach allows for a good integration and limited disturbance of different land and forest uses such as commercial plantations and exploitations, agriculture, timber, charcoal making, firewood, and for a wide range of non-timber forest products, including medicinal plants, food reserves to cater for times of food crises that are very common in the country's rural areas, due to droughts, floods and other natural and social events ▪ Areas below 200 m in general have been subject to extensive and practically permanent transformation including the general devastation of rich natural miombo forests. Land and forests use plans will determine which areas can be restored and which will be for other uses (plantation, plant and animal production, etc.). A combination of education and training and law enforcement will ensure that what is defined is adhered to in a consistent manner ▪ A pre-assessment system to determine that operations adhere to a time bound phased action plan acceptable to the Bank for achieving certification. A parallel work area will implement

Potential negative impacts	Mitigation measures
	independent certification as soon as the program gets underway ▪ Under the planning process for some Land use plans (such as national, provincial, multi-districtones), Strategic Environmental and Social Assessment shall be considered, not as true mitigation measure but rather as part of the planning process design, a tool to provide environmental and social contributions to planning processes.
Habitats and biodiversity alteration and loss: forests plantations (and timber harvesting) activities are usually accompanied by the replacement of the existing vegetation cover with native and/or non-native and often invasive species	Intentional or accidental introduction of alien, or non-native, species of flora and fauna into areas where they are not normally found can be a significant threat to biodiversity, since some alien species can become invasive, spreading rapidly and out-competing native species. Forest operators should not intentionally introduce any new alien species not currently established in the region of the project. Under the current stage of the country's development of its productive forces its ability to understand and deal with the multitude of interactions of invasive species, disease vectors, and pathogens with other drivers of ecosystem change to human health and economic well-being is limited. The best way of dealing with the phenomenon is taking precautionary measures from the onset and avoid/limit such practice as best as possible. ▪ All planting interventions must adhere to well designed and informed land and resource use plans ▪ Design planting to include both exotic and indigenous plants in the right proportions and location and based on assessment designate areas for different interventions and which operators can be allowed to do what, with which technologies, when, etc.; ▪ Avoid environmentally sensitive sites and unnecessary exposure or access to sensitive habitat; conduct and extensive consultative and participatory process in the selection and use of such sites with all relevant stakeholders and particularly local communities; ▪ Usage of invasive non-indigenous species is prohibited; ▪ Impacting on critical natural habitats is prohibited; ▪ Consider biodiversity plots within tree plantations and along waterways and streams within the plantations; Clearance of plantation plots will be sufficiently phased to reduce the impacts of vegetation removal on terrestrial flora and fauna. ▪ Provide adequate training and capacity building to disseminate knowledge and skills about the best practices (including study tours and visits to successful operations) ▪ Set up adequate monitoring and supervision of approved and recommended practices for each specific area ▪ Consider a Negative List of species that shall not be used due to their alien and invasive

Potential negative impacts	Mitigation measures
	performance. (to be provided at project implementation manual preparation stage) Any need for clearance of non-critical natural habitats, under plantations and agro-forestry activities must be followed by a mitigation (or rather compensation) measure of restoration of equivalent area of degraded areas with native species.
Water resources and water quantity and quality: plantation trees grow rapidly, absorbing nutrients and water from the soil Forest operations may negatively impact water quantity and quality of streams, water bodies, and ground water resulting in seasonal hydrologic changes and potential negative impacts on downstream river biota, communities, and fisheries. Impacts to water quality may result from erosion and accumulation of sediment and organic debris in water bodies (e.g. at stream crossings of forest roads and skid trails); chemical contamination (e.g. from use of pesticides, fuels, lubricants, and coolants) Eventual small irrigation shemes	Promote buffer zones along all the local river and streams to ensure their integrity and protection of other aquatic life forms. The buffer reserves will serve as natural filters for surface runoff from the plantation areas. The reserves will also play an important role in protecting the banks of the waterways from channel erosion. The reserves will also create habitats for biodiversity, fauna ecological corridors and aesthetic scenes along the watercourse. These buffer zones wideness will depend on the water course dimension (bigger buffer zones for bigger river/streams) Relationships between forest operations and particularly plantations and water resources to be consistently and continuously managed. The regional water authorities (ARAs) need to be strongly involved in assessing the potential impacts including the cumulative impacts for each site and be given a strong voice in delineating management options. Cabo Delgado province has many areas with water shortage and require concerted vigilance. Mitigation measures for small irrigation schemes such as the environmental flow must be assessed, for instance following ARA recommendations; Avoid impacting on critical natural habitats, an HCVF assessment must be undertaken by service provider or the project safeguard specialist.
Soil: Soil erosion in forests may result from natural causes (e.g. wind and rain), timber harvesting operations, and from construction and use of road infrastructure	▪ Buffer zones for river/streams must be compulsory (a minimum distance to water course margin shall be defined) ▪ Existing riparian vegetation must be preserved from any kind of activity that implies its reduction or modification, except if the objective is its restoration ▪ Restrict the application of inorganic fertilizer to the period just after transplanting. ▪ The fertilizers will be applied around each tree in shallow rings to ensure that the fertilizer is available to the young transplanted trees. ▪ Fertilizers and their use will not be openly promoted ▪ Bio char may be introduced in selected plots ▪ Sensitive sites with high erosion risk will be identified. Those areas shall not be cultivated and will include hill-tops and very steep slopes having gradient of 25% or more. Vegetation of such areas shall be maintained to help control erosion as well as ensuring soil stability.

Potential negative impacts	Mitigation measures
	▪ Enrichment planting will be done in patches of degraded areas along these slopes
Alienation of local communities and people: there is the potential of alienating local communities and people by treating them as mere recipients and observers of the processes to be developed	People and particularly women, youth, local leaders, traditional healers and other community representatives need to be put in the driving seat in all aspects, i.e. community agendas and community development action planning, land demarcation, titling, selection of partners and of activities, access to job and business opportunities in the entire value chain, monitoring and evaluation and feedback. Strengthening the CGRNs and other CBOs locally, support their legalization so that they may enter into agreements with the Projects, and ensure the inclusiveness of vulnerable groups in the community decision-making forum, empowerment of Multi-stakeholders platforms. Development of community institutions to represent the interests of respective communities by service providers must ensure where possible, that such organizations are representative of different interest groups within each community, including in terms of gender, ages and different livelihood activities (traditional fishers, honey collectors, traditional healers, hunters, etc). In order to participate in co-management fora, service providers will train members of community institutions to effectively represent and promote the interests and development of their communities insofar as they are involved or aim to be involved in Project financed forestry and agroforestry activities. Work/job opportunities must benefit the direct affected people with adequate involvement of local authorities to better manage the influx of external workforce. Local training programs must also be selective in targeting its audience amongst the local affected people as priority
Resettlement (natural resources access restriction in designated PAs): management plans reinforcing actions to prevent or regulate the use of conserved forests in PAs.	There will be no displacement causing physical resettlement as identified in OP/BP 4.12 by activities suppored by MozFIP or MozGDM. Where economic displacement is unavoidable in relation to access constraints to PAs, activities should be conceived, and executed as sustainable development programs through a community development action plan. This plan should provide sufficient resources and means to enable the persons displaced by the project to receive project benefits. Displaced persons must be meaningfully consulted and given opportunities to participate in the planning and implementation of both the management plans that will constrain their use of natural resources as well as the plans and programs and to provide alternative livelihoods activities to ensure their well-being is equal or better than pre-project. There will be no compensations, as the participation on MozFIP and MozDGM is voluntary, voluntary agreements must me reached out. No RPF was prepared.

Potential negative impacts	Mitigation measures
Cumulative impacts: although limited in scope when combined with other interventions in the landscape and over time MozFIP/MozDGM can have significant positive or negative effects on the quantity and quality of air, soils, water, aquatic organisms, wildlife as well as on the social and economic lives of the people and entities living in the project area, also when combining our program impacts with the impacts from other foreseen projects, programs and/or infrastructure.	▪ Use the existing systems and tools to define baseline conditions or ecological thresholds of ecosystems to be used to identify, describe and assess the potential impacts of the various interventions on the receiving natural and social environment and later on to define, implement and monitor management measures ▪ Provincial/district governments should bring together all developers and developments and make them cognisant of each other as well as promote active forms of collaboration among them. ▪ Counteract knowledge limitations by making maximum use of land and resource use plans to have a more solid approach to deal with cumulative impacts at different stages of interventions in the landscape. ▪ Apply consistent monitoring systems and make adjustments in environmental and social management as issues come to surface.

The planning and implementation of mitigation measures will be under the guidance and responsibility of Program safeguards personnel deployed at central and provincial levels.

The operators (communities, individuals, MSMEs) and their contractors will be primarily responsible for the implementation of social and environmental clauses to be included in subproject design as well as environmental and social management plans or simply as precautionary measures for subprojects that will be exempted from preparing ESMPs. Where contractors will be involved (for more sizable interventions) these will adhere to the guidelines contained in the tender documents that will include ESMP and these will be part of their contractual obligations.

8.7 Pesticide Management in Agriculture and Forests

The planned expansion of the introduction of advanced forests and agriculture production and businesses under Program and other related projects (e.g. ANRLMP and MozBio) has a strong potential for an increase in pest populations and subsequently a raise in pesticide usage to control them, as well as an increase in the use of chemicals fertilizers across the forests and agricultural cycle. Any increase in pest populations may be detrimental to forests and agricultural productivity or human/animal health, which consecutively will increase the dependency on pesticides. Any subsequent increase in the use of chemicals has the potential to cause harm to users, to the public and to the environment. Evidence shows that although developing countries like Mozambique lag far behind developed countries in the use of pesticides they experience the highest number of pesticide poisoning due to poor regulatory, health and education systems.

A pest may be defined as any organism whose presence causes economic loss or otherwise detracts from human wellbeing and safety in general. The term covers a broad range of organisms (plants, animals and microorganisms) that reduce productivity of agriculture including forests. Pest management issues can be raised on a variety of smallholder and small-scale commercial agriculture sub-projects such as:

- New land-use development or changed cultivation practices in each area;
- Expansion of forests and/or agricultural activities into new areas;
- Diversification into new forests species, agricultural crops, particularly if these tend to receive high usage of pesticides;
- Intensification of existing low-technology forests and agriculture systems and their gradual substitution by high-tech and capital intensive systems including forests plantations.

Integrated Pest Management (IPM) based pest management is a mix of farmer-driven, ecologically based pest control practices that seek to reduce reliance on chemical pesticides. It involves: i) managing pests (keeping them below economic impact levels) rather than seeking to eradicate them; ii) relying, to the extent possible, on non-chemical measures to keep pest populations low; and iii) selecting and applying pesticides, when they should be used (rational use), in a way that minimizes adverse effects on beneficial organisms, humans and the environment.

This section presents the essential aspects of Integrated Pest Management Plan (IPMP) to manage potential pest problems that may arise in the course Program implementation

and help ensure that the use of all pesticides, insecticides, herbicides, chemical fertilizers and other chemicals associated with the Project will be handled appropriately and in accordance with World Bank Operational Policy 4.09 on Pest Management. According to this policy the PMP is based on the Integrated Pest Management (IPM) approach, which promotes good agricultural practices through the use of responsible and sustainable activities that will result in a rational and a reduction in pesticide use.

The IPM focuses particularly on the following product systems to be developed by the Project, namely:

Forest-based

- Timber from natural forests
- Timber from planted forests

Non-Timber Forest Products (e.g. natural oils; honey, mushrooms, fruits, plants for medicines).

Agricultural based:

The value chains to be promoted in agroforestry systems will be maize, cassava, sesame, peanuts, soybeans, beans (cowpea, butter and Boer beans), cashew and others that are identified as potential for the objectives of the program. Legumes (peanuts, soybeans and beans) will be used in rotation/intercropping that in addition to food security and revenue source will also be used to improve soil fertility (vegetation cover and nitrogen fixation). The latter intervention already addresses important aspects of IPMP.

8.7.1 Local Regulations and Practices

Mozambique's pesticide legislation is relatively spread over a series of laws and regulations in which two instruments occupy central position, namely ***Ministerial Diploma 153/2002 of 11 September 2002*** (Pesticides Regulation) and ***Decree 6/2009 of 31 March 2009*** (Pesticides Management Regulation). The table below makes a summary of the main contents of these instruments and of other that are relevant for the subject:

Table 10: Relevant Mozambican pesticide laws and regulations

Laws and regulations and brief description	Applicability to the project
Ministerial **Diploma 153/2002 of 11 September 2002** (**Pesticides Regulation**) This is a joint diploma issued by the Ministries of Agriculture, Health, and Environment for the management and use of pesticides in Mozambique. It stipulates that the use of pesticides is subject to their prior product registration with the Ministry of Agriculture. The Ministry of Health establishes permissible levels of pesticide residue in food stuffs based on FAO guidelines. Pesticides must be clearly labelled and identified and be color-coded depending on their level of toxicity. The use, storage, handling, sale and removal or destruction of pesticides may be subject to environment licensing	It is applicable as many of its provisions are in line with the WB guidelines on pest management including integrated pest management
Decree 6/2009 of 31 March 2009 (Pesticides Management Regulation) The objective of the Regulation is to ensure that all processes that involve working with or handling pesticides are not performed in detriment of the public, animal and environmental health The Regulation applies to the registration, production, donation, trading, importation, exportation, packing, storage, transport, handling, use and elimination of pesticides and adjuvants, by individual or collective persons, for agricultural, livestock, forestry, public health protection, domestic and other purposes Among other aspects the regulation identifies the institutions involved in pesticide management, sets up bodies with responsibility of performing specific tasks in the area such as the (i) Technical Assessment Committee for Pesticides Registration; and the (ii) Technical	It is applicable for the same reasons as those stated above

Laws and regulations and brief description	Applicability to the project
Advisory Committee for Agrochemicals It also provides and updates regularly (annually) the list of pesticides products that can be used in Mozambique. These are classified according to their toxic potential (Article 9). Out of the 188 registered pesticides, 109 are class III; 67 class II and only 12 class I (being Class I the most toxic ones)32. The Regulation also stresses that The companies or entities employing people for pesticide storage, trading, transport, application and elimination shall ensure continuing and updated training of their staff, including rules for combating fires, intoxication, first-aid, spills and other hazards. The companies are entrusted with the responsibility of training their staff with the government entities in the MASA being are responsible for the preparation and administration of the courses it also elaborates on the need for information dissemination and establishes limitations for pesticide advertisement	
Decree n. 18/2004 Regulation on Environmental Quality and Effluents' Emissions amended by **Decree No. 67/2010** (see below) The aim is to define environmental quality patterns for granting an effective control and management of pollutant concentration levels in environmental components. The annexed Regulation is composed of 26 articles and 6 annexes divided in six Chapters. It defines air quality standards and emission requirements, water classification according to the uses and related quality control requirements with special regards to potable water. Moreover, it rules on soil quality and noise emissions. The Annexes provide technical requirements and standards **Decree No. 67/2010** amending the Regulation on Environmental Quality and Effluents' Emissions amends articles 23 and 24 and Annexes I and V of the Regulation on Environmental Quality and Effluents' Emissions, related to taxes for special authorizations and new fines and sanctions for illegal activities. Annexes IA and IB deal new standards of air quality, atmosphere polluting agents and parameters for carcinogenic Inorganic and Organic agents. Annex V lists potentially harmful chemical substances	Applicable

[32] Article Article 51, of the Regulation on Toxicological Classification, stipulates that the Ministers supervising the areas of agriculture, environment and health define the criteria for the toxicological classification of pesticides, which shall comply with the international standards defined by FAO and WHO.

In general, at present pest and plant disease control in Mozambique is limited by a combination of lack of knowledge, equipment, supplies and finance. In general, smallholder farmers in the project area take various measures to minimize or avoid pest infestations such as weeding and application of insecticides and herbicides. Weed control is generally achieved through a combination of tillage-seedbed preparation by several passes of the traditional ox-drawn plough (or manually) and subsequent inter-row weed control cultivations in row crops. Comprehensive data on pesticides use are not available, but provincial officers in the subsector referred to Cypermethrin, Mancozeb, Cobox and Teodan, all under Class III (least toxic), as the main pesticides they use. These are also the pesticides mostly acquired and distributed by the public sector in critical moments.

Control of birds and wild animals (scarce in the targeted area) are mainly done by using the traditional way of scaring (the use of scarecrows is very common especially in cereal production areas), chasing and guarding of animals.

Box 1: Forests and pesticides in Mozambique

In forests the use of pesticides is even less prevalent and less known. The emerging plantation of Eucalyptus by Green Resources (North of Mozambique) and Portucel in the central region of the country, are the few somehow described experiences of establishment of plantations and use of pesticides. The huge plantations established by these organization require continuous sophistication of knowledge for successful management. Pest management is most required at level of seedling production and its management from the nursery to the final area of plantation.

The most common disease at nursery is denominated damping off, caused by excess of water resulting from irrigation. To prevent the *damping off* the use "Cupravit" fungicides in concentration from 300 to 600g/100 liters of water, is common. The "white ants" are part of pests and disease that attack the seedling in the nursery and at final location for plantation. The chemical products normally used to control this pest include "endussulfan" (35%) in the concentration of the 350 g/l, "fipronil" at concentration of 150 ml/10 liters of water. Some experiences of fipronil application for white ants control in the forestry plantations in Mozambique (for example in Niassa and Manica provinces), has shown to be effective and efficient in concentrations of 350ml/200l of water, correspondent to 1 liter of fipronil for each 3 hectares.

It is also important to emphasize that in terms of chemical products, the forestry cultivation or management, require soils fertilization through application of NPK composition. The quantities of inorganic fertilizers recommend depend on the level of fertilizers existent in the soil.

These chemicals (pesticides and fertilizers) are available in the national market but not in huge quantities, as the establishment plantation businesses is still confined to a small group of enterprisers. These enterprisers also import these products from other markets to create enough stocks to ensure availability for immediate applications, when needed. Hence, there are collateral effects of using these chemical products, such as water contamination, alteration of soils biotic and structure, health problems for utilizers, and other environmental and social implications.

At present and considering several factors (reliance on natural forests, cost of chemical products against low ability to pay) local people and communities do not use any pesticides/fertilizers in forests operations. It is only in relation to other food and cash crops in agriculture that a limited number of farmers do so.

Data on pesticides use, poisoning and environmental contamination are often not available or are difficult to obtain, since no regular government system exists for systematic monitoring of the risks, but indications are that due to affordability

limitations these are not yet widespread but could be if the necessary measures are not taken.

It is under this context that the WB policies and guidelines on pest management become relevant and mandatory.

8.7.2 World Bank Policies and Guidelines

The World Bank policies and guidelines on pest management are led by two main documents, namely World Bank OP 4.09 Pest Management and BP 4.01 Annex B – Application of EA to projects Involving Pest Management.

When compared with WB policies and guidelines the GOM is assessed to have fundamental differences with the lack of a framework by the latter to deal with PM, being the most outstanding. The country's regulations mentioned and particularly the two pertaining to the agricultural sector focus on operational matters in detriment of defining and regulating the overall context under which pesticides should be integrated, considered and possibly used. The country does not have any integrated pest management or any organic production strategy. Partial IPM related aspects are referred indirectly when encouragement for using other pest control methods (e.g. biological, physical, etc.) and other precautionary methods in dealing with pesticides are endorsed. However, IPM as such does not exist as a standalone policy and regulatory instrument. Under specific contexts, this situation also carries the potential to be an open door for farmers and other operators in the agro-chemicals value chain to embark on poorly thought and poorly controlled market, which could have unwanted consequences.

Conversely, IPM is central to the WB approach. IPM can be defined as a mix of farmer-driven, ecologically based pest control practices that seek to reduce reliance on synthetic chemical pesticides. It involves (a) managing pests (keeping them below economically damaging levels) rather than seeking to eradicate them; (b) relying, to the extent possible, on non-chemical measures to keep pest populations low; and (c) selecting and applying pesticides, when they should be used, in a way that minimizes adverse effects on beneficial organisms, humans, and the environment. The WB policy calls for assessment of the nature and degree of associated risks, taking into consideration the proposed use and the intended users for procurement of any pesticide in Bank-financed projects. Under the WB approach it is a requirement that any pesticides that will be used, manufactured, packaged, labeled, handled, stored, disposed of, and applied be done per standards acceptable to the World Bank. This will be applied in the project's life cycle.

8.7.3 Pest Management Approach to be Adopted

To mitigate the potential impacts associated with uncontrolled proliferation of pesticides, specialy at plantations and agro-forestry activities, the general approach of the REDD+/FIP/DGM should be to keep pesticide use at a minimum or avoid it and ensure that any necessary use is intelligent, coherent and considered part of an IPM approach in line with OP 4.09 and BP 4.01 (OP 4.09/BP 4.01). The preliminary discussions with the stakeholders and assessment of the situation on the ground indicates that the formulation of a concise plan of action will need to adopt a staged approach. Under this plan a general outline is presented, which will need to be endorsed

by the project stakeholders and adjusted as more evidence is gathered. The final plan of action adopts the following essential stages:

Table 11: Indicative plan of action on pesticides management

Activity	Stakeholders	Objective/Action	Leading agency
Mobilization	DNAS, IIAM, DNEA, DPASA, SDAE Health and Environment Private sector, NGO, small, medium and large farmers	Formation of the Core IPM Team A national Workshop in the project area to identify agencies and individuals who will lead the formulation and implementation of the IPM for REDD+/FIP/DGM	Program assisted by DNAS
Diagnostic	DNAS, IIAM, DNEA, DPASA, SDAE Health and Environment Private sector, NGO, small, medium and large farmers	Take stock of the main issues affecting the subsector in the country and in the project area in particular Concise definition of the baseline Agree on the sequence of activities to formulate a plan of action and respective contents	REDD+/MozFIP/MozDGM as the convener DNAS as the leading technical department
Formulation of specific action plans	DNAS, IIAM, DNEA, DPASA, SDAE Health and Environment Private sector, NGO, small, medium and large farmers	Identification of specific issues and activities to be carried out in: ▪ IPM in general ▪ pesticide regulation per se, ▪ research, ▪ extension, and ▪ pesticide use	DNAS assisted by IIAM, DNEA
Implementation of action plans	DNAS, IIAM, DNEA, DPASA, SDAE Health and Environment Private sector, NGO, small, medium and large farmers	Separate and coordinated actions in: ▪ IPM in general ▪ pesticide regulation per se, ▪ research, ▪ extension, and ▪ pesticide use	Program coordination In line with its role and responsibility each agency will work in its area, i.e. regulation, research, extension, IPM and pesticide use

Activity	Stakeholders	Objective/Action	Leading agency
Monitoring and evaluation and lessons learned to feed into the project and the subsector in general	DNAS, IIAM, DNEA, DPASA, SDAE Health and Environment Private sector, NGO, small, medium and large farmers	Continuous monitoring, introduction of corrective measures where needed, drawing of lessons learned and feeding back into the project and the IPM in general	Program assisted by DNAS

The Objectives and main action of an IPM approach are presented below in order of sequence:

Table 12: Objectives of an IPM

Main areas of and issues for intervention	Actions required	Responsibility
Change current pest management practices	(i) Allocate adequate resources to implement National Plant Protection Policy (ii) Increase IPM awareness amongst policy makers and farming community; (iii) Abolish free distribution of pesticides to farmers and promote safe handling and application of pesticides.	Program/DNAS
IPM mainstreaming	Embed IPM into the project key components of: (i) production and commercialization of smallholder agriculture; and (ii) make it a practical element affecting all aspects of extension and training	DNAS
IPM research and extension	(i) Strengthen IPM research at MASA/Relevant Research Institutions (ii) Strengthen IPM extension (iii) Strengthen collaboration between MITADER and MASA for field implementation of IPM (iv) Involve the Private Sector, NGOs and Communities in promoting IPM activities; (v) Implement participatory approaches in IPM for farmers to learn, test, select and implement IPM options to reduce losses due to pests and diseases	IIAM/UEM DNEA DNAS IIAM/UEM/DNEA
Increased use and reliance on chemical pesticides	(i) Promote adoption of IPM practices through farmer education and training (ii) Develop strategies to move farmers away from pesticide-dependent pest control practices and promote use of biological control	Extension services in coordination with research including applied research on traditional practices/on farm demonstrations
Enforcement of legislation	(i) Strengthen institutional capacity of MIC (to the extent needed) and	DNAS/Program

Main areas of and issues for intervention	Actions required	Responsibility
	MITADER to effectively supervise compliance with pesticide legislation	
Environmental hazards of pesticide misuse	(i) Create public awareness of the hazards of pesticide misuse through public awareness campaigns (ii) Regular assessment of pesticide residues in irrigated agricultural production systems and in harvested produce. (iii) Monitoring of pesticide poisoning in the farming and rural communities.	DNAS/Program
Increase in vector populations and of vector borne diseases such as malaria	(i) Collaborate with other IPM programs in the region. (ii) Establish strong collaboration between Africa Stockpile Program and national malaria control project (iii) Conduct regular vector surveillance.	DNAS/Program
Monitoring	(i) Establish a participatory monitoring system that provides early warning on pest status, (ii) identify at what level economic losses will occur, (iii) identify main pest species, beneficial, regular and migratory species	DNAS/Program

A significant factor that can be expected to work as a constraint in the adoption of IPM practices could be the attitude that pesticides are modern "medicines" that provide fast and effective cure for all problems affecting crops. Therefore, the success of any IPM strategy depends not only on the ability of the Project to define an IPM program and link it with strategic partners (private companies or NGOs), but also on the capacity of the different actors (government, extension service, farmers, private organizations, strategic partners) to fulfill their commitments in these areas. The latter requires considerable investment in training and capacity building in several topics of IPM and the implementation of this PMP as referred to in Chapter 11 – Training and capacity building requirements, of this document.

It is recommended The PMP and related IPM for the project will be managed and facilitated by the Hired Service Provider (HSP). The HSP will be responsible for

facilitating the main stages of the process, i.e. mobilization, participatory diagnostic, formulation of the detailed plan of action involving the main actors and main areas of intervention that have been identified, implementation, monitoring and evaluation and feedback to the system through lessons learned that are valid for the project and other similar interventions. The HSP will work in close collaboration with a focal point for IPM under Program stationed at the DNAS. All together should liaise with relevant agricultural operators and services including research and extension services in the fulfilment of their objectives.

Important training aspects could be done with lead farmers or involving experienced farmers. The use of lead farmers is part of the extension system in Mozambique already used in other areas of demonstration. This should be replicated accordingly to the IPM. The success of IPM will depend largely on developing and sustaining institutional and human capacity to facilitate experiential learning for making informed decisions in integrating scientific and indigenous knowledge to minimize potential detrimental impacts of the use of pesticides. Poor communication between farmers and extension workers and other agricultural and government officers could lead to poorly-targeted research or to poor adoption of promising options generated by research. Ideally some of the training should be led by farmers themselves targeted to other farmers. Additionally, experience exchange among different farmers' communities could prove essential for the outcomes intended with this plan.

8.7.3.1 Possible Interventions in Integrated Pest and Pesticide Management

Based on issues that have been identified in previous chapters, this section provides a general outline of various types of pest control strategies known and applied in Mozambique and that can be further investigated and disseminated in wider areas, including the project area, based on evidence. These include a brief review of techniques for biological control, cultural control, chemical control, quarantine and physical or mechanical control, chemical control and botanical control.

8.7.3.1.1 Strategy for Intervention and Pesticide Management Action Plan

Biological Control

Biological control involves the use of biological agents and predators to control pests and diseases. The method is usually successful in crops like cassava and involves conservation or optimization of the impact of living agents that already exist in the ecosystem, artificially increasing the number of natural enemies in the agro-ecosystem, introducing the new natural enemies' species where these were non-existent.

Evidence shows that every living organism has its natural enemies and diseases, which keep its population at balance. Natural enemies include predators, parasitoids, nematodes, fungi, bacteria, viruses etc. The use of predators, parasitoids, nematodes, fungi, bacteria and viruses to maintain the population density of pests at a lower level than would occur in their absence is a common method under biological control or simply bio-control.

In the plant kingdom resistance to pests is the rule rather than the exception. In the coevolution of pests and hosts, plants have developed defense mechanisms. The

mechanisms may be either physical (waxy surface, hairy leaves etc.) or chemical (production of secondary metabolites) in nature. Pest-resistant crop varieties either suppress pest abundance or elevate the damage tolerance level of the plant. In other words, genetic resistance alters the relationship between pest and host. The inherent genetically based resistance of a plant can protect it against pests or diseases without recourse to pesticides.

In the project area and under Program research, extension, farmers of all classes, and particularly family, small and medium farmers will be encouraged to work together to make experiments and come up with combinations that are suitable for the area. The specific ways under which this will be done will be defined as set out in table below.

Cultural and Crop Sanitation Practices

Pests may also be controlled through the adoption of improved cultural and crop sanitation practices. Some of these include:

i. **Crop rotation**: this practice is used to depress weeds and/insect pests and diseases in some crops. For example, *Striga* in sorghum and millet can be controlled/reduced by planting a trap crop like groundnuts or cotton;
ii. **Intercropping**: the field is used to grow two or more crops at the same time, which among them interchange disease control elements;
iii. **Relay cropping**: where one crop is relayed with another to reduce the infestation of weevils, for example;
iv. **Fallow**: the field is not cultivated for some years to control various parasitic weeds;
v. **Cover crops**: these are leguminous crops, which are grown to suppress weeds in the field. They can be intercropped or not and they protect and cover the field e.g. pumpkins;
vi. **Trap crops**: these induce the germination of a pest. The trap crop can be intercropped or rotated with a susceptible host.
vii. **Mulching**: this is covering of crop fields by dry grasses to control weeds and conserve soil moisture;
viii. **Hand pulling and hoes weeding**: these practices are the most common and being used by small-scale farmers. In moments of relative abundance of labor in rural areas this practice can be adopted easily;
ix. **Burning**: land clearing and destroying infected plants/crops. Although it is fundamental to ensure that burning is strictly controlled and limited to the areas and species being targeted and do not spread to other areas;
x. **Fertilizer/manure application**: the application of nutrients in the form of either inorganic fertilizer or farm-yard manure reduces both the infestation of fields by weeds (e.g. *Striga*) and losses in crop yield;
xi. **Use of disease free planting material**: e.g. cassava cuttings, sweet potato vines etc.;
xii. **Pruning**: done in tea, orange tree etc. to reduce insect pests and diseases that might infest the crop;
xiii. **Thinning**: done to reduce plant population in the field.

As with biological control existing knowledge and experiments in the project area should be used and/or carried out to identify the practices that are more suitable to local conditions. Based on evidence these should be disseminated.

Physical and Mechanical Control

These are measures that kill the insect pest, disrupt its physiology or adversely affect the environment of the pest. They are different from cultural measures as the devices or actions adopted are directed against the insect pest instead of modifying agricultural practices. The hand picking of cotton strainers from cotton plants, banana weevils from banana pseudo stems, killing American bollworm from tomato plants are forms of physical control while the use of a fly swatter against annoying flies is a form of mechanical control. Some of the mechanical measures are relatively easy to apply where and when there is abundance of manpower.

Chemical Control

These measures involve the use of herbicides, insecticides and fungicides to manage weeds, pests and diseases. As already explained throughout this document they should be used under certain conditions and when the other less intrusive and poisonous measures have proved to not be effective. All the aspects of capacity building of individuals and institutions should be used to ensure that the use of chemicals is not done to the detriment of the health of humans and other living organisms and consequently ensuring a healthy environment.

They can be applied as liquid spray, in the form of granules, powder or fumigation in stores. Registered pesticides (Annex 8) can be recommended as a component of IPM packages. These are registered under Pesticide Regulation (Ministerial Diploma 153/2002 of 11 September 2002) and as said updated on a yearly basis and Annex 8 is the list approved in December 2015 and currently.

The focus on monitoring and evaluation must be based on the assessment of the increase in IPM capacity, the extent to which IPM techniques are being adopted in crop production and the economic benefits that farmers derive from adopting IPM. Indicators for monitoring IPM adoption could be but not limited to:

Table 13: Monitoring indicators

Monitoring indicators	Number of farmers/percentages over time[33]	Institutional responsibility
Number of farmers who have adopted IPM practices		SDAE and extension workers
Number of farmers who have received training in IPM methods		SDAE and extension workers
Number of crops in which IPM is		SDAE and extension

[33] Targets to be defined after the diagnostic exercise a better definition of the baseline situation.

Monitoring indicators	Number of farmers/percentages over time[33]	Institutional responsibility
applied		workers
Quantification of economic, health, environmental and social benefits		DPASA, SDAE and extension workers
Extent of area in which pesticides are used		DPASA, SDAE and extension workers (as part of normal monitoring and evaluation of agricultural seasons)
Efficiency of pesticide use: type of pesticides used, rational use, handling, storage and disposal of pesticide residues and pesticide containers		DPASA, SDAE and extension workers (as part of normal monitoring and evaluation of agricultural seasons)
Level of reduction of pesticide purchase		DPASA, SDAE and extension workers (as part of normal monitoring and evaluation of agricultural seasons)

Monitoring will be a continuous function that will use a systematic collection of data on the above-mentioned indicators and other to measure progress over time. *Evaluation* on the other hand will be the periodic assessment of sustainability, relevance, impact, effectiveness and efficacy of an intervention in relation to stated objectives. Evaluation measures achievements in relation to institutional policies, project objectives, and the goals set for each operation. As can be seen monitoring and evaluation should, in as much as possible, be embedded in the existing data collection and processing done periodically by MASA at all levels, instead of being a separate and standalone process. The progress of IPM will be done taking into consideration the multiple areas in which the strategy will be rolled out notably regulation per se, research, and extension, adoption of IPM and pesticide use in a way that is in line with the strategy.

8.7.3.2 Authorized pesticides

Unless the project switches to and enforces an organic approach, it is inevitable that pesticides will be recommended for use on some sites and crops. In the territory defined by the Project the use of agro-chemicals, including pesticides is already a reality. Even if in general the use of pesticides in the project area is low there are pockets of farmers that do so. When compared with other areas in Mozambique the fourteen districts that define the project area might rank high at the national level in the use of agro-chemicals. At present, this is mainly associated with the production of cotton and to some extent horticulture and in a limited fashion in forests as such. As the area experiences guided inclusive agricultural and forest value chain development, development of small scale irrigation schemes, etc. the use of agro-chemicals might have to be intensified.

Under the World Bank funding for the Project, no funding for pesticide acquisition will be provided for farmers. However, it would be recommended to elaborate a provisional list of less harmful pesticides that can be used. A list of registered pesticides in Mozambique is provided as an Annex of the Pesticide Regulation (Ministerial Diploma 153/2002 of 11 September 2002) and includes among others: cypermethrin, deltamethrin, mancozeb and dimethoate. The list is updated on a regular basis and

Annex 8 of this document presents the latest version updated in December 2015. The WHO also has its Pesticide Classification List by level of hazardousness. The list could guide the classification of pesticides eventually to be used.

8.7.4 Institutional Strengthening, Training and Capacity Building

A described below, a series of measures should be put forward to mitigate the potential adverse impacts likely to occur because of pesticide use in the project areas. The primary mitigation measure includes institutional strengthening and the second training of the various categories of stakeholders in the pesticide chain in safe and thoughtful pesticide use and management. The later includes the delivery of a mix of Information Education and Communication approaches targeting farmers, pesticide operators and teams; provision of Personal Protective Equipment (PPE); training to farmers, and thorough and consistent supervision and monitoring. Specific aspects and numbers of people to be involved will be defined after the diagnostic of the situation and preparation of the final version of the plan of action.

8.7.4.1 Institutional Strengthening

The success of IPM depends largely on developing and sustaining institutional and human capacity to facilitate experiential learning for making informed decisions in integrating scientific and traditional knowledge to solve specific problems. Poor communication between farmers, extension workers has often led to poorly-targeted research or to poor adoption of promising options generated or that could be generated by research.

A sound IPM in Mozambique can only be achieved through a good and practical combination of scientific and applied/participatory research involving farmers (including women), extension workers, and researchers. For this specific project stakeholders need to get together and in a process with multiple stages agree on issues to be addressed and define a plan of action, implement and monitor it. During the formulation of this plan it was not possible to bring all of them together and the information obtained from each of the few that were directly contacted cannot substitute this process of formulation of an agreed plan of action. The issues to be addressed are assessed to be complex and requiring a good combination of plan and action.

In other words, the DNAS through its Plant and Animal Health Services, are required to work together with the IIAM (research stations in the project area (e.g. Nampula)) and other related sectors (health and environment) to institute research programs that respond to local needs. For the programs to be adequately responsive they should involve local farmers (including women) and extension workers in the identification of issues to be worked on and subsequent delivery of responses and ways of putting them into practice, including the training, capacity building and skills and attitude development. The “on farm” and “on station” research programs embraced by IIAM should be creatively used to work for this objective. The private sector and local relevant NGOs should also be involved. The program should also include initiatives such as Farmer Field Schools, Training of Trainers, and regional meetings etc., which could bring together actors from different projects (e.g. PROIRRI) but with similar objectives in this regard.

As said PROIRRI is already using the above-described structure to build capacity on irrigation. Stakeholders are suggesting that although on a minor scale REDD+/FIP/DGM should adopt a similar approach for IPM and contribute to creating models of best practice that it is felt are not adequately applied for this subsector.

8.7.4.2 Training and Capacity Building

It is not always a straight forward perception but in general farmers are aware that pesticides are poisonous and represent a serious occupational health and environmental risk. Additionally, the cost of pesticides is discouraging for most poor farmers to embark in respective massive use. To boost this conducive situation there is a need to implement awareness campaigns to raise the understanding of the potential environmental and human health impacts related with inadequate use of pesticide as well as the benefits of the integrated pest management practices.

Capacity building will be achieved through farmer-based collaborative management mechanisms under which all key stakeholders should be regarded as equal partners whose role will be to facilitate the process and provide technical direction and any other support necessary for the implementation of the activities

The HSP backed by DNAS Focal Point will take the necessary steps to prepare comprehensive training manuals, brochures and leaflets on pesticide use and management, targeting different actors within the program, ranging from extension service providers, farmers, loaders, mixers, transporters, government staff among others. The training manual or guides to be developed for use must be simplified and easy to understand and participatory in nature with in-built and demonstration/ practical sessions as much as possible.

More specifically training on IPM, targeting lead farmers, extension workers, local leaders, etc. will include but not be limited to:

- **Learning-by-doing/discovery training programs**: farmers are most apt to adopt new techniques when they acquire knowledge and skills through personal experience, observation, analysis, experimentation, decision-making and practice. This allows to identify farmers' own knowledge and for farmers to understand how IPM applies to their own farms.
- **Recovering collective memory**: pest problems often emerge because traditional agricultural methods were changed in one way or another, or lost. These changes can sometimes be reversed. This approach uses group discussions to try to identify what changes might have prompted the current pest problem.
- **Focus groups discussions**: regular meetings among women, men, the youth to discuss production problems including pests and related problems can assist in the success of various control methods. These meetings should be promoted using all forms of local incentives.
- **Demonstration projects**: farmer-field schools can be very effective at promoting IPM within the local community. These pilot sessions demonstrate IPM in action and allow farmers to compare IPM with ongoing cultivation supported by synthetic pesticides.
- **Educational material**: basic written and photographic/figures guides or even videos about pest identification and crop-specific management techniques are essential for training and could be an important factor in motivating farmers to adopt IPM.
- **Youth education**: promoting and improving the quality of programs on IPM and the risks of synthetic pesticides has been effective at technical schools for

rural youth. In addition to becoming better farmers in the future, these students can bring informed views back to their communities.

Training in the use of pesticides, targeting lead farmers, extension workers, local leaders, etc., will include but not be limited to:

- **Pesticide selection**: indicating the list of authorized pesticides per target pests, indicating their level of toxicity and hazardous, possible harmful effects and experience of using those pesticides for the pest and the crop.
- **Understanding the pesticide label**: explaining all the information included in the label. Pesticide transport: give indications on how to transport pesticides to avoid any leakages and avoiding the contact with persons or animals.
- **Mixing and loading pesticides**: explain the importance of ensuring the proper dilution of the concentrated pesticide and the need to use protective clothing.
- **Pesticide storage**: give indications on how to storage pesticides (i.e. site location (not allowed in flood areas), security (against illegal entries, as well as children and livestock), isolated from housing, well ventilated, waterproof roof, have a current inventory list of pesticide stock.
- **Container disposal**: giving indications on how to destroy/dispose used pesticide containers
- **Obsolete pesticides**: explain the risks associated with obsolete pesticides and procedures to be followed.
- **Calibration, product quantity and pesticide application**: explaining the importance of application equipment calibration and how to do it.
- **Determining the amount of chemicals to use**: giving explanations on methods to find out the amount of chemicals to apply per hectare and levels of dilution
- **Precautions related to the application of pesticides**: giving indications on important precautions for safe use of pesticide
- **Toxicity, human protection and first aid**: explaining the possible effects of pesticide on human health, ways of pesticides entering in the body, importance of protective clothing and other protective equipment, basic first aid for pesticide exposure (with skin, mouth, eye or respiratory system).

Under the Program the distribution and use of pesticides to or by people who have not received training should be prevented.

8.8 Implementation of Management Principles and Guidelines

To ensure adequate implementation of the Safeguards requirements and applicable national regulations there will be one Safeguard Specialist at central level responsible for natural environment and for social issues. At the central level, there will also be a Communication Officer to give support to the Safeguard Specialists when related to social issues. This Specialist will be responsible for the critical communication aspects of the project such as keeping all stakeholders and PAP aware of the main issues around the project at each and every phase. At the provincial level, there will be one Project Implementation Unit (PIU) in each province, comprised by one sustainable development Specialist in charge of safeguard isuses who will respond to the Program's Provincial Coordinators. The Safeguard Specialist has already been hired and has been working at the central level. They participated actively in the formulation of the

Safeguard Instruments including this ESMF. In regard of Integrated Pest Management Plan the safeguard specialist shall also be supported by the agriculture specialist of the program.

9 GUIDELINES FOR IDENTIFICATION OF BENEFICIARIES, SCREENING, PREPARATION, APPRAISAL, APPROVAL AND MONITORING

9.1 Screening of Project Beneficiaries, Activities and Sites

To get to approval for each Projects' (MozFIP and MozDGM) activity and subsequent implementation, a series of steps will be followed by all entities involved in the projects' management and implementation. The process is also meant to identify and select the right program beneficiaries to avoid opportunistic behavior. Extensive publicity, awareness creation, capacity building, environmental and social clearance and continuous assistance on the ground will be given prominent position in the entire program and subproject cycle within the Program (FNDS/UGFI to MozFIP and NEA to MozDGM). This encompasses five main steps that will be adhered to systematically, namely:

1. Program dissemination
2. Identification, training and capacity building and verification of the legality of operators (community, landholders and MSMEs)
3. Preparation and submission of activities, initial screening and acceptance
4. Screening for compliance with environmental and social requirements and environmental and social licensing
5. Activity implementation, monitoring and evaluation.

A more detailed description of the actions to be taken under these headings highlights the following:

1. **Program dissemination** including the dissemination of the eligibility criteria for projects/subprojects as well as that of the environmental and social safeguardas. Assisted by the FNDS/UGFI and LMUs at Central and Landscape (Cabo Delgado and Zambézia) levels; the Service Provider will undertake to disseminate all aspects of the program (i.e. context and framework, general and specific objectives, components/subcomponents and activities, funding modalities, eligibility criteria for operators/project/subproject selection, compliance with environmental and social safeguards requirements, etc.) to allow all relevant stakeholders to be fully cognizant of the program, its environmental and social safeguard requirements and to start preparing themselves to participate and particularly for communities and all other classes of operators and service providers to prepare projects/subprojects to apply for funding and/or eligibility for other forms of intervention. Communication strategy was developed for this purpose, and its implementation was started during the REDD+ preparation phase, and will include the project implementation phase. It involves an extensive process of public consultation in the community, province and central level. The dissemination will be done through TV, community radio, community theatre, newspapers, magazines, website, social network and workshops, per the specific target. The language and local culture will be taken in consideration.

2. **Identification, training and capacity building** of prospective operators and program beneficiaries, i.e. community, landholders, private (essentially

MSMEs) forests operators, charcoal makers, etc. with the potential to prepare activities eligible under and for Program support and collaboration. At the practical level the Centro de Excelência (Center of Excellence) in Zambézia will provide training for forests plantation practices, processing, administration and business development as a way of ensuring that the beneficiaries to be selected are fully aware of the program context, their responsibilities and have the necessary knowledge and skills to perform as required.

The certification system being worked out will be in line with the WB OP 4.36 and designed to meet important criteria such as: (i) compliance with relevant laws; (ii) recognition of and respect for any legally documented or customary land tenure and use rights; (iii) the rights of indigenous/local peoples[34] and workers; (iv) measures to maintain or enhance sound and effective community relations; (v) conservation of biological diversity and ecological functions; (vi) measures to maintain or enhance environmentally sound multiple benefits accruing from the forest; (vii) prevention or minimization of the adverse environmental impacts from forest use; (viii) effective forest management planning; (ix) active monitoring and assessment of relevant forest management areas; and (x) the maintenance of critical forest areas and other critical natural habitats affected by the operation (WB, OP 4.36).

For small and medium-scale landholders certification will be achieved if such operations: (i) have achieved a standard of forest management developed with the meaningful participation of locally affected communities, consistent with the principles and criteria of responsible forest management, and (ii) adhere to a time-bound phased action plan to achieve such a standard. The action plan must be developed with the meaningful participation of locally-affected communities and be acceptable to the Bank (WB, OP 4.36). For local communities under community forest management, they will have less stringent requirements.

Certification can be expected to be a complex area of operation, which will require considerable technical assistance. Experience shows that even though forest certification has been on the agenda since the 1990s the forests that have been certified around the world remain minimal, i.e. less than 5% (Rametsteiner; E. et al (2002). Most of the certified areas are in the temperate and boreal zone, with Europe being the most important region. Only around ten per cent is in tropical countries. Although acknowledging that it is an area that is technically demanding, forest certification has been very successful in raising awareness and disseminating knowledge on a holistic sustainable forest management (SFM) concept, embracing economic, environmental and social issues, worldwide. It also provides a tool for a range of other applications than assessment of sustainability, such as e.g. verifying carbon sink. During the life of Program concerted efforts will be made to provide Mozambique with valuable elements to develop its certification basis.

[34] Although this is not applicable to Mozambique and should be replaced by Local Prople/Communities.

For the activities implementation direct beneficiaries were identified: rural communities, including women and youth, will benefit from land titles (individual and community) and community land-use planning, economic opportunities, improved productive inputs through access to technical assistance, training in efficient production technologies, and other market opportunities linked to natural resources; Government (MITADER (DINAF, AQUA), MASA (DINAS, DINEA) and MIREME (FUNAE)); Government institutions at the provincial level in Zambézia and Cabo Delgado, including MITADER's Provincial Directorates (DPTADER), the provincial forest directorates (SPF), AQUA's provincial delegations and the provincial land administration in Cabo Delgado (SPGC), who will receive support, for strategic planning, improving governance, technical assistance for policy implementation, support for operations and for the implementation of their programs and private sector (small and medium enterprises (SMEs) and small- and medium-holders in timber, non-timber forest and agricultural products, who will receive support in preparing management plans, technical and business, training in technologies and improved techniques, and access to markets.)

The Project also reaches a significant number of indirect beneficiaries through: (i) improved governance and sustainability in the forest and natural resources sectors; ii) economic opportunities and improved livelihoods; and (iii) reduced deforestation and improved land and forest management, enabling more productive landscapes. The Project aims to develop a model for integrated landscape management that can be replicated or scaled up in other provinces. The indirect beneficiaries therefore could extend beyond those of this Project to include others across the country. At the global level, the population will benefit from reduced GHG emissions and restored habitat for biodiversity. Training and capacity building are needed at all stages of the project from preparation to implementation. The courses are geared towards the sustainable management of natural resources and, in a specific way, the type of training and education will be identified. The training and capacity building will be carried out by the service provider under the supervision and support of UGFI. However, the Project emphasizes geospatial capacity building at provincial and district level for improved decision-making and spatial planning, involving local government authorities and other land users with relevant stakes in the landscape. Additionally, within the scope of its community delimitation activities, interventions will build the capacity of communities to create and implement land use plans. Specific training for the implementation of safeguards instruments should be developed, with attention to the Grivance Mechanism "for the community".

Emphasize that the Project will contribute significantly to an ongoing existing initiative to establish a Center of Excellence to provide technical and business skills training for the forestry sector, to incentivize SME sector development, and in the long-term, to supply the forest industry with a competent labor force. This Center would serve as Mozambique's training hub for the natural forest sector, encompassing the areas of commercial timber production and processing. The Center would support systematic training for the value-added transformation and processing of timber, with the aim of elevating the technical and technological levels of operations and increasing the competitiveness of the sector, ultimately to promote the domestic timber industry. The Center will focus on research and development and skills training for operators in technical areas such as processing techniques, value chains and market opportunities for niche products and use of lesser-known timber species.

The training curriculum is to include a whole range of topics important to the successful running of a forest enterprise: business administration and management; support to the execution of investment projects; technical and technological assistance for timber processing; maintenance of equipment; principles of sustainable best practices and certification; training in forest exploration; fire management; laboratorial research; carpentry and furniture design; implementation of quality control systems; digital economy and marketing; and others. This program will be designed by a consultancy, to be contracted with FCPF funds as part of project preparation. This Center would be in the central zone of the country in Zambézia, to facilitate maximum access of operators, most which are concentrated in this area—and this also falls within the Project area. In the medium term, the Center will focus on processing techniques and new technologies, marketing and furniture design, training in enterprise management and in general professional training in the sector. In the longer term, the Center will develop laboratorial facilities that would support advanced research and development for the sector. The Center would be financed through a public-private partnership. To maximize synergies and optimize financing, the Project will contribute to an existing initiative rather than create a new one.

For MozDGM project, the CGRN and CBOs who express interest in being part of the initiatives will be considered beneficiaries. The training and capacity building are under the responsibility of ANE, as implementation entity of the tasks approved by the National Steering Committee (NSC). The training will be on leadership development, conflict resolution and negotiations skills to ensure active participation in initiatives related to natural resource-based mitigation and adaptation to climate change, intellectual property and land tenure issues, development of technical skills or understanding of REDD+. Training and capacity development for securing and strengthening customary land tenure and resource rights and traditional forest management systems of IPLCs and for reducing cultural, social, economic and policy barriers to such rights and to the continuance and enhancement of traditional forest management systems will also be considered.

3. Preparation and submission of project activities, initial screening and acceptance

The agreement between the Service Provider and the beneficiary of the commercial plantations mechanism will includethe obligations and critiria defined in the agreement. Disbursements based on performance will be conditioned to the results verified on the ground regarding the fulfillment of the criteria mentioned above.

In close collaboration with the Service Provider, the FNDS / UGFI at central level and LMUs will regularly monitor the implementation of the activities. This action will be carried out by specialists from different areas including community management as a way to verify the effectiveness in the implementation of planned activities

Natural florest: Forest operators in targeted landscapes with scoring of at least 80 in government's assessment of forest operators will consider.

The following different selection of criteria will be applied for different operators, namely:

(i) **Private sector proposed investment activities (tree planting subsidies).** Will be expected to have: (a) an approved concession contract in place; (b) prove compliance with applicable legislation: Social security, Work Law and Fiscal obligations; (c) have a valid management plan; (d) prove to have a good relationship with local communities (on-off-criteria); (e) have a solid record of involvement in tree planting activities/ or management of forest in case of forest management; and (f) practice secondary wood processing.
(ii) **Community activities (tree planting subsidies).** The same criteria as in a), b) and c) d) prove to have a good relationship with neighbors, (documented agreements).

Figures from a comprehensive evaluation of Mozambique's forest concession operators undertaken nationwide in February 2016, suggest that only 7 concessions (5 percent) scored 100 points, while 31 (23%) scored 90 or more points and 53 concessions (40%) scored more than 80 points. The same assessment noted that: (a) most forest management plans are outdated; (b) most forest management plans are not implemented, with frequently there being no technical capacity to do so; and (c) there is low, if any, investment in management, regeneration, reforestation or protection. In general, before being eligible to receiving technical assistance from the Technological Center, potential beneficiaries will be screened against having reached at least 80 points forest operator evaluation.

The identification of the beneficiaries involves more detailed criteria as: demonstrate strong commitment towards sustainability, an approved concession contract in place; prove compliance with applicable legislation: Social security, Work Law and Fiscal obligations; have a valid management plan; prove to have a good relationship with local communities (on-off-criteria);

Agroforestry Systems: The farmer should express interest in the programa. Degraded areas and nearby forest fragments areas will be considered priorities. The beneficiaries will be small- and medium-holders, and all owners with areas of activity between 20 to 250 hectares will be eligible.

Note that community-based groups (CGRN's, CBO's) are also eligible if formally registered, containing a minimum of 20 individual members and portions between 1.3 hectare and 20 hectares, to add up to equal or greater than 20 hectares.

It should be emphasised that eligibility to join the initiatives for both agroforestry systems and promotion of multi-use planted forests will require prior documented voluntary agreements between potential beneficiaries and potential PAPs whenever land or other natural resources are identified for use. Such voluntary agreements must be formally documented and demonstrate the parties' interest in adhering to the program in a mutually beneficial manner.

Landscape Planning and Land Tenure Regularization will contemplate all intervention area for FIP project financing. The beneficiaries must first express their interest to participate in the project. Gender aspects will be taken into consideration in the support provided to the issuing of community, family group, and individual land titles. Per Mozambique's Land Law, customary rules and governance structures within collective holdings may be used if they do not contravene principles of the constitution, which

include gender equality in land ownership. However, implementation of this principle has shown to be lacking. In Mozambique's rural areas, customary laws favor male access/control over land, with women having difficulties in defending their rights in the delimitation process, particularly when this is carried out as a step toward attribution of land use to investors (DAI and Nathan Associates 2014). Within the scope of the Project, gender-responsive practices, such as ensuring that both husbands' and wives' names, as well as those living in consensual union or married under customary or religious law, are listed on land documents and registered, will be mainstreamed.

A gender-sensitive approach will be applied in every stage of the program, from the identification of beneficiaries to any subsequent support provided. This would include having a targeted proportion of women involved in SAFs schemes and accessing technical support, as well as priority given to SAFs with species that are mostly grown by women such as legumes.

In close collaboration with the Service Provider, the FNDS / UGFI at central level and LMUs will regularly monitor the implementation of the activities.

Supporting Sustainable Production and Use of Charcoal:, the Service Provider will be the primary implementing entity for this activity, in close coordination and collaboration with the National Energy Fund, (FUNAE), at central and provincial level, and FNDS/UGFI. This targeted focus on production enhances the value-addition of the Project in the landscape, given that many other partners are addressing challenges on the demand side. There will be close collaboration with said partners, to ensure that the overall approach is holistic. **The beneficiaries will be community-based groups that express interest in the use of efficient technologies for charcoal production.**

Additionally, a screening process to select operators/developers and their projects will be supported by the following selection framework (to be further refined):

(iii) **Charcoal producers**

- **Screening for compliance with environmental and social requirements and environmental and social licensing**, to implement the activities will be required.
- Although this program component's main objectiveis to provide capacity to illegal charcoal producers and bringing them to legality (under envirovmentally sound good practices), the process of environmental and social assessment will be carried out in accordance with national and international legal framework for the purpose, taking as a guideline the present ESMF, and the updated MozBio/ MozFIP PF developed under the REDD + initatives, MozFIP and MozDGM. Preliminary diagnoses will be applied in the preparation of visits for the start of activities. The reports will support the licensing process with the competent instance, National Environment Directorate (DINAB) and Forest National Directore (DINAF), central and provincial level. This activity will be performed by service provider in collaboration with FNDS/UGFI through expert safeguards and community management assistant. For implementation of this project, subprojects category B and C, are planned. The preparation of feasibility studies and environmental management plans, if deemed necessary, will be the service provider's responsibility. The process will be supervised by FNDS/UGFI.

- **Project/subproject implementation, monitoring and evaluation.** This stage will be associated with compliance support activities (Technical Units/Unidades Tecnicas (within MITADER and line ministries (e.g. MASA and MIREME to assist operators/developers to implement management plans, and where needed also to assist in strengthening of licensing and verification systems.

Additionally, a screening process to select operators/developers for Multi-propose planting forest, Agroforestry Systems and Sustainable Production and Use of Charcoal can be supported by the following proposed selection framework (to be further refined) and proposed indicators:

Table 14: Additional proposed screening criteria and proposed indicators for operators and activities

N.º	Criteria	Indicators (preliminary examples)
1	Potential of producing positive impacts/results in line with the overall objectives of the program	Number of activities in REDD+/MozFIP/MozDGM areas of focus (e.g. land delimitations and land use plans; forests plantations, commercial harvesting, energy efficient burners (for charcoal making) and charcoal/fuelwood stoves) non-timber value chains, etc.)
2	Potential of contributing to changing/adopting a new paradigm in forests operations	Number of activities related with agro-forestry Employment/income generation opportunities for local people especially women, youth and other vulnerable groups (e.g. Rangers in protected areas, in value chains around agriculture, timber and non-timber products, etc.)
3	Promotion of ownership by local people	Number of activitities adhering to adequate land/resource demarcation and land use plans; comprehensive public engagement including adequate grievance redress
4	Financial efficiency and viability	Number of proposals/submissions with positive financial and economic returns and profitability
5	Fulfilment of requirements within the program landscapes	Plantation and commercial harvesting in adequately zoned areas (restoration of degraded areas and no conversion or degradation of forest areas)
6	Impact on gender equity and attention to vulnerable people and groups, including addressing youth problems	Number of activities involving and/or initiated by women, other vulnerable people/groups with concerted attention to the youth
7	Alignment with the program different stages (if requirements will be stricter as the program progresses and lighter at the beginning)	Adherence to a time-bound phased action plan to achieve acceptable selection criteria and standards

Many checks and balances will be put in place throughout all stages to ensure that the selection process gets rid of all the potential negative and opportunistic elements known

to abound in the sector at the same time the change and positive elements are systematically encouraged and rewarded.

With the environmental and social license for project implementation, assisted by the technical departments to which their activities are affiliated as well as by the environmental and social safeguards personnel within the UGFI Central Level with the service provider to implement activities, including the necessary monitoring and evaluation and the drawing of lessons learned for replication. The team of safeguards and community assistants in collaboration with experts of biomass, forests, agriculture and land at the level of landscapes, will make the supervision of projects under the coordination of central level safeguards team. A MRV platform that includes the management system of safeguards has been designed for information management of environmental and social safeguards. The pre-identified indicators and the collection and recording of information involves different stakeholders at the community level, civil society, private sector, provincial government and district government (CGRN, NGOs involved, Dealers, Directions: ANAC; DINAF, DINAB, FUNAE, DINAS, DINAE, SIDAE, SPGC, SDPI). Per the resolution n.4 / 2016 in its Article 15, it is up to AQUA conduct audits and inspections on land, land use planning, forests, environmental quality; notify and apply sanctions as per the National legislation.

At the center of environmental and social management is the environmental and social screening process, which may or may not result in the preparation of a full ESIA/ESMP documents, a freestanding ESMPs or no action needed to be taken, although in the case of this program only Category B and C projects are expected, which only require an ESMP or no impact assessment at all. The screening process should follow the Safeguard Policy OP 4.01/BP on Environmental Assessment of the World Bank and the Mozambican Regulations for Environmental and Social Impact Assessment Process (.

The screening process will be carried out at specific sub-project sites in the field once they have been identified. The environmental and social screening process is necessary to identify if activities andsubprojects will cause environmental and social impacts and to decide on the level of environmental and social assessment required. The environmental and social screening is part of the preparation and approval process of project activities and subprojects financed by the Project.

9.2 Environmental and Social Screening and Licensing

There will be the need to ensure that potential environmental and social impacts are adequately addressed through the institutional arrangements and procedures used by the Program interventions for managing the identification, preparation, approval, environmental licensing, implementation, monitoring, evaluation and auditing of projects and above all sub-projects to be implemented on the ground. As indicated under this program the selection and involvement of operators as such will also be a selective process. This will increase the chances of designing and implementing sound projects from the environmental and social point of view.

The Program has been classified as Category B per WB Safeguards Policies. Although some activities will take place inside conservation areas (capacity building towards law enforcement and agroforestery activities at Quirimbas National Park), due to the objectives of the program in promoting land use planning, institutional and community

level capacity building, reforestation, plantations, restoration of degraded areas and conservation agriculture having as target beneficiaries local communities and micro, small and medium entrepreneurs, there is no evidence of adverse environmental and social impacts rising from this program that justifiy classifying it under Category A, therefore it is clearly classified under Category B. Most of the activities will fall within this category, while some will be under Category C, per Mozambique environmental regulation. As per both Mozambican and WB regulations Category B projects require less stringent ESIA/ESMP processes because the environmental and social impacts are easier to deal with; few if any of them have irreversible effects; and in most cases, appropriate mitigation measures can be readily designed. As is the case with any intervention environmental and social best practices recommend that negative impacts be avoided and/or minimized and that adequate and implementable mitigation and management measures must be put in place early enough where avoidance is not feasible.

The key to environmental and social management is the environmental and social screening process, which may or may not result in the preparation of a full ESIA/ESMP document, a freestanding ESMP or no action need to be taken. The screening process should follow the Safeguard Policy OP 4.01/BP on Environmental Assessment of the World Bank and the Mozambican Regulations for Environmental and Social Impact Assessment process (Decree 54/2015). The screening process will be carried out at specific sub-project sites in the field once they have been identified and submitted by potential beneficiaries. This screening process is necessary to identify if the subprojects will cause environmental and social impacts and to decide on the level of required work. This will be part of the preparation and approval process of subprojects financed by the Program.

The objectives of the prescribed ESMF screening process include:

a) determining which land demarcations, land use plans and titling, forest plantations and other forest operations, construction/rehabilitation and operation activities are likely to have potential negative environmental and social impacts;
b) determining the level of environmental and social work required, including whether an ESIA[35]/ESMP or a freestanding ESMP is required or no action need to be taken;
c) determining appropriate mitigation measures for addressing adverse impacts;
d) incorporating mitigation measures into the development plans for the subproject;
e) indicating the need for a Community Development Action Plan (CDAP), which would be prepared in line with the MozBio Project's Process Framework (PF), that will cover the Project;
f) facilitating the review and approval of the construction/rehabilitation and operation proposals; and

[35] Mentioned as a general principle and precautionary note. In practical terms, it is not expected that subprojects under this program will require ESIAs per se.

g) providing guidance for monitoring environmental and social parameters during the implementation and operation of project activities;
h) ensuring the final environmental and social evaluation of the project.

The extent of environmental and social work that might be required, prior to the commencement of installation, and during operation will depend on the outcome of the screening process.

9.2.1 Screening of Project Activities and Sites

Depending on the size, nature and perceived environmental consequences of a project, Mozambican Regulation for ESIA (Decree 54/2015) provides for four project categories, namely A+, A, B and C. Where project activities fall under Category B, a simplified ESIA needs to be carried out. Under activities or subprojects of MozFIP and MozDGM, only those falling under Category B or C will be eligible for funding. Should a subproject fall outside these two Categories it should be resized, relocated, and restructured as needed to bring it to the eligible Categories or fall outside the scope of the Project. The screening process will be used to determine the appropriate types of environmental follow-up measures, depending on the nature, scope, and significance of the expected environmental and social impacts from each of the Project subproject activities. Figure 9 of this ESMF (Chapter 7) illustrates how this process is structured.

The critical cycle to be adopted to avoid/minimize negative impacts as well as mitigate and manage them correctly are suggested (also see Table 19).

Both the Environmental and Social Screening Form (ESSF in Annex 9) and Annex VI of Decree 54/2015 (Annex 10 under this ESMF) will be completed by Project safeguards staff. The screening forms, when correctly completed, will facilitate the:

- identification of potential environmental and social impacts and the identification of health and safety risks, also in accordance to OP 4.04 (Natural Habitats), OP 4.09 (Pest Management Control), OP 4.11 (Physical Cultural Resources), OP 4.12 (Involuntary Resettlement), OP 4.36 (Forest) and OP 4.37 (Safety of Dams);
- determination of their significance;
- assignment of the appropriate environmental category; and
- determination of the need to conduct an ESIA/ESMP or a freestanding ESMP and/or CDAP where required or determine that no action need to be taken.

The responsible MITADER structure at Provincial level will need to confirm the above-mentioned screening process to comply with Mozambican environmental legislation, the screening process will be conducted in the following manner:

Preparation activities for the screening process will include a desk appraisal of the intervention (e.g. plantation, processing, construction/rehabilitation and operation plans) for sub-project related infrastructure.

After the desk appraisal of the interventions, the initial screening of the proposed activities/sub-project will be verified in the field, with the Environmental and Social Screening Form (ESSF) prepared by the Project Safeguard staff. The Provincial and/or

delegated District Environmental Officers, stationed at the SDPI, and appointed as Project safeguard focal points, will do the site verification and ESSF filling. Subsequently, they will oversee the preparation and implementation of the required measures. After filling the ESSF the Provincial or the District safeguard focal points will send it to UGFI for appraisal by the Project Safeguard Specialist to approve it or request further clarifications (or even doing a dedicated field visit for deeper assessment). When appropriate, a High conservation value forest (HCVF) assessment[36] shall be done by the Safeguard specialist or the Service provider if a critical natural habitat (or a fragment of these) might be impacted by the proposed activitie or sub-project.

Regarding land use planning activities under the program attention shall be paid to regional and sub-regional land use plans in order to integrate Strategic Environmental and Social Assessment (SESA) to enhance environmental and social integration during the planning process, targeting as well social issues such as vulnerable group in community. A SESA is particularly important at the National Land Use Plan preparation level[37], where considerations shall be drawn from National REDD+ Strategy SESA process.

9.2.2 Assigning the Appropriate Environmental and Social Categories

The ESSF, when completed, will provide information on the assignment of the appropriate environmental and social category to a particular subproject. The Provincial Departments of Environmental Impact Assessment in collaboration with the Environmental and Social Specialists from the Program Management Units at Provincial level will be responsible for categorizing a subproject as either A, B or C (according to Bank environmental categories, OP 4.01). It is not expected that any of the subprojects will be Category A through the application of OP/BP 4.01 and Decree 54/2015 (A+ and A). As explained above should that happen the subprojects will be resized, relocated, restructured as needed to bring them to the eligible Categories or be abandoned as per this program.

Category A (A+[38] and A) is more complex and sub-project activities would have significant and long-term adverse environmental and social impacts and therefore would require an ESIA/ESMP and/or RAP, in accordance with Mozambican legal requirements. Category B projects are those with one or a few potentially significant adverse impacts, which would require an Environmental and Social Management Plan (ESMP) to address specific impacts during project construction or operation, but not a full ESIA. Category C projects would not involve any significant adverse environmental

[36] Guidelines (and criteria) to be prepared for the Project implementation manual.

[37] ToR for National Land Use Plan preperation must include the elaboration of SESA its process. National Land Use Plan SESA shall further assess the outcomes from National REDD+ Strategy SESA process.

[38] Program activities inside protected areas must be included in the exemption rule of decree 54/2015, its Annex 1 nº1 d).

impacts; they would therefore not require an ESIA or a specific ESMP, but they would require adherence to good environmental practices, including any applicable Environmental and Social Clauses to be included in the Contractor's Contracts, where these will exist, or simply to be adopted by the implementing entities/subproject developers. The recommended and simple way to adhere to good environmental and social practices is through a simplified ESMP, which shall also be included as Environmental and Social Clauses at the biding documents as well as in a later stage in contracts of contractors and supervision, when applicable.

The assignment of the appropriate environmental category for the subprojects will be based on the provisions of the Mozambican ESIA Guidelines (Decree 54/2015).

The ESIA, ESMP or CDAP should be disclosed in country at the project sites and on the MITADER website and the World Bank Infoshop prior to commencement of any project construction activities. Furthermore, as only economic displacement will be allowed under this program (not physical resettlement), according to WB safeguard policies such activities may still be classified as Category B, with only ESMP and CDAP to be produced.

9.2.3 Carrying out Environmental and Social Work

After reviewing the information provided in the Environmental and Social Screening Form (ESSF) and the Preliminary Environmental Information Sheets and having determined the appropriate environmental and social category, the Provincial Directorate of Environment in close collaboration with the Project Management Units at the Provincial Level will determine whether (a) the application of simple mitigation measures will suffice (Category C); whether (b) an Environmental and Social Management Plan (but no ESIA as such) needs to be prepared to address specific environmental impacts (Category B); or whether (c) a full ESIA/ESMP will need to be carried out (Category A+ or A). For subprojects categorized as B, the ESMP should be prepared by an environmental and social consultant certified by MITADER. Project under Category A under Bank categorization will not be financed; they must be reformulated to fall under B Environmental Category. After this assessment being made at provincial/district level by the safeguard focal points the ESSF is sent to UGFI for appraisal by the Program Safeguard Specialist.

9.2.4 Environmental and Social Checklist:

The Environmental and Social Checklists in Annexes 9 and 10 will be completed by the qualified and experienced Environmental and Social Safeguard Specialists of the Project Management Units at Central Level in National Government - UGFI. Most of the subprojects will be categorized as Category B, which may not require a full ESIA, and will benefit from the application of mitigation measures outlined in the checklist.

If there is already an existing design for a subproject, the Provincial Directorate of Environment in collaboration with relevant sectors/ministries/districts directorates/services and the SECU will assess the potential environmental and social impacts on the chosen site and on the community and will recommend modification of the design or the location to mitigate or reduce these potential impacts.

The ESSF shall provide clear information in OP 4.04 (Natural Habitats), OP 4.09 (Pest Management Control), OP 4.11 (Physical Cultural Resources), OP 4.36 (Forest) and OP 4.37 (Safety of Dams) to set up adequate impact assessment and appropriate mitigation measures per this Bank Environmental and Social Safeguard Policies.

The ESSF can be better refined at the preparation of the Project Implementation Manual stage and must be dynamically reviewed and updated during whole program implementation duration.

For program activities that relate to Land Use Planning at community level, the development of the important land use tools shall also take into consideration the environmental and social risks of the territory as well as the proposed land use impacts. The Central Safeguard Specialist at Central level (FNDS/UGFI) shall prepare a Simplified Checklist Form of risk integration in the development process of these tools (such as flooding, landslides, soil erosion, degraded areas, conservation areas, protected species and other sources of environmental and social degradation or pollution).

9.2.5 Environmental and Social Impacts Assessment (ESIA)

Certain subprojects will be found to require a full ESIA/ESMP even after being categorized under B. This may occur when certain activities falling under Category A considering Mozambican law, still fall under Category B under Bank policies. In such a case, the ESIA would identify and assess the potential environmental and social impacts of the proposed activities, evaluate alternatives, as well as design and implement appropriate mitigation, management and monitoring measures. These measures would be captured in the Environmental and Social Management Plan (ESMP) which will be prepared as part of the ESIA Document.

Where required, preparation of the ESIA that includes an ESMP, will be carried out by the Borrower/Project Beneficiaries/Developers in consultation with the relevant stakeholders, including potentially affected persons. Environmental and Social Specialists of the Project Management Units at the Provincial Level, in close consultation with the Provincial Directorate of Environment and/or DPTADER and on behalf of the District Governments or Municipalities, will arrange for the (i) preparation of ESIA/ESMP terms of reference; (ii) recruitment of a consultant to carry out the ESIA/ESMP; (iii) public consultations and participation; and (iv) review and approval of the ESIA/ESMP following the national ESIA approval process. ESIAs and ESMPs also need to be sent to the World Bank for approval and disclosure. Annex 14 provides guidelines for preparation of TOR for ESIA/ESMP or RAP studies

9.2.6 Subproject Review and Approval

Where an ESIA/ESMP or a freestanding ESMP has been carried out, the Environmental and Social Specialist in collaboration with the Project Management Units at the Provincial Level, as well as the Directorate of Environment/DNAIA or DPTADER/DA will review the reports (ESIA/ESMP or only the ESMP) to ensure that all environmental and social impacts have been identified and that effective mitigation measures have been proposed, including institutional arrangements for the implementation of the ESMP and a budget. And then Central Safeguard Specialist at UGFI approves it. Once the ESIA or ESMP is approved, an environmental license will be issued by the

environmental authority, after payment of environmental license fees. Under Decree 54/2015 the license is subdivided into two stages, i.e. one for Construction and the other for Operation, which are awarded in two separate occasions. Each eligible activity (mainly B or C Category) must have its Environmental license before any works start.

Based on the results of the above review process, and discussions with the relevant stakeholders and potentially affected persons, the Environmental and Social Specialists of UGFI, in case of sub-projects that do not require an ESIA/ESMP or a freestanding ESMP will make recommendations to the Municipal, District Government or any other local government entity to go ahead with the project implementation.

It is a known fact that at present it is mainly at the provincial and central levels that solid capacity exists for managing the ESIA/ESMP processes. At the district and municipal levels such capacity is either non-existent or weak. To ensure that all stages of the process including the verification of screening forms is completed correctly for the various sub-project locations and activities, training will be provided to members of the SDPI and Municipalities. Technical advice and training on environmental and social impacts assessment and implementation of mitigation measures will be provided by a contracted safeguards specialist or by the Provincial Community Management Officials, with assistance from the central and provincial safeguard specialists under the program.

9.2.7 Participatory Public Consultation and Disclosure

Local people and communities as well as their representatives need to be continuously involved in the decision-making related to the diversity of Project interventions. The numerous pieces of Mozambican legislation on land issues place public consultation and participation at the top of the agenda. The Project will ensure that the provisions in those regulatory documents are strictly followed. Local people/communities and their representatives are properly placed to take care of the needs of local stakeholders and to promote the local resource management capacity.

The public participation process (PPP) is an intrinsic component of the ESIA/ESMP process with the following main objectives:

- Keep Project Interested and Affected Parties (PI&APs) informed about key issues and findings of each stage of the ESIA;
- Gather concerns and interests expressed by various project stakeholders;
- Obtain contributions/opinions of stakeholders in terms of avoiding/minimizing possible negative impacts and maximize positive impacts of the project.
- Finally, support the social dialogue and identify from the onset, stakeholders' perceptions and expectations, which can contribute to the action planning and effective communication to minimize the impacts of the project. The process also allows for rethinking the project's technical aspects.

PPP will support a Social Engagement Plan and for it to be effective there are norms and procedures to be observed throughout. The program has already benefited from extensive and deep PPP. During the subsequent phases this work should be further developed by the Project's Safeguard Specialists and Communication Officers to respond to issues as they come to light.

The ESIA/ESMP process emphasizes the clear need for frequent interaction and communication between the general public, parties affected by the proposed Project, local NGOs, external interested and concerned organizations, as well as Project scientists and engineers. Local people and other stakeholders should be organized into a Social Committee to easily articulate the various aspects in an organized and continuous fashion.

Each aspect of the technical investigations generally includes a data collection and verification phase, followed by analysis and evaluation, then synthesis and conclusions. The findings of each phase are communicated as appropriate to external parties.

In terms of the ESIA Regulations in force in Mozambique (Decree 54/2015 and Diplomas 129/2006 and 130/2006 and other related regulatory instruments) mandatory public consultation meetings mark the end of each main phase, e.g. scoping and definition of terms of reference as well as a public consultation on the draft final ESIA document. These gatherings should be announced at least 15 days prior to the meeting day. In addition to being invited by public notices, a certain number of participants to these meetings should be directly invited by letters of invitation drafted by the Consultant, issued, and distributed by the project developers. In this case the PCU would be at the forefront in ensuring that relevant stakeholders are invited and participate in the meetings.

Depending on the complexity of the subproject during the meetings, the ESIA team in collaboration with the developers' (forests, agriculture, public works, energy, etc.) representatives and the engineering team, maintain PI&APs informed of the main issues and findings of each phase and collect concerns and interests expressed by the various project stakeholders. Public meetings are non-technical in nature and are expected to contribute to get stakeholders' inputs in terms of avoiding/minimizing possible negative impacts and optimizing the positive impacts of the subproject.

It is fundamental that the Project does not contribute in any way to create land conflicts and/or exacerbate any such conflicts, which could be the result of poor planning with the potential to result in the increase of the number of landless people, make local food insecurity worse, cause environmental damages, stimulate rural-urban migration, etc., which are project outcomes to be avoided.

In compliance with both the GOM regulation and World Bank guidelines, before a sub-project is approved, the applicable documents (ESIA, ESMP) must be made available for public review at a place easily accessible to beneficiary communities (e.g. at a local government office, at the DNA-DLA/DPTADER/SDPI/SDAE), and in a form, manner and language that can easily understood, including the non-technical summaries of the main documents. They must also be forwarded to the World Bank for approval and disclosure at the Public Information Center in Maputo and at the World Bank Infoshop in Washington DC. Especially as part of ESIAs/ESMPs public consultation and participation processes, Mozambican guidelines also have similar pre-requisites, which should be strictly followed under the Project.

9.3 Grievance Mechanism

MozDGM will have a standalone **Grievance Mechanism** where the communication mechanism involves only community members. The will be used to facilitate agreements among community members but also to solve disagreements where these might occur. It is known that communities rely substantially on their own internal social regulatory systems including mechanisms to deal with grievances that work in parallel with the formal systems. Under the Program it is recommended that these be used to the extent possible at community level. Recourse where necessary will be facilitated by the Project so that this is directly transmitted via the Multi-stakeholder platforms to the NEA and GEA in conformity with the DGM norms More details will be provided in the Operational Manual, but in general the Program will ensure culturally appropriate, easy access to information on the program, grant-funded projects, status of project proposals under review, and contact points through radio and other culturally appropriate means and language of communication..

The NEA and the GEA will maintain open lines of communication and actively reach out to stakeholders, review feedback received, respond to questions and comments and report to the NSC and GSC on actions taken. Information on DGM implementation will be shared with stakeholders through websites and through information-sharing meetings organized for this purpose.

The initial point of contact for all grievances will be with a dedicated staff member within the NEA. The name and contact information of the staff member will be on the website and printed brochures of the Program. The designated staff member will acknowledge complaints within 10 business days with a written response to the complainant, detailing the next steps it will take, including escalation to the NSC or the GSC Grievance Sub-Committee level where appropriate.

If the NEA cannot resolve the issue, the grievance should be elevated to the NSC. If the NSC cannot resolve the issue, it will elevate to the GSC. The time taken for the NSC to resolve complaints brought to its attention will be specified in the Operational Manual. Because the GSC meets infrequently, a Grievance Sub-Committee of the GSC will handle escalated grievances upon request.

It is expected that the majority of grievances filed can and should be resolved on the spot by the dedicated staff member within the NEA. Further detail will be available in a grievance handling manual produced by the NEA. Complaints can be submitted by phone, SMS, fax, email, regular mail, or in person. Anonymous complaints can be made by phone or through a letter. Where possible, complainants will be handed a receipt and a flyer that describes the DGM and the grievance redress mechanism procedures, which will be read to them at their request. The Operational Manual will provide the contact details for receiving questions and complaints.

The NEA must record all complaints received in a publicly accessible online system. The system will track and report on:

- number of complaints received
- number and percent of complaints that have reached agreement
- number and percent of complaints that have been resolved

- number and percent of complaints that have gone to mediation
- number and percent of complaints that have not reached agreement

If the complaint is related to decisions on grant applications by the NSC, the complaint should be referred to the NSC. If it relates to WB policies, a WB staff member may be invited by the NSC to its meeting to interpret the relevant policy. If the matter is not resolved, it will be referred to the Grievance SubCommittee of the Global Steering Committee.

If the complaint does not fall under the mandate of DGM operations at the country level, but relates to (i) the policies of the DGM as a whole, (ii) the governance of the DGM in Mozambique, or (iii) complaints that could not be resolved at lower levels, the matter will be taken to the Grievance SubCommittee of the GSC.

In each instance, a written response will indicate which entity (i.e. the NEA, NSC or GSC) will handle the complaint. That entity will then seek agreement on an approach with the complainant. The parties will engage in the process, implement the agreed actions, and record the outcome.

Whether agreements are reached through direct conversations or mediation, all supporting documents of meetings needed to achieve resolution should be part of the file related to the complaint. At all stages of the process the NEA will keep the WB in Mozambique informed and maintain a comprehensive record of all correspondence and decisions on the issue.

In general, and for what is valid for the program's ESMF, i.e. this document, as a way of ensuring that PAPs can present their grievances and that project managers can adopt timely corrective measures to deal with the issues, the grievance mechanism will be available to all Project Affected Persons, throughout the project life cycle.

MozFIP and MozDGM will use different lines of communication and response from the landscape level to the FNDS/UGFI and the NEA. These must be clearly distinguished in Project Communication Plans and awareness-raising about these higher levelstructures clarify their role in redress of more serious grievances that cannot be addressed satisfactorily locally.

As preventative measures, awareness-raising about MozFIP and MozDGM Project activities will be continued throughout the Projects' life to reduce misunderstanding and grievances. The participatory land use planning process, forest management planning and any participatory action plan formulation will identify potential conflicts and involve potentially affected people. Consultations and negotiations will be carried out with PAPs where there are indications of potential conflicts. Training for technical teams, CGRN and local leaders in conflict management will also assist in minimizing the negative impact of conflicts. To empower communities they will be involved in awareness-raising and training concerning their rights and obligations, how to obtain legal advice and representation, and how to seek redress against what they regard as unfair practices by investment partners, forest inspectors (*fiscais)* or others. Thus CGRN and other groups CBOs created to manage specific natural resources such as water supply, agricultural or charcoal producers, and community forest guards will be involved in communication and initial grievances reception.

For all **grievances** within **MozFIP** related with non-fulfilment of community related contracts, unauthorised taking of assets or certain restrictions of access to natural resources Project affected people should first try to resolve these conflicts through presentation to Project Service Providers or local influence leaders or authorities, or to one of the CBOs for attention and either immediate redress action of channelling to the appropriate higher authority. General principles and procedures must be established by the Project and publicised including:

- Verbal communication should be in locally relevant languages but all records of communications must be in Portuguese.
- Grievance forms should be prepared by the Environmental and Social Safeguards Unit within FNDS and distributed to Provincial Project Coordinators for making available to all potential users in and around Project supported activities. The same mechanism should be used by NEA concerning the MozDGM process. PAPs may also lodge their own documented grievances as they wish and it is the responsibility of each Project implementing unit and multi-stakeholder forum to organise and maintain records of all these.
- An initial response must be provided to the communities in a recommended period of 10 -15 days maximum. The response time-frame should be as short as possible to maintain community trust.
- If the specific number of days for a response has to differ due to local communication and operational conditions, this may be decided in consultation with each multi-stakeholder forum and it must always be publicised in and around Project districts so all local communities know that they can expect a response within a certain period of time.
- Detailed procedures to redress grievances and the appeal process should be disseminated among PAPs who should be empowered to use them.
- Measures must be put in place to ensure that solutions are reached by consensus based on negotiation and agreement.

Community level structures to address local issues vary around the country. Representatives of local communities include territorial leaders (*régulos*, *muenes*), their subordinates and the local government structures, political party secretaries and village presidents. In some areas, local influence leaders who are trusted, especially by women, may in practice receive and redress local issues; these may include religious leaders, teachers, interest group leaders, community health practitioners and local extension workers. Some land and resource-use related conflicts may be resolved by traditional leaders. If such solutions are beyond their scope they may be passed on to the local community court[39] where it exists, for resolution if appropriate.

[39] Five elected members led by a nominated president constitute a community court, established and paid for by the Provincial Government. They may deliberate on small civil conflicts and customary issues related to family relations. They may also exact penalties such as compensation for damages caused by

As appropriate per Project area, specific people should be chosen to represent their local communities during the implementation of MozFIP and MozDGM especially for grievance presentation and to accompany the redress process. These men and women will provide a first level of listening and informal resolution. They should either be literate or be assisted by other people to carry out all the secretarial work involved in the process, such as preparing/writing grievances, collecting them, filing, sending, translating, etc. Where Project affected people/households/entities prefer to handle the whole process by themselves they should be free to do so. Representation may be appropriate in many cases but it should not be imposed.

CGRN and their working groups should be involved in creating awareness that they may also be used for the communication of grievances for informal resolution. Efforts will be made to ensure that CGRN include representatives of women and youth with whom leaders will consult to offer tangible solutions.

The GRM process for MozFIP can be summarized by the following flowchart (and details including for issues that extend beyond the district can be seen in Annex 17):

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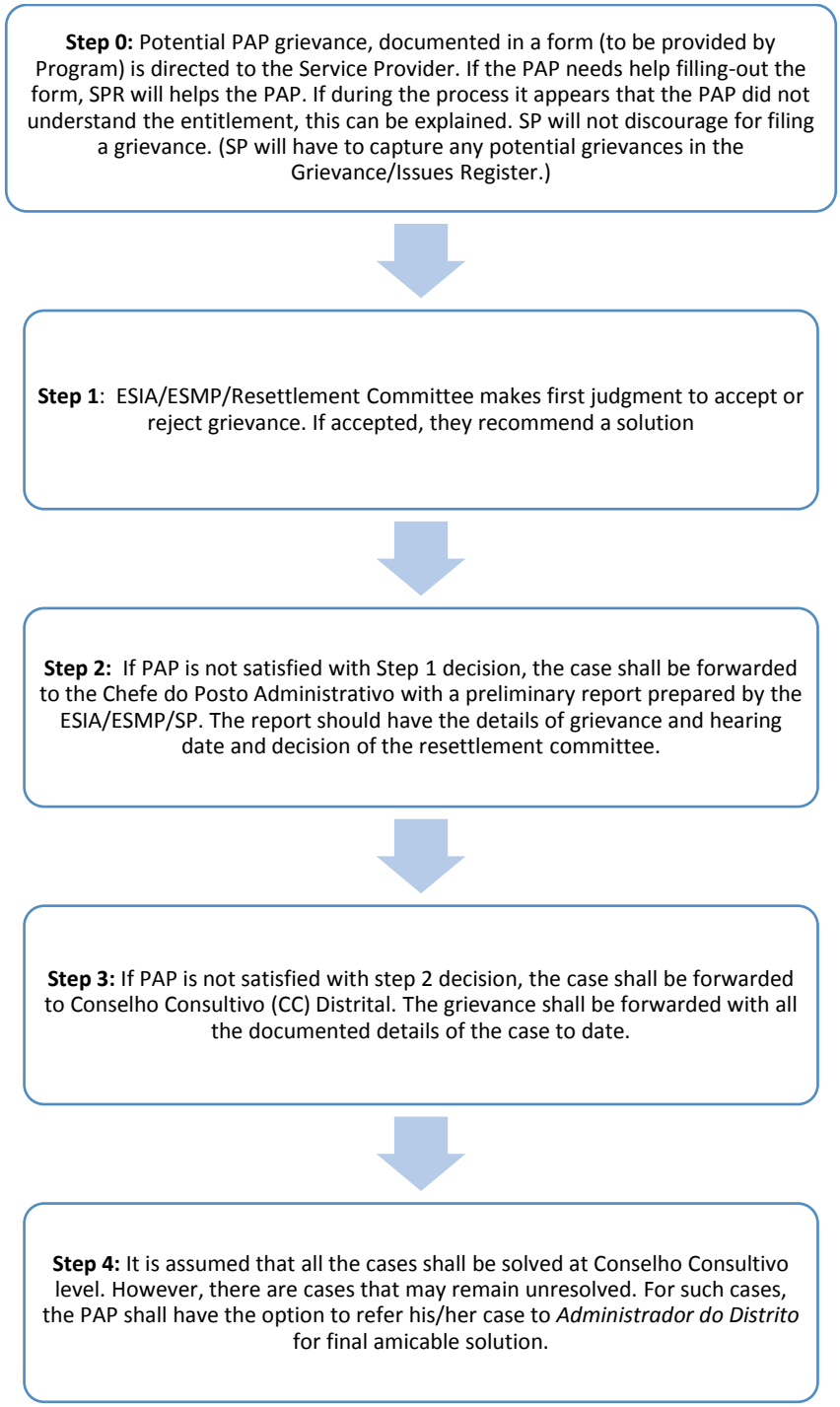
the offense and / or, public criticism, community service, small fines, refraining from carrying out the activity that caused the case. Unresolved cases may be turned over to the District Courts.

Diagram 3: Snapshot of the grievance procedure and stages



The design, implementation, monitoring and evaluation of all aspects of Program should be legitimate; accessible; predictable; equitable; transparent; rights compatible; enable continuous learning; and be based on engagement and dialogue. This encompasses the design and implementation of a local communication strategy stressing awareness-raising activities about the subproject(s), entitlements to benefit sharing and participation and the grievance redress mechanism.

A grievance redress mechanism should be implemented from the beginning of any Program subproject. At first there will be a need to create this capacity, to actively capture and anticipate grievances. This should continue during the operational phase, which is anticipated to be more passive.

A stakeholder action plan (SAP) and stakeholder engagement plan (SEP) should be prepared early in the project and reviewed and approved by the FNDS/UGFI. A Draft is offered in Annex 12 of this document. This document should be adjusted throughout the process of project implementation as more issues become known. The SAP and SEP must consider inclusion of women's groups and representatives of other vulnerable populations (elders, youth and disabled). It is important that consultation be initiated early in the project which provides stakeholders and members of the public adequate time to comment, voice concerns, or share ideas that may enhance the Project.

The main objective of stakeholder engagement and public participation is to ensure that the concerns and issues raised by the Interested and Affected Parties (PI&As), organizations or individuals are considered during the ESIA, allowing for the PI&As to discuss the proposed Program and the results of the environmental and social studies. The Public Participation Process grants an open channel of communication between the public, consultants, FNDS/UGFI, MITADER, relevant government departments (MASA, MIREME), NGOs/CSOs, which will be of extreme importance in managing potential conflicts.

9.4 Annual Monitoring Reports and review

Monitoring of the compliance of project implementation with the mitigation measures defined in its ESIA/ESMP and PMP will be carried out jointly with communities, the Environmental and Social Specialist, and the Provincial Community Management Specialists, MITADER's local representatives, extension workers and the Service Provider (i.e. CSO) responsible for implementing the Project.

District (SDPI) and municipal authorities should supervise the monitoring activities and are required to report annually on subproject activities during the preceding year. The information to be included in these annual reports to capture experience with implementation of the ESMF procedures will be included in an annex to be prepared as part of the annual report, which will be used as a guide.

Compliance monitoring comprises on-site inspection of activities to verify that measures identified in the ESMP and PMP are being implemented. This type of monitoring is like the normal tasks of a supervising engineer whose task will be by contractual arrangement to ensure that the Contractor is adhering to the contractual obligations regarding environmental, social, health and safety practices during construction, as prescribed in the Environmental and Social Clauses (ESC) included in the bidding documents and Contracts or as described in the Contractor ESMP.

MITADER, through DPTADER and the LMU (or an external consultant) will have the responsibility of conducting the environmental, social, health and safety inspection. An annual inspection report must be submitted (together with the monitoring report) to MITADER and the World Bank for review and approval.

Independent local consultants, local NGOs or other service providers that are not otherwise involved with the Project, thus independent, may carry out annual reviews. Annual review should evaluate the annual monitoring report from district authorities and the annual inspection report from DPTADER/LMU.

It is worth pointing out that annual reviews are not normal for ESIAs/ESMPs with the current practices. The FNDS/UGFI and provincial LMUs need to make dedicated efforts to ensure that this work is done properly.

9.5 Environmental and Social Audit

An external independent environmental, social, health and safety audit will be carried out at mid-term of project implementation and at the end of the project. It is proposed that AQUA/MITADER will conduct its audit to verify compliance with the GOM requirements, mainly based on the ESMP while Program Provincial Environmental and Social Safeguards Officers will focus on compliance of program requirements as such. The two audit teams will report to MITADER and the World Bank, who will deal with the implementation of any corrective measures as required. The audits are necessary to ensure that (i) the ESMF and the ESMP processes is being implemented appropriately, and (ii) mitigation measures are being identified and implemented accordingly. The audit will be able to identify any amendments in the ESMF approach that are required to improve its effectiveness.

The Audit Reports will include:

- A summary of the environmental, social, health and safety performance of the subprojects, based on the ESIAs, ESMPs, RAPs, PMP and the implementation of the Environmental and Social Clauses in the Contractor Contracts and Contractor ESMPs;
- A presentation of compliance and progress in the implementation of the subprojects ESMPs;
- A summary of the environmental and social monitoring results from individual subprojects monitoring measures (as set out in the subproject ESMPs).
- Environmental and social performance of the community land use plans developed or under development; whether they considered environmental risks into the development process or not.

The main tasks of the audit will be to:

- Consider the project description;
- Indicate the objective, scope and criteria of the audit;
- Verify the level of compliance by the developer with the conditions of the ESMP andPMP Environmental and Social Clauses and Contractor ESMPs; integration of environmental risks on land use plans and CDAPs developed at community level;
- Evaluate the developer’s knowledge and awareness of and responsibility for the application of relevant legislation;
- Review existing project documentation related to all infrastructure facilities and designs;

- Examine monitoring programs, parameters and procedures in place for control and corrective actions in case of emergencies;
- Examine records of incidents and accidents and the likelihood of future occurrence of the incidents and accidents;
- Inspect all buildings, premises and yards in which manufacturing, testing and transportation takes place within and without the project area, as well as areas where goods are stored and disposed of and give a record of all significant environmental, social, health and safety risks associated with such activities;
- Examine and seek views on health and safety issues from the project employees, the local and other potentially affected communities; and
- Prepare a list of health and safety and environmental and social concerns of past and on-going activities.

Table 19 sumarizes roles and responsabilities of the project cycle in terms of environmental and social safeguards under MozFIP and MozDGM.

Table 15: Roles and responsibility in implementing ESMF and preparing ESIA/ESMP

Roles	Intuitional responsibilities	Assistance/Collaboration
Screening of subproject Activities and Sites	Developers: UGFI, MASA, , MITADER/DPTADER, MIC Hired Service Providers	LMU-ESSS (and ARA[40])
Assigning the Appropriate Environmental and Social Categories	MITADER/DPTADER at provincial level	LMU-ESSS
Carrying out Environmental and Social Work	FNDS/UGFI Hired Service Providers	LMU-ESSS
Environmental and Social Checklist	FNDS/UGFI Hired Service Providers	LMU-ESSS
Environmental and Social Impacts Assessment (ESIA)	Hired Service Providers	LMU-ESSS Developers: MASA, MITADER, MIREME
Subproject Review and Approval	MITADER/DPTADER at provincial level	LMU-ESSS
Participatory Public Consultation and Disclosure	Developers: Developers: MASA, MITADER, MIREME, Hired Service Providers	District/Local authorities
Grievance Mechanism	FNDS/UGFI Hired Service Providers	District/Local authorities
Monitoring Reports and review	Developers: Developers: MASA, MITADER, MIREME Hired	District/Local authorities

[40] ARAs – Regional Water Administration will have an important role to play in this project due to the recognized implications of forests and especially forests plantation in water availability and general management.

Roles	Intuitional responsibilities	Assistance/Collaboration
	Service Providers	
Environmental and Social Audit	MITADER/WB	LMU-ESSS

10 GUIDELINES FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN AND MONITORING REQUIREMENTS

10.1 Environmental and Social Management Plan (ESMP)

A site specific ESMP should be conducted as part of the environmental assessment procedure of proposed activities under this program that will need to further identify, assess, mitigate and monitor its environmental and social and negative impacts whenever classified under B environmental category for WB. As well as per the national legislation on environmental impact assessment [Regulamento do Processo de Avaliação do Impacto Ambiental (RPAIA)] requirements. Thus, these activities should include the "monitoring of impacts, prevention plans, as well as accident contingencies".

Under this program ESMP are expected to be implemented on activities such as forest plantations, agro-forestry activities and eventual construction of small scale irrigation.

In an ESMP, various mitigation measures are organized into a well-formulated plan to guide the planning, design, construction and operation of the planned interventions. Under the ESIA/ESMP process and particularly under this ESMF, what is described below should be viewed as dynamic, which may require updating or revision during the implementation of the activities.

An effective ESMP for specific sub-projects/activities will be a practical document, which will precisely set out both the goals and actions required in mitigation.

The ESMP covers a set of measures that need to be taken to ensure that impacts are dealt with in the following hierarchical order[41]:

- **Avoidance**: avoiding activities that could result in adverse impacts. Avoiding resources or areas considered as sensitive, including the unplanned introduction of invasive species in the case of forests
- **Prevention**: preventing the occurrence of negative environmental and social impacts and/or preventing such an occurrence from having negative environmental and social impacts
- **Preservation**: preventing any future actions that might adversely affect an environmental and social resource. Typically achieved by extending legal protection to selected resources beyond the immediate needs of the project

[41] Ref: The World Bank. Environment Department. January 1999. Environmental Management Plans. Environmental Sourcebook Update. Number 25

- **Minimization**: limiting or reducing the degree, extent, magnitude or duration of adverse impacts. This can be achieved by scaling down, relocating, redesigning elements of the project
- **Rehabilitation**: repairing or enhancing affected resources, such as natural habitats or water sources, particularly when previous development has resulted in significant resource degradation
- **Restoration**: restoring affected resources to an earlier (and possibly more stable and productive) state, typically 'background/pristine' condition
- **Compensation**: creation, enhancement or protection of the same type of resource at another suitable and acceptable location, compensating for lost resources

As stated above, the management measures set forth in the ESMPs for more complex sub-projects and the Environmental and Social Clauses (SECs) for simple sub-projects will be included in the bidding documents and in the various contractual clauses for the design, construction and appropriate operation of the interventions to be adopted. All construction contracts should comply with the Environmental and Social Clauses and if relevant with the ESMP and Contactor ESMP prepared for the specific sub-project. Their implementation is the responsibility of the contractors. The Supervising Engineers will be required to monitor the adequate implementation of these clauses, ESMPs and contractors' ESMPs (CESMPs). For complex sub-projects the contractors will be required to prepare and implement his/her own Contractor ESMP and should employ an experienced environmental, health and safety specialist for this purpose. The Supervising Engineers will be required by contractual arrangement to supervise the adequate implementation of these Contractor ESMPs, other ESMPs or ESCs and should employ an experienced environmental, health and safety officer for this purpose.

A series of steps to be followed to ensure that agriculture under the Project follows the best practices should be creatively followed where the Project will be supporting forests and agricultural sub-projects. Annex 5 provides a checklist of issues to be considered as part of Good Agricultural Practices - Hygiene and Safety (Environmentally and Socially Friendly Agricultural Farming Systems), which should be followed and adapted to specific interventions.

The additional management actions may include the preparation of Integrated Pesticides Management Plans (PMPs).

Where applicable, the ESMP mitigation measures and indicators related to OP 4.04 (Natural Habitats), OP 4.11 (Physical Cultural Resources) and OP 4.37 (Safety of Dam) procedures.

The monitoring reports from ESMP implementation developed by contractors and supervision team must reach the provincial/district focal points on a monthly basis and after assessment and reviewing they will send them to the central UGFI Safeguard specialist for approval after discussion on existing issues. If any certain environmental and social indicators or measures are repeatedly failed by contractor penalties must be set to this company. The List of Penalties must be defined in the Program Implementation Manual with its monetary figures and a figure as an annex of the contracts with contractors.

10.2 Process Framework and action planning

Although limited in scope and size some land acquisition is likely to happen during Program planning and implementation. Assets likely to be acquired include farmed areas (crops), trees/forests, houses, shops, temporary sale points, food vending areas belonging to local communities/people/entities. The process for this acquisition is required by the Program to be entirely voluntary and will not therefore trigger OP/BP 4.12.

The MozBio updated PF with a MozFIP Addendum describes how groups or communities will be involved in identifying (a) the most equitable basis for sharing access to resources under restricted use, (b) alternative resources available for use, and (c) other opportunities to offset losses. The participatory method by which adversely affected community members will make collective decisions about the options available to them as eligible individuals or households is identified. The framework also describes enforcement provisions and clearly delineates responsibilities of the community and government agencies to ensure that use restrictions are observed.

The framework establishes arrangements for monitoring progress during project implementation. A general principle is that these arrangements include opportunities for the affected population to participate in monitoring activities. The framework describes the scope and methods for monitoring, taking into account the extent and significance of adverse impacts and the effectiveness of measures intended to improve (or at least restore) livelihoods and living standards. The PF addresses issues about the quality of the participatory process including issues such as leadership, representation, equity, and treatment of individuals vulnerable to specific hardships.

Templates of generic environmental and social management plans are presented in annex 15 to be used by project entities in different phases and ways after the necessary adjustments.

11 TRAINING AND CAPACITY BUILDING REQUIREMENTS

Successful implementation of the Project will depend among other aspects on the effective implementation of the environmental and social management measures outlined in the ESIAs/ESMPs, PMP and the updated MozBio's PF. Training and capacity building will be necessary for the key stakeholders to ensure that they have the appropriate knowledge and skills to implement the environmental and social management plans.

11.1 Institutional Capacity Assessment and Analysis

Descriptions made in Chapter 7 clearly show that there has been considerable progress in institutional, legal and regulatory processes related with environmental and social management in Mozambique. However, coordination and law enforcement remain a serious challenge.

The host ministry (MITADER) is also entrusted with the responsibility of "promoting sustainable development through the practical leadership and execution of the country's environmental policy". However, it is a Ministry that is relatively new compared to other traditional ministries.

This is further compounded by the activeness of the informal sector, which makes it very difficult to regulatelocal actors.

Based on needs identification a specific institutional and human capacity-building program for environmental and social management should be developed as part of the Project. Beneficiary institutions might be MITADER at its various levels, mainly the provincial and district levels, relevant ministries at provincial and district levels, e.g. agriculture, public works, energy, mineral resources, health, education, economy and finance, etc., including local authorities (e.g. municipalities and others such as CSOs). A detailed capacity-building program will be developed during implementation, with a focus on strengthening the District, Municipal and Provincial structures responsible for environmental and social management.

The District Services of Planning and Infrastructure (SDPI), which have a unit that deals with environmental matters at the district level, should be given special attention to build their capacity to manage the ESIA/ESMP. So far, these processes are managed mainly at the provincial and central level. Only limited number of districts have made significant strides in getting actively and competently involved in ESIA/ESMP. In as far as possible lessons learned from successful experiences in the districts should be replicated in ten districts and five municipalities that form the project area as part of the Project planning and implementation.

To deal with the various and complex issues related with communication, coordination, capacity building and institutional strengthening there will be one qualified Safeguard Specialist at central level and two Provincial Community Management Officials (one in each province) and a Communication Officers in the two provinces stationed at DPTADER.

11.2 Proposed Training and Awareness Programs

The general objectives of the training and awareness programs for implementation of the ESIAs/ESMPs, PMP and the updated MozBio & MozFIP PF are to:

- Sensitize the various stakeholders on the linkages between environment and social impacts and Program subprojects, particularly forests plantations, invasive species, water and land conservations, fuel efficiency processes, forests and land management plans, etc.;
- Demonstrate the role of the various key players in the implementation and monitoring of the safeguards instruments (ESMF-ESIA/ESMP, PMP and MozBio /MozFIP PF/CDAPs etc.);
- Sensitize representatives and leaders of community groups and associations (who will in turn convey the message to their respective communities) on the implementation and management of the mitigation measures; and on their roles in achieving environmental and social sustainability;
- Ensure that both provincial and district level personnel can provide leadership and guidance as well as supervise the implementation of their components in the ESIA/ESMP, PMP and MozBio/MozFIP PF/CDAPs etc.;
- Ensure that participants can analyze the potential environmental and social impacts, and competently prescribe mitigation options as well as supervise the implementation of management plans;
- Strengthen local NGOs and teams of extension workers to provide technical support to the farmers.

The stakeholders have different training needs for awareness raising, sensitization, and comprehensive training, namely:

- Awareness-raising for participants who need to appreciate the significance or relevance of environmental and social issues, that go beyond just safeguards (i.e. gender mainstreaming, social accountability and/or grievance redress mechanism, etc.);
- Sensitization for participants who need to be familiar with the ESIA/ESMP, PMP and MozBio/MozFIP PF/CDAPs and to monitor their implementation; and
- Comprehensive training for participants who will need to understand the potential adverse environmental and social impacts and who will at times supervise implementation of mitigation measures and report to relevant authorities.

Practical ways of reaching all target groups will need to be devised for training and capacity needs assessments as well as for delivery of the training. The "*Learning by Doing*"[42] approach in relative detriment of studies and other forms of advice and assistance will be given priority consideration. The training of trainers is also seen as a

[42] In which relevant personnel at the various levels are exposed to examples of good practices and/or where they learn by seeing and/or doing how things are approached and done.

relevant approach as it will assist in the creation of basic conditions for sustainability and replication of the interventions. The outcomes of such a process will live beyond the life span of the project.

11.3. Technical Assistance (TA)

In due course the need for short, medium and long term Technical Assistance will be assessed. The results will be used to devise the best approach to deploy TA to the project.

Particularly important in TA will be to ensure that the various external inputs from different providers of goods and services to the project are aligned and harmonized with the Project's ultimate goals. Capacity building and transference of knowledge and skills for MASA, MPOHRH, MIREME, MAPFP, MITADER and the overall environmental and social sector will be at the center of the activities to be carried out. The provincial and district levels will be crucial as it is at this level that capacity is usually low,

12 ESMF MONITORING REQUIREMENTS

Monitoring will be fundamental to ensure that the objectives set forth in the ESMF and the ESIAs/ESMPs, PMP and in the updated MozBio /MozFIP PF with regard to community level CDAPs are being achieved satisfactorily and where there are nonconformities to, timely, introduce changes. This will be a continuous process and will include knowledge (i.e. the extent to which environmental and social safeguards are known by relevant people/entities), compliance and outcome monitoring. The aim is to verify key concerns on knowledge and understanding of and compliance with the ESMF, implementation progress and extent of effective consultation and participation of local communities.

Project Management Team, especially the environmental and social management officials stationed at the provincial level, will have the overall responsibility for coordinating and monitoring the implementation of the ESMF. They should conduct sensitization programs to inform stakeholders about the framework, how it works and what will be expected of them. They will undertake continuous knowledge and compliance monitoring and evaluation to ensure that:

- All critical people/entities (at local, district and provincial) levels have the necessary knowledge and skills to perform their duties and were needed identify and carry out remedial actions;
- All project activities are implemented per the environmental and social management requirements of this ESMF/PMP and the updated MozBio /MozFIP PF and, where applicable, specific Environmental and Social Management Plans (ESMPs) and community level CDAP;
- Problems arising during implementation are being addressed early enough to avoid any spill-over that could subsequently hinder the outcomes of the project (e.g. issues of Grievance Redress Mechanism and other); and
- Environmental and social mitigation or enhancement measures, designed as per this ESMF or additional environmental and social mitigation measures identified during project implementation and/or ESIA/ESMP preparation, are reflected within specific ESMPs, CESMPs and monitoring plans.

The Project Management Team (PMT) will consult and coordinate with the appropriate government agencies on social and environmental monitoring. Quarterly progress reports will be prepared and circulated to all relevant entities covering aspects such as:

- Implementation schedule;
- Extent of officers' knowledge, involvement and actions;
- Extent of community involvement;
- Allocation of funds;
- Problems arising as well as solutions devised, during implementation; and
- Efficiency of contractors in fulfilling their environmental, social, health and safety management contractual obligations;
- Efficiency of Supervising Engineers in fulfilling their environmental, social, health and safety monitoring contractual obligations.

For major project activities, the Project will procure an external independent consultant/firm to (i) conduct the monitoring and evaluation of the sub-project

activities, and (ii) verify the effectiveness of measures for mitigation of negative impacts and enhancement of positive impacts. The Independent consultant/Firm will develop a detailed monitoring and evaluation plan (including questionnaires and inventory forms) from terms of reference, based on the ESMPs and CESMPs submitted to and approved by the GOM and the WB/IDA.

This ESMF provides an annex (11) that should be finalized to be used as a guide for monitoring environmental, social, health and safety issues as part of program implementation. It is expected to be used on an annual basis but this timing can be adjusted as found fit.

13 PROPOSED ESTIMATED IMPLEMENTATION BUDGET

In the absence of details the footprint and quantification of the different interventions that will inform the type and level of environmental and social work at this stage of the process the initial budget lines and estimate of lump sum amounts necessary to cover this particular component of the Project is calculated based on percentage the total budget, i.e. US$ 747.0 mil. The percentage is estimated at 5%, which was found to be in line with the percentage used for PROIRRI (close to 3.71%), which is a Category C Project. The 5% is also justified by the fact that under Program a lot of dissemination and public consultation might continuously be conducted to ensure transparency, legitimacy and awareness mainly on participatory decision-making and social negotiation processes. As well as training and capacity building, technical assistance by service providers, strong grievance redress mechanism and development and implementation of dedicated ESIA, ESMPs, PMP and Community Development Action Plans – CDAP (fully detailed in the PF and costed here) in addition to other issues normally addressed by this ESMF. Thus, the **total amount to cover the cost of all activities foreseen under this ESMF stands at US$ 2,450,000.00.** A preliminary distribution of the total amount by budget main lines, which is based on the general guidelines taken from the WB Toolkit for ESMF for Multiple Small-Scale Subprojects (WB, 2008), is presented below.

In due course this initial distribution will be fine-tuned considering, among other aspects, that one area that is going to mobilize most of the fund is the payment of all forms of compensation and livelihood restoration, followed by provision of various types of services, including the formulation, implementation and monitoring and evaluation of ESIAs/ESMP.

Table 16: Estimated budget for ESMF implementation

ESMF Implementation	US$	%
Institutional Development and Community Entities formalization	$73 500,00	3%
Training and Capacity Building	$245 000,00	10%
Technical Assistance	$857 500,00	35%
Preparedness and Implementation of ESIAs, ESMPs, PMP	$367 500,00	15%
Grievance Redress Mechanism	$245 000,00	10%
Communication and Public Consultation	$318 500,00	13%
Monitoring and Evaluation	$122 500,00	5%
Audit and Annual Reviews	$147 000,00	6%
Other Studies and Plans	$73 500,00	3%
TOTAL	**$2 450 000,00**	**100%**

The implementation of the environmental and social safeguards for MozDGM is already included under this ESMF budget. Despite the MozDGM's components are still under a process of preparedness and validation amongst NSC member, the component 3 has foreseen a budget about US$ 500,000.00 which includes, Project Management, M&E and Safeguards activities.

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Annexes

ANNEX 1: Summary of the Public Participation Process Followed Under the Program

Summary Report
Public Consultation fo

Additional information can be found at the government's website: http://www.redd.org.mz (Link: http://bit.ly/2g1bjoj)

ANNEX 2: Current status of preparation of PDUT (district land use plans) in the two provinces

PROVÍNCIA	ORDEM	TOTAL DE PLANOS	DISTRITOS COM PLANOS ELABORADOS	ANO DE ELABORAÇÃO	DISTRITOS SEM PLANOS
CABO DELGADO	1	1	Pemba Metuge	2008	
	2	2	Mecufi	2008	
	3	3	Balama	2009	
	4	4	Montepuêz	2009	
	5	5	Macomia	2009	
	6	6	Chiúre	2009	
	7	7	Namuno	2009	
	8	8	Ancuabe	2009	
	9	9	Mueda	2010	
	10	10	Nangade	2010	
	11	11	Meluco	2011	
	12	12	Ibo	2011	
	13	13	Muidumbe	2011	
	14	14	Quissanga	2011	
	15	15	Mocimboa da Praia	2012	
	16	16	Palma	2012	
Total de distritos com planos = 16					

PROVÍNCIA	ORDEM	TOTAL DE PLANOS	DISTRITOS COM PLANOS ELABORADOS	ANO DE ELABORAÇÃO	DISTRITOS SEM PLANOS
ZAMBÉZIA	40	1	Mocuba	2009	Namarroi
	41	2	Pebane	2009	Gurué
	42	3	Alto Molócué	2009	Lugela
	43	4	Namacurra	2009	
	44	5	Mangaja da Costa	2009	
	45	6	Chinde	2009	
	46	7	Morrumbala	2011	
	47	8	Mopeia	2011	**Total of districts without Plans = 3**
	48	9	Gilé	2011	
	49	10	Nicoadala	2012	

ANNEX 3: EHS Guidelines for Forest Harvesting Operations

Adobe Acrobat Document

ANNEX 4: EHS Guidelines for Sawmilling and Wood-based Products

Adobe Acrobat Document

ANNEX 5: Good Agricultural Practices - Hygiene and Safety

Environmentally and Socially Friendly Agricultural Farming Systems

Technical steps	Environmental and social measures
Clearing (felling of trees and shrubs)	• Reforestation of the waste land areas as a compensation • Development of low-lying flood plains for crop production, but leaving high biodiversity wetland areas untouched
Fertilization	• Development of improved farming system by applying improved technology • Training on the safe selection, use, storage and disposal of agricultural inputs • Training on compost making techniques • Train communities on how to improve their nutrition • Reduction of agricultural production losses and wastage • Reuse of agricultural by-products • Integration of short-cycle crops, i.e. 3 months, short stem rice
Treatment plant	• Promotion of integrated pest management • Training on safe pesticide selection, use, storage and disposal • Application of knowledge to get healthy crops, avoid or manage diseases • Adoption of best practices for monitoring inESCts and knowledge of the life cycle of pests • Use of natural predators and ecological characteristics • Practice of Biological Control • Adoption of short cycle varieties selected for durable resistance to pests
Cropping systems	• Development of agricultural systems and irrigated lowland systems for year-round production • Regular monitoring of the quality of water for irrigation to avoid contamination of food crops • Recycling of crop residues and animal waste • Use of animal traction and shelterbelts • Promotion of home gardens

Measures of good agricultural practices integrating environmental and social sustainability aspects

Improving seed quality (seed production techniques)

- Enhance the features of improved seeds taking the environmental and dimensions into account, i.e. good ground cover to reduce erosion, short growing season so that more crops per year are feasible
- Organize the production and dissemination of improved seeds
- Disseminate intensification techniques to improve the competitiveness of produced crops
- Improve harvesting and post-harvest techniques in order to reduce losses

Improvement of production systems and natural resource base:

- Control erosion with legumes
- Improved fertility including alley cropping with legumes
- Use of cover crops
- Reduce the decline of soil fertility through a better agriculture - livestock integration
- Monitoring of Soil Fertility
- Program for Research on Integrated Management of soil nutrients
- Research Programs on more Sustainable Agricultural Systems leading to an Enhanced and Sustainable Production System
- Dissemination of technical erosion control

Sustainable agricultural crop production

- Controlling erosion and rapid depletion of soil organic reserves, the restoration of soil fertility and sustainable land management

- Develop research on technologies that optimize the use of new sources of accessible and sustainable organic fertilizers
- Minimize the effects of mechanized practices (choice of agricultural machinery and equipment suited to the agro-ecological zones for cultivation, etc.).

Improving food quality

- Ensure quality of food (hygienic, packaging, transportation, storage and processing
- Prioritize the establishment of a system of risk analysis and critical control point (HACCP hazard analysis of critical control point)

ANNEX 6: The Ten World Bank Operational Safeguards Policies

Safeguard Policies	Main Objective	Applicability	Application for REDD+/FIP/DGM
Environmental Assessment (OP/BP 4.01)	Used in the World Bank to identify, avoid, and mitigate the potential negative environmental impacts associated with Bank lending operations. This policy is considered to be the umbrella policy for the Bank's environmental 'safeguard policies.	The purpose of Environmental Assessment is to improve decision making, to ensure that project options under consideration are sound and sustainable, and that potentially affected people are properly consulted.	Applicable, since the REDD+/FIP/DGM will lead to some environmental and social adverse impacts. All projects/subprojects will have to undergo an environmental impact assessment from design through to implementation, monitoring and evaluation in accordance with the GOM and WB Safeguard Policies.
Natural Habitats (OP/BP 4.04)	Aimed at ensuring that World Bank-supported infrastructure and other development projects take into account the conservation of biodiversity, as well as the numerous environmental services and products, which natural habitats provide to human society. The policy prohibits Bank support for projects which would lead to the significant loss or degradation of any Critical Natural Habitats, whose definition includes natural habitats which are either: (i) legally protected; (ii) officially proposed for protection; or (iii) unprotected but of known high conservation value. In other (non-critical) natural habitats, Bank supported projects can cause significant loss or degradation only when (i) there are no feasible alternatives to achieve the project's substantial overall net benefits; and (ii) acceptable mitigation measures, such as compensatory protected areas, are included within the project.	It strictly limits the circumstances under which any Bank-supported project can damage natural habitats (land and water areas where most of the native plant and animal species are still present).	Applicable, since the project has areas of intersection with important natural habitats such as Quirimbas National Park or Gilé National Reserve, these natural habitats and others outside them shall be adequately considered and assessed and shall not be negatively unmanaged impacts by this program. The ESMF includes measures for addressing potential negative impacts on natural habitats.
Forests (OP/BP 4.36)	Aimed at reducing deforestation, enhance the environmental contribution of forested areas, promote afforestation, reduce poverty, and encourage economic	Reduction of deforestation and use of forests to promote economic development	Applicable. This is typically a forestry project, which ultimately is aimed at

Safeguard Policies	Main Objective	Applicability	Application for REDD+/FIP/DGM
	development. The policy is currently being revised to make it more effective and in recognition of the fact that forests play an increasingly important role in poverty alleviation, economic development, and for providing local as well as global environmental services.		materializing the objectives set forth in the OP/BP 4.36 by creating the conducive conditions in and around forests production to do both at the higher level and on the ground in the project area concrete efforts will need to be made to demonstrate that deforestation and forest degradation and forests emissions can be reduced through the adoption of concerted efforts to promote rural development and the sustainable use of natural resources, particularly in rural areas.
Pest Management (OP 4.09)	Aimed at assisting rural development and health sector projects to avoid using harmful pesticides and encourage the use of Integrated Pest Management (IPM) techniques in the whole of the sectors concerned.	Where pesticides have to be used in crop protection or in the fight against vector-borne disease, the Bank-funded projects should include a Pest Management Plan (PMP), prepared by the borrower, either as a stand-alone document or as part of an Environmental Assessment.	Applicable, since certain elements of the project may encourage the use of pesticides in an area without a strong tradition of using these products. All the necessary precautions will need to be taken in order to avoid creation situation where the use of pesticides can negatively affect local people. Elements of PMP/IPM are included in this ESMF.
Physical Cultural Resources (OP/BP	The objective of this policy is to avoid, or mitigate, adverse impacts on cultural resources from development projects that the World Bank finances. The	The borrower identifies physical cultural resources	Applicable. As this program deals with forest and other

Safeguard Policies	Main Objective	Applicability	Application for REDD+/FIP/DGM
4.11)	assumption is that cultural resources are important as sources of valuable historical and scientific information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices. The loss of such resources is irreversible, but fortunately, it is often avoidable.	likely to be affected by the project and assesses the project's potential impacts on these resources as an integral part of the EA process, in accordance with the Bank's EA requirements	rural activities it might be expected to occasionally interfere with any known and recognized historical or cultural resources (sacred stones or trees, graves, etc.). Therefore, in order to ensure that all precautions are taken to protect any physical cultural resources and particularly forests that fall under this category in the event of these being found in the project area this ESMF includes measures for addressing potential negative impacts on cultural heritage, such as "chance find" procedures and other when justified.
Indigenous Peoples (OP/BP 4.10)	The policy underscores the need for Borrowers and Bank staff to identify indigenous peoples, consult with them, ensure that they participate in, and benefit from Bank-funded operations in a culturally appropriate way - and that adverse impacts on them are avoided, or where not feasible, minimized or mitigated.	Integration of indigenous peoples in project development and benefits	Not applicable as there are no people falling under the category of indigenous people in Mozambique in general and the project area in particular
Involuntary Resettlement (OP/BP 4.12)	The policy aims to avoid involuntary resettlement to the extent feasible, or to minimize and mitigate its adverse social and economic impacts. It is also aimed at promoting the participation of displaced people in resettlement planning and implementation. Its key economic objective is to assist displaced persons in their efforts to improve or at least restore their incomes and standards of living after displacement. The policy prescribes compensation and other resettlement measures to achieve its objectives and requires that borrowers prepare adequate resettlement planning	The policy is triggered in situations involving involuntary taking of land and involuntary restrictions of access to legally designated parks and protected areas.	Applicable. Any of the project interventions in subproject proposals or activities resulting in loss of private assets by local people will be excluded or addressed through alternative livelihoods planning through community development plans annexed to

Safeguard Policies	Main Objective	Applicability	Application for REDD+/FIP/DGM
	instruments prior to Bank appraisal of proposed projects		forest management plans as identified in the associated project MozBio's PF that will be updated according to MozFIP and MozDGM and will guide mitigation of the livelihoods impacts of restrictions of access and use of natural resources in PAs resources by local people and communities. All actions planned for community participation will be in line with the GOM regulations and WB and guidelines.
Safety of Dams (OP/BP 4.37)	Aimed at ensuring that experienced and competent professionals design and supervise construction of bank-funded dams, and that the borrower adopts and implements dam safety measures through the project cycle. The policy also applies to existing dams where they influence the performance of a project. In this case, a dam safety assessment should be carried out and necessary additional dam safety measures implemented.	Ensure that all precautionary measures necessary to strengthen the institutional, legislative, and regulatory frameworks for dam safety programs are in place where there are bank-funded dams.	Applicable in a precautionary approach. This project is expected to have areas of interESCtion with other initiatives that involve limited small size dams (new or existing ones) for irrigation although the project as such will not be involved in massive actions in this particular area. Efforts will always be made to pass the responsibility to related projects, which are expected to be better equipped to deal with the issues of dams and

Safeguard Policies	Main Objective	Applicability	Application for REDD+/FIP/DGM
			will have specific provisions to do so.
Projects on International Waterways (OP/BP 7.50)	Aimed at assisting riparian stated to make appropriate agreements or arrangements for the entire waterway, or parts thereof, where bank-funded projects involve international rivers. It requires that adequate detailed procedures for inter-state notification be followed by riparian states	Where the project area stretches over water ways that cover more than one state	Not applicable. The project will not use water from or impact on international rivers.
Projects in Disputed Areas (OP/BP 7.60)	Aimed at ensuring that the Bank only finances projects in disputed areas when either there is no objection from the other claimant to the disputed area, or when the special circumstances of the case support Bank financing, notwithstanding the objection. The policy details those special circumstances.	Where there are disputed areas the Bank wants to make sure that it is not making any judgment on the legal or other status of the territories concerned or to prejudice the final determination of the parties' claims.	Not applicable. There are no known disputed areas in the project area

ANNEX 7: Guidelines for the management of common environmental and social impacts associated with infrastructure and agriculture development

Management of environmental and social impacts from other physical interventions (implementation and operation of local infrastructure and facilities)	
Soil and groundwater: During construction and rehabilitation: accidental discharge of on-site wastewater, hydrocarbons and chemicals can adversely affect groundwater and soil in the area; Top soil management During operation: Pollution of water and soil from pesticides and fertilizers and erosion from agricultural areas. Soil erosion problems associated with construction	During construction: Mitigation measures include proper storage of hydrocarbons and dangerous chemicals on site and the installation of natural, concrete or synthetic liners beneath oil and chemical storage tanks and the placement of these structures within a bunded impermeable concrete structure of 110% the volume of the largest tank. Other important measures include proper surface drainage during both the construction and operation phases, minimization of on-site water and chemical usage (oil, lubricants and fuel), as well as limiting the exposure of the soil to accidental releases of pollutants. Chemicals used on-site should preferably be non-toxic and readily biodegradable. Fueling areas should have a concrete slab so that petrol and oil cannot escape into the environment. Drainage systems in maintenance areas should be equipped with an oil/water separator; During construction put the top-soil apart and place it back on top after construction has finished. During operation: ▪ Implementation of the provisions of the Pest Management Plan ▪ Only use approved pesticides ▪ Adequate disposal of obsolete pesticides ▪ Compliance with prescribed doses of pesticides ▪ Control of the periods of pesticide application ▪ Promoting the use of organic manure ▪ Training of stakeholders on the use of agro-chemical inputs ▪ Observance of recommendations for the use of fertilizers and pesticides bio control ▪ Rational use of fertilizers and pesticides ▪ Awareness and training of farmers ▪ Apply contour line farming in order to avoid erosion. Focus on existing quarries and construction areas: Rehabilitation of affected areas, e.g. quarries and other construction areas. Put in place vegetative filters to filter sediments out of run-off. Rehabilitation works should start as soon as possible after the construction work is finished.
Air emissions: release of dust from land clearing, excavation and movement of earth materials, cut and fill operations, contact of construction machinery with bare soil, and exposure of bare soil and	Control techniques for minimizing PM emissions involve watering of surfaces, chemical stabilization, or reduction of surface wind speed with windbreaks or source enclosures. Covering the road surface with a new material of lower silt content, such as covering a dirt road with gravel or slag has also proved to be efficient. Regular maintenance practices, such as grading of gravel roads, also help to retain larger aggregate sizes on the traveled

Management of environmental and social impacts from other physical interventions (implementation and operation of local infrastructure and facilities)	
soil piles to wind. Agro-processing facilities from project associated investors	portion of the road and thus help reduce emissions. Low cost measures also include: ▪ Proper site enclosure through appropriate hoarding and screening; ▪ On-site mixing and unloading operations; ▪ Proper handling of cement material; ▪ Maintaining minimal traffic speed on-site and on access roads to the site; ▪ Covering all vehicles hauling materials likely to give off excessive dust emissions; ▪ Ensuring adequate maintenance and repair of construction machinery and vehicles; ▪ Avoiding burning of material resulting from site clearance; ▪ Covering any excavated dusty materials or stockpile of dusty materials entirely by impervious sheeting; ▪ Proper water spraying when necessary; ▪ The provision of water troughs at entry and exit points to prevent the carryover of dust emissions, beyond the construction site Measures to reduce truck traffic emissions include proper truck maintenance and the adoption of a traffic management plan while avoiding congested routes. Regarding on-site construction equipment, proper maintenance procedures and the quality of diesel fuel used are important to reduce emissions. Equipment should also be turned off when not in use, to reduce power needs and emissions of pollutants. Agro-processing facilities can cause air pollution. The air emission standards in the applicable World Bank Group Agribusiness and Food Production Environmental, Health and Safety Guidelines, as well as the General Environmental, Health and Safety Guidelines need to be applied.
Noise: noise levels emitted during the construction/rehabilitation and operation may exceed acceptable noise level standards	Mitigation measures to be adopted mainly during construction and operation to minimize noise levels include but are not limited to: ▪ Enclosing the site with barriers/fencing ▪ Effectively utilizing material stockpiles and other structures, where feasible, to reduce noise from on-site construction activities ▪ Choosing inherently quiet equipment ▪ Operating only well-maintained mechanical equipment on-site ▪ Keeping equipment speed as low as possible ▪ Shutting down or throttling down to a minimum equipment that may be intermittent in use, between work periods ▪ Utilizing and properly maintaining silencers or mufflers that reduce vibration on construction equipment during construction works

Management of environmental and social impacts from other physical interventions (implementation and operation of local infrastructure and facilities)	
Agro-processing facilities from project associated investors	▪ Restricting access to the site for truck traffic outside of normal construction hours ▪ Proper site logistics and planning ▪ Limiting site working hours if possible ▪ Scheduling noisy activities during the morning hours ▪ Informing the locals when noisy activities are planned ▪ Enforcing noise monitoring Agro-processing facilities can cause noise pollution. The noise emission standards in the applicable World Bank Group Agribusiness and Food Production Environmental, Health and Safety Guidelines, as well as the General Environmental, Health and Safety Guidelines need to be applied.
Solid and liquid wastes: during construction/rehabilitation and operation, there will be generation of construction and operation debris as a result of various construction and operation activities Hydrocarbons (waste oils) Agro-processing facilities from project associated investors	The generated solid materials can be used for reclamation purposes whenever applicable. However, care should be taken to ensure the absence of contaminated fill material and the adequacy of the physical and chemical properties of such material to limit potential adverse impacts on water and soil and ensure project safety. Construction and demolition wastes can also be minimized through careful planning during the design stage, by reducing or eliminating over-ordering of construction materials to decrease waste generation and reduce project costs. The contractor should carry out sorting of construction and demolition wastes into various categories and adopt re-use/recycle on site whenever deemed feasible. Chemical wastes generated during the construction phase include containers that were used for storage of chemical wastes on site, the chemical residue as well as contaminated material. Rehabilitation of fuel storage facilities may involve the removal of contaminated soils around fuel dispensers, piping, and tanks, as well as bulky, inert and contaminated solid waste items such as damaged tanks. Storage of hazardous waste should take place in a separate area that has an impermeable floor, adequate ventilation and a roof to prevent rainfall from entering. In addition all chemical wastes should be clearly labeled in Portuguese and, stored in corrosion resistant containers and arranged so that incompatible materials are adequately separated. General refuse generated on-site during the construction phase should be stored in enclosed labeled bins or compaction units separate from construction and chemical wastes. General refuse is generated largely by food service activities on site, therefore, where feasible, reusable rather than disposable dishware should be promoted. Aluminum cans, glass, plastics, wood and metals may be recovered from the waste stream by individual collectors if they are segregated and made easily accessible, so separate, labeled bins for their storage should be provided. Hydrocarbons should be stored on an impermeable concrete floor with concrete bunding. It should be negotiated with the new oil supplier to take back the waste oils for recycling by a MITADER authorized recycler. When rehabilitating areas where, at present, oil storage are located and sites are hydrocarbon contaminated, it will

Management of environmental and social impacts from other physical interventions (implementation and operation of local infrastructure and facilities)	
	be necessary to clean up the site completely before starting any rehabilitation activities. A rapid environmental audit will need to be conducted to identify the action plan for site clean-up. Agro-processing facilities can cause solid waste pollution. The solid waste management practices in the applicable World Bank Group Agribusiness and Food Production Environmental, Health and Safety Guidelines, as well as the General Environmental, Health and Safety Guidelines need to be applied.
Water quality and quantity: the primary sources of potential impacts to water quality will be from pollutants from site runoff, accidental spills, which may enter surface waters (rivers, lakes and streams) directly or through the storm drainage system Agro-processing facilities from project associated investors Dams, weirs and other water regulation infrastructures to be rehabilitated/constructed can interfere negatively with the water and sediment flow required for the health of the ecosystem downstream the developments.	Surface run-off from the construction site should be directed into storm drains through adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. If oil is present, oil/water separators should be installed, which should be regularly cleaned. Channels, earth bunds or sand bag barriers should be provided onsite to properly direct storm water to silt removal facilities before discharge into the surrounding waters. Silt removal facilities should be maintained with deposited silt and grit being regularly removed after each rainstorm to ensure that these facilities are functioning properly at all times. Moreover, the rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities and not directly to the aquatic environment. Open stockpiles of construction materials on site should be covered with tarpaulin or similar fabric during rainstorm events to prevent the washing away of construction materials, while earthworks should be well compacted as soon as the final surfaces are formed to prevent erosion especially during the wet season. Water used in vehicle and plant servicing areas, vehicle wash bays and lubrication bays should be collected and connected to foul sewers via an oil/grease trap. Oil leakage or spillage should be contained and cleaned up immediately. Spent oil and lubricants should be collected and stored for recycling or proper disposal and should be stored on impermeable and bunded surfaces. All fuel tanks and chemical storage areas should be provided with locks. Fuel tanks should be placed in concrete bunded areas of 110% of the volume of the largest fuel tank. The contractor should also prepare guidelines and procedures for immediate cleanup actions following any spillages of oil, fuel or chemicals. Sewage from toilets, kitchens and similar facilities should be contained in sanitary cesspools before being transported by trucks to a nearby wastewater treatment plant. As for the wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, it should undergo large object removal by bar traps at drain inlets. Agro-processing facilities can cause water pollution. The water effluent standards in the applicable World Bank Group Agribusiness and Food Production Environmental, Health and Safety Guidelines, as well as the General Environmental, Health and Safety Guidelines need to be applied.

Management of environmental and social impacts from other physical interventions (implementation and operation of local infrastructure and facilities)	
Water retention and all the management measures to be adopted can also interfere negatively with other social activities downstream the developments	All measures should be taken to allow the normal flow of the river flows to be involved in the project so as not to affect the vitality of ecosystems that depend on these flows downstream including sediment transport and circulation. The most appropriate formulation of environmental minimum flow calculation to the system should be adopted taking into account the reduced magnitude of most of the water management schemes to be rehabilitated/built. The design and operation of water management infrastructures (small dams/weirs) need to be done in such a way as to not interfere negatively with the host of water uses by local people downstream and amongst other factors complying with OP 4.37 (Safety of Dams requirements). The downstream uses include drinking, washing, including ablutions, livestock, navigation, etc.
Flora and fauna: due to the nature of this program the OP 4.04 (Natural Habitats) was triggered and closer attention shall be paid to impacts in fauna, flora and habitats. Stream pollution by sediments from rehabilitation and construction activities by suspended and settable solid particles that may coat, bury, suffocate or abrade living organisms. Many aquatic invertebrates and fish may undergo changes in population density and community composition if high concentrations of suspended solids occur. Aquatic vegetation may be adversely affected by a reduction in photosynthesis due to high turbidity. Accidental hydrocarbon spill will have a detrimental impact on aquatic life.	To minimize stream pollution by sediments, it is recommended to reduce or prevent soil erosion from the construction site by: ▪ Scheduling construction/rehabilitation to avoid heavy rainfall periods (i.e., during the dry season) to the extent practical ▪ Contouring and minimizing length and steepness of slopes ▪ Protecting to stabilize exposed areas ▪ Install sediment traps, e.g. reed screens ▪ Re-vegetating areas promptly ▪ Designing channels and ditches for post-construction flows Additional measures include: ▪ Carefully select right-of ways/corridors of impact to avoid important natural areas such as wild lands and sensitive habitats ▪ Utilize appropriate clearing techniques (hand clearing vs. mechanized clearing) ▪ Maintain native ground cover beneath lines ▪ Replant disturbed sites soon after construction/rehabilitation ▪ Manage right-of-ways/corridors of impact to maximize wildlife benefits General implementation and enforcement of good agricultural practices and crop management, e.g. contour line farming, in order to reduce erosion. Prevent accidental hydrocarbon spills by storing hydrocarbons into concrete bunded areas and equip areas where

Management of environmental and social impacts from other physical interventions (implementation and operation of local infrastructure and facilities)	
	hydrocarbons are used with oil/grease/water separators.
Deforestation, soil degradation through erosion, habitat destruction may occur during clearing	Compensate lost trees in the same area (at least twice or three times the loss numbers). Install erosion prevention and control measures as mentioned above. Avoid sensitive habitat by fencing the area, so that the habitat cannot be entered by trucks and workers. Near sensitive areas such as reserves and areas of special vegetation special measures need to be taken. These should be but not limited to (i) cutting existing natural vegetation should be avoided to the maximum and be limited to the minimum necessary; (ii) any activity of vegetation removal must be authorized in advance by the competent environmental agency, especially to ensure destroying vegetation of any special value where it can be present; (iii) large trees and fruit trees and those that serve as shade or have landscape value should be preserved whenever possible, provided that they do not offer security risks, due to their state of degradation or that of the soil; (iv) shrubs must be preserved to minimize soil erosion; (v) in the areas for deposits of various materials during construction and even during operation, shrubs should be maintained; (vi) where possible, seed collection should be performed in order to preserve the species object of any form of disturbance intervention. This has the potential to secure necessary inputs for environmental compensation by way of replanting, which already has poor in the project area; (vii) deforestation through the use of standard tractors or blades should be strictly prohibited. The use of fire should not be admitted in any phase of the work; and (viii) the use of herbicides, defoliants or any types of chemicals should be prohibited regardless of their degree of toxicity, for logging purposes or any purpose in the reserve areas, and access roads.
Health and safety: occurrence of accidents (direct and indirect) to workers on-site, pedestrians, and machine operators or passengers during construction/rehabilitation and operation	Occupational health and safety measures should include: ▪ Restriction of access to the construction site by proper fencing with site boundaries adjoining roads, streets or other areas accessible to the public should undergoing high enough fencing along the entire length except for a site entrance or exit ▪ Establishment of buffering areas around the site ▪ Provision of guards on entrances and exits to the site ▪ Installation of warning signs at the entrance of the site to prohibit public access ▪ Provision of training about the fundamentals of occupational health and safety procedures ▪ Provision of appropriate personal protective equipment (PPE) (impermeable latex gloves, working overalls, safety boots, safety helmets, hearing protecting devices for workers exposed to high noise levels, and lifesaving vests for construction sites near water bodies) ▪ Ensuring that workers can swim (at work sites near water) and that lifesaving rings are available at the worksite, near water ▪ Ensuring that the protective material is being used wherever it is required

Management of environmental and social impacts from other physical interventions (implementation and operation of local infrastructure and facilities)	
	▪ Ensuring that especially sensitive or dangerous areas (like areas exposed to high noise levels, areas for especially hazardous work etc.) are clearly designated ▪ Ensuring that all maintenance work necessary for keeping machines and other equipment in a good state will be regularly carried out. ▪ Ensuring that the workers (and especially those doing hazardous work or otherwise exposed to risks) are qualified, well trained and instructed in handling their equipment, including health protection equipment ▪ In case blasting is required the Contractor should work according to an approve Blasting Plan, which need to be approved by the Supervising Engineer and the Client ▪ Provision of adequate loading and off-loading space ▪ Development of an emergency response plan ▪ Provision of on-site medical facility/first aid ▪ Provision of appropriate lighting during night-time works ▪ Implementation of speed limits for trucks entering and exiting the site Regarding hazardous substances, the following measures should be implemented: ▪ Ensuring that hazardous substances are being kept in suitable, safe, adequately marked and locked storing places ▪ Ensuring that containers of such substances are clearly marked, and that material safety data sheets are available ▪ Ensuring that all workers dealing with such substances are adequately informed about the risks, trained in handling those materials, and trained in first aid measures to be taken in the case of an accident. ▪ Designating an area where contaminated materials and hazardous waste can be stored for proper disposal according to environmental guidelines in force in the country and as specified in the applicable World Bank Group Environmental, Health and Safety Guidelines of April 2007. Regarding waterborne and water-related diseases substances, the following measures should be implemented by the contractor: ▪ The adoption of good housekeeping practices for ensuring hygiene on site ▪ The elimination of pools of stagnant water, which could serve as breeding places for mosquitoes The provision of bed nets for workers living on site. Ideally, these nets should be treated with an insecticide
Development of agriculture might increase the prevalence of water-borne diseases (intestinal and urinary bilharzia and malaria)	The appropriate elimination of waste of all types, including wastewater

Management of environmental and social impacts from other physical interventions (implementation and operation of local infrastructure and facilities)	
Infrastructures to manage water (e.g. dams/weirs) may translate into reduction of the flow in rivers and streams, conflicts for water usage, etc.	▪ Monitor the prevalence of intestinal and urinary bilharzia and malaria. If the prevalence increases implement the following: ▪ Distribute long-lasting insecticidal impregnated mosquito bed nets (LLINs) to affected communities, to control malaria ▪ Mass treatment of high risk groups with praziquantel need to be carried out to control intestinal and urinary bilharzia ▪ Minimize contact with infected water by requiring people to wear boots and gloves ▪ Support to access to drinking water and autonomous sanitation facilities ▪ Reduce fecal and urinary pollution of surface waters by prohibiting defecation and urine in water and putting in place sanitation systems (latrines, etc.) ▪ Educate affected communities with regard to these water-borne diseases ▪ Follow WHO guidelines ▪ design and operation of water management infrastructures (small dams/weirs) need to be done in such a way as to not interfere negatively with the host of water uses by local people downstream. The uses include drinking, washing, including ablutions, livestock, navigation, etc. ▪ make use of existing water management structures and where these do not exist and/or are weak assist local authorities and farmers to establish and strengthen these (e.g. water user associations) to develop and enforce water sharing systems and procedures that reduce conflicts and promote harmony
Socioeconomic impact including reduction of arable and pastoral land, loss of access to natural resources in PAs, prevention of HIV/AIDS and influx of external workers: potential loss of land or land use, interruptions to means of livelihood, disturbances to cultural resources, and influx of foreign workers. Public security issues regarding influx of external workers, mobilization and demobilization of staff, lack of job opportunities for local people	▪ Select project sites and rights-of-way (ROW) in a consultative and participatory manner so to avoid important social, agricultural, and cultural resources and avoid areas of human activity ▪ Utilize alternative designs to reduce land and ROW width requirements and minimize land use impacts ▪ Ensure a high rate of local employment to minimize influx of foreign contract workers: preferred preference to local people in order to avoid social conflicts ▪ Manage PF development and community development action planning (CDAP) in compliance with the World Bank Safeguard Policy on Involuntary Resettlement OP/BP 4.12 ▪ Prevention of STDs, HIV/Aids: Create awareness and educate workers and nearby communities. Provide free, sufficient, good quality condoms for personnel. Provide treatment for infected personnel ▪ Supply and enforce wearing protective equipment (helmets, boots, dress, gloves, masks, goggles, etc.) by workers ▪ Strictly follow government instructions on the hiring of foreign workers and clarify criteria for hiring them

Management of environmental and social impacts from other physical interventions (implementation and operation of local infrastructure and facilities)	
	▪ Favor local labor where the required skills are available, including offering training opportunities to increase local people's chances of getting work/jobs. ▪ Environmental management of construction waste (installation of litter bins, regular collection and disposal in authorized sites) ▪ Awareness on respect for local customs ▪ Dissemination of the use of farmyard manure ▪ Rational use of mineral fertilizers (avoiding excess nitrogen fertilizer) ▪ Leave land fallow to restore soil fertility ▪ Cover bare soil with a vegetation cover to reduce soil erosion ▪ Educate and training of farmers
Physical Cultural Resources There is the possibility of physical cultural resources and particularly forests of particular importance being found in in the project area	Adopt "chance find" procedures and other to ensure that objects and sites of value that might be found in the project area are adequately preserved. If during construction/installation an important arte-fact, forest of particular value is found, construction should be stopped and the responsible Mozambican authorities be warned and involved in an investigation of the site. Construction/installation can only resume after the green light has been given by the responsible Mozambican authorities

ANNEX 8: Registered Pesticides in Mozambique (June 2015)

Microsoft Excel
97-2003 Worksheet

ANNEX 9: Environmental and Social Screening Form for subprojects and activities

Nr of order:……	Date of filling

This ESSF form is designed to assist in the environmental and social screening of Program activities to be executed in the field on-site.

Activity Location:……...

Activity Developers (e.g. Communities/MSME, specify)……

Activity Leaders:……

Part A: Brief description of the activity

(Describe the main area(s) of Program operation that will be the focus of the planned intervention(s), e.g. plantations, commercial harvesting, agriculture, biomass/energy)

……

……

……

……

Part B: Selection/approval of the operators and activity in general in light of pre-selection criteria

Operators and sites and pre-selection criteria	**Yes**	**No**	**Remarks** **Follow the various measures foreseen in the ESMF document to counteract negative outcomes**
Operators			
Are the operators cognizant of the main aspects that characterize the Program (objectives, components, activities)			
Do the operators (Community or MSME) meet the defined selection criteria to be involved in the program			
Have the operators (Community or MSME) attended any training/capacity building activity to acquire the basic knowledge, skills and attitudes required to participate in the program			
Does the activity involve women and the youth and/or other recognized vulnerable groups, including their access to tangible benefits as part of the activity development?			
Especially for activities promoted by MSME do they have comprehensive agreements/contracts with the communities that are the land title holders of the areas to be exploited?			
Do the agreements/contracts with the communities clearly specify their rights and entitlements as part of the operation?			
Is the beneficiary engaged in the forest certification process or its equivalent?			
General siting of the activities			
Is the proposed location of the activity aligned with the land/resource use plan			

Operators and sites and pre-selection criteria	Yes	No	Remarks Follow the various measures foreseen in the ESMF document to counteract negative outcomes
established for Program operations (especially at rural and communities land use plan level)?			

Part C: Identification of environmental and social impacts

Environmental and social concerns	Yes	No	Remarks
Sector resources			
Especially for plantation/reforestation will the activity be aimed at restoring degraded areas?			
Will it occupy a large area of land and require other resources (e.g. water, sand, timber, etc.)			
Especially for commercial harvesting does the activity encompass a management plan, including restoration of the harvested resources?			
Especially for plantation/reforestation will the activity/proposal suits the edaphic-climatic (soil and climate) conditions of the proposed site/location (in order to minimize its lack of success)?			
Does the proposal depend on an existing dam or weir? Or implies the construction of a new one?			
Biodiversity			
Will the activity cause impacts on endemic, rare, vulnerable species (i.e. IUCN Red List species, nationally protected species) and/or important economic, ecological and components?			
Are there any areas of environmental or ecological sensitivity that could be adversely affected by the activity? e.g. wetlands (lakes, rivers, seasonal floodplains), mangroves, native forest, etc.			
Are there (rivers) streams in the proposed location area? Permanent water or temporary water courses?			
Do rivers and streams show riparian vegetation?			
Protected areas			
Does the proposed activity area (or its components) have impact on protected areas (national parks, national reserves, protected forests, a World Heritage Site, an IBA site, etc.?)			
If yes, are the interference with a protect area, is it aligned with the zoning and resource management plan established for that area?			
If the activity is outside protected areas, but at a short distance from protected areas, could it adversely affect the ecology within the protected area? (e.g. interference with the flight of birds, migration of mammals)			
Geology and Soils			
From the geological or soil point of view are there unstable areas (erosion, landslide, collapse)? Gully erosion? Areas with slopes with more than 25%?			
Are there any areas at risk of soil salinization?			
Landscape/aesthetics			
Will the activity have any adverse effect on the aesthetic value of the landscape?			
Historical, archaeological or cultural sites			
Has the activity the potential to change one or several historic, archaeological, cultural sites, sacred trees or rocks, graves or require excavations?			
Loss of assets and other			
Does the activity trigger the temporary or permanent loss of natural or critical natural habitat, crops, agricultural land, grazing, fruit trees, houses and domestic infrastructure?			
Pollution			
Is the activity likely to cause a high levels of noise or affect noise levels in the area?			
Has the activity the potential to generate significant amounts of solid and liquid wastes? (i.e. waste oils, high BOD effluents, heavy metals, other toxic chemicals, pesticides, fertilizer pollution, etc.)			
Will there be use of generators for electricity sourced by fuel?			
If "yes" has the client prepared a plan for waste collection and disposal or management (spils)?			
Is there any risk that activity could affect the quality of surface water, groundwater, drinking water sources			
Has the activity any potential of affecting the atmosphere and causing air pollution (dust, PM10, various gases such NOx, SO2, etc.)			

Environmental and social concerns	Yes	No	Remarks
Lifestyle			
Does the activity have any potential of causing alterations in the lifestyle of local people?			
Could the activity lead to the accentuation of social inequalities?			
Does the activity have the potential to lead to incompatible uses of resources or to social conflicts between different users or is there a risk that local communities could lose the access to their land or lose the use rights/access of/to their land and related resources?			
Health and Safety			
Does the activity have the potential to lead to risks of accident for workers and communities?			
Does the activity have the potential to cause risks to the health of workers and the communities? (i.e. HIV/Aids)			
Does the activity have the potential to lead to an increase in the population of disease vectors? Malaria, Intestinal and Urinary Bilharzia and others			
Do elephants, crocodiles, and hippos exist in the proposed location area? Or its surroundings? (may cause death to workers)			
Local Incomes			
Does the activity reduce the income of any person?			
Does the activity create temporary or permanent jobs?			
Does the activity empower women, the youth and other vulnerable groups to increase their income levels?			
Gender Concerns			
Does the activity promote the integration of women, the youth and other vulnerable groups and provide them access to resources such as business opportunities in timber and non-timber products, irrigated agriculture, markets, etc.?			
Does the activity take into account the concerns of women, the youth and other vulnerable groups and does it encourage their involvement in decision-making?			
Is there Environmental and Social Management Capacity and Equipment by the proponent?			

Public Consultation and Participation

Have public consultation and participation been sought?

Yes____ No___

If "Yes", briefly describe the measures taken to this effect.

Part D: Mitigation

For all "Yes" given answers briefly describe the measures taken to that effect.

……

……

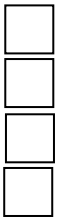
……

……

……

Part E: Project classification and environmental and social work

- No environmental and social work needed ……..
- Freestanding ESMP or ESCs ……..
- ESIA with an Environmental and Social Management Plan (ESMP)
- Contractor ESMP



Activitiy classified as category:

A ☐ B ☐ C ☐

ANNEX 10: Preliminary Environmental Information Sheet

Ficha de Informação Ambiental Preliminar (FIAP)[43]

1. **Nome da Actividade**

_____
_____
_____
_____

2. **Tipo de Actividade**

a) Turística ☐ Industrial ☐ Agropecuária ☐ Energética ☐ Serviços ☐ Outra ☐ (especifique)

_____

_____

_____

_____

b) Nova ☐ Reabilitação ☐ Expansão ☐ Outro ☐ (especifique)

_____

_____

_____

_____

3. **Identificação do(s) Proponente(s):**

_____

_____

_____

_____

4. **Endereço/Contacto**

Av./Rua:

_____

_____

[43] Appears as Annex VI of Decree 54/2015 of December 31st, which regulates the environmental impact assessment process in Mozambique

_____

Telefone Fixo: _____; Fax: _____
Celular: _____ /_____/ _____
E-Mail _____

5. Localização da Actividade

5.1. Localização Administrativa

Bairro: _____ Vila _____
Cidade _____
Localidade _____ Distrito _____
Província _____

Coordenadas Geográficas:

1. _____, 2. _____
1. _____, 2. _____

5.2. Meio de Inserção

Urbano ☐ Rural ☐ Periurbano ☐

6. Enquadramento no Instrumento de Ordenamento Territorial

Espaço habitacional ☐ Industrial ☐ erviços ☐ Outro ☐

(especifique)

_____

_____

_____

_____

7. Descrição da Actividade:

7.1. Infra-estruturas da actividade, suas dimensões e capacidade instalada (juntar sempre que possível as peças desenhadas e descritas da actividade).

_____

_____

_____

_____

_____

7.2. Actividades Associadas

_____

_____

_____

_____

7.3. Breve descrição da tecnologia de construção e de operação

_____

_____

_____

_____

7.4. Actividades principais e complementares

_____

_____

_____

_____

_____

_____

_____

7.5. Tipo, origem e quantidade da mão-de-obra

_____

_____

_____

_____

7.6. Tipo, origem e quantidade de matéria-prima e sua proveniência

_____

_____

_____

_____

_____

7.7. Produtos químicos citados cientificamente a serem usados (caso a lista seja longa deverse-á produzir-se em anexo)

_____

_____

_____

_____

_____

7.8. Tipo, origem e quantidade de consumo de água e energia

_____

_____

_____

7.9. Origem e quantidade de combustíveis e lubrificantes a serem usados

_____

_____

_____

_____

7.10. Outros recursos necessários

_____

_____

_____

_____

8. Posse de Terra (situação legal sobre a aquisição do espaço físico)

_____

_____

_____

_____

9. Alternativas de localização da actividade: (motivo da escolha do local de implantação da actividade indicando pelo menos dois locais alternativos)

_____

_____

_____

10. Breve informação sobre a situação ambiental de referência local e regional:

_____

_____

_____

10.1. Características físicas do local de implantação da actividade

Planície ☐ Planalto ☐ Vale ☐ Montanha ☐

10.2. Ecossistemas predominantes

Fluvial ☐ Lacustre ☐ Marinho ☐ Terrestre ☐

10.3. Zona de localização

Costeira ☐ Interior ☐ Ilha ☐

10.4. Tipo de vegetação predominante

Floresta ☐ Savana ☐ Outro ☐

10.5. Uso do solo de acordo com o plano de estrutura ou outra política vigente

Agropecuário ☐ Habitacional ☐ Industrial ☐ Pretecção ☐ Outro ☐
(especifique)

_____

_____

_____

_____

10.6. Infra-estruturas principais existentes ao redor da área da actividade

_____

_____

_____

_____

11. Informação Complementar

- Mapa de localização (a escala conveniente)
- Mapa de enquadramento da actividade na zona de localização (a escala conveniente)
- Outra informação que julgar relevante.

12. Valor Total de Investimento:

_____

_____

_____

ANNEX 11: Guidelines for Annual Reviews

1. Objectives and Scope of the Work

Objectives:

The objectives of annual reviews of ESMF implementation are:

a) To assess Project performance in complying with ESMF procedures, learn lessons, and improve future performance; and
b) To assess the occurrence of, and potential for, cumulative impacts due to Project-funded and other development activities in the project area.

The annual reviews are intended to be used by Project management to improve procedures and capacity for integrating land, forests and other natural resources and environmental/social management into the Project operations. They will also be the main source of information to the Bank supervision missions.

Scope of Work:

ESMF Performance Assessment

The overall scope of the performance assessment work is to:

a) Assess the adequacy of the subproject approval process and procedures based on interviews with Project participants, Project records, and the environmental and social performance of a sample of approved subprojects;
b) Assess the adequacy of ESMF roles and responsibilities, procedures, forms, information, resource materials, etc.;
c) Assess the needs for further training and capacity building;
d) Identify key risks to the environmental and social sustainability of subprojects; and
e) Recommend appropriate measures for improving ESMF performance.

The following tasks will be typical:

a) Review central and district records of subproject preparation and approval (e.g. applications; management in the country; screening checklists; EMPs, CDAPs and PMPs; appraisal forms; approval documents), as well as related studies or reports on wider issues of land, forests and natural resources and environmental management in the country
b) On the basis of this review, conduct field visits of a sample of approved subprojects to assess the completeness of planning and implementation work, the adequacy of the environmental/social design, and compliance with proposed mitigation measures. The sample should be large enough to be representative and include a substantial proportion of subprojects that had (or should have had) a field appraisal according to the established in the ESMF criteria. Subprojects in sensitive natural or social environments should especially be included.
c) Interview Project and district officials responsible for subproject appraisal and approval to ascertain their experience with ESMF implementation, their views on the strengths and weaknesses of the ESMF process, and what should be done to improve performance. Improvements may concern, for example, the process itself, the available tools (e.g. guidelines, forms, information sheets), the extent and kind of training available, and the
d) Develop recommendations for improving ESMF performance

Cumulative Impacts Assessment

Under this heading the annual review assesses the actual or potential cumulative impacts of subprojects with other subprojects or development initiatives on the environment, natural resources and community groups. Cumulative impacts result from a number of individual small-scale activities that, on their own, have minimal impacts, but over time and in combination generate a significant impact. For example:

- Deforestation due to the overharvesting of poles and timber for small-scale construction and other rural activities;
- Decline in groundwater levels or quality due to ill planned and sited forests plantations or the construction of numerous wells and the introduction of numerous small scale irrigation works;
- Overwhelmed or illegal waste and dumping sites due to the inappropriate disposal of increasing amounts of waste materials;
- Illegal poaching of wildlife due to expansion of land under cultivation or increased proximity and access to protected areas through construction of small access roads; and
- Attraction of large migrant populations to communities that have successfully introduced improved social infrastructure (such as schools, health centers or water sources) resulting in overcrowding, depletion of resources (e.g. space, supplies, water), etc.

The function of this assessment is primarily to serve as an "early warning" system for potential cumulative impacts that might otherwise go undetected and unattended to. It will be largely based on the observations of people interviewed during the field work, and trends that may be noticed by district or regional officials. Where cumulative impacts are detected or suspected, recommendations will be made to address the issue, perhaps through more detailed study to clarify matters and what should or can be done about them.

2. **Report Form**

Subproject Form

1. **Name of District or Local Government:**
2. **Name and Position of Review Authority Completing the Annual Report:**
3. I **Reporting Year:**
4. **Date of Report:**
5. **Subprojects (Community/MSME):**

Please enter the numbers of subprojects in the following table. *(Note: The types of subprojects should be the same as those listed in Chapter 2 of the ESMF.)*

Type of Activities	Approved this year	Application included an ESMF Checklist	**Number of Activities Requiring:**						
			Field Appraisal	ESMP	PMP		PF		
Land and natural resources inventories									
Land and forests use plans									
Issuing of DUATs									
Forest plantations									
Forests concessions for commercial harvesting									
Production and use of biomass energy									
Agroforestry systems including related infrastructures (e.g. roads, bridges, small size dams, commercial infrastructures, etc.)									
Other agricultural and rural development infrastructures									

6. Were there any **unforeseen environmental or social problems** associated with any subprojects approved and implemented this year? If so, please identify the subprojects and summarize the problem(s) and what was or will be done to solve the problem(s). Use a summary table like the one below.

Subproject	Problems	Action Taken	Action to be Taken

7. Have any **other environmental or social analyses** been carried out by other public or private agencies in your district and province? If so, please describe them briefly.

_____
_____
_____
_____

8. Have you noticed any problems **with implementing the ESMF** in the past year (e.g. administrative, communications, forms, capacity)? If so, please describe them briefly.
9. _____
   _____
   _____
10. **Training:** Please summarize the training received in your district/province in the past year, as well as key areas of further training you think is needed.
11. _____
    _____
    _____

Group	Training Received	Training Needed
Review authorities		
Approval authorities		
Extension workers		
Communities		
Developers (Communities/MSME)		

ANNEX 12: Proposed Public Participation Process to be followed under the Project

1 Overview

Public participation and communication will be conducted mainly to meet the requirements of the environmental regulator in Mozambique, i.e. the Ministry of Land, Environment and Rural Development (MITADER) as stipulated by **Decree 54/2015**, which regulated the environmental impact assessment process and Diplomas 129/2006 and 130/2006, on public participation as well as **Decree 31/2012** that regulates "*Resettlement Process Resulting from Economic Activities* and other related regulatory instruments. The process will also be in line with the WB regulations and guidelines on the same subject.

Under the above-mentioned regulations adequate environmental and social management processes, as set out in the various instruments such as ESMF, PMP, PF (MozBio), ESIA/ESMP, CDAP, etc. emphasize the clear need for frequent interaction and communication between project developers and the general public, parties affected, external interested and concerned organizations, as well as project scientists and engineers.

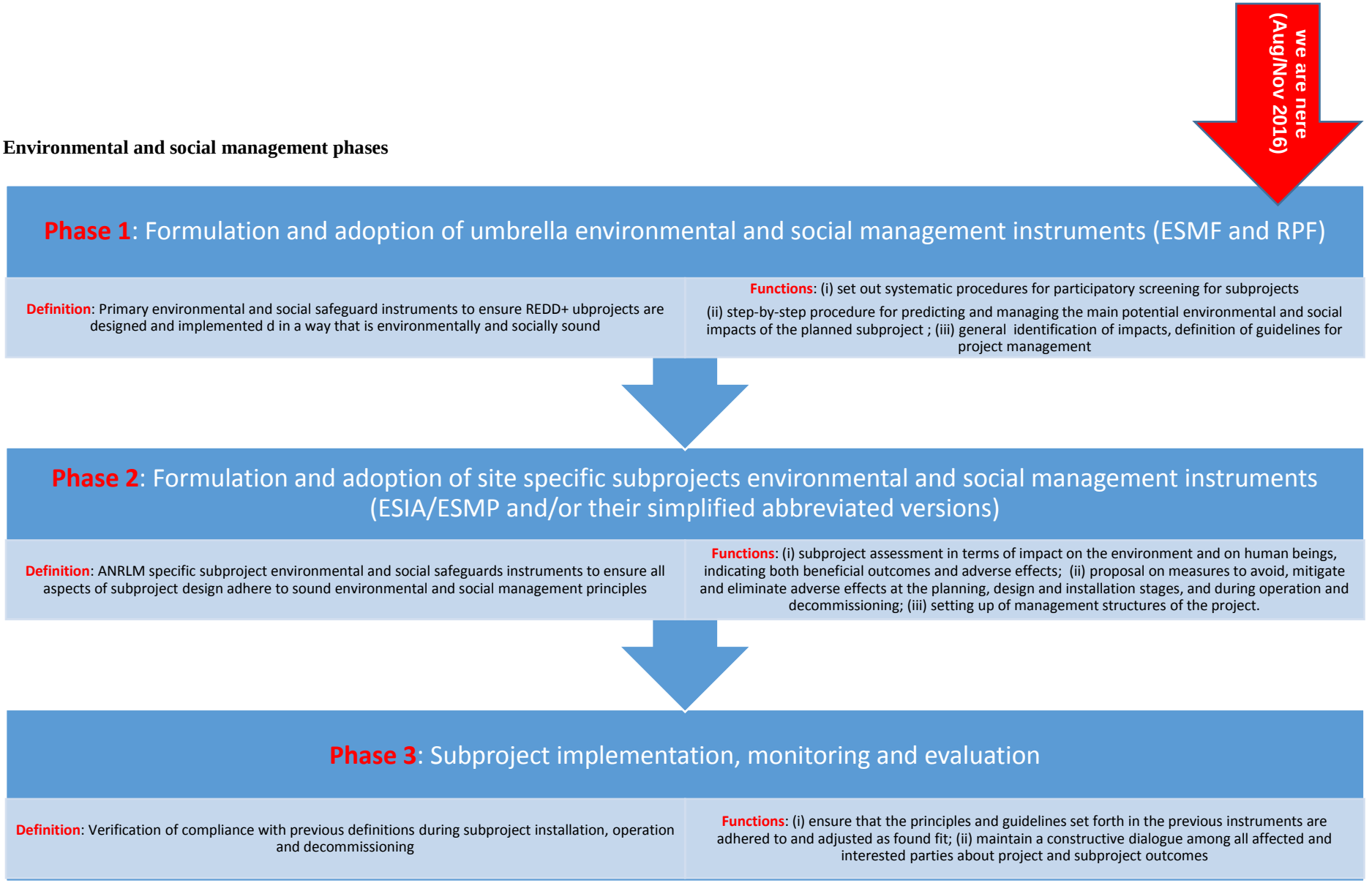
Each aspect of the technical investigations generally includes a data collection and verification phase, followed by analysis and evaluation, then synthesis and conclusions. The findings of each phase should be communicated as appropriate to external parties. Project implementation and monitoring as well as phasing out should also be characterized by solid engagement of all interested and affected parties.

The main objectives of the public consultation and involvement are to:

- Keep Project Interested and Affected Parties (PI&APs) informed about key issues and findings of each stage of the process;
- Gather concerns and interests expressed by various project stakeholders;
- Obtain contributions/opinions of stakeholders in terms of avoiding/minimizing possible negative impacts and maximizing positive impacts of the project.
- Finally, support the social dialogue and identify from the onset, stakeholders' perceptions and expectations, which can contribute to the action planning and effective communication in order to minimize the negative impacts of the project. The process also allows for rethinking the project's technical aspects.

From the environmental and social management point of view it is planned that the **Environmental and Social Management Framework (ESMF) for REDD+ Under Forest Investment Program (FIP)** will adopt the following work phases:

Environmental and social management phases



MM

Phase 1 – Formulation and Adoption of the ESMF (and adoption of MozBio's PF): these are the primary (umbrella) environmental and social safeguard instruments aimed at ensuring that MozFIP subprojects are designed, approved, implemented, monitored and evaluated in a way that adheres to sound management principles, systems and procedures. These safeguard instruments are usually relevant where there is still an unclear definition of the project (i.e. specific definition of subprojects) interventions. Among other aspects they set out (i) systematic procedures for participatory screening for subprojects; and (ii) a step-by-step procedure for predicting and managing the main potential environmental and social impacts of the planned subproject activities. It is going to be at this stage that public participation and involvement with the project will be initiated in a systematic way. MozFIP is at this phase at the moment, i.e. January/February 2016.

Phase 2 – Formulation and adoption of site specific subprojects environmental and social management instruments (ESIA/ESMP and CDAP and/or their simplified abbreviated versions): at this stage safeguard instruments are aimed at (i) assessing the proposed development in terms of impact on the natural and social environment, indicating both its beneficial outcomes and adverse effects; (ii) proposing measures to be taken in order to mitigate and eliminate adverse effects both at the planning, design and installation stages and during operation and possible decommissioning.

Depending on the magnitude of project impacts the following sub-stages can be involved in the preparation of these instruments:

- Inception Phase - Pre-Assessment Application Form and Project Categorization (mandatory)
- Scoping Phase and Definition of Detailed ESIA Terms of Reference (for Categories A and B Projects)
- Environmental and Social Impact Assessment and Environmental and Social Management Plan Phase (for Categories A and B Projects)

Community Development Action Plans (CDAPs) are required where subprojects result in access restrictions to natural resources in designated PAs for people who used these for their livelihoods.

2 Public Participation Process

2.1 Principles and General Orientation

The public participation regulations and guidelines require that in addition to interviews and meetings with individuals (e.g. key informants), each one of the above-mentioned phases should be marked by a series of public meetings and where appropriate focus groups discussions in which relevant Interested and Affected Parties (I&APs) are actively involved.

During the meetings the environmental and social management teams in close collaboration with the Developer (MITADER) representatives will maintain I&APs informed of the main issues and findings of each phase and collect concerns and interests expressed by the various project stakeholders.

All the public meetings will be non-technical and are expected to contribute to get stakeholders' inputs in terms of avoiding/minimizing possible negative impacts and optimizing the positive impacts of the project.

Community consultation and participation should be at the center of the entire process as a way of providing an opportunity for all relevant stakeholders and particularly affected/beneficiary households, communities, public and private organizations to get informed about the project. The process is also designed to instill a sense of ownership for the project and to provide an opportunity for all concerned parties to present their views and interests and expand options for dealing with sensitive matters.

It is important to include the affected communities at the grass root level as integral part of the project development and the environmental and social management process. Therefore, communities must have their own representatives and should be clustered in an appropriate way to ensure social cohesion in addressing the various issues. Considering the different social roles of men and women, it is likely that the impact of the project will be felt differently by men and women and therefore they should be

consulted separately. Separate focus group discussions should be held with women and men in each project phase, in each community influenced/affected by the project.

Community leaders must be people with leadership capacity and accepted by local people as their representatives. They shall get involved in the communication and participation process to integrate community wishes and institutional arrangements to reach agreements.

At the same time, the community participation process will play an important role in community organization, allowing for the identification of people within communities that can be used in the various aspects of project development and implementation.

There will be a need to ensure that a practical communication system is established in order to strengthen the ability of all project beneficiaries and affected people to articulate, disseminate and make their own decisions.

In order to empower the communities and the beneficiaries the communication systems to be adopted should embrace the "rights based approach".

2.2 Methodologies

Communication should be conducted in different ways and using different methods as found fit for each case and circumstance, such as:

- Public meetings with groups of interested and affected people. These meetings are publicly announced using national newspapers of major circulation and are open to all those who wish to attend;
- Community and local meetings target to certain communities and groups identified are crucial in the project's communication strategy at a given point;
- Focus group discussions separately with women, men, youth, business people, company managers, farmers, etc.

Every meeting should be properly documented. The minutes of such meetings should, among other aspects, contain:

1. Date
2. Venue - City/Bairro/Quarter
3. Summary of the main issues presented during the meeting by the developer and/or their representatives (Environmental and Social Workers and/or Engineering teams)
4. Summary of the main issues presented by the participants (Note: All concerns and interests expressed should be recorded)
5. Feedback given
6. List of participants including the names and position of the organizers as well as contact details of all who attended the meeting.

Meetings should be conducted in both languages, Portuguese and local languages. Local languages relevant for each city/bairro/quarter will be identified in due course, particularly during Phase 1, i.e. of **Formulation and Adoption of the ESMF (and adoption of the MozBio PF)**. Where needed, local interpreters will be engaged to facilitate this process.

Other means of communication should also be used to disseminate information and all different kinds of instructions to affected and concerned people. These should include but not be limited to:

- radio – national, provincial, municipal and community
- television – national, provincial, municipal and community
- newspapers and news bulletins – national, provincial, municipal and community
- leaflets
- letters

- word-of-mouth
- other media and channels.

Women have often limited or no access to written and audio/audio-visual information channels. It is therefore important to find out, already at the initial phase, how/where women can be reached most efficiently. It is likely that market places, health posts, public standpipes, farms, etc. become strategic meeting points for reaching women in large numbers.

Communication material produced specifically to foster project interests should be circulated in both languages, Portuguese and local languages, using the most appropriate channels for men and women.

The exact venues and the people and entities to be involved in the meetings as well as the way in which the various stakeholders will be grouped will be identified and specified at an opportune time.

In line with the regulations hard copies of the Drafts of main reports, i.e. **ESMF** and **later** ESIA/ESMP and CDAP and/or their simplified abbreviated versions as well as Non-Technical Summaries should also be made available to the public in certain places such as MITADER and other ministries directly involved, e.g. agriculture, public works, etc. (at the central and Provincial level) Municipalities, etc. (The MozBio PF has already passed through full disclosure prior to its approval by the WB in 2014.)

This document outlines the various aspects that will characterize the public meetings associated with the current phase of REDD+/FIP/DGM i.e. **Phase 1 – Formulation and Adoption of the ESMF**and it is be structured as follows:

Public Consultation Meetings

Types of Meetings	Objectives	Participants[44]	Location	Dates
Public Meetings	▪ Inform Interested and Affected Parties (PI&APs) about key issues of REDD+/FIP/DGM and particularly its expected positive and negative environmental and social impacts ▪ Gather concerns and interests; ▪ Initiate social dialogue and identify stakeholders' perceptions and expectations to finalize ESMF and PMP.	Open meetings announce publicly using national newspaper at least 15 days before the date of the meeting. A number of well identified people and institutions will receive direct invitations to participate in these meetings. These include representatives of (i) central, provincial, district relevant institutions; (ii) private organizations and NGOs; (iii) selected influential people REDD+/FIP/DGM staff and environmental and social consultants		
Local/Community Meetings	▪ Inform Interested and Affected Parties (PI&APs) about key issues of REDD+/FIP/DGM and particularly its expected positive and negative environmental and social impacts ▪ Gather concerns and interests; ▪ Initiate social dialogue and identify stakeholders' perceptions and expectations to finalize ESMFand	Selected people and institutions will receive direct invitations to participate in these meetings. These include representatives of (i) district institutions; (ii) private organizations and NGOs; (iii) selected influential people at the district level Purposively selected sample of local women, men, youth, etc.		

[44] A detailed list of participants to be presented in due course.

Types of Meetings	Objectives	Participants[44]	Location	Dates
	PMP.	REDD+/FIP/DGM staff and environmental and social consultants		
Focus Groups Discussions	▪ Inform Interested and Affected Parties (PI&APs) about key issues of REDD+/FIP/DGM and particularly its expected positive and negative environmental and social impacts ▪ Gather concerns and interests; Initiate social dialogue and identify stakeholders' perceptions and expectations to finalize ESMF	Purposively selected samples of local: ▪ women, ▪ men, ▪ youth and ▪ local leaders Environmental and social consultants		

3 Gender and Poverty Alleviation Sensitive Communication Process

Women play a crucial role in agriculture and rural development as well as natural resources management. The communication process and strategy to be adopted should be deliberately sensitive to both aspects. In order to be responsive to those aspects it should be informed by adequate knowledge and understanding of gender division of roles and poverty issues within the communities and households to be involved.

In order to prepare a more detailed gender-sensitive participation and communication plan, the consultant and project implementation teams need to gain a thorough understanding of the gender roles, responsibilities and needs in the communities influenced/affected by the project. Focus should be on issues as such:

- Daily division of labor between women and men / young girls and boys at household level. Gender (and age) roles related to production and consumption at household level.
- Are women/men informed of the planned project? How will it affect their activities and living standards?
- What proportion of men and women use the resources related with the project? How often do they use them on a daily, weekly, monthly and yearly basis?
- What concerns/constrains women and men have in relation to current natural and agricultural resources?
- Will the project under consideration solve the agricultural and rural development problems women/men encounter now in the conduct of their public, family and social activities?
- Which solutions could be envisaged under the project, in order to reduce prevailing constraints?
- How can the women/men participate in the implementation of the project?
- Will the project bring about changes in job opportunities as well as improvement in social services particularly appropriate for women and children?
- What impact (positive and negative impact) will the project have on the activities and living conditions of women and men during construction/rehabilitation and operation?
- What impact can construction workers have on local population – women vs. men – and socio-economic activities, including the possible spread of STDs and HIV/AIDS?

In order to have in place adequate measures to deal with the HIV/AIDS epidemic that may escalate during the construction/rehabilitation process, a communication program and strategy will be developed. This will be aimed at:

- Educating workers and local people – women and men – and communities during construction
- Opening of active STDs/HIV/AIDS voluntary counselling and testing centers to prevent and treat infected and affected people.

The formulation of the Safeguard Instruments will be particularly important to get an initial understanding of the social dynamics resulting from the answers to those questions. But the investigative approach will continue in an appropriate manner throughout the various phases of the project, including during its implementation and post-implementation.

Annex 1

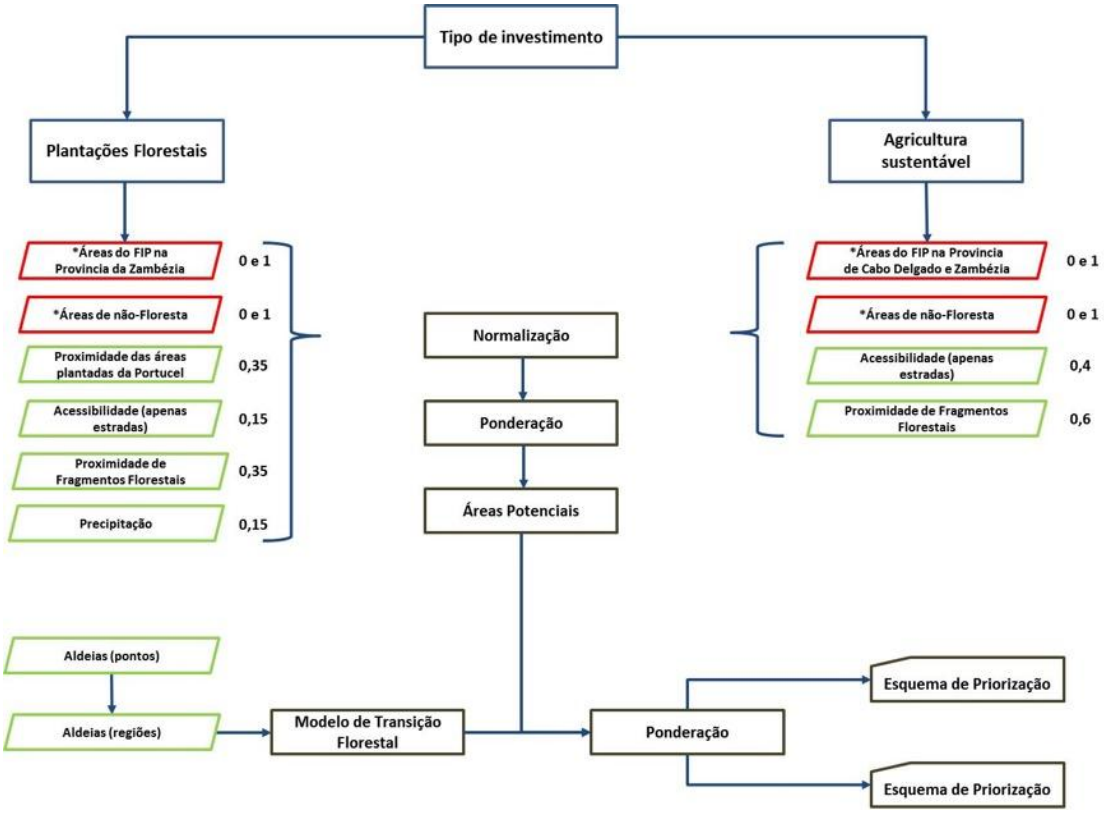
Preliminary list of entities to receive direct invitations to send representatives to the Public Participation Meetings

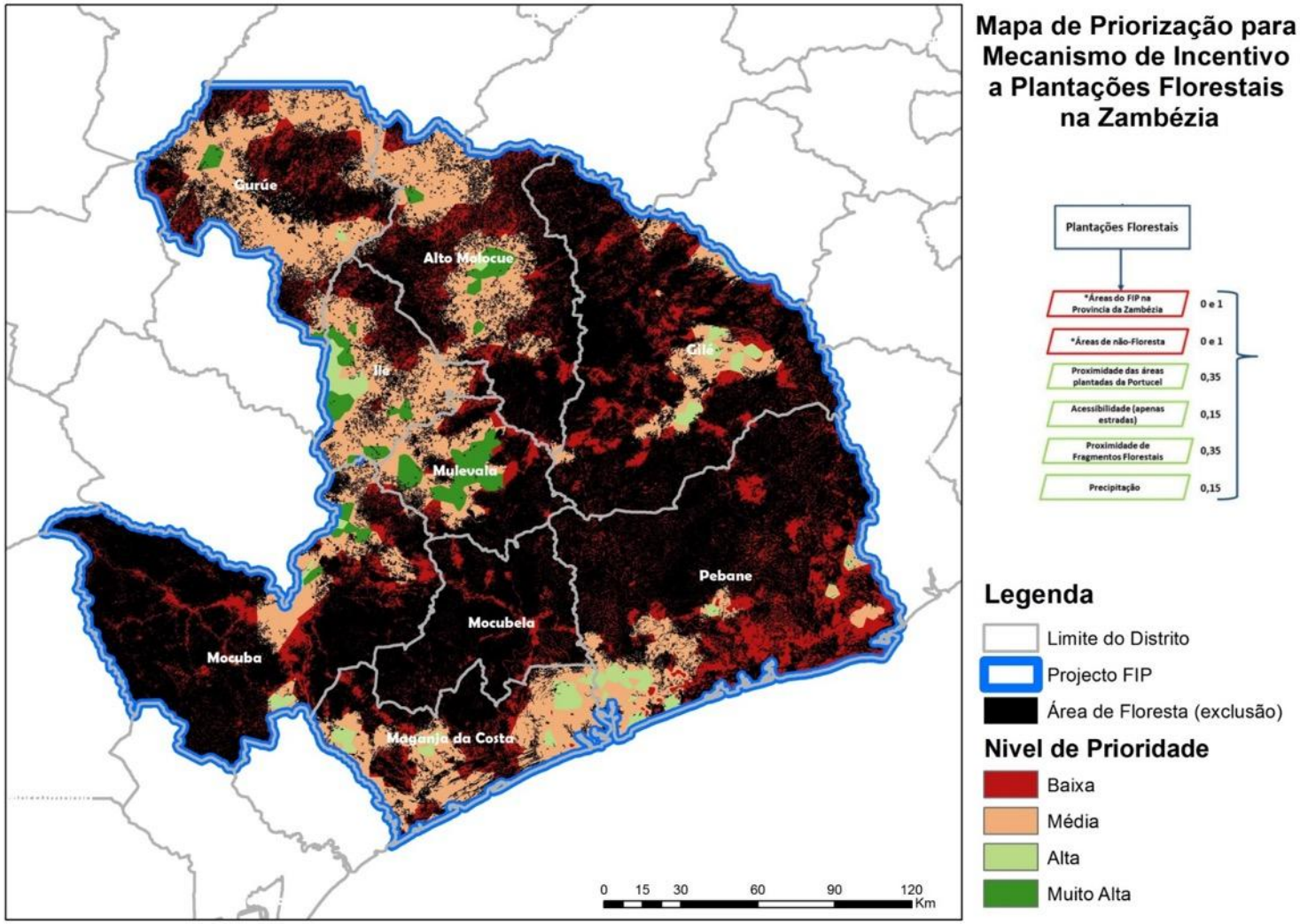
Central Level		
No.	**Entity**	

Provincial Level		
No.	**Entity**	

Municipal/District Level		
No	**Entity**	

ANNEX 13: Geographic prioritization of forest plantation and agro-forestry areas for MozFIP





Mapa de Priorização para Mecanismo de Incentivo a Plantações Florestais na Zambézia

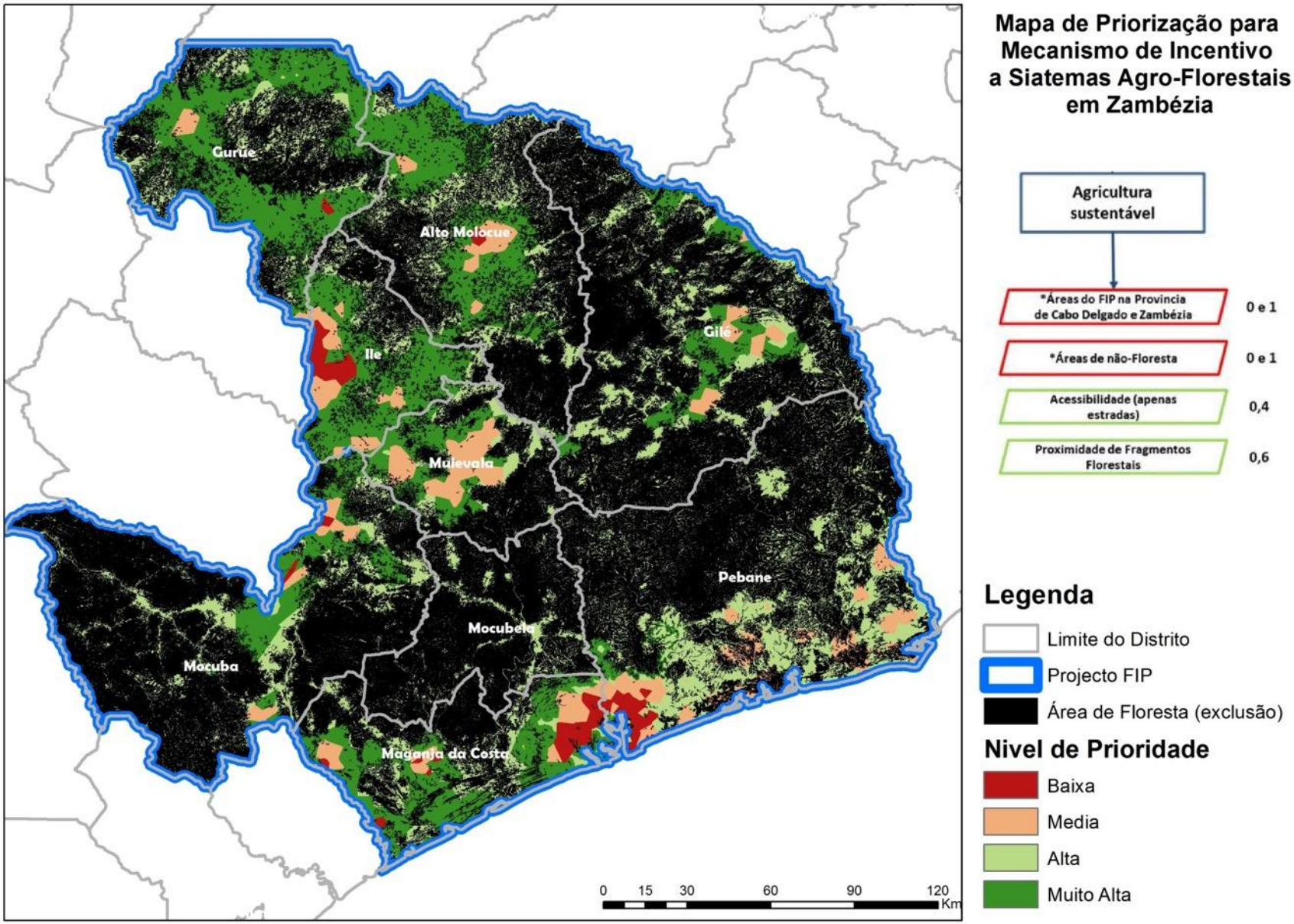
Legenda

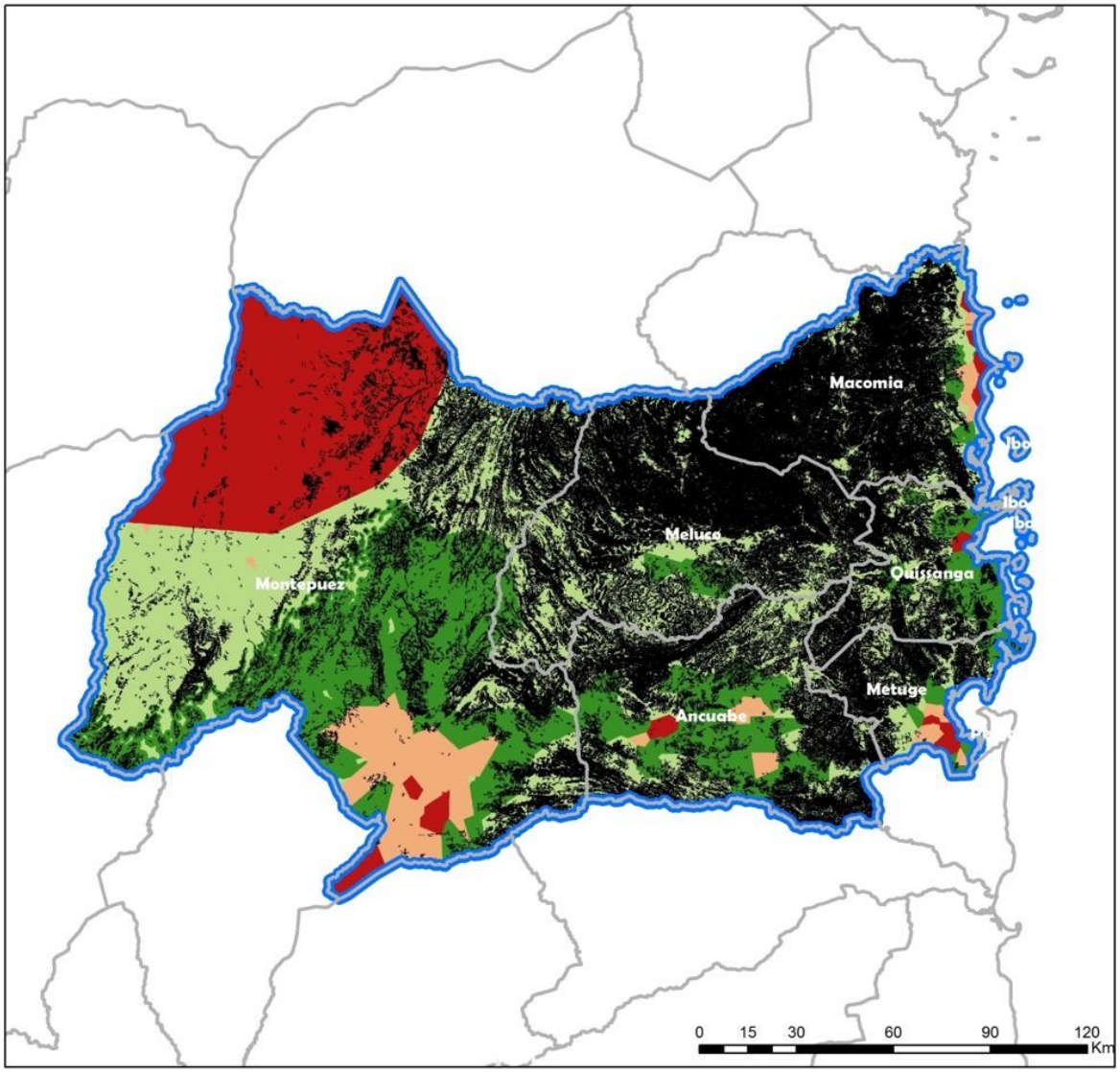
- Limite do Distrito
- Projecto FIP
- Área de Floresta (exclusão)

Nivel de Prioridade

- Baixa
- Média
- Alta
- Muito Alta

WW


Mapa de Priorização para Mecanismo de Incentivo a Siatemas Agro-Florestais em Zambézia
Agricultura sustentável
*Áreas do FIP na Provincia de Cabo Delgado e Zambézia
0 e 1
*Áreas de não-Floresta
0 e 1
Acessibilidade (apenas estradas)
0,4
Proximidade de Fragmentos Florestais
0,6
Legenda
Limite do Distrito
Projecto FIP
Área de Floresta (exclusão)
Nivel de Prioridade
Baixa
Media
Alta
Muito Alta
Gurúe
Alto Molócue
Ile
Gilé
Mulevala
Pebane
Mocubela
Mocuba
Maganja da Costa
0 15 30 60 90 120
Km



Mapa de Priorização para Mecanismo de Incentivo a Siatemas Agro-Florestais em Cabo Delgado

Agricultura sustentável

*Áreas do FIP na Provincia de Cabo Delgado e Zambézia	0 e 1
*Áreas de não-Floresta	0 e 1
Acessibilidade (apenas estradas)	0,4
Proximidade de Fragmentos Florestais	0,6

Legenda

- Limite do Distrito
- Projecto FIP
- Área de Floresta (exclusão)

Nivel de Prioridade

- Baixa
- Media
- Alta
- Muito Alta

YY

ANNEX 14: Guidelines for Preparing the Terms of Reference for the Preparation of the Environmental and Social Impact Assessment (ESIA) for the Program's Subprojects

Consultancy services for the preparation of the Environmental and Social Impact Assessment (ESIA) Studies for the Mozambique Forest Investment Project (MozFIP), Dedicated Grant Mechanism (DGM) REDD+ Initiatives Program

1. Introduction

As part of the forest investment program in Mozambique the GOM Government received a World Bank funding to develop a set of actions within the value chain of the forest sector in Mozambique and particularly the provinces of Cabo Delgado and Zambézia. The Program is subdivided into tow main projects, namely MozFIP and MozDGM, with the activities of both project being aggregated by components for each Project.

MozFIP comprises three components:

Component 1: Monitoring, Information and Incentives in the Forest Sector with the objective of improving the enabling environment and governance in the forest sector to promote sustainable forest management;

Component 2: Integrated Landscape Management in Cabo Delgado and Zambézia, which seeks to promote integrated landscape management in the Cabo Delgado and Zambézia landscapes, to address the most important drivers of deforestation in the landscapes while reducing rural poverty; and

Component 3: Project Management, Monitoring and Evaluation, Safeguards Management and Communications, which **includes activities related to project coordination and management, fiduciary management, consultations, safeguards management, M&E, training and communications.**

Under the MozDGM the following components are foreseen:

Component 1: Capacity Building and Strengthening for Sustainable Natural Resources Management, to finance capacity-building and institutional-strengthening activities for communities and civil society organizations across the country covering aspects such as strengthening communities' awareness, network, advocacy and technical capacity on matters related to climate change and, forest and land management, as well as their managerial and grant-making competencies.

Component 2: Promoting Sustainable Local Community Initiatives related to subproject implementation. The NEA will screen and finance CGRNs or formal CBOs that have confirmed expertise on subprojects implementation or a validated Community Development Action Plan prepared through the process mentioned on MozDGM component 1 in the target area. Candidate organizations can apply for the MozDGM grants by presenting proposals which will contribute directly or indirectly to reduce deforestation while enhancing local livelihoods, including, but are not limited to: food security improvement activities; production and commercialization of artisanal and non-timber forest products; community woodlots for biomass energy production; restoration of degraded areas; sustainable agro-ecological production; and ecotourism.

Component 3: Project Management, Monitoring and Evaluation, Safeguards and Communication to finance the operational costs incurred by the National Executing Agency to carry out its responsibilities, which include, among others: (i) serving as Secretariat to the NSC; (ii) ensuring project's technical coordination, monitoring and evaluation; (iii) reporting to the World Bank and the Global Steering Committee; (iv) ensuring Project's financial management, procurement, and auditing; (v) operating the Project's Grievance Redress Mechanism; (vi) supervising the implementation of community initiatives and assessing results; and (vii) ensuring communication, public consultation and outreach activities. This component will also finance studies, the development of a grant administration manual, travel and limited procurement of equipment for desk and monitoring activities.

2. Objectives of the Required Services

The objectives for the proposed services are to fulfil all the requirements for the Environmental Licensing of the subprojects to be formulated and implemented following the GOM laws and regulations and the World Bank under the general forest investment program in the country. The exercise will consist in the preparation of the Environmental and Social Impact Assessments and formulation of the Environmental and Social Management Plans including the budgeting of the mitigation measures for each subproject.

3. Scope of Work

3.1. Literature Review

The Consultant shall follow and be familiar with the environmental regulations in the country, including: The **The Environmental Law n.º 20/97, of 1 of October 1997**, Regulation on the Process of the Environmental Impact Assessment Process (Decree n.º 54/2015), relevant directives and legislation of the Forest, Agriculture and Energy Sector and the World Bank operational policies and safeguards, especially the operational Policy 4.01.

As part of the secondary data review the Consultant will:

a. Analyse the vegetation cover, forest, geological and topographic maps, and soil maps at appropriate scale for alignment and siting of project components. Where possible aerial photographs should be analysed. This analysis will serve the following purposes:

   - Topography and land formations (with emphasis on inclination related with the risks of erosion and sedimentation);
   - Geology and Geomorphology (lithography, tectonic, seismic and geologic structures, and mineral resources);
   - Soils (with emphasis on the distribution of soil types, susceptibility and sensitivity to erosion);
   - Land and vegetation cover;
   - Surface water and underground water sources (rivers, physical structures of the river basins including rivers and permanent or intermittent natural springs)

   - Evaluate existing reports and documents to determine possible occurrence of plant species and wildlife (with is emphasis on the vertebrate's taxa and possible occurrence of conservation species);
   - Compile climate relevant data of the area of the subprojects (including rainfall, temperature, prevailing winds and extreme events of the atmospheric conditions and the susceptibility of the area to the effects of climate change);
   - Describe the salient physical and biological characteristics to determine the impacts on relevant elements;
   - Make socioeconomic and environmental assessment at the district and local levels (demography, land use, commerce and social development). Within the socioeconomic area the consultant should consider the local economy such as employment and livelihoods; land use and uses of natural resources; current use of surface land and forests including the sources thereof; problem related with forests and land degradation; infection by diseases such as HIV and AIDS; gender and others and evaluate the effects of the project on people, their ways of life and assets.

b. Natural environment inventory and climate analysis especially topography, geology, hydrologic situation; flora, fauna and biodiversity; rare, threatened and endemic species.

c. The relationships between the project and the planned interventions to adopt sustainable practices in the use of forests and land and the receiving natural and social environment highlighting the fact that some of the

subprojects will have areas of intersection with conservation areas (i.e. QNP and GNR) and identify possible areas of conflict areas and measures to harmonize and mitigate them;

d. Verify the presence of objects and forests of cultural and physical value with social interest.

2. Work field

The Consultant will carry out a field visit for the preliminary assessment of the biophysical environmental and socio-economic data. The evaluation will cover but not be limited to:

- Air quality
- Quality of water will
- Noise
- Vibration
- Ecosystems: if some of the species fall under the categories of CR (Critically threatened with extinction), EN (Extinct) and VU (Vulnerable) established by IUCN are identified during the desk study the Consultant will oversee the ecosystem with the following requirements: (i) identify habitat areas and the number of species;
- Check, consult and study the presence of objects of cultural and physical value with social interest;
- The extent to which the planned interventions will not be associated with the introduction of invasive species
- Interviews and discussions with local communities, local and traditional authorities, national and international NGOs, professional associations and traders, specific experts, relevant government institutions (at the national, provincial and district levels) and the private sector to inform the about the project and gather their views, interests and concerns in relation to the same.

3. Impact identification and assessment

The consultant must clearly identify all the environmental and social impacts likely to take place during the planning, design, construction and rehabilitation and operation of the proposed subprojects. The expected environmental and social impacts should be categorized into primary and secondary effects. Inquiries should also be made, including field reconnaissance, site investigation, sampling and the necessary laboratory tests.

In this regard the following aspects should be addressed:

Biological and physical impacts: ecology, change of land use, erosion and sedimentation, water quality, soil quality, hydrology, noise and vibration, air quality, climate change, waste management, aesthetics, flora and fauna, invasive species, etc.

Socio-economic impacts: direct impacts, access to services, accident cost reduction, improved access to the project area, migration of people or changes in settlement pattern, health HIV and AIDS, archaeology and cultural heritage.

To characterize the impacts with repercussions on environmental factors, the Consultant will use a group of attributes based on the following criteria:

- **Character**: this criterion describes the nature of the impact;
- **Extension**: this criterion describes the area affected by the project;
- **Duration**: this criterion describes the life period in which the impact might be felt;
- **Intensity**: this criterion assesses the magnitude of the impact in the project area;
- **Occurrence**: this criterion describes the likelihood of the impact happening;
- **Significance**: this parameter will be evaluated through a synthesis of all the criteria mentioned above.

In line with what has been described above, each of the above criteria can adopt the sub-classification shown in the table below.

Criteria to be used to evaluate the impact

Descriptive adjective		Definition
Character	**Positive**	Beneficial environmental change
	Negative	Adverse environmental change
Extension	**Local**	Proposed installation/construction area
	Sub-regional	Surrounding districts
	Regional	Surrounding provinces
	National	Mozambique
	Regional/International	Mozambique and neighboring countries
Duration	**Short-term**	Within a period of 6 months
	Medium-term	Within a period of 6 months to 2 years
	Long-term	For the lifecycle of the project
Intensity	**Low**	Impact of low severity, minor effects
	Median	Medium severity, major effects
	High	High severity impacts
Occurrence	**Improbable**	Unlikely to occur
	Probable	Distinct possibility
	Highly probable	Most likely
	Permanent	Definite
Significance	**Low significance**	Requires no further investigation, no mitigation or management
	Median significance	Requires mitigation and management to reduce impacts to acceptable levels (if it is negative)
	High significance	Should influence a decision about the project if the impact cannot be mitigated or managed

Assessment of the possible cumulative impacts of the project, the impacts on the project's interference with the climate change (which may be the target of the impacts of these or any contribution to these by issuing gases with greenhouse effect and/or of reducing such gases), and the evaluation of gender issues that the project should take into account, according to the different policy areas of this project.

4. Management measures and environmental and social management plan

After the identification and assessment of potential impacts of the project on the environment, the next step will be the identification of a number of mitigation measures centred on the agents that cause the impact. The main objective of the mitigation measures is to prevent, minimize or even optimize the effect of any intervention on the environment. The set of measures should be included in an environmental and social management cohesive plan that will address among other things:

- Monitoring and control of land and forest use changes;
- Degradation of habitats (the destruction of riparian vegetation during installation/construction and operation should be minimized);
- Installation/construction site establishment;
- HIV and AIDS prevention;
- Waste management;
- Soil contamination;
- Introduction of invasive species
- Noise and vibration;
- Traffic
- Air pollution;
- Management of hazardous materials;
- Management of drainages during construction works and the establishment of the construction site;
- Erosion and sediment control during and after installation/construction and operation (use of temporary structures to control erosion and sedimentation during the installation/construction);

Environmental management measures may be varied and can have a variety of objectives, however, the priority is always to prevent adverse impacts and then is to consider management measures with other objectives. The table below is an attempt to present the sequential order in which the various management measures should be dealt with by the Consultant in order to be applied by the various actors to be involved in implementing the subprojects during the design, construction and operation phases. The various measures are presented in descending order of priority.

There will also be the need to consider "the chance find" procedure during all phases to deal with the possibility of finding sites, objects including forests of heritage, archaeological, cultural or other values.

Objectives of mitigation measures for adverse environmental impacts

Measures	Significance
Avoidance	Avoiding activities that could result in adverse impacts. Avoiding resources or areas considered as sensitive.
Prevention	Preventing the occurrence of negative environmental impacts and / or preventing such an occurrence having negative environmental impacts.
Preservation	Preventing any future actions that might adversely affect an environmental resource. Typically achieved by extending legal protection to selected resources beyond the immediate needs of the project.
Minimization	Limiting or reducing the degree, extent, magnitude or duration of adverse impacts. This can be achieved by scaling down, relocating, redesigning elements of a project.

Rehabilitation	Repairing or enhancing affected resources, such as natural habitats or water sources, particularly when previous development has resulted in significant resource degradation.
Restoration	Restoring affected resources to an earlier (and possibly more stable and productive) state, typically 'background / pristine' condition.
Compensation	Creation, enhancement or protection of the same type of resource at another suitable and acceptable location, compensating for lost resources.

As part of the measures and environmental and social management plan the consultant will also identify and propose entities to involve, defining their roles and responsibilities to ensure that at all stages the various issues related to the mitigation of environmental and social impacts are addressed appropriately.

5. Public consultation

Depending on the magnitude of the subprojects and for the public to could comment during all phases of the studies, an extensive program of consultation with the communities should be designed and conducted to include all government entities (national, provincial and district), local communities, national and international NGOs, academics and private individuals and stakeholders throughout the process.

The public consultation is part of the Environmental and Social Impact Assessment. In coordination with MITADER and the Program Management personnel the Consultant shall disclose the information in advance to ensure that all interested people understand the objectives of the ESIA and the policies, procedures for all project aspects as well as means/ways to submit complaint and appeals. Note should be taken of the fact that the information should be disclosed at the MITADER/MASA/MIREME offices at all relevant levels and elsewhere deemed convenient.

4. **Phases and Reports**

The ESIAs will be structured through the following stages and reports:

Preliminary assessment and ESIA categorization process for the Mozambican environmental authorities to determine on the need and type of the environmental and social impact assessment applicable to the project

Draft Final Report of the environmental and social impact assessment and the environmental and social management plan to be submitted to the Developers and later to MITADER/DPTADER and the World Bank and then for Public Consultation

Final Report of the environmental and social impact assessment and the environmental and social management plan and social to be submitted to the Developers, MITADER/DPTADER, World Bank and then the DPTADER for environmental licensing effects of the project.

5. **Duration**

TBD

6. **Required Experience**

Environmental Specialist (Environmental Engineering, Environmental Management, Environmental Science or relevant specialties)/Team Leader: The Environmental Specialist will be responsible for developing the ESIA, the Environmental and Social Management Plan and its specifications.

1. Minimum Qualifications Master's degree in relevant field;
2. Minimum ten years of experience in Environmental Studies;
3. Depending on the specific characteristics of the subproject experience in environmental and social impact assessment and formulating mitigation measures for agriculture, forests and energy, environmental monitoring and management systems;
4. Experience in managing multidisciplinary teams;
5. Five years' experience in Mozambique;
6. Knowledge of Portuguese and English languages.

Ecologist (Environmental Protection and Management, natural resources, biological sciences or relevant areas) with experience in evaluation of biophysical issues in energy projects.

1. Relevant Academic degree in ecology;
2. Minimum experience of 5 years in environmental impact assessment;
3. Five years of work experience in Mozambique;
4. Knowledge of Portuguese and English languages

Socio-economist (Sociology, Economics or other relevant specialty) with experience in implementation and/or monitoring and evaluation of development projects in developing countries. The socio economist will be responsible for developing the social part of the ESIA and the ESMP.

1. Relevant degree in social sciences;
2. Minimum 10 years' experience in socio-economic studies;
3. Proven experience in analyzing socio-economic data for the purpose of project impact assessment;
4. Five years of work experience in Mozambique;
5. Knowledge of Portuguese and English languages.

Specialist Public consultation with skills in facilitating the community, conflict resolution and communication to help the team leader. The Consultant will be responsible for the section dealing with public consultations of the ESIA and ESMP, participation of community leaders and other stakeholders and the complaint process.

1. At least five years of experience in social sciences, sampling and data analysis;
2. Knowledge of SPSS and other statistical programs;
3. Five years of work experience in Mozambique;
4. Portuguese and English language domain;
5. Knowledge of the local language will be an advantage.

Specialist in Cultural Heritage with the following profile:

1. Relevant degree in cultural heritage (archaeological, architectural or other);
2. Minimum 10 years' experience in cultural heritage studies;
3. Proven experience in project impact assessment;
4. Work experience in Mozambique;
5. Knowledge of Portuguese and English languages.

7. Logistical Support

The Project Developers will be the link through which all the requests for information, guidance and assistance including contact with other Government departments and access to other data that are relevant and which are not classified as restricted.

ANNEX 15: Generic Environmental and Social Management Plan for MozFIP/MozDGM Subprojects

Generic Environmental and Social Management Plans for MozFIP/MozDGM Subprojects

Forest Plantation Activities

Issue	Potential Impact	Mitigation Measures for (Negative Impacts) and Enhancement Measures (for Positive Impacts)	Monitoring and Reporting Indicators
Phase 1: Pre-installation/construction			
Issue	**Potential Impact**	**Mitigation Measures for (Negative Impacts) and Enhancement Measures (for Positive Impacts)**	**Monitoring and Reporting Indicators**
Land and resource use planning.	Poor selection of sites from the biophysical and social point of view	– Identify and assess the environmental and social impacts and risks including those related to gender, climate change and vulnerability – Address all land acquisition, involuntary resettlement and compensation – Identify and address all pollution, biodiversity and occupational health and safety issues.	- Clearance from district land authorities and land title (DUAT) to developers
Community mobilization and consultation	Alienation of local people and inadequate engagement in project design and subsequent phases	– Follow ESMF/PF and prepare and implement a stakeholder engagement plan, inform all communities affected by the project implementation schedule and their right to compensation if applicable	N.º of meetings/farmers/community groups engaged/sensitized

Issue	Potential Impact	Mitigation Measures for (Negative Impacts) and Enhancement Measures (for Positive Impacts)	Monitoring and Reporting Indicators
Health and safety	Risks of accidents, injuries and spread of infectious diseases and child labour	Preparation of a health and safety plan for workers and impacted communities addressing issues including education of workers and impacted communities on measures to prevent the spread of HIV/AIDs through awareness campaigns, provision of safety equipment for workers, child labor prohibit -	– Health and Safety plan prepared – N.º of workshop on HIV/AIDs for workers and community – n.º of workers and community members participating in the workshops
Phase 2: Installation/construction			
Issue	**Potential Impact**	**Mitigation Measures for (Negative Impacts) and Enhancement Measures (for Positive Impacts)**	**Monitoring and Reporting Indicators**
Land Use and Acquisition,	Land disputes and conflicts around private land use rights and potential displacement	Forest plantations and harvesting ventures will be located on government land and sites belonging to local communities that will have the land rights/titles and formal agreements with developers (community or MSME)	No complaints from affected parties. All complaints are adequately addressed using the grievance redress mechanism offered under program's ESMF and MozBio's PF as well as other acceptable instruments
Loss of vegetation	Deforestation, soil degradation through erosion, habitat destruction may occur during clearing	– Clearing of vegetation should be done only where necessary. – At least xxx% (TBD) of any indigenous trees removed during clearing will be replaced. – Ensure clearing is undertaken with minimal disturbance to the surrounding environment within the approved work sites	– Area re-vegetated or restored. – Conservation of at least xxx% (TBD) of indigenous trees.
Use of Alien Species or non-native species	Contamination of local flora and fauna	Follow the ESMF guidelines under no circumstances will	Lists of species used and authorized by district authorities

Issue	Potential Impact	Mitigation Measures for (Negative Impacts) and Enhancement Measures (for Positive Impacts)	Monitoring and Reporting Indicators
		alien species known to be invasive be introduced into a new environment unless it is subjected to a risk assessment to determine the potential for invasive behaviour by relevant authorities	
Soil Erosion	Landslides and degradation of landscape	– Immediate backfilling and refrain from trenching in rain season. – Prompt rehabilitation will be done so that no trenches are left uncovered for more than 48 hours. – Stockpiles will be made not to exceed a height 1 meter. – Utilize excavated material for construction and restoration works	Excavated soil banked and backfilled
Soil Contamination	Discharges of hydrocarbons, chemicals and wastewater can adversely affect groundwater and soil fertility, and carbon storage capacity in the area;	– Adopt labor intensive technologies as much as possible – Machinery that will be used for the project will be properly serviced to minimize fuel leaks to the environment. – In cases of spillages, in-situ bio-remediation will be done – Avoid/minimize the use of fertilizers and other chemicals following the provisions of the ESMF/PMP	– Daily and weekly checklists completed. – Machinery services as per manufacturer's specification

Issue	Potential Impact	Mitigation Measures for (Negative Impacts) and Enhancement Measures (for Positive Impacts)	Monitoring and Reporting Indicators
Water Pollution	Discharges of hydrocarbons, chemicals and wastewater can adversely affect surface and groundwater	– Promote buffer zones along all the local river and streams to ensure their integrity and protection of other aquatic life forms. The buffer reserves will serve as natural filters for surface runoff from the plantation areas. – All grey water runoff or uncontrolled discharged from site/working areas to water courses should be contained and properly channeled	Water pollution prevention measures in place
Water quantity	Depletion of water resources associated with plantations and other forest operations	The regional water authorities (ARAs) need to be strongly involved in assessing the potential impacts including the cumulative impacts for each site and be given a strong voice in delineating management options	Subproject clearance from regional water authorities (ARAs)
Air pollution	Operations involving biomass burning at the household and farm level have the potential to impact negatively on the quality of the air	– The on-site burning of cleared vegetation will be mitigated by making it available to local communities for use as firewood. This will prevent burning large quantities of – cleared vegetation during single events – Burning of biomass will be avoided as much as possible. – Fire will be used only in situations where this is effective and least environmental damaging. – Extractor fans should be available in mills to manage dust – Introduce and promote the use of	– Air quality monitored. – No complaints from affected parties or complaints addressed as per the GRM foreseen under the ESMF/ MozBio's PF

Issue	Potential Impact	Mitigation Measures for (Negative Impacts) and Enhancement Measures (for Positive Impacts)	Monitoring and Reporting Indicators
		fuel efficient stoves at the household level	
Noise Pollution	Excessive noise from various planting and construction operations and disturbance to humans and animals including wildlife	– Installation of noise mufflers on equipment – Periodic measured of noise levels	Equipment with noise reduction provision
Dust	Excessive dust from various planting and construction operations and disturbance to humans and animals including wildlife	Equipment and vehicles transporting raw materials especially soil should be covered or avoid overloading to reduce dust emissions	Use of wet excavations/damping of roads. No complaints from affected parties
Occupational Health and Safety	Accidents, injuries and spread of diseases	– Develop, implement and disseminate occupational health and safety guidelines – Employ qualified fist aider and safety officer – First aid kits to be available on site for use by the workers, – Provide Personal Protective Equipment (PPE) to employees. – Sensitize community about ongoing works through notice boards, reflective liners and detours	– OHS guideline in place (% of contractor staff aware of OHS measures and trained – Documented qualifications of first aider and safety officer – PPE usage – Informed public and employees – Gender and HIV/AIDs mainstreamed
Employment Opportunities	Increased job opportunities Potential for work conflicts	– Implement clear and transparent procedures for recruitment of labour and sourcing of goods and services will enhance the positive impact. – Preference will be given to residents of local communities, in the case of unskilled	Number of local communities' employed and/or procured as part of project interventions. -

Issue	Potential Impact	Mitigation Measures for (Negative Impacts) and Enhancement Measures (for Positive Impacts)	Monitoring and Reporting Indicators
		labor, and preference given to local suppliers in the case of goods and services.	
HIV/AIDS	Spread of HIV/AIDS	– Ccomplement existing initiatives in the community, HIV/AIDS awareness and sensitization to personnel as part of other health and safety awareness. – Development of brochures and other materials that will convey information about diseases and infections, – Regular provision of adequate prevention measures such as condoms; – Provision of drugs such as anti-retroviral drugs (ARVs)	HIV/AIDS is included in regular Health, Safety and Environment awareness
Phase 2: Operation and Maintenance			
Soil and biodiversity	Degradation of land due to poor agronomic practices	Sensitize farmers on adoption of improved agriculture technologies. Promote soil conservation practices and labor saving technologies	Number of farmers trained in improved agronomic practices Soil conservation practices implemented
Soil and Water Pollution	Degradation of soil and water due to use of chemicals/pesticides and overuse	Adopt IPMP as per ESMF/PMP guidelines. Prepare pest management plans Provide water quality monitoring station to monitor water quality	Training of farmers in IPMP and IPMP manuals developed for farmers - Water monitoring station in place
		-	-
		-	-

1. **Agro-forestry Activities (e.g. small size dams, etc.)**

Issue	Potential Impact	Mitigation Measures for (Negative Impacts) and Enhancement Measures (for Positive Impacts)
Site Selection and Design		
Soil & Water Resources	Erosion/Siltation Water/Soil Contamination	- Avoid areas of soil, slope or geological instability - Avoid flood areas
Air Quality	Contribution to the increase of GHG	- Buildings and other infrastructures designs shall consider the use of renewable energies. Employ solar water heating, photovoltaics for lighting, radio and cold chain storage in areas out of the electric grid. Incorporate passive solar cooling and heating into building designs. Investigate wind energy and micro hydropower and employ where cost-effective. Develop and implement energy conservation plans.
Vegetation & Habitats	Destroy or harm valuable and sensitive habitats	- Comply with the CA Management Plan - Avoid special protected zones/ sanctuaries or sensitive habitats as wetlands, mangroves, riparian vegetation, and dense forests.
Fauna	Man – animal conflict, Accidents and/or Disturbance	- Avoid areas with known wildlife movement routes or areas with high wildlife use.
Social	Physical displacement	- Avoid the destruction or damage to buildings, structures, or infrastructure.
	Loss of land and/or other assets	- Avoid the destruction or damage to agricultural areas (farms) or fruit trees.
	Impact on access among communities living in the project areas	- Measures will be considered in the projects' design to ensure that communities are not divided and if they are as a result of a project appropriate measures are taken to mitigate this impact.
	Conflicts with local community due to use of natural resources and/or different cultural values	- Engage local leaders and local community in the project planning. - Avoid sites with other important land uses by the community.
Cultural heritage	Cemeteries and sacred sites, and sites with archaeological or cultural/historical features	- Avoid cemeteries, graves or sacred sites and forests/trees, that the project shall avoid and by-pass. - Design any infrastructure (if unavoidable) to create least impact.
Landscape	Adverse visual impact	- Design to use local materials as much as possible, without depleting available resources or harming the environment. - Place airstrips and management buildings out of view of protected-area visitors, as possible.
Construction		

Issue	Potential Impact	Mitigation Measures for (Negative Impacts) and Enhancement Measures (for Positive Impacts)
Soil &	Erosion/Siltation	- Clearing and earthworks limited to the dry season. As much as

Issue	Potential Impact	Mitigation Measures for (Negative Impacts) and Enhancement Measures (for Positive Impacts)
Water Resources		possible, avoid construction work in the rainy season. - Minimize land clearing areas as much as possible to avoid unnecessary exposure of bare ground to the elements of the weather. Minimize time of exposure. - Clearly mark out the extent of clearing within the approved worksite areas with pegs or tape at 25 meter intervals or less. - No construction activity shall occur outside the defined work areas. - Balance cut and fill for minimum deposition of earth. - Minimize use of heavy machinery, as its tracks could create erosion. - Areas susceptible to erosion45 shall be protected by installing necessary temporary and permanent drainage works as soon as possible and by taking measures to prevent the surface water from being concentrated in streams and from scouring slopes, banks or other areas. - Soil and / or sand required for construction purposes should only be obtained from areas approved by the CA Administration (shall avoid proximity to drainage lines or wetlands). - Material (earth, stone etc.) shall not be stored within 10 meters of any drainage lines or within areas that are at risk of flooding. - Store and reuse topsoil for replanting. Storage mounds for topsoil shall have a maximum depth of two meter. - Piles shall be covered with plastic sheeting or sowed with a cover crop (native grass) within 2 days of top soiling - Re-vegetate cleared areas as early as possible using native plant species. - No garbage/refuse, oily wastes, fuels/waste oils can be discharged into drains or onto site grounds - Toilet facilities shall be provided for construction workers to avoid indiscriminate defecation in nearby bush or local water bodies (dry pit latrines in areas with high water level or risk of flood). - Leaking equipment shall be repaired immediately or removed from the site.
Soil	Erosion/Siltation	- Clearly mark out the extent of clearing within the approved site

[45]Steep slopes, areas stripped of topsoil, soil stockpiles, spoil sites, borrow pits or river banks.

Issue	Potential Impact	Mitigation Measures for (Negative Impacts) and Enhancement Measures (for Positive Impacts)
		- Design and layout furrows appropriately, along the contour lines. - Avoid unsuitable gradients - Avoid over-irrigation. - Install sediment traps in fields and channels to capture sediment for return to fields - Minimum tillage, contour cropping, terracing and other methods of conserving soil moisture. - Revegetate degraded and marginal areas to reduce runoff
	Soil salinity	- Adjust crop patterns (fallow times, crop selections, etc.) to prevent further salt buildup
	Soil infertility	- Rotate crops - Allow land to lie fallow - Intercrop with legumes or another nitrogen-fixing species - Combine crop and tree production (agroforestry)
Water Resources	Water use	- Apply water efficiently. Consider drip or dawn/evening sprinkler irrigation. - Install and maintain adequate surface and sub-surface drainage. - Mulch exposed soil surfaces to reduce evaporation.
	Water quality	- Flush irrigated land regularly to avoid salinity - Prevent surface drainage of fields into nearby water bodies (streams, ponds, etc.) - Proper storage, handling, use and disposal of agro-chemicals. - Vegetate areas around fields to prevent nutrient runoff from croplands - Vegetate riparian areas to prevent erosion along stream banks leaving 50-m-wide strips between waterways and croplands - Implement minimum setback limits for agriculture around water sources - Implement Integrated Pest Management techniques
Vegetation & Habitats	Destroy or harm valuable and sensitive ecosystems and organisms	- Except to the extent necessary for establishing the farm area, vegetation shall not be removed, damaged or disturbed. - The clearance of the site for construction purposes shall be kept to a minimum. - Avoid destroying rare or unique species. - Obey plant quarantine rules
	Fire	- No burning of vegetation will be permitted.
Fauna	Man – animal conflict	- Include non-lethal techniques such as the use of chilies and bee-hives, awareness and education campaigns, training programs for community and Conservation Area scouts, as well as the construction of fences.

Issue	Potential Impact	Mitigation Measures for (Negative Impacts) and Enhancement Measures (for Positive Impacts)
Social	Public health (water-related diseases spread)	- Avoid over-irrigation - Periodically drain waterlogged fields to prevent mosquitoes - Maintain water works, and clear sediment and weeds, regularly - Periodically flush slow or stagnant waterways with water to remove snails (which cause *schistosomiasis*)

ANNEX 16: Environmental and Social Clauses

The environmental and social clauses will be integrated into Contracts for the Design, Construction, Operation and Maintenance of project subprojects, mainly those related with infrastructure development.

a. Prior arrangements for carrying out works

Compliance with laws and regulations:

The Contractor and its subcontractors must: know, respect and enforce laws and regulations in force in the country in regard to the environment, disposal of solid and liquid waste, air emission and effluent standards and allowed noise levels, hours of work, etc.; take all appropriate measures to minimize harm to the environment and people; take responsibility for any claims related to environmental non-compliance.

Permits and approvals before work

Any work carried out must be preceded by obtaining information with regard to permits (e.g., environmental permit) and administrative permissions. Before starting work, the Contractor shall obtain all permits necessary for carrying out the work under the contract: authorizations are issued by local communities, forest services (in the case of deforestation, pruning, etc.), mining services (in case of quarries and borrow sites), water and hydraulic services (in case of water abstraction and use of public water points), the Labor Inspection, network managers, etc. Before starting any works, the Contractor shall consult with the residents with whom they can make arrangements to facilitate the progress of the subproject implementation.

Meeting before starting works

Before starting work, the Contractor and the Project Manager, under the supervision of the Client, shall hold meetings with government officials, representatives of the population in the project area and relevant technical services to inform them about the consistency and duration of works, routes involved and locations likely to be affected. This meeting will enable the Client to collect people's suggestions, raise awareness on environmental and social issues and their relationships with the workers.

Identification of concessionaire networks

Before starting works, the Contractor shall investigate a procedure for identifying concessionaire networks (water, electricity, telephone, sewer, etc.) on a plan that will be formalized by Minutes of Meetings signed by all parties (Contractor, works supervisor, concessionaires).

Release of public and private domain

The Contractor should be aware of the fact that the perimeter of a public utility related to the operation is the perimeter that may be affected by the works. Work can only begin in the affected areas by private companies when they are released as a result of an expropriation process, if any.

Environmental and social management program

The Contractor shall prepare and submit for approval by the Project Manager a detailed project environmental and social management program including: (i) a site plan showing the location of the site and the various areas of the site for project components and locations, (ii) a site plan for waste management indicating the types of waste, the type of collection considered, the storage, the method and location of disposal; (iii) the information and awareness program specifying targets, themes and selected consultation modality; (iv) a plan for accident management and health protection stating the risks of major accidents which endanger the health or safety of staff and/or public security measures and/or health protection to be applied in the context of an emergency plan. The Contractor shall also

prepare and submit, for approval by the prime contractor, a plan to protect the environment of the site, which includes all security measures to protect the site and forward a site decommissioning plan at the end of works.

The environmental and social management program will also include: the organization of staff in charge of environmental, health and safety management with an indication of the officer in charge of the Project Environmental Health and Safety Department, description of the methods to reduce negative environmental, social, health and safety impacts, water resources management, water supply and sanitation management plan, the list of agreements made with the owners and current users of private sites, etc.

b. Construction Plant and Work Camp Rules

Location standards

The Contractor shall construct temporary construction facilities in order to cause the least disturbance possible to the environment, preferably in areas already cleared or disturbed when such sites exist, or on sites that will be reused at a later stage for other purposes. The Contractor shall strictly prohibit the establishment of a base camp within a protected area.

Display rules and staff awareness

The Contractor shall display a clearly visible internal regulation in the various camp facilities specifically prescribing: respect for local customs, protection against STI/HIV/AIDS, hygiene rules and safety and environmental measures. The Contractor shall educate its staff in regard to respect for customs and traditions of the people of the area where the works are being performed and the risks of STDs and HIV/AIDS.

Use of local labor

The Contractor shall engage (besides his technical staff) as much labor as possible from the area where the works are being performed. Failing to find qualified personnel on site, it is permitted to bring a workforce from outside the work area.

Child labor

Harmful Child Labor, which consists of the employment of children that is economically exploitative, or is likely to be hazardous to or interfere with, the child's education, or to be harmful to the child's health, or his/her physical, mental, spiritual, moral or social development should not be allowed.

Respect for working hours

The Contractor shall ensure that work schedules comply with the laws and regulations in force. Any waiver is subject to the approval of the project manager. Wherever possible (except in exceptional cases provided by the prime contractor), the Contractor shall avoid performing work during the rest hours, Sundays and holidays.

Protection of site personnel

The Contractor shall make available to site personnel prescribed working clothes and in good condition and all accessories and safety protection to their activities (helmets, boots, belts, masks, gloves, goggles, etc.). The Contractor shall ensure scrupulous use of protection equipment on site. Permanent monitoring should be carried out for this purpose and, in case of violation, enforcement actions (warning, layoff, dismissal) must be applied to personnel.

Person(s) Responsible for Health, Safety and Environment

The Contractor shall appoint Health/Safety/Environment Officer(s), who will ensure that the hygiene, safety and environmental protection rules are strictly followed by all and at all levels of performance, both for workers and the population as well as others in contact with the site. He will locate health centers closest to the site to allow its staff to have access to first aid in case of accident. The Contractor shall prohibit access to the site by the public, protect it with tags and signs, indicate different access and take all order and security measures to avoid accidents.

Appointment of staff on duty

The Contractor shall provide care, supervision and safety maintenance of the site including out of hours on-site presence. Throughout the construction period, the Contractor shall have personnel on call outside working hours, every day without exception (Saturday, Sunday and holidays), day and night, to take action with regard to any incident and/or accident that may occur in connection with the works.

Measures against traffic barriers

The Contractor shall avoid blocking public access. He must constantly maintain and guarantee the movement and access of residents during construction. The Contractor shall ensure that no excavation or trench is left open at night without proper signage approved by the Project Manager. The Contractor shall ensure that temporary deviations allow for passage without danger.

c. Decommissioning of construction sites

General Rules

Upon releasing a site, the Contractor leaves the premises to their own immediate use. He cannot be released from his obligations and responsibilities without ensuring that the site is in good condition. The Contractor shall carry out all the necessary works for rehabilitation of the site and restore it to its initial or almost initial state. All equipment, materials, polluted soil, etc. will be removed and cannot be abandoned on site or surrounding area.

Once the work is completed, the Contractor shall: (i) remove temporary buildings, equipment, solid and liquid waste, leftover materials, fences, etc. (ii) rectify faults in drainage and treat all excavated areas; (iii) reforest areas initially deforested with appropriate species in relation to local forest services; (iv) protect the remaining dangerous works (well, open ditches, slopes, projections, rehabilitate quarries, etc.); (vi) install functional pavements, sidewalks, gutters, ramps and other structures essential for public service. After the removal of all equipment, a report on the rehabilitation of the site must be prepared and attached to the minutes of the reception of the works.

Protection of unstable areas

During the execution of works in unstable environments, the Contractor shall take the following precautions not to accentuate the instability of the soil: (i) avoid heavy traffic and overload in the zone of instability; (ii) retain as much as possible the vegetation or restore it using native species where there are erosion risks.

Control the execution of environmental and social clauses

The Project Manager, whose team should include an environmental expert who is part of the mission control team, shall verify compliance and the effectiveness of the implementation of the environmental and social clauses by the Contractor.

Notification

The Project Manager shall notify the Contractor of any event of default or non-performance of environmental and social measures. The Contractor shall rectify any breach of the regulations duly notified to him by the Project Manager. Costs of restarts or additional works arising from non-compliance shall be borne by the Contractor.

Sanction

Pursuant to contractual non-compliance with environmental and social clauses, duly noted by the Project Manager, may be grounds for termination of the contract. The Contractor whose contract has been terminated due to non-implementation of environmental and social clauses may be subject to sanctions up to suspension of the right to bid for a period determined by the Client, with a reduction on the price and blocking the pay back of the guarantee.

Reception of the works

Failure to follow these terms exposes the Contractor to provisional or final refusal of acceptance of the works, by the reception Commission. The implementation of each environmental and social measure may be subject to partial acceptance involving relevant departments.

Obligations under the guarantee

The obligations of the Contractor run until the final reception of the works that will happen only after the complete execution of the works to improve the environment as stated in the contract.

d. Environmental and Social Clauses

Works signage

Prior to the opening of construction sites and whenever necessary the Contractor shall place, pre-signage and signage within an appropriate distance in line with the laws and regulations in force.

Measures for the movement of construction equipment

During the works, the Contractor shall limit vehicle speeds on site by installing signs and flag bearers. In residential areas, the Contractor shall establish the schedule and route for heavy vehicles, which must circulate outside the sites to minimize nuisances (noise, dust, risk of accidents and traffic congestion) and carry approval of the project manager.

Only strictly necessary materials will be tolerated on the site. Outside access, designated crossing places and work areas, it is prohibited to operate construction equipment.

The Contractor shall ensure that the speed limit for all vehicles on public roads, will be a maximum of 60 km/h on rural roads and 40 km/h in urban areas and through villages. Drivers exceeding these limits shall be subject to disciplinary action up to and including dismissal. The installation of speed humps or water spraying in settlements will be recommended in order to reduce the risk of accidents and reduce the nuisance of dust.

Vehicles of the Contractor shall, at all times, comply with the requirements of the Highway Code in force, particularly with regard to the weight of the laden vehicle.

The Contractor shall, during the dry season and depending on water availability, regularly spray water on dusty roads/tracks used by its transport equipment to avoid dust, especially in populated areas.

Protection of crossing areas and agricultural and forest activities

The work schedule should be established in such a way as to minimize disruption of agricultural including forest activities. The main periods of activity (ploughing, sowing, harvesting, drying, etc.) must be known in particular to adapt the construction schedule to these agricultural and forest activities. The Contractor shall identify where crossings for animals, livestock and people are needed. Again, the involvement of the population is paramount.

Protection of wetlands, fauna and flora

It is forbidden for the Contractor to establish temporary installations (storage areas and parking, or paths to circumvent works, etc.) in wetlands, including the filling of existing temporary pools. In the case of vegetated areas, the Contractor must adapt to the local vegetation and be careful not to introduce new species without consulting the forestry services. For all deforested areas lying outside the ROW and required by the Contractor for the purposes of its works, the top soil must be kept separate and restored afterwards.

Protection of sacred sites and archaeological sites

The Contractor shall take all necessary measures to respect the cultural and cultural sites (cemeteries, sacred sites and tree species/forests, etc.) existing in the vicinity of the works and not interfere them with. For this purpose he must first identify their type and location before starting the works.

If, during construction, remains of places of interest for worship, historic or archaeological value are discovered, the Contractor shall follow the following procedure: (i) stop work in the area, (ii) immediately notify the Project Manager who must take steps to protect the site to avoid destruction by defining a protection perimeter on the site within which no activity shall be carried on, and (iii) to refrain from removing and moving objects and relics. The work must be suspended within the scope of protection until the national body responsible for historic and archaeological sites has given permission to continue.

Measures for logging and deforestation

In addition to complying with all the measures set forth in this ESMF in the case of deforestation, felled trees must be cut and stored in locations approved by the Project Manager. Local residents should be aware of the possibility that they can make use of this timber at their convenience. Felled trees should not be left on site or burned or fled under the earth materials. Felled trees should be compensated in natura or in monetary value.

Liquid Waste Management

The Contractor shall prevent spills and wastewater discharge, oil and all kinds of pollutants in surface water or groundwater or on soils. The Project Manager will provide treatment methods, disposal procedures, disposal sites and drainage locations to the Contractor.

Solid waste management

The Contractor shall deposit the garbage in bins to be emptied and sealed periodically. In case of evacuation of the site by trucks, bins should be sealed to prevent the waste spillage. For hygiene reasons, and in order to not attract vectors daily collection is recommended, especially during hot periods. The Contractor shall dispose of or recycle the wastes in an environmentally sound manner. For this purpose the Contractor should store waste in labeled containers. The Contractor shall deliver the waste, if possible, to existing disposal sites.

Protection against noise pollution

The Contractor shall limit construction noise in order not to disturb residents, either by excessively long duration, or by their extension outside of normal working hours. Thresholds are not to exceed 55 decibels (dB) during the day and 45 decibels at night.

Prevention against STD/HIV/AIDS and related diseases

The Contractor shall inform and educate staff on the risks of STD/HIV/AIDS. He must make sufficient and good quality condoms available to staff free of charge to be used against STDs and HIV/AIDS infections. Local communities should also be informed about the risks of STDs and HIV/Aids.

The Contractor shall inform and educate employees on safety and health at work. He must maintain the safety and health of workers and local populations and take appropriate measures for this purpose. The Contractor shall provide the following preventive measures against the health and safety risks: (i) enforce the wearing of masks, uniforms and other appropriate footwear and equipment; and (ii) systematically install a medical clinic at the construction site and provide free medications necessary for emergency care on site for the staff.

Site journal

The Contractor shall maintain a log yard, which will record complaints, violations, accidents or incidents that have a significant impact on the environment or impacts on the local communities. The site log is unique to the site and notes must be written in ink. The Contractor shall inform the general public and local residents in particular, about the existence of this journal, with an indication of where it can be accessed.

Equipment maintenance and equipment projects

The Contractor shall comply with the maintenance standards for construction equipment and vehicles and conduct refueling and lubricant in a place designated for this purpose. Refueling should take place on a concrete slab. Fuel tanks should be placed within a concrete bund of 110% volume the volume of the fuel tank or tanks. Oil/water separators should be installed where there is a risk of pollution with hydrocarbons, e.g., at vehicle maintenance sites. On the site, provision of absorbent materials and insulators (pillows, sheets, tubes and peat fiber, etc.) as well as sealed containers clearly identified for receiving petroleum residues and waste, must be present. The Contractor shall perform, under constant surveillance, handling of fuel, oil or other contaminants, including the transfer to avoid spillage. The Contractor shall collect, process and recycle all waste oil, and waste in operations and maintenance or repair of machinery. It is forbidden to discharge any hydrocarbons or other dangerous chemicals into the environment or on the construction site.

The Contractor shall drain the waste oils in sealed drums and retain oils to return it to the supplier (recycling). Used spare parts must be sent to the landfill or disposed off in another environmentally acceptable manner.

Washing areas and areas for maintenance of equipment and vehicles must be from concrete and equipped with a collection system for oils and fats, with a slope oriented to prevent the flow of pollutants to areas with bare soil. Concrete mixers and equipment for the transportation and installation of the concrete should be washed in the areas provided for this purpose.

Dust control

The Contractor shall select the location of crushers and similar equipment based on noise and dust they produce. Goggles and dust masks are mandatory.

“Chance Find Procedure”

If during construction and/or during any phase of the project development an important arte-fact is found, construction/development is stopped and the responsible Mozambican authorities are warned and involved in an investigation of the site. Construction/development can only resume after the green light has been given by the responsible Mozambican authorities.

ANNEX 17- Grievances Redress Mechanism details

Formal grievances redress and conflict resolution processes should follow the general steps outlined below:

Preparation

MozFIP: Grievance Register Forms to be provided by the Projects' Provincial Community Management personnel to District level personnel in The District Service for Economic Activities (SDAE), CGRNs and service providers for making available at local level at publicised sites and via publically recognised community representatives.

Community representatives should be encouraged to explain this entitlement whenever needed and at no time should filing a grievance be discouraged by community representatives, local authorities or Project officers. Each grievance will be captured in the Grievance/Issues Register that must be maintained in each FNDS provincial PIU personnel and copies of all associated communications registered and filed by them.

Reports on grievances will be regularly presented by the FNDS PIU to DPTADER and the multi-stakeholder forum (MSLF). Grievance reports should track complaints, responses, redress action and close-out of all community grievances with dates and responsible parties clearly indicated. The MSLF and Provincial PIU Project Coordinator will periodically verify response management and redress through to close-out of each grievance.

Each of the following steps should be limited to a maximum of 15 days from receiving a grievance to communicating a decision. Resolution should be sought at the lowest level possible in all cases.

Step One

If issues are concerned with relationships with service providers, neighbouring communities or external stakeholders they should be presented to local CGRN to try and resolve immediately or as appropriate, to transmit directly to the local authorities for resolution.

A service provider Community Management officer should screen grievances presented to the service provider to initially decide if a grievance is to be accepted or not. If so, the officer should pass them on to the appropriate agents or agencies for resolution.

Grievances may be resolved directly by the service provider or SDAE at district level, but where they require redress via other agencies they should be passed to the Provincial Project Coordinator for delegating responsibilities for recommending solutions accordingly.

If the subject is multisectoral it may require attention of the MSLF equivalent at district level. Presentation to this entity will be organised by SDAE or the service provider involved and communication about when this will occur made to the complainant within the timeframe established for responses by the Project/MSLF.

Solutions recommended by the service provider, SDAE, a district multi-sector platform[46] or local authorities should be communicated to the aggrieved people immediately.

In cases where conflicts or complaints are directed against governmental agencies or Project management, PAPs and communities may seek informal mediation by external agencies, such as NGOs.

Where one or more communities is/are in conflict with a private-sector developer, the issue may also be taken to NGOs for amicable mediation.

If the actions of local communities conflict with the sustainable natural resources management objectives of the Projects and cannot be resolved amicably by the service provider or the district multi-sector platform, then District government officials may be sought to mediate a solution.

Grievance redress may require shorter or longer periods depending on the subject of the complaint. The district multi-sector platform must communicate via the SDAE or service provider's Community Management officer to the complainant the period that the redress action will take.

The district multi-sector platform, SDAE or service provider may engage with relevant local authorities or independent civil society groups with sufficient field experience in the locality and who are respected by households to help resolve these problems in such a way that the interests of communities and sustainable resources use are appropriately balanced.

Step Two

If the aggrieved person is not satisfied with the Step One decision he/she shall forward the case to the Head of the Administrative Post for the District Administrator's attention with a preliminary report prepared by the Community Management officer. The report should contain the details of the grievance and hearing date and decision of the SDAE, service provider or the district multi-sector platform.

If issues concerning service providers or external stakeholders are not resolvable at the lower administrative levels, they may be transmitted via the local authorities to the District Administrator for redress or mediation.

The District Administrator may engage with relevant Government and local authorities to help resolve these problems in such a way that the interests of communities and sustainable resources use are appropriately balanced.

[46] It may be necessary for operational reasons at sub-district level to have a multi-sector channel to fairly hear grievances, and respond to issues that may involve more than one sector, particular if these concern CSOs or NGOs. Such a platform would include representatives from the District Government and other actors in the district involved in MozFIP and MozDGM and might be led by SDAE representing the interests of FNDS, though leadership would be limited to a reporting role. Deliberations would be carried out by voting by all parties of an agreed quorum. As such the platform could receive and respond to both MozFIP and MozDGM grievances.

The period for informing the aggrieved person of the redress steps must be followed, and the periods expected for redress communicated to them.

Step Three

If the PAP is still dissatisfied with the decision taken after Step Two, he/she shall forward the case to FNDS for attention of the national MozFIP Coordinator as the representative of the Project Authority. The grievance shall be forwarded with all the documented details of the case to date.

Communication with the Project Authority may also be carried out via community representation on the MSLF to the Provincial Project Coordinator and thence to FNDS (See Figure 10, below).

Step Four

It is expected that the Project Authority at the level of FNDS should resolve all cases presented, however where this is not possible, the PAP has the option to present his/her case to the Provincial Governor or Mayor of the Municipality for final amicable solution.

Conflicts with private sector developers may be taken to the Ministry or agency with titular responsibility for the investment.

Step Five

If no amicable solution is reached up to Step Four, as an ultimate recourse the aggrieved person may submit the case to the Provincial / District /Municipal court system to seek reparation. In principle, a community can take a concessionaire or licensee to court for not abiding by the terms of an environmental management plan, a land use plan or a forest management plan. This final step is an option that must always be available, but it should be discouraged by all positive means possible. Timely communication and open negotiation are the main deterrents. The institutional arrangement and the principles of community consultation and participation that are intrinsic to the Process Framework are designed to allow the process to detect and deal with problems in a timely and satisfactory manner for all parties concerned.

If affected communities' interests are superseded or rendered ineffective by any other government actions in agreements entered into by them provisions exist in most legislation to appeal with sectoral grievances to higher levels of government such as National Directors and Ministers. Ultimately, though not usually practiced systematically by many people, all citizens have the right to address complaints to the Public Prosecutor, the institution responsible for ensuring the law is correctly applied, particularly in the elaboration of territorial management instruments and their implementation.

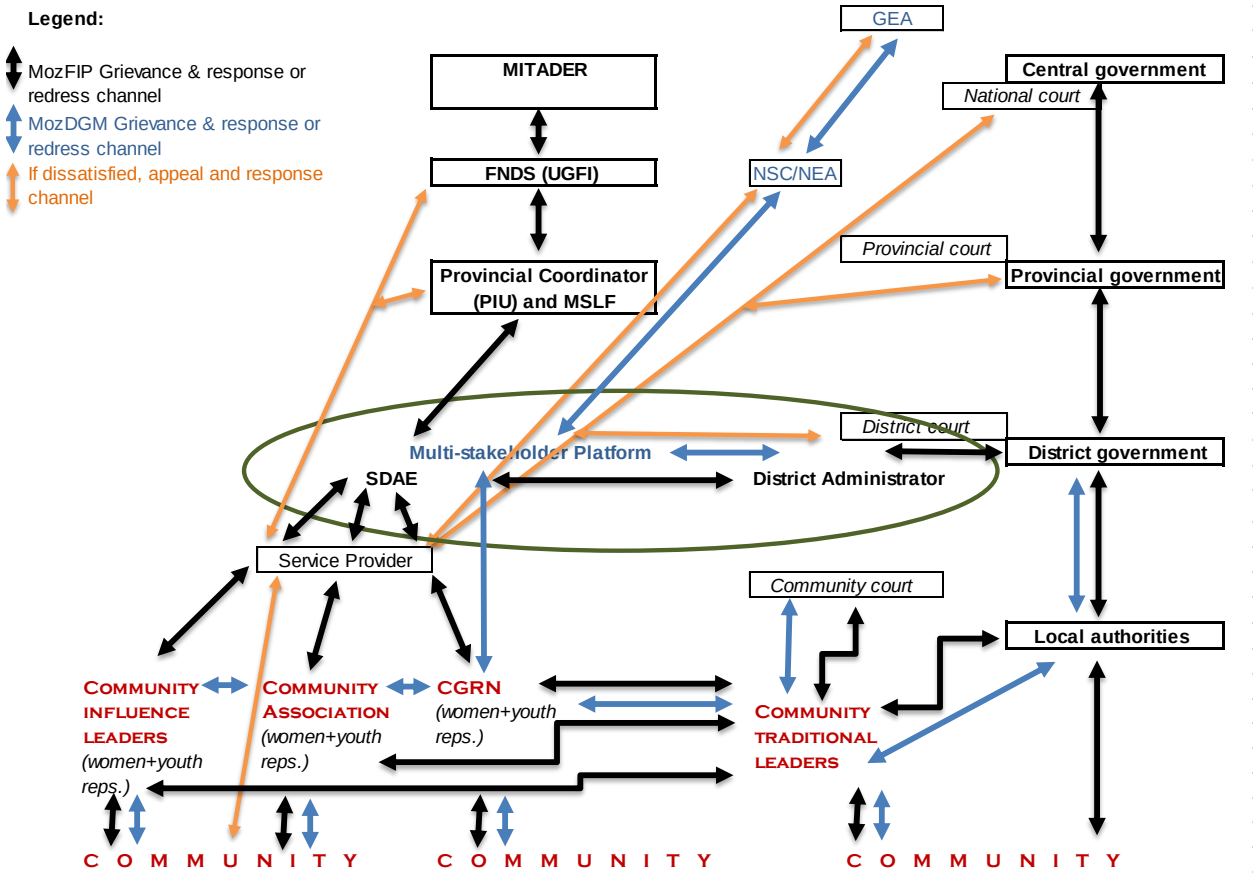


Figure 10. Grievance and conflict resolution routes

MozDGM: The NEA will maintain the documentation of the MozDGM projects, follow the communications strategy in coordination with the Global Executing Agency (GEA), manage grievances, complaints and redress processes, responding promptly to queries, and coordinate with and sending information as requested to the GEA.

Grievances response in the MozDGM project is unique and for the most part separated from the MozFIP system. At community level, grievances that cannot be redressed locally will be passed through the CGRN and CBOs or local leaders to the District level in the same way as for MozFIP. However for MozDGM the District multi-stakeholder platform will receive and address grievances or if it cannot provide a resolution that is satisfactory to the complainant, it should be passed directly to the NEA as representative of the Project Authority in Mozambique for resolution. All timeframes pertaining to grievances response periods will follow the agreed on principles for both MozFIP and MozDGM unless the latter specifies a different period in its communication campaigns.

If the NEA is unable to provide an acceptable solution to the complainant, the grievance, accompanied by documented reports of case management up to then, should be passed by the NEA to the GEA (see Figure 10 above).

Administrative and Legal Procedures

Administrative processes related to communities will be led by MOZFIP's Social and Environmental Specialists from the Social and Environmental Unit in FNDS. Unless resolved at community level the Community Courts may pass cases to the District Courts for resolution. Government ministries represented by respective national and provincial directorates or departments will be called on to participate in plan and agreement approval and to provide administrative and legal recourse as may be required from grievances arising from community benefit agreements and community / private / public partnerships for implementing development activities. The institutions providing oversight with responsibilities to ensure administratively and legally compliant outcomes will include:

Institution	Roles and Responsibilities
Council of Ministers	Passes decree-laws, decides on policy, promotes and regulates economic activity and the activity of social sectors. Creates, modifies or extinguishes PAs, establishes buffer zones around these per their management plans, approves the criteria for declaring historical-cultural use zones, authorises certain activities in PAs.
MITADER	Approves land-use, forestry and wildlife and PA management plans and is responsible for ensuring compliance. Fixes environmental taxes, timber and wildlife quotas and taxes and defines the percentages attributed to different parties of collected monies, guarantees forest and wildlife policing
MITADER/AQUA	Environmental quality regulator with compliance verification responsibilities for environmentally sensitive management plans, inspection of sustainable use of forest resources, land use and benefit and the use of land use planning instruments.
MASA/DNAS/DPASA	Planted forests management plans, and their taxes compliance. Agroforestry standards and compliance.
MITADER FNDS/UGFI - E&SS Unit /DPTADER	Will enter legally binding agreements with communities to provide funding for development projects in exchange for commitments to observe stipulated and agreed to sustainable uses of natural resources. These will have clear indications of validity period and conditions, and identify mechanisms for their enforcement on all parties. The Social and Environmental Focal Points are from FNDS' Social and Environmental Safeguards Unit and are also represented in the provinces.
ANAC	Approves management plans for PAs and their buffer zones and is responsible for ensuring compliance.
Provincial Governor	Authorises historical-cultural use zones.
MITADER/ DINOTER	Policy and oversight for land use planning and resettlement planning and compliance.
MICULTUR (DINATUR)	Is responsible for ensuring that tourism planning and development is integrated with other sectoral agendas at the provincial, district and local levels, and for supervising NGOs contracted for community capacity building and

mobilisation.

MITADER / FNDS / UGFI - E&SS Unit		Where land use is required for infrastructural development or forest investments FNDS will screen and direct the appropriate permiting process for use of an area. The Social and Environmental Specialists will lead and facilitate the process with communities to acquire the needed titles and licences. FNDS shall be responsible for providing technical assistance to affected persons during adjustment periods. Such assistance will include administering training, support with material grants where necessary, and providing guidance on identification and development of alternative livelihood strategies. This may be outsourced.
MAEFP		District Governments through local authority chiefs and traditional leaders will provide land where land use rights shall be acquired for infrastructural development, forestry or tourist investments.
MEF/DPPF	+	Are responsible together for implementation of
MAEFP/DA	+	participatory decentralised district development planning
MASA/DPASA		and financing.
MITADER.		Has the authority to delimit community land and authority
(DINAT/DINAF/		to certify and gazette it. The SPGC processes land use rights title acquisition (DUAT) and transfers of title deeds.
CENACARTA	+	
DPTADER/SPGC)		
MASA/DPA/SPEA		Provides extension services and technical services for identification and evaluation of assets lost by Project affected people, demarcation of plots, and other technical assistance.
MOPHRH/DNA	+	Shall be responsible for the development of potable water
DPOPH/DAS		and together with DPA/SPEA, small-scale irrigation works.
MINEDH+ MISAU		Teachers and health workers, respectively, shall be provided by these Ministries.

The MozFIP Financial Management Unit shall be responsible for coordinating these intersectoral activities, in collaboration with the Provincial Project Coordinators and the multi-stakeholder forums.

MITADER approves full ESIAs; simple EAs are approved by the DPTADER. All ESIA require a report of public consultation carried out and the full integration of local issues and recommendations into the Environmental Management Plan. Full ESIAs are obligatory for activities that imply potential conflicts concerning people's use of natural resources.

Government ministries have the legal authority to grant concessions in and outside of protected areas, without local consultation. Provisions in the EIA regulations, Land Use Law and Land Law are the principle tools for ensuring that projects are screened for their potential impacts on local populations and obligate public consultation if people are found to be affected.

Legal procedures for restricting access to natural resources shall be observed as provided for in the Constitution and laws of Mozambique, and impacts on local communities managed by this ESMF. Land use plan compliance is monitored by MITADER through AQUA.

Attention during planning and implementation must be paid to the following principles outlined in the Constitution, and environmental, forestry and wildlife, land and land use, and conservation laws and regulations:

- Consultations with local authorities and affected people must occur before and during project implementation.
- Notification of intentions or plans to restrict access to natural resource must be made public as required by the law.
- Determination of alternative livelihood measures will be made together with the affected people, with the assistance of the MozFIP Unit, DPTADER, DPASA, and NGOs with proven expertise in the initiative.

ANNEX 18 - Mozambique General Context

Mozambique has a total area of approximately 800,000 km². In 2007 it was found to have 20.4 million inhabitants (INE, 2007), which under current annual growth rates (2.8% average) is estimated to be slightly around 26.5 million at present. The country´s GDP per capita is estimated at 1,123.40 USD (UNDP, 2015).

In recent years there has been a significant deterioration of the main economic and financial indicators such as inflation, exchange and interest rates. These are informed by unfavorable domestic and external circumstances particularly (i) a reduced level of demand and prices for commodities that the country is and was becoming a potential exporter (e.g. coal, gas and other high value mineral resources), (ii) continued low domestic production, as well as (ii) reduced level of foreign assistance. Deceleration meant that in 2015 the economic growth went down to 6.5% and in 2016 is expected to not go beyond 4.5% (IMF, 2016).

However, despite growth progress, the country continues to be among the poorest in the world. The United Nations[47] indicates that Mozambique is in the 180th position among 188 countries in terms of human development index (0.416). This is a slight improvement when compared with the rating in the last 4-5 years, when Mozambique was among the worst 3-5 countries, but it continues to be in indication of the precarious situation in which the country finds itself in. Several institutional constraints and other constraints continue to hamper the delivery of basic services (e.g. water supply, sanitation, and education and health services).

A series of reforms in the areas of agriculture, mining, and business environment in general are in place to reverse the imbalances in development, limited diversification of production and access to the benefits of development by a significant proportion of the population.

Strengthening micro, small and medium size enterprises (MSMEs) is also seen as key to changing the predominant situation. MSMEs (both formal and informal) represent about 98.6% of all enterprises, employing 43% of the workers and accounting for 76% of the total sales. Trade and service sectors form the bulk of business units, with commerce and retail businesses accounting for close to 60%, restaurants and accommodation 20% and manufacturing less than 10%. Most of these SMEs typically grow informally and as a reaction to immediate market deficiencies.

The “Strategy for the Development of Small and Medium Size Enterprises in Mozambique”, approved by the government in 2007, highlights the central role of MSMEs as drivers of employment, competitiveness, diversification and innovation, including mobilization of social resources.

[47] Latest report released on 14 December 2015 compiled based on estimates for 2014 by the UNDP

MozFIP and MozDGM will aim to provide different forms of technical and financial support to community and MSME.

The Agriculture and Forests Sector

The National REDD+ Strategy and the Forest Investment Program focus on forests and particularly on the reduction of emissions from deforestation and forest degradation. Ultimately, they focus on rural development and the sustainable use of natural resources including the development of agriculture. These will be the strongest pillars to achieve the REDD+ core objective in the specific context of Mozambique.

Agriculture

In Mozambique Agriculture contributes 25.9% of total GDP and is the source of livelihood for close to 75% of the population. The sector has been displaying a rapid growth averaging 6.8% over the period 1996 to 2010, which, notwithstanding the significance, was less than the overall growth of the GDP of around 7-8% over the same period. One of the contributing factors for slow progress has been the high vulnerability of agriculture to natural disasters, mainly droughts and floods in the southern and central regions.

In the same manner as the general economy, the structure of the agricultural sector consists of three main actors, loosely defined these are: the business sector, the household commercial sector, and the household self-consumption sector (better known as family sector). The household sector, comprising both the self-consumption and commercial agriculture, represents 94% of agricultural exploitations. The business sector is very small and represents only 5.3% of total agricultural exploitations (farms), but is the one that attracts more foreign investment mainly for cultivation of cotton, sugar and tobacco. However, despite its small size it has been particularly dynamic, growing on average at 47.9% over the period 2001-2003. The household sector is the key or base of agriculture activity in Mozambique, which is characterized by following aspects:

- Cultivation of very limited areas: 0.5 to 1 ha is the common size of most of the farms, including in the project area[48].
- Use of farming technologies that are rudimentary: cultivation is primarily undertaken using hoes and virtually no external inputs, such as improved seeds, fertilizers and chemicals are used[49].

[48] The informal character of agriculture and animal production, which are dominant economic activities in the project-related areas, explains the present land use and land tenure patterns. Ancestral laws establish the distribution and use of land by existing families. Lineage plays a crucial role in the process. Each family and groups of families do their best to secure enough land and to have direct access to areas for housing, fauna, forests, pastures, fertile grounds and water

[49] Due to the monopolistic structure of the market for these products, they are rather very expensive in Mozambique

- Regular plot rotation as a way of counteracting fertility loss. After several years (4-7 in most areas) of using a certain portion of land farmers move on to new plots as fertility is lost and leave the old plots in fallow to restore it. New areas are opened by means of extensive slash and burning of surrounding vegetation, which explains massive losses of forests and is one of the major causes of deforestation and carbon emissions;
- Over the years the family sector farmers have developed livelihood strategies oriented towards minimizing risk through crop diversification, which takes place in a variety ways including:
    - Growing several crops and the dominance of intercropping;
    - Preferring to grow two or more consecutive crops rather than just one of a longer cycle, even if the potential total yield is higher for the latter, to obtain advantage of moisture availability during the short rainy season; and
    - Growing crops in as many diverse environments (topography/relief/soil) as possible, e.g., in sandy flat areas, in medium textured alluvial deposits of slopes (transition zones), in the fine textured dark colored soils of the river beds (dambos) and in open valleys and alluvial soils.
- Diversification (of income at the household level) also extends to embracing other on farm and off farm activities by the active members of the household.

Consequently, the way agriculture is practiced does not allow for the achievement of good results in production and productivity. Despite its low productivity, the households use part of food crops production for commercialization, to reduce risks of post-harvesting losses and generate some cash. On other hand, the increasing presence of companies that are promoting cash crops, mainly in the central and northern regions of Mozambique, has been creating new dynamics in the households' farms, with the introduction of cash crops such as tobacco, cotton, pigeon peas, sorghum, sesame and sunflower. This has influenced households to restructure farm size and embark on new arrangements for cultivation of both crops (food and cash). The cultivation of cash crops is showing considerably good results in terms of productivity due the facilitation of inputs (improved seeds, fertilizers, drugs for pest management, technical assistance) by enterprisers that are promoting such crops. These companies continue to be concentrated in fewer districts or locations across the country.

In general, the predominance of household sector in agriculture activity in the context of limited access to inputs (soil fertilizers, drugs for pests control and water management, improved seeds), contributes for massive adoption of extensive practices (through increasing farm sizes and shifting cultivation) as the alternative to increase production, i.e. by increasing and alternating the cultivation areas instead of optimizing production elements.

Diversification by the family sector is also extended to embracing a multitude of activities across sectors, including forests (fuelwood and charcoal and other forests products that are used by the family sector to supplement needs and incomes), fisheries, mining, etc. in detriment of specialization that would lead to elevated production and productivity.

At the household level forests products are also used for honey production, medicines, construction, energy and other domestic uses (e.g. household utensils and furniture) at times in ways that often represent a threat to the sustainability of the resources, especially as the population grows and substitution of used resources is not done in a systematic way.

The business sector is mostly linked with cultivation of sugar cane, cotton and tobacco, which are normally cultivated in monoculture arrangements. The cultivation of these requires the prior removal of all existent vegetation in the targeted areas. The investments in commodity production have often been made in high agricultural potential areas converted from forests and later abandoned without restoration after intensive use. In addition to contributing significantly to increasing carbon emissions due to deforestation and forest degradation, this contributes to degrade the areas on which such practices are adopted.

Unequivocally agriculture contributes for land use and cover changes and carbon emissions. Therefore, technological solutions with potential to increase productivity without creation of collateral effects to biodiversity and forest ecosystems must be conceived, tested and disseminated to farmers. Efforts have been underway to change this unsatisfactory situation and to use the wealth of resources in the agriculture sector to meet important development goals such as diversification of the economy in general and that of agriculture itself, increased productivity, food security, employment, attract foreign direct investment, feed internal and external markets with a variety of agricultural goods, etc. and ultimately increase the weight of agriculture in the country's GDP in a way that would be in line with its potential.

Forests

The table below makes a broad characterization of the forest sector in Mozambique, which is then briefly described in this subchapter and further below in Chapter 5.

Table 17: Broad characterization of the forest sector in Mozambique

Group	N° of species	Areas of endemism and primary occurrence of fauna	N° of species in the red data list	Main causes	Trends
Flora	5500 (4800 of higher plants)	▪ Maputaland Center ▪ of Endemism ▪ Chimanimani ▪ Center of ▪ Endemism ▪ Coastal Forests; and ▪ Inselbergs sub centers (yet to be confirmed)	300 (122 under treat)	▪ clearing of vegetation, ▪ slush & burn agriculture, ▪ human settlements, ▪ uncontrolled fires	Reduction of primary vegetation and its transformation into a secondary land.

Mozambique has 70% of its territory (54.8 million of hectares) covered by forest and other woody formations. The forest area covers about 40.1 million of hectares (close to 51% of national territory), while other woody formations (scrubs, thickets and forests with shifting cultivation) cover approximately 14.7 million of hectares, which correspond to 19% of territory (Marzoli, 2007).

The existence of several types of soils, climate and hydrology along the country contributes for the development of several types of vegetation. As shown in the figure below there are mainly 4 types of vegetation in the region: coastal mosaic, dense afro mountain vegetation, undifferentiated woodland and miombo vegetation. Nevertheless, at the local scale there are other vegetation types such as coastal dune and littoral vegetation such as Mangroves and Acacia vegetation in the lowland (Albano 2008). Also, along most of the river beds there are discontinuous stands of reed vegetation throughout most of their length. Dambos (vegetation in low and wet land) are another vegetation formation, which are very common at the base of the inselbergs and act as a buffer, capturing water and releasing it slowly throughout the year (MAE, 2005). Most of the dambos have been converted into rice fields, which are cultivated during the rainy season (MAE 2005).

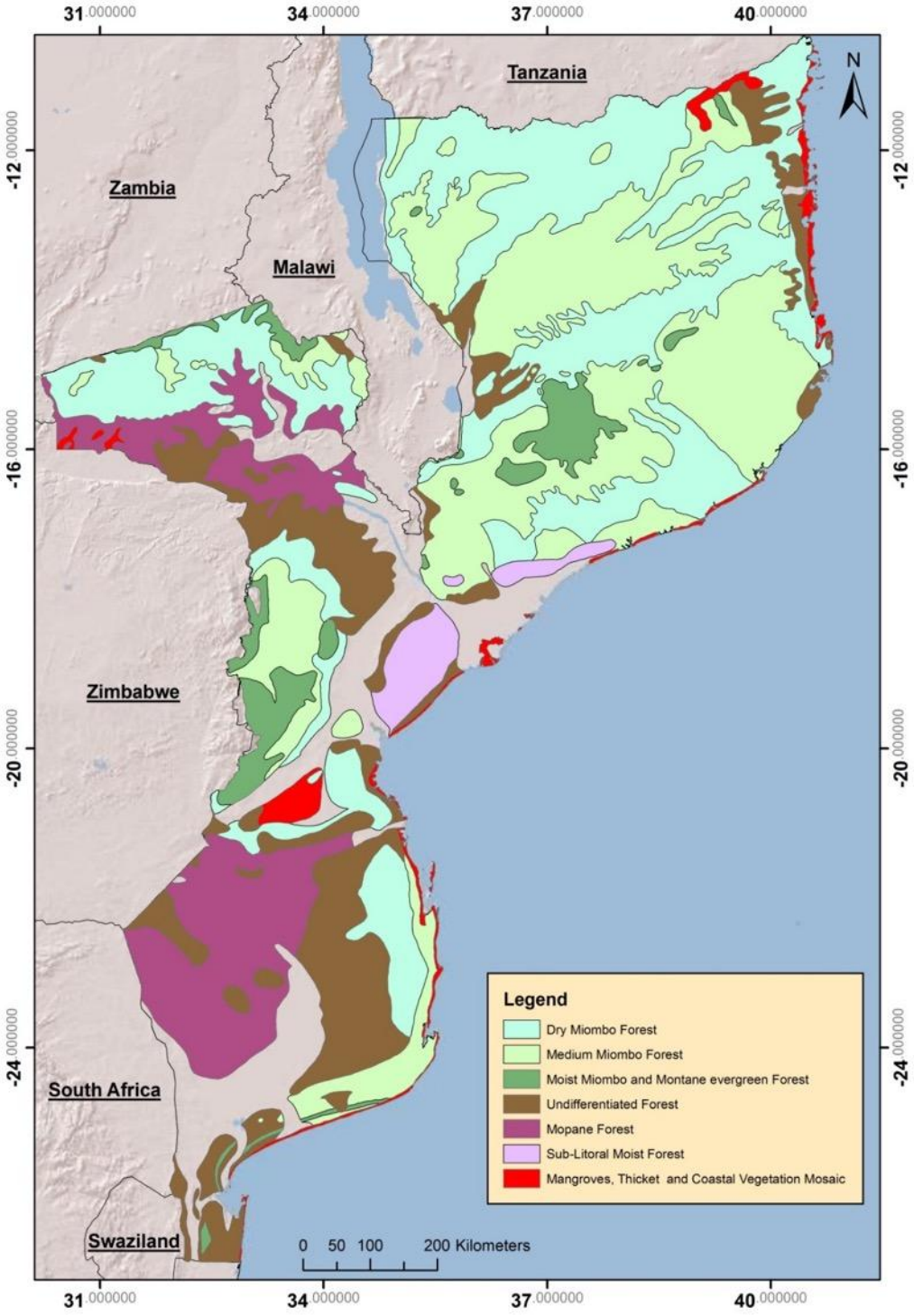


Figure 11: Distribution of vegetation types in Mozambique

Marzoli also indicated that only 26.9 million hectares of land are covered by productive forests (forest with potential for timber production). This productive forest is concentrated in central and northern regions of Mozambique; and the provinces with high contribution for productive forests

include Niassa (6 million of hectares), Zambézia (4.1 million of hectares), Tete (3.3 million of hectares) and Cabo Delgado (3.2 million of hectares). Although the Zambézia and Cabo Delgado provinces are in second and fourth position in terms of extension of productive forests, it is noted that they occupy the first (Zambézia) and second (Cabo Delgado) position with 7.7m^3/ha and 7.3m^3/ha of commercial volume, respectively. The species of commercial value that present high volumes include: mopane, umbila, jambirre and chanfuta. In terms of commercial classes, 4% of available commercial volume belongs to precious timbers producing species, 21% for the 1st class, 44% for the 2nd class, 14% for 3rd class and 17% for the 4th class.

The exploitation of timber or forest resources for commercial purpose is done through two regimes of contracts that include simple license and concessions. The concession regime is considered suitable for sustainable forest utilization because it considers long term contracts, forest management plans and timber processing units, even though often these are not systematically adhered to due to cultural reasons and other reasons including economic (a lot of local operators do not have enough financial resources to invest in other areas other than cutting) and inadequate law enforcement. Hence, the simple license is the regime of contract with high number of timber operators due to the easy requirement that it involves such as short term contract (1 year), no obligation to present and implement forest management plans, facility to move annually from area to area, no obligation to have processing units, and other similar aspects. This set of requirements in the context of significant growth of timber operators, contributes for rapid appearance of gaps in the forestry or accelerated land clearance and use changes in the forestry. This situation has stimulated various debates and studies aimed at adjusting the simple license regime. Part of it was done through Decree 30/2012 that makes it compulsory for operators to present forest management plans for operations within an area of up to 10,000 ha for 5 years and contracts valid for a period of 5 years but renewed in after the 2nd year of logging. It means that the remaining difference between concession and simple license is the timber processing unit, which remains absent in the simple license.

However, the deforestation and forest degradation is still notable in both contracts regimes (simple license and concession) because the logging process is according to species in demand in the market (mostly local and Asian) and not necessarily what makes sense from the forests management point of view. This trend contributes significantly for increasing the pressure on a few species, creating conditions for deforestation and degradation, mainly regarding the species with high demand such as mopane, messassa, and others. Because operations are illegal there are no reliable statistics but the volume of export-oriented illegal logging is estimated to represent around 93% of all commercial logging[50]. This is an open door for government revenue that is not collected. It is estimated that between 2007 and 2012 around US$146 million of government revenues were lost. This also extends to the communities, which per the law are entitled to receive 20% of concession taxes, which usually they do not receive.

[50]Environmental Investigation Agency (EIA, 2014)

While the direct impact from natural forest exploration is degradation, this can enable deforestation, for instance through the opening of access roads.

The fuelwood (wood and charcoal) is another forest product with high importance for Mozambican population as the source of domestic energy. In rural areas people are dependent on wood for cooking while in the urban and peri urban areas, there is a huge demand for charcoal. Wood collection, when it consists on removal of dry or dead parts of trees, becomes a forest management operation that contributes to the reduction of susceptibility to wild fires. But the actual demand for wood due to population growth and increased use of this type of energy, stimulates the cutting/logging of fresh wood for this purpose. Moreover, the high demand for charcoal in urban areas stimulates the high-level production to supply consumers. Therefore, charcoal production is commonly done through technologies characterized by low conversion efficiency of biomass to charcoal such as boat kiln. This type of technology requires double quantity of biomass to produce the same quantity of charcoal. The other critical issue related to charcoal production is the adoption of indiscriminate logging and use of commercial species not allowed for this purpose. So, the demand of charcoal in urban areas and the opportunity for income generation it offers to all the actors involved in charcoal value chain (direct producers, transporters, resellers, etc.) except the consumers, contributes to massive deforestation and forests degradation in a number of places. All these aspects and the fact that most producers are members of rural communities working in isolation, create conditions to increase the gaps or open spaces in the forestry. The promotion of sustainable charcoal production is more than introducing improved technologies at the production level. It should capitalize on investments in functional institutional arrangements that consider the empowerment of communities involved in charcoal production, forest management and control through for example facilitating access to and collaboration with community concessions.

Forests also extend to non-timber forest products such as medicinal plants, indigenous fruits, trees with potential of use to produce cosmetic products, edible tubercles, mushrooms, honey and grass, that can be considered for consumption and for commercialization. The sustainable exploitation of this potential can contribute for income generation and to reduce pressure on timber exploitation in native forests.

Livestock

Livestock is part of the agriculture sector and is being practiced commercially by the private sector and mainly in small scale by households as a survival/money reserve strategy for investment in health, education, selective household improvements and an element of gaining respect and prestige in the community. The activity involves mainly cattle, goats, sheep, pork, chicken and others.

Although there are few initiatives or projects related to livestock involving private sector, the largest areas legalized for this purpose belong to the private sector. They usually ask and are given areas ranging from 1,000 to 100,000 hectares of land for this purpose. This tends to create conflicts with local communities, where the population also has interests of feeding and watering their animals.

Areas given to livestock purpose are usually subject to deforestation, to create conditions for animal circulation and grazing. Grass is usually seen as the main important element to feed the animals, mostly cattle, in detriment of trees. At the end of dry season, the application of fire to turn the grass more palatable and nutritive for animals, is common. These practices are unsustainable and are associated with susceptibility to wildfire (uncontrolled fire), soils degradation and biodiversity losses. Moreover, during the dry season, the animals abandon the grazing areas due lack of fodder and look for it in the forest, which leads to the transformation of more forest areas and changes in forest structure. The degradation is not only related to the forest and biodiversity but also to impacts on water such as rivers, dambos, lakes and lagoons. Where there are areas with high animal density soil degradation around the water resources is noticeable due to the pressure of animals.

Under this context, REDD+/FIP and DGM are highly relevant. They are well positioned to demonstrate the viability of the linkages between the various sectors (agriculture (plant and animal production including forests itself, urban/rural planning, mining, etc.), actors (public/private, micro, small and medium size enterprises and communities at large) in achieving the common goal of promoting rural development and in the final analysis consolidating the factors that will reduce deforestation, degradation and forests emissions.

REDD+/FIP and DGM will support ongoing efforts to improve the way in which natural resources are used in rural areas, strengthen the institutional and the legal and regulatory framework to manage rural development, land and forests, pilot and demonstrate viable socioeconomic interventions, assist in capacity building and provide adequate monitoring, verification and evaluation mechanism that will benefit the project areas and the country. The focus of the project on rural development, sustainable management of natural resources including building resilience to climate change are also positive aspects in such a context as the rural areas concentrate both the majority of the country's population and poverty and are in dire need of adopting better practices in the use of the natural resources at the same time that can effectively face climate change challenges that affect the country and are translated into recurrent natural disasters in the form of floods, droughts and cyclones.

Settlement Expansion

The natural growth of population and migration of people from rural to urban areas is accompanied by needs of more areas/lands for the establishment of new areas for settlement and production of goods for households' subsistence. This usually goes hand in hand with infrastructure development, such as roads and power transmission lines, which create a context for vegetation removal.

The intensification of investments on extractive industry, mainly in the northern and central regions of Mozambique created a context of parallel investments of the private sector to provide services and goods to the extractive industry companies. This includes the building of new hotels, appearance of new settlement areas, parks of machinery and vehicles rental, and other aspects. These investments resulted in the expansion of some urban areas and the creation of other urban areas, which are associated with the removal of vegetation and acceleration of land use and cover changes. Additionally, many of mining operations required the removal of people

living the interest area to other locations with housing and restoration of other activities, with the same effect of creating new areas of settlement and associated land and forest clearance.

Mining

The country is now known for having several reserves of minerals such as coal, gas, gold, tourmaline, rubies, limestone, diamond, and others. From 2004 up to now, Mozambique knew a "boom" in terms of discoveries of large coal reserves and natural gas. This was followed by contracts being signed between government and companies to explore mainly the coal and heavy minerals (sand). These investments were almost done in Tete and Nampula. The explorations of several reserves are being undertaken in Zambézia and Cabo-Delgado. This also creates a context for changes in terms of land use and cover due to the process of infrastructures installing and resettlement of people living in the areas of interest for these operations.

At the local level mining of gold, tourmaline, rubies, stones and other minerals is practiced by means of rudimentary techniques. Among other aspects this has led to a situation where many farms were transformed into mining areas and become completely covered by holes, which lead to erosion. Pressure done to land during the extraction of these minerals including removal of vegetation and opening of holes lead to deforestation and land degradation (erosion). The process of washing minerals also contributes for silting rivers and when chemicals such as mercury are used during the process, water contamination becomes inevitable. it should be stressed that in some areas of the country artisanal mining is more profitable than agriculture and certain local households prefer to abandon the agriculture activity because there is a promising market for the minerals. Among other places this situation can be seen around Gilé Reserve in Zambézia province, mainly in Mulevala and Gilé districts.

The areas targeted by the project, as it will be seen, are also highly relevant since they have an outstanding natural resources potential that can be used to produce envisaged results and demonstrations. REDD+/FIP and DGM also advocates linkages with similar and relevant past, ongoing and planned programs and projects on the ground (e.g. ANRLMP and MozBIO, which will contribute to expand the opportunities to learn and disseminate lessons.

Plants Listed in the Red List

Among other aspects, the combination of all the sources of deforestation and forest degradation listed above also means that the number of species of plants listed in Mozambique Red List stood at 300 in 2009[51] (see table below). One out of these is extinct in the wild (*Sueda sp.*), 6 are critically endangered (*Encephalartos lebomboensis, E. munchii, E. ngoyanus, E. pterogonus, E. senticosus, E. umbeluziensis*) and 6 are endangered (*Crassula maputensis*; *Icuria dunensis, Cyphostema barbosae, Encephalartos aplanatus, E. chimanimaniensis, Sarcocornia*

[51] MICOA (2009) National Report on Implementation of the Convention on Biological Diversity in Mozambique

mossambicensis). The others are vulnerable, at low risk or with deficient data (Izidine & Bandeira, 2002). 55% of the Red List Species are confirmed endemics, and 22% are confirmed near endemic (Izidine & Bandeira, 2002). Confirmed and suspected endemic and near endemic total 85% of the Red List Species.

Table 18: Number of taxa in each Red List category in Mozambique. (Source: Izidine & Bandeira, 2002).

N.º	**Red List Status**	**Number of taxa**
1	Extinct (EX)	1
2	Critically endangered (CR)	6
3	Endangered (EN)	6
4	Vulnerable (VU)	109
5	Lower risk near threatened (LR-nt)	16
6	Lower risk least concern (LR-lc)	23
7	Data deficient (DD)	139
	Total	**300**

Source: MICOA (2009)

The Cabinet Decree issued in November 2015 suspending the giving out of new permits for logging for a period of two years to contain the intense deforestation occurring in the country, also banned the cutting of *Swartzia madagascarensis* (rose wood), which although not included in the Red List has been subject of intensive cutting in the last few years and risks to disappear. It is very precious and in high demand.

The mapping of the red list plant species is also imprecise, which also makes it difficult to indicate the respective incidence in the project area. What is a known fact is that in its more than 2,770 km of coastline the country has several marine and coastal habitats with the most critical being the coral reefs, mangroves and seagrass meadows. The coral reefs cover about 1,860 km2 of area of the coast, mostly concentrated in the northern Mozambique coastline occurring almost continuously within Quirimbas archipelago (in Cabo Delgado) and project area.

Fauna

The table below also makes a broad characterization of the fauna in Mozambique, which are further developed under chapter 5.

Table 19: Broad characterization of fauna in Mozambique

Group	**N° of species**	**Areas of endemism and primary occurrence of fauna**	**N° of species in the red data list**	**Main causes**	**Trends**
Fauna	4 271 (72% insects, 17% birds, 5% mammals, 4% reptiles, 2% amphibians)	Lager mammals mostly confined to conservation Areas	Around 8 species of mammals threatened	Hunting, uncontrolled fires/ forest fires, destruction of habitats	Confinement of large mammals to conservation areas

Source: MICOA (2009)

Fauna knowledge is less developed than that of flora in Mozambique, particularly for the northern and central regions.

There is a total number of 4271 terrestrial species registered (MICOA, 2003). 72% of these are represented by insects, 17% by birds while mammals and reptiles account for only 5% and 4%, respectively. The remaining 2% is made by amphibious. According to the 2008 census of wildlife, there are five main areas where richness of wildlife species is particularly high, namely (i) the western districts of Tete province (north and south of Lake Cahora Bassa), (ii) northern Mozambique (Niassa Reserve, Chipanje area and its surrounding) there are considerable populations of buffalos, elands, impalas, wildebeests and zebras. Also, three sub-species of large terrestrial mammals are endemic to this region: Equus burchelli subs. Boehmi (zebra); Connochaetes taurinus johnstonii (blue Niassa wildebeest) and Aepycerus melampus subs. Johnstonii (johnstonii impala); (iii) central Mozambique (Gorongosa NP, Marromeu Reserve and coutadas 6, 7, and 9 to 5), (iv) Limpopo-Banhine-Zinave NP's complex; and (v) Maputo Elephant Reserve.

Red list species

National red list has eight threatened mammal species (Table 5). Apparently, the only giraffes remaining in the country are those from Limpopo NP, a re-introduced population. Recently some giraffe was introduced to the Safari Park private wildlife area. White rhino was also re-introduced into Limpopo NP, while only one black rhino was seen in northern Mozambique during the last wildlife census. By law it is forbidden to hunt protected animals and fines for lawbreakers go from 1.000 MT (~ 40 USD) to 100.000 MT (~ 4.000 USD). The list of protected species "red list animals" include others species such as birds of prey and vultures, pangolin, ostrich, and all species of agave and gibbons. Major threats to terrestrial mammals are hunting, wildfires, non-sustainable use of forest resources and destruction of forests.

Table 20: Threatened large mammal species in Mozambique

Common name	Scientific name
White rhino	*Cerato therium simum*
Mzanze	*Damaliscus lunatus*
Sitatunga	*Tragelaphus spekei*
Black rhino	*Diceros bicornis*
Giraffe	*Giraffa Camelopardalis*
Matagaíça	*Hippotragus equinum*
Mountain Chango	*Redunca fulvorufula*
Cheetah	Acinomyx jutabus

The mapping of the species in the red list remains imprecise, which makes it difficult to indicate their status in the project area. What is a known fact is that the so called man-animal conflict is the main problem in the conservation areas, notably in the Quirimbas National Park, which forms the bulk of the project area in Cabo Delgado province. 735 species of birds, most of them migratory, occur almost in all habitats of Mozambique; emphasis to the complex of Marromeu, which supports many species of waterfowl in the country. Many of the identified endemic species, rare and threatened habitats are associated with isolated mountain, as are the cases of inselbergs (also very common in the project area in both provinces), Chiperone and Namule hills, Mecula and Gorongosa Mountains and Chimanimani massive. About 17 species of birds make up the Mozambican red list. Threats to birds are mostly from anthropogenic activities such as

deforestation of vegetation, hunting, trade bird cage, use of birds in traditional medicine, poisoning (for crop protection) and to an increased degradation of the alluvial plains and wetlands. Some of these reasons make it more complex to change given the fact that they are inherently related with essential aspects of local communities' livelihoods.

As explained in Chapter 7, in addition to being signatory of series of regional and international conventions and treaties related with biodiversity conservation (e.g. UN Convention on Biodiversity; African Convention on Nature and Natural Resources Conservation; Protocol related to Wildlife Conservation and its application in the SADC; adherence to the IUCN (Resolution n.º 21/81, of 30 of December, by the Cabinet, Convention on International Trade in Endangered Species – CITES (Resolution No. 20/81 of December 30)), Mozambique has enacted a number of laws and regulations aimed at protecting biodiversity including that of endangered species, namely: the Forests and Wildlife Law (Law n.º 10/99, of 7 of June) and specific regulations; Rule (Portaria) n.º 117/78 of May 16 that establishes the principles to be followed in conducting hunting activities. The country does not have a specific National Red List of species of flora and fauna.

Forests, Ecosystems Services and Climate Change in General

General Aspects

Besides the socioeconomic aspects that have been described above, note should be taken of the fact that forest is one of the most complex natural ecosystems with considerable influence on the quality of the environmental components such as air, water, soil, climate and different forms of life and biodiversity in general. It also has a strong weight on recreation, landscape scenery, and general wellbeing of humans and another species. The health of the environment in general has strong relations with forests in vast and complex ways.

Forest improves the environment in different forms such as: (i) relative humidity of air that is increased; (ii) increased fertility of surface soil by adding large quantities of organic matter in soil by which water and nutrient holding capacity of soil is increased; (iii) soil erosion avoidance; (iv) increases surface water capacity to infiltrate on ground water; (v) quality and diversity of life of wild and domestic animals, including humans.

The forest environment or site consists of the physical environment surrounding the aerial portions of the tree (climatic factors) and that surrounding the subterranean portion (edaphic factor) and the third one is the biotic factor. External influences, particularly fire, grazing and browsing animals and humans, significantly have an impact on the nature of sites and their capacity to support tree growth.

As the forest becomes established and develops, the site itself undergoes changes. Forest cover moderates the extreme daylight temperature regime of open sites resulting in more uniform conditions. Wind velocity is slowed near tree crowns and becomes negligible within the forest.

Trees crowns intercept sunlight and alter the quantity and quality of radiation reaching forest floor compared with that reaching open sites. On the forest floor, accumulating layers of leaves,

twigs and other litter attract a characteristic grouping of plants and animals that live on decaying organic matter and on each other.

There is increasingly more evidence to the effect that forests have the following influence on air temperature: (i) lowering the daily mean temperature in the hot season and raising it slightly in the cold season; (ii) lowering the daily maximum of air temperature and raising the daily minimum; (iii) diminishing the daily range of air temperature; and (iv) influencing precipitation.

Forest air is cooler and moister, than the air in the open. Forest increases the precipitation of any area. As air cools in rising, precipitation increases with increase in elevation.

The beneficial influence of forest vegetation on soil is due to its beneficial effect and its power of increasing fertility of the land by adding nutrients. In general, the influence of forest vegetation on soil is related to the producing of a new substratum of soil and the changing of soil structure. Forest vegetation assists in the formation of soil by the accumulation of plant remains by stimulating weathering through the action of acids formed by vegetation, and by the resistance which forest vegetation offers to moving air and water.

Forest vegetation also plays and important role in water retention by reducing surface runoff, and thus increasing the amount of water that percolates into a soil. Forest cover also increases seepage by increasing the volume of soil in mountainous regions over the solid rock foundations. The humus layers, characteristic of every well-managed forest, absorb from two to four times their weight of water. Forest soil, with its overlaying organic layers is in a real sense a vast sponge capable of absorbing much more water per unit area than soil in the open.

Plants also have a role to play in controlling air, water and noise pollution, cleaning the air, etc.

From the biotic point of view plants are undoubtedly the most important feature in the environment of terrestrial animals. All animals are dependent directly or indirectly upon plants for food. Forests also provide many animals with shelter from bad weather, protection from enemies, situation for homes, and materials for nests.

After many years of focusing on the influence of forests on climate at the microclimate or local level in recent times there is increased attention at the potential, impact of forests on global conditions.

Forest have the potential to contribute to climate change through their influence on the global carbon cycle. Forest are being recognized as playing important roles in global biochemical cycle. Major pools of carbon are the atmosphere, fossils fuels, oceans and terrestrial biota and soils.

The world's forests contain more than 55% of the global carbon stored in vegetation and more than 45% of that in soil. Most of the carbon Pools in forest vegetation is in tropical forests (62%), whereas most of the carbon pool in forest soils is in boreal forests (54%).

Thus, forests have a large range of ecological services, not only timber, but also climate regulation, nutrient regulation (specially on soils), soil production and avoidance of its erosion,

air regulation (e.g. purification but also source of oxygen), water cycle regulation (flood control), products such as glues, and very importantly biodiversity that brings honey, fruits, mushrooms, bush meat, natural medicines and aesthetics, amongst others.

4.1.3.2 The Mozambican Context

Forest ecosystems play an important role in biodiversity and livelihoods of Mozambican inhabitants and particularly those in the two provinces and targeted districts in the project area. In Mozambique and the rest of the world tropical forests are vital for biodiversity and conservation and are also important in controlling climate change. Mangrove forests have proven to be of great use in Africa as support elements to address climate variations by providing the first barrier of protection to hinterland elements in the event of extreme events such as rising sea level, winds, cyclones and even tsunamis (tidal waves caused by earthquakes in seas and oceans). Mangrove forests also constitute important nurseries for a variety of terrestrial, marine and fresh water species. These have been object of devastation and degradation in line with what has been described above. Under REDD+, MozFIP and MozDGM efforts will be made to demonstrate that this can be sustainably transformed by offering alternatives and other incentives for people to value mangroves and related ecosystems.

A significant part of Mozambique territory is situated in areas that are prone to the occurrence of natural disasters, markedly floods, droughts and cyclones. Sea-level rise (SLR) and temperature increases are also being added. Related disasters are often accompanied by damages to public and private assets, which translate into GDP losses. These offset the country's efforts to eliminate poverty and interfere negatively with development.

Vulnerability in general and particularly to flooding and SLR is related to heavy rainfall, hypsometry, which explains that extensive plains are lower in relation to the rivers and sea levels, high flood flows from neighboring countries, in shared river basins, changes in vegetation cover and land use. The occurrence of different categories of extreme events is reasonably well mapped in Mozambique.

There is also enough evidence to the effect that rising temperatures and increased frequency of extreme events will have direct and negative impacts on crops, livestock, forestry, fisheries and aquaculture productivity. CC poses a serious for global food security and this calls for new ways of improving the way farmers manage agricultural systems and natural resources to achieve food security in an effective manner. Food security can no longer be separated from that of natural resources, the environment and climate change. They are all inextricably intertwined, which calls for responses structured in the same way.

Reducing food insecurity goes hand in hand with building the resilience of rural communities to shocks and strengthening their adaptive capacity to cope with increased variability and slow onset changes. Therefore, the agricultural sectors (crops, livestock, forestry, fisheries) must transform themselves to feed a growing global population and provide the basis for economic growth and poverty reduction. Transformation must be accomplished without hindering the natural resource base. More productive and resilient agriculture requires a major shift in the way land, water, soil nutrients and genetic resources are managed to ensure that these resources are

used more efficiently and sustainably. This shift requires considerable changes in national and local governance, legislation, policies and financial mechanisms. The transformation must also involve improving producers' access to markets as foreseen under the program for both forests and agricultural products.

At the world level the above described phenomena have led to the adoption of the Climate Smart Agriculture (CSA). For CSA to become a reality an integrated approach responsive to specific local conditions is required. Integrated landscape approaches and coordination across agricultural sectors is essential to capitalize on potential synergies, reduce trade-offs and optimize the use of natural resources and ecosystem services.

Main features of Climate Smart Agriculture are:

- Addressing agriculture and building resilience to shocks;
- Considering climate change mitigation as a potential co-benefit;
- Being location specific and of knowledge intensive approach;
- Identifying integrated options that create synergies and reduce trade-offs;
- Identifying barriers to adoption and providing appropriate solutions
- Strengthening livelihoods by improving access to services, knowledge and resources;
- Integrating climate financing with traditional sources of agricultural investment.

The inclusion of the project under the Climate Change (CC) is highly relevant as it will be implemented in areas (Cabo Delgado and Zambézia provinces) with significant level of exposure to this phenomenon involving poor communities, which are both, more vulnerable to climate change and particularly to cyclones, inundations and resulting disruptions in the form of losses of lives and other fundamental household and community assets. These communities should not be passive agents of these phenomena. They need to be made aware of the issues and to be adequately equipped to actively and creatively undertake adaptation measures.

From the onset, the two provinces have typically different problems with Zambézia being prone to inundations and selective droughts and Cabo Delgado (particularly the selected districts) facing considerable water shortages. Consequently, they will require different solutions whereby in Zambézia focus will be on water management to counteract periods of excess and scarcity (irrigation and drainage) while Cabo Delgado can be expected to go for water retention in the short periods of abundance (during the rainy season) for use throughout the year. Free, Prior and Informed Consent (FPIC) processes to facilitate an informed and independent decision-making process by the communities will be required.

Awareness of the CC dimension of development can be expected to assist in the (i) identification of critical areas of intervention which harmoniously should combine mainstreaming environmental management and climate change adaptation with overall socioeconomic development and be consistent with interventions in those areas. Evidence shows that extreme events are often made worse by poor land and resource planning and use (e.g. degradation of mangroves). In Mozambique, it is found that there are four major types of floodplain occupation: rural settlements linked to the practice of traditional and family farming, irrigation areas for commercial agriculture, urban settlements, and roads/railways crossings and power transmission

lines. Direct negative impacts of flooding happen around these types of land occupations and natural resource uses, which in turn originate other negative indirect impacts.

The existing land use planning legal and regulatory instruments need to be systematically implemented and enforced while they are complemented by other instruments, such as awareness raising for the importance of being proactive towards extreme events. This seems to be an area with long reaching potential that has been misrepresented in environmental management and CC mitigation and adaptation. The levels responsible for implementing mainstreaming interventions (provinces and mainly districts, municipalities and communities) need to be provided with solid science-based data and knowledge by the sectors and where relevant in combination. The project will offer an opportunity to test and materialize transformation.

Annex 19 – Environmental, Health, and Safety Guidelines

General EHS Guidelines:
http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/our+approach/risk+management/ehsguidelines

Environmental, Health and Safety Guidelines for Perennial Crop Production: http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/learning+and+adapting/knowledge+products/publications/publications_policy_ehs-perennial

Environmental, Health, and Safety Guidelines for Sawmilling & Manufactured Wood Products: http://www.ifc.org/wps/wcm/connect/ce72a58048855ac48704d76a6515bb18/Final+-+Sawmills+and+MWP?MOD=AJPERES

Agrobusiness/Food production:
http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/our+approach/risk+management/ehsguidelines