Sustainable Landscapes in Eastern Madagascar

Environmental and Social Management Plan

Translation of the original French version

19 May 2016 (Updated 23 August 2016)

Table of Contents

List of Tables

List of Figures

Acronyms

ADER	Agence de Développement de l'Electrification Rurale (Agency for Rural Electrification)
AMF	Althelia Madagascar Fund
Ar	Ariary (local currency; exchange rate is 1 USD~3155 Ar)
BNCCC	Bureau National de Coordination des Changements Climatiques (National Climate Change Coordination Office)
CC	Climate Change
CI	Conservation International
CIM	Conservation International Madagascar
COAP	Code de gestion des Aires Protégées (Management code for protected areas)
CPDN	Contribution Prévue Déterminée au niveau National (Intended Nationally Determined Contributions)
CTD	Collectivité Territoriale Décentralisée (Decentralized local authority)
CTE	Comité d'évaluation technique (Technical Evaluation Committee)
DG	Directeur Général/ Direction Générale (General director / directorate)
DNA	Designated National Authority
EIA	Environmental Impact Assessment (including social aspects)
EIB	European Investment Bank
ESMP	Environmental and Social Management Plan
ESSP	Environmental and Social Safeguard Plan
GHG	Greenhouse Gases
GCF	Green Climate Fund
HLI	Highly Labor-Intensive
IFC	International Finance Corporation
IUCN	International Union for Conservation of Nature
LMU	Local Management Unit
LPSAEP	Lettre de Politique Sectorielle Agriculture, Élevage et Pêche (Agriculture, livestock, and fisheries sectorial policy letter)
MECIE	(Décret) sur la Mise en Compatibilité des Investissements avec l'Environnement (Decree on the compatibility of investments with the environment)
MEEF	Ministère de l'Environnement, de l'Écologie et des Forêts (Ministry of environment, ecology, and forests)
MEEMF	Ministère de l'Environnement, de l'Écologie, de la Mer et des Forêts (Ministry of environment, ecology, sea, and forests)
MEF	Ministère de l'Environnement et des Forêts (Ministry of environment and forests)
MGA	Ariary (local currency; exchange rate is 1 USD~3155 Ar)
NPA	New Protected Area
ONE	Office National pour l'Environnement (National Environmental Office)
PA	Protected Area
PAG	Plan d'Aménagement et de Gestion (Development and Management Plan for protected areas)
PANA	Programme d'Actions National d'Adaptation (National Adaptation Program of Action)
PAP	People Affected by the Project
PGEP	Plan de Gestion Environnementale du Projet (Project Environmental Management Plan (definition of the MECIE)
PREE	Programme d'Engagement Environnemental (Environmental Commitment Program, a simplified EIA)
REDD	Reducing Emissions from Deforestation and Forest Degradation
RDP	Regional Development Plan

RSE	Rapport de Suivi Environnemental (Environmental Monitoring Report, mandated by the acquisition of an environmental permit)
SDG	Sustainable Development Goals
SRI	Système de Riziculture Intensive (System of rice intensification)
SRA	Système de Riziculture Améliorée (System of rice improvement)
STD	Service Technique Déconcentré (Decentralized technical service)
TNRM	Transfer of Natural Resources Management
ToR	Terms of Reference
USD	United States Dollar
WCS	Wildlife Conservation Society
ZOC	Zone d'Occupation Contrôlée (Controlled settlement area)
ZUC	Zone d'Utilisation Contrôlée (Controlled use area)
ZUD	Zone d'Utilisation Durable (Sustainable use area)

Glossary

Dina: Collective agreement, in written form, freely adopted by the majority of the *Fokonolona* over eighteen years of age or, as the case maybe, by representatives of a hamlet, a village, or a *Fokontany*.

Fokonolona: Literally means local community and is composed of the residents of the base unit that is the *Fokontany*. A homogenous collectivity, well-versed in managing local affairs. It served and still serves as an administrative, political, economic, social, and cultural unit close to citizens.

Fokontany: A geographical area. The *Fokontany* is the basic administrative subdivision at the level of the Commune. According to the size of settlements, the *Fokontany* can include hamlets, villages, sectors, or districts. A *Fokontany* includes one or more districts or one or more villages; the inhabitants of a *Fokontany* constitute the *Fokonolona*.

Major PAP: Include individuals whose main or unique source of revenue and livelihoods is affected by the project.

Local community: Voluntary group of individuals sharing the same objectives and interests for the management of natural resources contained in their territory. It is the population of the *Fokonolona* as a whole, particularly interested in the management of natural resources.

Minor PAP: Individuals using the natural resources in a Protected Area on an occasional basis; the benefits from such resources do not constitute their main source of revenue.

People Affected by the Project (PAP): Include all people living and depending on natural resources in a Protected Area (PA) that is designated/ being designated /being extended and who may potentially suffer from the restricted access to such resources (Impacts on their sources of revenue and living standards).

Note on 23 August 2016 Update:

Minor modifications to the original version of this document (dated 19 May 2016) were made on August 23 2016. These modifications were to reflect changes made in the Full Proposal regarding:

- The proposed financial flow to the proposed Climate Change Trust Fund. In the original document the returns from the Investment Fund were proposed to return directly to the Trust Fund but in the final submission of the documents it is proposed that the funds reflow to GCF and a separate proposal is submitted requesting them for the Trust Fund. Minor changes were therefore made to figure 1 and the text related to the Trust Fund.
- Figures 9 and 10, showing the management structure were also modified slightly to ensure that the same terminology for the project's governance units was used in the figures and in the text.
- Chapter 9, the Gender Action Plan was also updated to reflect the contents of the Gender Mainstreaming Analysis and Action Plan submitted as a separate document with the Proposal (annex 16).
- Finally, the page numbers in the contents section were updated.

Executive Summary

Project Components, Purpose of the ESMP:

Under its National Climate Change Policy, the National Climate Change Coordination Office (Bureau National de Coordination des Changements Climatiques / BNCCC), Conservation International Madagascar (CIM), and Althelia Ecosphere, through the CI-GCF Project Unit and the European Investment Bank (EIB), have requested the Green Climate Fund's (GCF) support for their project « *Sustainable Landscapes in Eastern Madagascar* ».

The objective of this Project is to develop and apply a "climate-smart landscape" approach to improve social and environmental resilience of smallholder farmers to climate change, to reduce greenhouse gas (GHG) emissions from deforestation, and to channel private sector funding to climate investments that transform livelihoods.
The Project involves 4 components contributing to 5 of the GCF outcomes:

1. Adaptation through a sustainable agriculture program and ecosystem-based adaptation (contributing to outcome A7.0 of GCF "Strengthened adaptive capacity and reduced exposure to climate risks");
2. Creation of enabling conditions for reducing and managing climate change risks (contributing to GCF adaptation outcome A8.0 "Strengthened awareness of climate threats and risk-reduction processes" and A5.0 "Strengthened institutional and regulatory systems for climate-responsive planning and development");
3. Development of renewable energy sources in rural areas of Madagascar (contributing to GCF mitigation outcome M6.0 "Increased number of small, medium and large low-emission power suppliers");
4. Reduced GHG emissions from deforestation of natural forests (contributing to GCF mitigation outcome M9.0 "Improved management of land and forest or improved management contributing to emissions reduction").

The Project will be implemented primarily in the landscapes of the Ambositra Vondrozo Forest Corridor (known by its French abbreviation, COFAV) and the Ankeniheny-Zahamena Forest Corridor (known as CAZ), respectively in south-central and eastern Madagascar. To support these efforts and achieve the Project objectives, private sector for-profit investments in climate mitigation and adaptation activities will be made through an Investment Fund. These investments will be made in additional landscapes to be identified during the Project. Other zones will also be identified jointly with the Agency for Rural Electrification (ADER) for the implementation of renewable energy activities (outcome M6.0).
Some of the sub-projects are to be identified and defined during the project execution and therefore specific information about the numbers of sub-projects, the location of sites of sub-projects, land requirements and relations with local communities, and terrestrial geophysical characteristics are not yet available. Thus the preparation of this ESMP document serves to:

- provide a reference tool for implementing environmental and social activities in relation to the standards adopted by the GCF, EIB and CI and to ensure coherence with national Malagasy legislation;
- define actions to avoid or mitigate impacts that could arise from the various subprojects.

Once specific information is available, each subproject will need to be screened and if necessary an environmental impact assessment developed. An environmental commitment program for the subproject should be developed that conforms to this ESMP so as to eliminate, mitigate or compensate any negative environmental or social impacts.

The Project will continue for a period of 10 years. The principal beneficiaries will be rural households that are the most vulnerable to climate change, the staff of public institutions and local organizations that receive capacity building support, and private sector organizations.

Conformity of the Project with Performance Standards:

The Project is aligned with and contributes to various national policies and strategies, notably: the National Environment Policy (Politique Nationale de l'Environnement/PNE), the National Climate Change Policy (Politique Nationale pour la Lutte contre le Changement Climatique/PNLCC), the National Adaptation Program of Action (Programme d'Actions National d'Adaptation/PANA), Reduction of Emissions from Deforestation and Degradation (Réduction des émissions issues de la déforestation et de la dégradation des forêts/REDD), Intended Nationally Determined Contributions (la Contribution Prévue Déterminée au niveau National/CPDN), the National Social Protection Policy (la Politique Nationale pour la Protection Sociale/PNPS), the Sectorial Program for Agriculture, Livestock and Fisheries (le Programme Sectoriel Agriculture Élevage Pêche/PSAEP), the National Action Plan on Gender and Development (le Plan National d'Action Genre et Développement) and the National Strategy on Information and Communication on the Environment and Sustainable Development (la Stratégie Nationale de l'Information et de la Communication Environnementale pour le Développement Durable /SNICEDD) that is currently being finalized. These various reference documents are directly concerned with questions touching on the environment, sustainable development, and more specifically resilience to climate change.

The Project has been the object of technical and financial feasibility studies and of multiple stakeholder consultation meetings to design the activities and to address environmental and social issues linked to the Project. In conformity with the procedures of EIB and the procedures of CI as GCF-accredited entities, the Project has been evaluated against an initial social and environmental screening based on which it has been categorized as a Category B project in terms of risk due to the identification of some potentially negative impacts. CI, with the EIB, has therefore prepared this Environmental and Social Management Plan (ESMP) to ensure that the planned interventions cause as little damage as possible and provide the maximum advantage to the environment and the population living in the Project area. The ESMP is also to ensure that the GCF Social and Environmental Standards are respected, that potential environmental and social risks are adequately identified, evaluated, and then managed in an appropriate manner. The goal is to avoid negative impacts, minimize unavoidable risks, and/or plan for sustainable mitigation measures.

Following the national legislation as defined in the MECIE[1] decree (on the compatibility of investments with the environment), and given that some sub-projects need to be identified (for example with regards size and location), some sub-project activities may need to undertake environmental and social impact assessments (EIA) or environmental commitment programs (Programme d'Engagement Environnemental/PREE), a simplified form of assessment.

The applicability of the GCF Performance Standards (PS), based on the IFC standards is summarized in the following table:

[1] Décret sur la mise en comptabilité des investissements avec l'environnement

Performance Standard	Contents	Applicability to the Project
Performance Standard 1 Assessment and management of environmental and social risks and impacts	This criterion aims to identify and evaluate social and environmental impacts of the Project and to prevent, minimize, and manage negative impacts on the population, communities, and the environment. It emphasizes the need for projects to consult affected communities appropriately using an approach that achieves free, prior, and informed consent and promotes improved environmental and social performance through effective management systems. For GCF, projects are classified as category A, B, or C depending on their type, location, vulnerability, and scale of the project, and the scope and scale of potential impacts.	Yes – Potential environmental and social impacts could be caused by agriculture/agro-business, habitat restoration, afforestation and renewable energy projects. This document defines the processes needed for environmental assessments of these activities, the responsibilities of different actors, grievance mechanisms, stakeholder consultations, and dissemination of pertinent information to help affected communities understand the risks, impacts, and opportunities of the Project. A classification of the different subprojects following the IFC standards and national environmental legislation is provided in this document.
Performance Standard 2 Labor and working Conditions	This criterion aims to establish, maintain and improve the working relationships between workers and management. It promotes equal employment opportunity and equitable treatment of workers and guards against child and/or forced labor. Work conditions must be safe and healthy and promote the wellbeing of employees. The environmental and social assessment must take into account worker protection and promote measures to protect the health and safety of workers and local communities.	Yes – The requirements of this performance criteria are also included in the Malagasy Labor Code (Law 2003 -044 of June 10, 2004) and will need to be applied throughout the Project. This aspect must also be integrated into the assessments for the subprojects. The provisions of the Labor Code are applicable to Project staff and also any contractors.
Performance Standard 3 Resource efficiency and pollution prevention and reduction	This criterion aims to reduce negative impacts on human health and the environment by minimizing pollution generated by project activities and by reducing emissions from project activities that contribute to climate change.	Yes – The objectives of this criterion are specifically addressed through the Project components. Component 1 on adaptation through a sustainable agriculture program and ecosystem-based adaptation includes various activities that contribute to the objectives of this criteria, notably: (i) Identification of sustainable agriculture techniques to improve resilience of communities. Component 3 on renewable energy: any activity should be categorized (A, B, C) and implement the required environmental and social provisions. Note that category A subprojects will not be eligible under the Project/ Investment Fund.
Performance Standard 4 Community health, safety and security	The objectives of this criterion are to: • Avoid or minimize risks and adverse impacts on the health and safety of the local community during the project lifetime from both routine and non-routine circumstances • Ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the local community.	Yes – The project management and the environmental assessment process (to be put in place for sub-projects) also include monitoring and evaluation steps as well as a final evaluation of a sub-project. These steps will allow for impacts on the health and safety of local communities to be identified so that measures can be taken if necessary.

Performance Standard	Contents	Applicability to the Project
Performance Standard 5 Land acquisition and involuntary resettlement	This criterion aims to avoid or minimize displacement of people. When displacement cannot be avoided, it provides a framework for providing assistance to improve or at least restore income sources and/or other means of livelihood.	Yes – Neither components 1 (adaptation) nor 4 (mitigation) envisage land acquisition or physical relocation (resettlement or loss of shelter) or a declaration of public utility. However, restriction of access to natural resources could occur, following a participatory approach, in order to protect natural resources (identification of a conservation area transferred to a local community or protection of a water source). As noted in this document, a mitigation hierarchy of avoidance and reduction of impacts should be applied (avoid, reduce, or compensate). Any restriction of access to resources should be determined for specific zones using a participatory and collaborative approach (forest/land-use zoning). Sustainable agriculture sub-projects are likely to take place on privately-owned land (recognized either officially or through the traditional land tenure system). For component 3 on renewable energy, the exact sub-projects and locations are not yet defined but the project will not lead to involuntary resettlement.
Performance Standard 6 Biodiversity conservation and sustainable management of living natural resources	The objectives of this performance criterion are to: - Protect and conserve biodiversity - Promote the sustainable management and use of natural resources through the adoption of practices that integrate conservation needs and development priorities	Yes – The environmental assessment process of sub-projects will take this issue into account, considering the sensitivity of each of the subproject locations. Mitigation or compensation measures may be needed to reinforce biodiversity-rich zones, such as protected areas. The development and management plan (PAG) will also guide sub-projects authorized in the protected area and the peripheral zones
Performance Standard 7 Indigenous Peoples	This criterion aims to: - Ensure that the development process fosters full respect for the human rights, dignity, aspirations, culture, and natural resource-based livelihoods of Indigenous Peoples; - Anticipate and avoid adverse impacts of projects on communities of Indigenous Peoples, or when avoidance is not possible, minimize and/or compensate for such impacts; - Promote sustainable development benefits and opportunities for Indigenous Peoples in a culturally appropriate manner.	No – It is not anticipated that there will be Project activities in areas where Indigenous Peoples (as the term is generally used[2]) are present. Rather there are the people affected by the project (PAP) as well as local communities that can include several different ethnic groups that are not considered “indigenous”. These local people, as both beneficiaries and actors in the Project itself, need to be included as stakeholders throughout the Project lifetime.
Performance Standard 8 Cultural heritage	This criterion aims at protecting irreplaceable cultural heritage. The IFC defines cultural heritage as tangible objects and sites having archaeological (prehistorical), paleontological, historical, cultural, artistic, and religious values, as well	Yes – In addition to zoning and land-management plans (for the implementation of sub-projects), capacity-building activities on the value of cultural heritage will be initiated.

[2] meaning social groups with identities that are distinct from the mainstream groups in national societies

Performance Standard	Contents	Applicability to the Project
	as unique natural features that embody cultural values such as sacred trees. This definition also includes intangible forms of culture such as knowledge, innovations, and cultural practices of communities embodying traditional lifestyles.	

The Project conforms to all the GCF Performance Standards (PS), EIB ESPS and CI Safeguard Policies. Other than PS 1 regarding assessment and management of environmental and social risks and impacts, six other PS may be triggered during the implementation of subprojects (these are PS2, PS3, PS4, PS5, PS6 and PS8). Regarding EIB ESPS and CI Safeguard Policies, the processes for stakeholder consultation and gender integration during the Project cycle are also presented in this document.

The environmental and social evaluation process to apply to sub-projects is presented in detail in this ESMP. The process aims to ensure that the social and environmental standards of GCF, EIB, CI, and the national environmental legislation are applied by the Project while adopting the most stringent of these requirements. The process consists of six steps: (i) screening (and categorization) of sub-projects (*screening*), (ii) determination of the environmental and social scope (*scoping*), (iii) environmental and social impact assessment, (iv) analysis of environmental and social studies, (v) environmental and social monitoring, and finally (vi) environmental and social results. This process allows the applicability of each of the environmental and social standards of GCF, EIB and CI to be checked and the nature and the scope of any needed environmental and social studies to be determined.

Issues, Risks, and Environmental and Social Impacts of the Project

The main issues raised by the Project are linked to the success of each of the four Project components (sustainable agriculture and ecosystem-based adaptation, creating the enabling conditions through capacity-building, the promotion of clean and renewable energy sources, and the reduction of GHG emissions from deforestation). A cross-cutting issue that is underlying and common to each component is poverty reduction.

Long-term positive impacts of the Project are (i) the reduction of GHG emissions by approximately 10 million tons CO_2 equivalent over 10 years, (ii) increasing the resilience of 114,000 smallholder farmers vulnerable to climate change, (iii) improving access to renewable energy for 448,000 people living in rural areas, and (iv) protecting 683,452 million hectares of natural habitats important for biodiversity and maintenance of ecosystem services. Indirectly, the Project will benefit a million people thanks to sustainable management of forests and agricultural lands, as well as of their ecosystem services.

Environmental and social risks that may aggravate deforestation or degradation of forests / forest resources and increase in GHGs, or may cause social conflicts are illicit mining, pressures on land due to the level of poverty in the Project areas, extension of livelihood by vulnerable populations, and migration. However, in general, mitigation of these risks is already anticipated in the approaches and activities proposed under the Project.

The Importance of Stakeholder Consultations in the ESMP Development Process

Various stakeholder consultation meetings have been organized at the central and regional levels.

The stakeholder consultations included the main actors involved in the project: beneficiaries, local communities, technical services and ministerial departments, partner organizations, local authorities, and research centers. The project was explained to these stakeholders with particular attention given

to environmental and social issues related to the Project. The approach was intended to contribute effectively to the sustainability of the Project. The overall objective of the stakeholder consultations was to involve the different actors in the final design and decision-making on the Project. Note that the regional consultations were related to the 'not-for-profit' activities that are to be executed through the grant managed by CI Madagascar and the BNCCC. The planned investment through the Investment Fund managed by Althelia will be subject to specific consultations for each subproject as these are identified and defined. These consultations will follow the procedures as described in this ESMP to ensure compliance with the requirements of the GCF, those of the EIB and the national legislation, and they may also include Althelia-specific provisions based on Althelia's own standards.

These consultations have enabled:

- Strong involvement of the GCF Designated National Authority (the BNCCC) in preparing the Project documentation following a participatory and iterative approach. The BNCCC has contributed to the development and validation of the logical framework, the definition of the management structure of the project, and reflections on the Trust Fund;
- Association of the various relevant ministerial departments in the development of the logical framework, exchanges on how to approach the implementation of sub-projects (by capitalizing on experiences in the area) on the planned sustainable agriculture activities, as well as the definition of the roles and responsibilities of STDs and CTDs in the execution of the Project;
- Organization of four regional consultation meetings in November 2015 (2 for CAZ and 2 for COFAV) that included the participation of citizens, representatives of local associations including community forest management groups, representatives of local authorities such as the mayor or president of the "*Fokontany*", farmers, students, teachers, etc.).

In general, the main suggestions received during the consultation process have been integrated into the project apart from suggestions that fall outside of the project scope, such as requests for construction of social infrastructure (health centers, schools etc.) or rehabilitation and/or construction of rural roads. The consultations helped to confirm that the key issues causing deforestation or degradation of forests are the conversion of land for agriculture, illegal mining and forestry operations, the extreme vulnerability of households, poverty, and poor governance of natural resources (lack of law enforcement and limited monitoring).

Gender Integration

The integration of gender in the Project involves identifying and addressing differences and inequalities between women and men, but also giving specific consideration to the vulnerable and the young or other identified groups within the context of each sub-project for private sector as well as public sector activities.

From the launching of the project, exchange sessions and/or harmonization of approaches and tools will be organized by the Project Coordination Unit (PCU), supported by a project gender specialist to address gender integration throughout the Project lifecycle based on a thorough understanding of the drivers of change and the gender dynamics. The Project includes an initial socio economic and gender assessment, complementary to the environmental and social safeguards process to address gender inequalities linked to the vulnerability of smallholder farmers to climate change. This will be the baseline to identify sub-projects to be initiated under adaptation as well as the monitoring and evaluation foundation for the Project. The different needs and priorities of women (women's association) and of men will be considered as activities are designed in detail taking into account the specificities of each of the sectors concerned (e.g. agriculture, livestock, water, forests, fisheries) and taking account of local customs. Similarly, capacity-building activities to address inequalities between men and women are anticipated and will be designed based on identified needs. Specific indicators will be designed for the gender aspect of the Project.

In the case of sub-projects funded by the Investment Fund and the Trust Fund that will be created, Althelia and sub-projects developers or the Trust Fund must designate resource people with the specific responsibility of integration of gender considerations into their respective structures, ensuring compliance with the environmental and social standards of GCF, EIB and CI.

As for the case of CI Madagascar, the Investment Fund and Trust Fund must ensure that gender is integrated into the identification and selection of subprojects (objectives, components) and beneficiaries, as well as consideration of gender by any service providers involved in the sub-projects, including sex-disaggregated indicator monitoring at the output, outcome and impact level and the consideration of gender in follow-up activities and monitoring and evaluation.

Structure of the ESMP:

In light of the above, the ESMP is structured in 10 parts:

1. **Introduction:** providing the context of the Project and presenting the objectives of the ESMP

2. **Presentation of the Project:** explanation of the components, activities and sectors included in the Project as well as the target beneficiaries

3. **Description of the receiving environment:** Project intervention area, location, context, socio-cultural and biophysical description, characteristics and uses of natural resources and zoning and management regimes

4. **Description and evaluation of the policy framework and applicable national regulations:** Scoping of the project within the national policies, evaluation with respect to the standards and safeguard policies of GCF and CI, and legal considerations for the environmental and social aspects of the Project

5. **Environmental and social impacts and mitigation and enhancement measures:** Approach, environmental and social issues related to Project activities, analysis of risks and negative impacts, mitigation measures, and analysis of positive impacts and enhancement measures

6. **Structure and sub-project environmental assessment process / project activities:** Project organizational framework, sub-projects environmental categorization, institutional arrangement for the implementation of the assessment process, consideration of the GCF performance standards and CI safeguard policies in the studies of impact or mitigation measures, tools and recommendations for the environmental assessment process, capacity-building needs for strengthening environmental and social management capacity

7. **Environmental and social monitoring and surveillance:** Monitoring plan, surveillance plan

8. **Stakeholder consultation:** Public consultations already completed, stakeholder consultation and participation during Project implementation

9. **Gender mainstreaming and action plan**

10. **Schedule and resources required:** Implementation timeline and required resources for the ESMP.

1 Introduction

1.1 Background and Project Objectives

The objective of this Project is to develop and apply the "climate-smart landscape" approach to improve the social and environmental resilience of smallholder farmers to climate change, to reduce greenhouse gas (GHG) emissions from deforestation, and to channel private sector funding to climate investments that transform livelihoods.

The Project involves 4 components contributing to 5 of GCF's outcomes:

1. Adaptation through a sustainable agriculture program and ecosystem-based adaptation (contributing to outcome A7.0 of GCF "Strengthened adaptive capacity and reduced exposure to climate risks");
2. Creation of enabling conditions for reducing and managing climate change risks (contributing to GCF adaptation outcome A8.0 "Strengthened awareness of climate threats and risk-reduction processes" and A5.0 "Strengthened institutional and regulatory systems for climate-responsive planning and development");
3. Development of renewable energy sources in rural areas of Madagascar (contributing to GCF mitigation outcome M6.0 "Increased number of small, medium and large low-emission power suppliers");
4. Reduced GHG emissions from deforestation of natural forests (contributing to GCF mitigation outcome M9.0 "Improved management of land and forest or improved management contributing to emissions reduction").

1.2 Objectives of the ESMP

This Environmental and Social Management Plan (ESMP) is proposed under the project "*Sustainable Landscapes in Eastern Madagascar*" (the "Project"), in accordance with the performance standards (PS) of the Green Climate Fund (GCF)[3], the EIB ESPS and the safeguard policies (SP) of Conservation International as GCF-accredited entities.

The ESMP aims to reduce and minimize the adverse environmental or social impacts of the Project on neighboring populations. The ESMP is also a mechanism that meets the standards of GCF, EIB and CI, identifying the risks and the social and environmental impacts of projects.

At the time of the Project development, all sub-projects have not yet been identified. Therefore, specific information on their quantity, location, requirements in terms of land and local communities, and terrestrial geophysical features are not available. This ESMP will:

- Provide a reference tool for the implementation of planned activities according to environmental and social standards defined by the GCF, EIB ESPS and CI safeguard policies, in compliance with the applicable national standards; and
- Define palliative actions to address the potential impacts of the various sub-projects.

As specific planning information becomes available, each sub-project will need to be screened to verify if either an Environmental Impact Assessment (EIA) or an Environmental Commitment Program (known as PREE, from its French acronym) is needed to eliminate or reduce to an acceptable level any adverse environmental and social impact.

[3] The Green Climate Fund has adopted the Performance Standards of the International Finance Corporation

Methodology
The adopted approaches are based on the collection and analysis of various documents and on the consultation of the Project stakeholders.

The collection of socioeconomic data and the identification of stakeholders were based on available studies and existing databases.

During the preparation stage, stakeholders were consulted through four regional consultation workshops in the corridors of Ankeniheny-Zahamena (CAZ) and Ambositra-Vondrozo (COFAV). The suggestions and grievances of the populations affected by this project in 48 communes were also considered.

Institutional actors and sectoral ministries directly linked to the Project were approached using this participatory method.

1.3 Link between the ESMP and the Environmental and Social Management Tools for the COFAV and CAZ Protected Areas

The Ambositra –Vondrozo Forest Corridor (COFAV) and the Ankeniheny – Zahamena Cooridor (CAZ) are two protected areas with the status of “Protected Harmonious Lanscape” and “Natural Resources Reserve” respectively, corresponding to categories V and VI of the International Union for Conservation of Nature (IUCN). Management of these protected areas was delegated to Conservation International (CI) by the Ministry in charge of the environment. Their type of governance is shared management (or co-management) involving the Ministry responsible for the Environment, local communities, and CI.

Pursuant to the existing legislation, notably Law 2015-005 of February 26, 2015 reforming the Management Code for Protected Areas (COAP) and the Decree on Environmental Assessment (Decree 99-954 of December 15, 1999 on the compatibility of investments and the environment, modified by Decree 2004-167 of February 03, 2004 or the MECIE Decree), the creation and management of the COFAV and CAZ protected areas required the following for each corridor:

- An Environmental Impact Assessment (EIA) and an Environmental and Social Safeguard Plan (ESSP), so that the creation of the protected areas does not affect the livelihoods of the populations that benefited from these protected areas, both for food self-sufficiency and source of revenue from forest products. The ESSP enunciates a Compensation Plan for the People Affected by the Project (PAP), based on the World Bank performance criteria. While some safeguard measures have already been implemented, others are ongoing.
- Issuance of an environmental permit by the National Environment Office (ONE), to which the ESMP is annexed and serves as environmental specifications (*Cahier de Charges Environnementales* or CCE) for the protected area;
- A Development and Management Plan (PAG) presenting the zoning of the protected area and the measures to ensure its conservation and sustainable management. The PAG was developed in a participatory and collaborative manner with the various stakeholders, including the local communities, particularly for the delineation of the external boundary of the site and the identification and delimitation of the areas included (core, controlled settlement area (ZOC), sustainable use area (ZUD), controlled use area (ZUC)). The PAG covers a period of 5 years and the most recent PAG dates from 2015;
- The proclamation of the creation decree for each protected area in 2015;
- The establishment of a community-based management convention, an agreement concluded between the protected area manager and local communities. This document defines economic, customary, and cultural activities as well as the communities’ interventions in managing the protected area.

The table below summarizes the different instruments applied to the sustainable management of the protected areas.

Table 1: References for the Sustainable Management of the Protected Area

Tools	Reference or Date of Acquisition or Implementation	
	COFAV	CAZ
EIA and ESSP	2010	2012
Environmental permit for the protected area (+Environmental Specifications)	Environmental permit 45/11/MEF/ONE/DG/PE of December 14, 2011	Environmental permit 24/13/MEF/ONE/DG/PE of December 14 2011
Decree creating the protected area	Decree 2015-755 of April 28, 2015	Decree 2015-754 of April 28, 2015
PAG	First version established in 2010 Revised in 2015	First version established in 2010 Revised in 2015
Convention for the conferral of management of the protected area	Order 36992 /2014/MEEF of December 17, 2014 modifying the provisions of Article 7 of Order 45329/2011/MEF of December 14, 2011, on the conferral of management of the NPA under creation named "Ambositra-Vondrozo Forest Corridor"	Order 36991 /2014/MEEF of December 17, 2014 modifying the provisions of Article 7 of Order 45328/2011/MEF of December 14, 2011, on the conferral of management of the NPA under creation named "Ankeniheny Zahamena Forest Corridor"

The CAZ ESMP can be found at:http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/07/17/000333037_20140717121954/Rendered/PDF/E8500v100EA0FR00Box385269B00PUBLIC0.pdf The COFAV ESMP at :http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2011/06/06/000333038_20110606052236/Rendered/INDEX/E8500v60FRENCH00EIES00NAP0COFAV.doc.txt

The ESMP applies to all sub-projects supported by GCF. Therefore, the ESMP will apply to all GCF-supported sub-projects inside the COFAV and CAZ protected areas, in all adjacent communes (municipalities), as well as for potential sub-projects in other regions of Madagascar. It uses information from all available documents under the Project and all management instruments for the COFAV and the CAZ.

For the effective application of the environmental evaluation process to sub-projects supported by the GCF, in addition to the spatial planning defined in the PAG for any sub-project in or around the protected areas and the promotion of existing stakeholder participation mechanisms (such as the Steering and Monitoring Committee – COS - or the grievance mechanism), specific recommendations are presented in Chapter 6.5.5 on the social and environmental management of the Project in and around the NPAs.

2 Project Overview

2.1 Description of Components, Activities, and Relevant Sectors

The Project will adopt a “landscape” approach to climate change mitigation and adaptation, combining best practices in sustainable agriculture, reduction of emissions from deforestation and forest degradation, and integration of public and private interventions to achieve the desired outcomes. Climate-smart landscape measures will also be integrated in policies and programs.

Component 1: Adaptation through a sustainable agriculture program and protection/restoration of priority sites for ecosystem-based adaptation (contributing to outcome A7.0 of GCF “Strengthened adaptive capacity and reduced exposure to climate risks”), notably habitat restoration and management, diversification of revenue-generating activities such as agroforestry, diversified crops, use of organic fertilizers, use of seeds resistant to the climate, construction of irrigation canals, shade-grown plants, system of rice intensification and system of rice improvement (SRI/SRA), short-cycle crops, apiculture and fishing, as well as better access to microfinance institutions and to markets.

- Assess the impacts of climate change on smallholder farmers and identify those farmers most vulnerable to climate change;
- Identify climate-smart landscape measures that can improve the resilience of agricultural systems and the livelihoods of small farmers;
- Improve the resilience of vulnerable communities (smallholder farmers) by strengthening their adaptation capacity (through ecosystem-based adaptation);

Component 2: Creation of enabling conditions for reducing and managing climate change risks (contributing to GCF adaptation outcome A8.0 “Strengthened awareness of climate threats and risk-reduction processes” and A5.0 “Strengthened institutional and regulatory systems for climate-responsive planning and development”);

- Strengthen the technical capacities of key governmental agencies, universities, local NGOs, and other key stakeholders pertaining to the climate-smart landscape approaches, in order to generate benefits both for mitigation and adaptation while improving livelihoods and maintaining ecosystem services. This effort will be carried out by developing climate-smart landscape modules, to be applied to training and policy development and to be shared during local and national workshops.
- Monitor and evaluate the costs and effectiveness of the various climate-smart landscape measures to achieve adaptation, mitigation, and improved livelihoods for the scaling-up and replication of these measures in other regions;
- Ensure that financial resources are sustained beyond the closure of the project to support climate efforts in high-value landscapes in Madagascar by investing capital in a trust fund dedicated to climate change;
- Integrate the strategies and actions of national policies on climate change in the decentralized planning efforts at regional and local levels;
- Strengthen the intervention capacities on climate change of decentralized technical services (STDs).

Component 3: Development of renewable energy sources in rural areas of Madagascar (contributing to GCF mitigation outcome M6.0 “Increased number of small, medium and large low-emission power suppliers”);

- Use the Investment Fund for the development and growth of private activities on biomass energy;
- Invest in renewable energy projects in rural areas of Madagascar, in collaboration with the Agency for Rural Electrification (ADER).

Component 4: Reduced GHG emissions from deforestation of natural forests with biomasses, ecosystem services, and biodiversity of high conservation value (contributing to GCF mitigation outcome M9.0 "Improved management of land and forest or improved management contributing to emissions reduction")

- Reduce GHG emissions from deforestation of natural forests through effective forest management, in collaboration with local community groups. Impacts of avoided deforestation activities will be permanently monitored and evaluated based on the Verified Carbon Standard (VCS) and will be audited to check the generated emission reductions under this component.

Sectors covered by the Project include rural economy, the social sector, environment and forests, energy, and water. This Project contributes to economic improvement for 85,700 people in the CAZ and COFAV landscapes through sustainable agriculture and trade of agricultural products. In addition, 28,300 people are expected to benefit from job creation in businesses supported by the Investment Fund.

The majority (87%) of rural households are composed of smallholder farmers. The promotion of climate-change resilient and sustainable agriculture is crucial to improve the resilience of the target populations.

In the environment and forest sector, the activities aiming at reducing GHG emissions will include conservation of forests in the protected areas of the CAZ and the COFAV and management of areas covered by transfer of natural resource management (TNRM) agreements.

The activities are presented in detail in the Project logical framework document (Section H of the funding proposal).

2.2 Targets and Characteristics

Environment and forests:

- Reduce GHG emission in Madagascar by 10 million tCO_2e over 10 years;
- Provide access to renewable energy for 448,000 people;
- Protect 683,452 hectares of natural habitats (mainly primary forests) and the associated ecosystem services;

Rural population:

- Increase the resilience of 85,700 smallholder farmers vulnerable to climate change;
- Create employment for 28,300 persons;
- Benefit one million people indirectly from the sustainable management of forests and agricultural lands as well as their ecosystem services;

Finance:

- Channel, through the Investment Fund, the capital of US$50.5 million from institutional investors and the GCF Private Sector Facility towards sustainable agriculture and energy access;
- Create a permanent trust fund for climate to be capitalized during the lifetime of the project with US$ 3.2 million of seed funding, the US$ 35 million equity participation by GCF in the Investment Fund - given that this fund is gradually reimbursed - and part of the benefits from the Investment Fund (for a total estimated at 44.7 million US$). The Climate Trust Fund would continue to finance adaptation and mitigation activities in the future.

2.3 Project Funding and Structure

In addition to the promotion of climate-smart landscape measures to improve the climate resilience of smallholder farmers or the reduction of GHG emissions from deforestation, the Project also aims to (i) pilot and demonstrate a replicable model addressing the vulnerability of small farmers to climate change, through a multidisciplinary approach involving the public and private sectors and (ii) support sustainable funding through the establishment of a trust fund for climate in Madagascar, in order to pursue the investments for adaptation and mitigation.

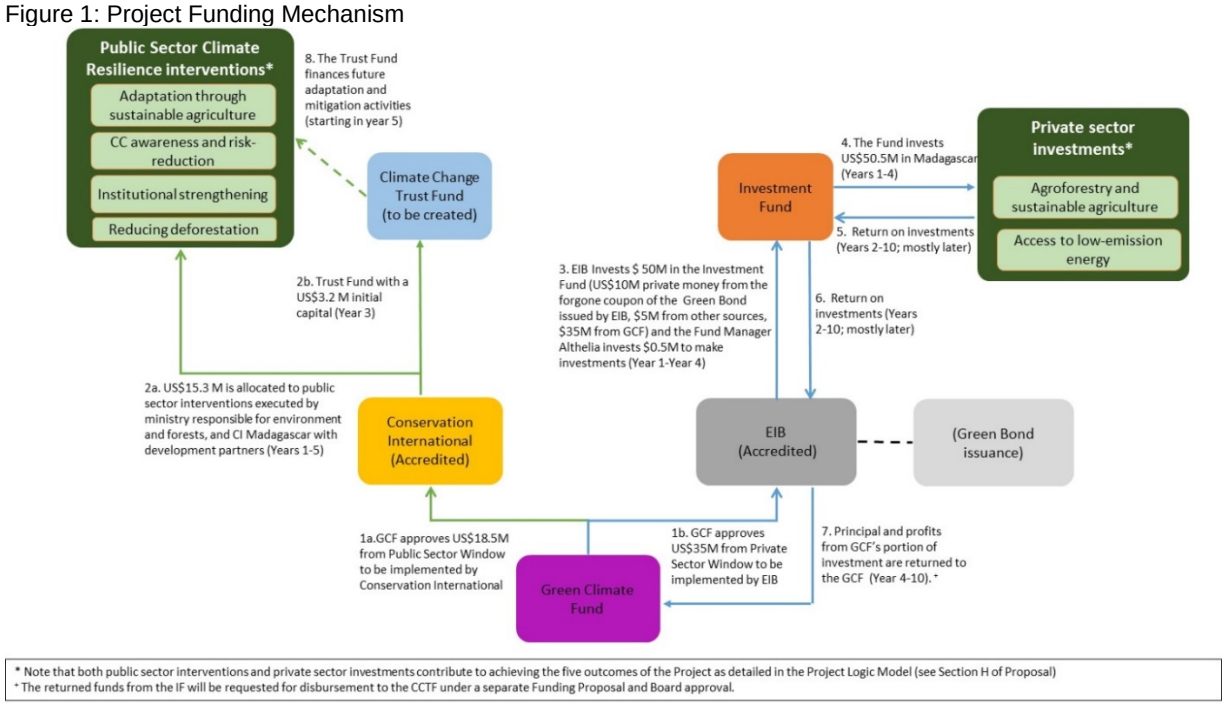
The funding envelope for the project amounts to US$ 53.5 million, comprising:

- A US$18.5M grant from the GCF Public Sector Facility intended for adaptation, mitigation, and capacity-building activities to promote climate-smart landscape approaches, and for the participation to the Climate Trust Fund seed funding in Madagascar for up to US$ 3.2M (in consistency with the requirements of the national legislation[4])
- A "recyclable" grant of US$ 35M from the GCF Private Sector Facility, intended to be co-invested in an investment fund for sustainable agriculture and renewable energy. The total Investment Fund will amount to US$50.5M, for which the participation of other investors will be US$15.5M (consisting of US$10M from the European Investment Bank from coupons foregone by investors subscribing an EIB Climate Awareness (CAB) Bond, US$ 5M from the EIB's ACP Impact Investment Fund; and US$ 0.5M from Althelia). This Investment Fund aims at promoting the support of private sector actors at the local level.

CI will be responsible for implementation of the Public Sector window while the EIB will undertake the monitoring of the execution of the Private Sector window.

The GCF contribution to the Climate Change Trust Fund to be created as part of the Project, will be through direct participation in the seed capital and the affectation of part of the profits of the Investment Fund in the capital of the Trust Fund (as the private sector returns on investments become effective). The Trust Fund will be established in accordance with the national legislation.

Figure 1: Project Funding Mechanism



* Note that both public sector interventions and private sector investments contribute to achieving the five outcomes of the Project as detailed in the Project Logic Model (see Section H of Proposal)
* The returned funds from the IF will be requested for disbursement to the CCTF under a separate Funding Proposal and Board approval.

[4] Law 2004-014 of August 19, 2004 reforming the regime of Foundations in Madagascar.

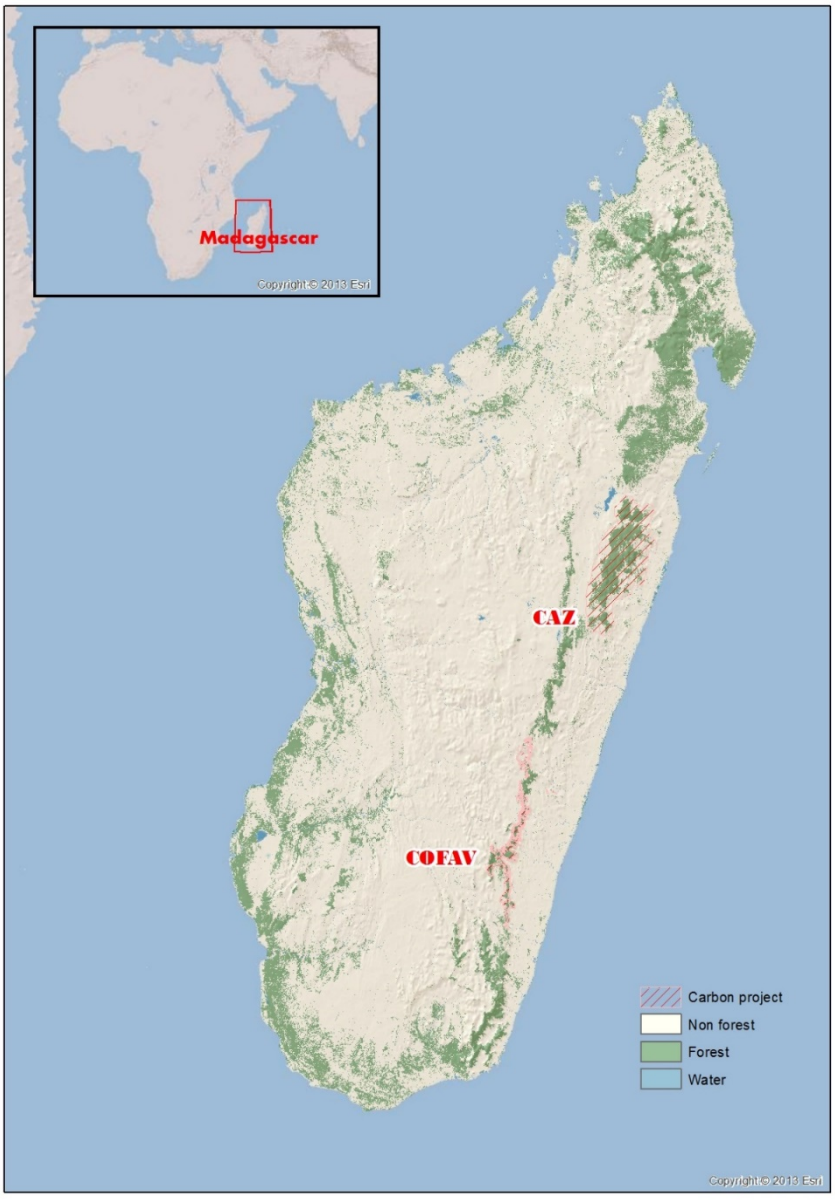
The management structure of the project is presented in Chapter 6.1 on the organizational framework.

3 Description of the Receiving Environment

3.1 Project Intervention Areas

The map below presents the main intervention areas of the Project

Figure 2: Main Project Intervention Areas



Through the promotion of climate-smart landscape measures and approaches, the Project focuses on improving the climate resilience of smallholder farmers; reducing GHG emissions from deforestation, forest degradation, and agricultural lands; and channeling funding from the private sector to climate investments that transform livelihoods or living conditions.

The COFAV and CAZ were selected as the main areas for the Project implementation for the following reasons: (i) the presence of numerous smallholder farmers in these areas, (ii) the extreme vulnerability of these farmers to climate change, (iii) the presence in these corridors of intact forest areas (among the last remaining in the country) that deserve to be considered in the efforts to reduce emissions from deforestation, (iv) local communities living in and around both protected areas depend heavily on natural forests for revenue generation, construction raw materials, or other ecosystem

services, and (v) the agricultural systems and the landscapes provide a significant potential for large-scale adaptation of climate-smart landscape measures and a simultaneous increase of adaptation and mitigation capacity, as well as improvement of agricultural production.

The planned Investment Fund for the project, implemented by Althelia, will invest in other landscapes of high biodiversity value to be identified.

As for Component 3 on the development of renewable energy in rural areas of Madagascar, activities are planned with funding from private operators and the Investment Fund. The intervention areas can therefore be different from the 2 forest landscapes mentioned above.

Sensitive Areas affected by the Project

All sensitive areas (with the exception of sensitive forest areas[5]) as defined in the national legislation[6] are not spatially defined. Any project developer (public or private sub-projects) must therefore indicate beforehand (before the inception of the sub-project activities and while developing the screening form) if there will be some encroachment of the sub-project in sensitive areas.

3.2 The Zahamena – Ankeniheny Forest Landscape

The main physical, biological and economical features of the CAZ are described in the following chapters. Other details are presented in Annex 1.1.

3.2.1 Location and Sociocultural Background

Administrative situation

The Ankeniheny-Zahamena Corridor (CAZ) extends over an area of 369,266 ha, along the Betsimisaraka Escarpment in the eastern part of Madagascar. It is 180 kilometers long and about 30 kilometers wide. It is bordered in the north by the Zahamena National Park and in the south by the Lakato commune. With its rich biodiversity, it was listed in 2004 as one of the priority sites for the extension of the surface of protected areas in Madagascar.

The protected area touches two (2) regions, five (5) districts, and twenty (20) rural communes. In general, access to these communes is very difficult. Only the administrative centers of the rural communes of Andasibe, Ampasimpotsy Gara, and Didy are accessible by car all year long; the Fierenana, Morarano Gara, Lakato, and Manakambahiny-Est in the dry season; and Fetraomby by river while other remaining communes are only accessible by foot.

This isolation and difficult access are due to the topography and the humid climate of the region. Accessible areas, found on the gentle-gradient western slope, are vast plains, suitable for conversion, or rather developed valleys. The rugged eastern part of the corridor presents steep slopes and very narrow valleys.

Sociocultural Context

Population

The population around the CAZ New Protected Area (NPA) is of about 347,250 individuals, divided in 3 ethnic groups: The Betsimisaraka, the Sihanaka, and the Bezanozano. This area experiences a very dynamic migration due to the search for convertible lands, the acquisition of croplands, and the search for precious stones, often targeting areas inside the PA.

Relationship between Humans and Forests: Human Dependence on Natural Resources

[5] Interministerial order 18177/04 of September 27, 2004 on the definition and delimitation of sensitive forest areas et

[6] Interministerial order 4355/97 of May 13, 1997 on the definition and delimitation of sensitive areas

The people in this region heavily depend on natural resources. Consultations carried out in the communes during the establishment of the protected area led to the identification of three main categories:

- The population is heavily dependent on natural resources, comprising households living inside the forest, either appropriating convertible plains or pursuing "illicit" wood-cutting as source of revenue after the exploitation by an economic operator. In addition to wood-cutting, this category also practices the collection of secondary forest products, hunting, fishing, and harvesting, particularly during the hunger gap. Such forest products are also sold in neighboring villages and Fokontany.
- The population moderately dependent on natural resources, living near the forest, using forest products for additional income, and clearing land to expand their croplands,
- The population lightly dependent on natural resources, living at a distance from the forest, i.e. in the neighboring villages and Fokontany, practicing irrigated farming by converting small plains and valleys, and using forest products only through their user rights (timber, firewood, honey, fishing, etc.).

Cultural Aspects

The populations practice several traditions and customs linked to the environment, some of which are favorable to natural resources, for instance:

- The presence of sacred sites: sacred forests (*ala fady*), supernatural forests (*ala mahery),* sacred waterfalls or sources, and sacred tombs;
- The presence of places of worship or offering (*doany*) inside forests. Several forest areas are already protected as *ala fady* or forbidden forests, either out of respect (*tany masina*) or fear (*tany mahery*);
- Penning of livestock or traditional pasture (*kijanan-drazana*) inside the forest; and
- Traditional medicine using forest plants.

However, for some communities, slash-and-burn cultivation (*tavy* ou *teviala*) is perceived as a way to maintain the links with their ancestors and leads to the destruction of forest cover and to biodiversity loss.

It should be noted that traditional authorities (*tangalamena*) still play a leading role in decision-making. In general, *tangalamena* and *ray aman-dreny* or elders are very respected by the communities. This could lead to a risk of conflict with protected area managers (when *tangalamena* prefer to conquer the forest) or on the contrary can represent an opportunity for productive collaboration (when the *tangalamena* have a favorable opinion on conservation).

Considering the role of traditional authorities in managing forests, they will be associated in the various consultations on the establishment or implementation of sub-projects, awareness or communication activities, and grievance management.

3.2.2 Biophysical Environment

Physical Features

Relief

The CAZ NPA is very rugged, dominated by summits reaching 1,532m and deep valleys, particularly on the eastern slope. Some areas are inaccessible but irrigable plains are present. The region lies on a crystalline basement (MEF &CI, 2012).

Climate

Due to its geographical situation (eastern side of Madagascar), the PA is permanently under the influence of trade winds leading to quasi-persistent rain. The general climate of the region is

characterized by two wet seasons, the hot and rainy season from September to May and the cool season with light rains from June to August (MEF & CI, 2012).

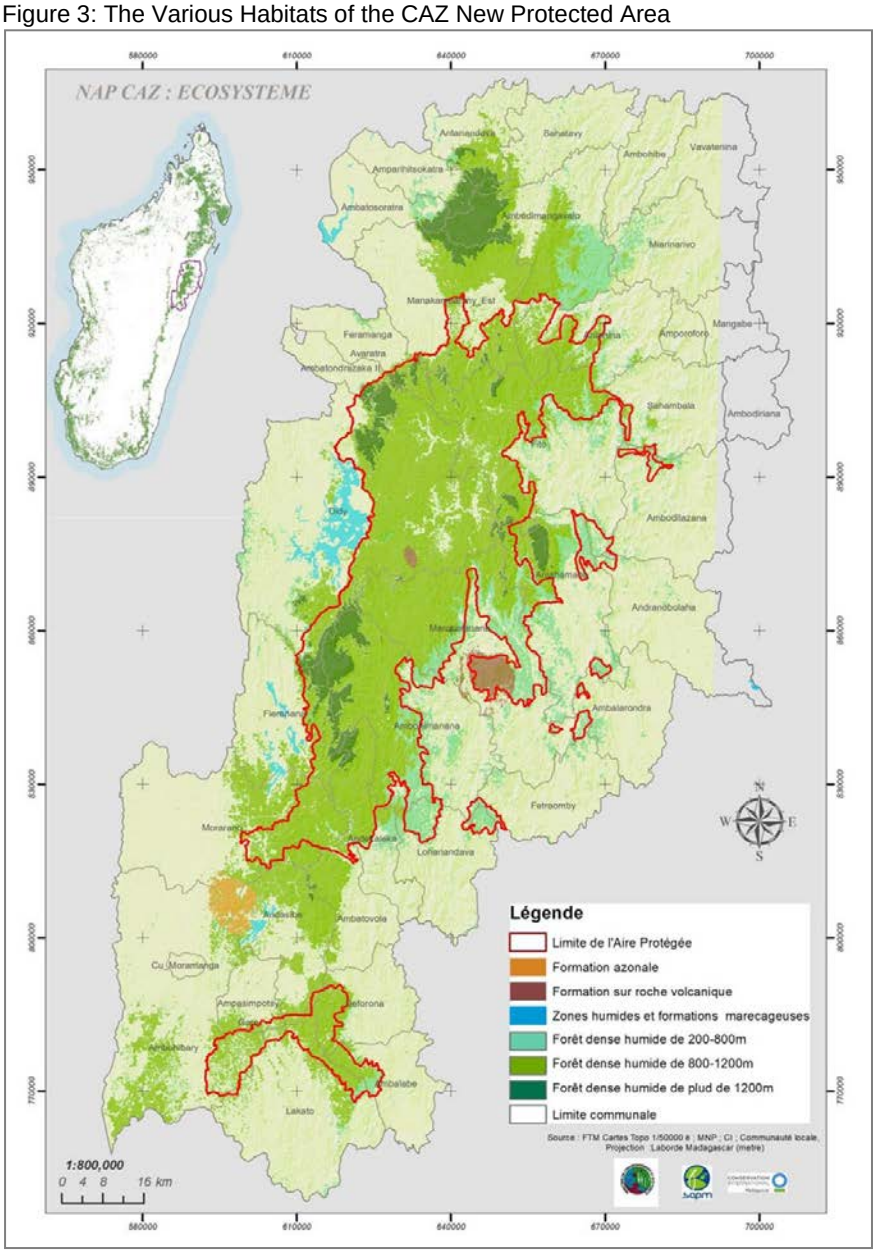
Water Systems

The area is characterized by an important water system including 8 large rivers originating in the mid-altitude humid forest.

Biological Features

The CAZ protected area is rich in biodiversity: the flora comprises 2,043 species in 5 families and 72 genera, with 1,585 endemic species identified, or an estimated endemism rate of over 85%. There are 17 species of lemurs, 8 of which are threatened. The number of avian species is estimated at 89 with an endemism rate of about 70% (see Annex 1.1). The habitats of the CAZ are illustrated in the figure below.

Figure 3: The Various Habitats of the CAZ New Protected Area



Source: MEEMF & CI, 2015a : Plan d'aménagement et de gestion (PAG), 2015 -2020

3.2.3 Type of Uses of and Dependence of Livelihoods on Forest Resources and Forest Products in the CAZ

The population's concerns on the tenure on their lands and towards the management entities of the reserve were already solved during the local consultations at the time of the creation of the protected area (MEF & CI, 2012).

At first, it seems that following the designation of the New Protected Area (NPA), restricted access to natural resources (gathering, hunting, extracting, etc.) and the ban on any extension of croplands, particularly in the core area, would negatively impact the standard of living of the affected households, depending on their vulnerability and dependence on natural resources (MEF& CI, 2012).

People Affected by the Creation of the CAZ NPA

In 2010, during the designation process of the protected area, and in accordance with environmental and social standards and the national legislation, the people affected were identified: they formed 2,500 households (out of the 12,383 households surveyed) including 2,101 key PAPs and 399 minor PAPs (MEF& CI, 2012). The main compensation measures were identified in a participatory manner and included: improved cultivation techniques, improved apiculture, improved aviculture, or cassava cultivation. These measures have already been provided, with some follow-up compensation measures currently ongoing with support from the Madagascar Biodiversity Trust Fund.

Household Economy

Agriculture

Agriculture is the main element of rural economy in the Ankeniheny-Zahamena Forest Corridor and the main source of livelihood for the local population. The traditional agricultural system is extensive and dominated by itinerant slash-and-burn practices. The population also grows cash crops such as coffee, banana, cloves, ginger, and litchis. Surplus subsistence crops are also sold, notably rice, but also corn or groundnut.

It is important to note that isolation has a major impact on the rural economy and agricultural activities. In general, the lack of road infrastructure strongly limits economic development. Therefore, the population focuses heavily on subsistence agriculture.

Livestock – Apiculture

The zebu herd serves mainly a social purpose and is used for social events and rituals such as "joro" or "*Laosandry*", "*Halanivao*", "*Zazafolo*", or "*laza Tsikafara*". Small farm breeding, mainly aviculture, also constitutes an important source of income for most households in the CAZ landscape. Villagers collect honey and some practice modern apiculture.

In addition to agriculture and livestock, the secondary elements of rural economy include wood-cutting, charcoal-making, mining activities, day labor, and small trade. Handicraft activities such as basketry and carpentry provide additional income for some households. A small number of civil servants are present in the CAZ landscape, mainly in the education and health sectors.

Ecosystem Services

Hydrological Service

Eight main rivers originate in the corridor and directly serve 350,000 inhabitants of the Toamasina Province. In addition, the biggest hydropower plant of the country at Andakelaka provides electrical power to the cities of Toamasina, Brickaville, Moramanga, Antananarivo, and Antsirabe, to name only the main settlements.

Production Service

At local level, the CAZ NPA also participates in water production for many towns. It also feeds water to arable plains and valleys. The forest corridor provides the local population with timber and firewood, as well as some secondary forest products as raw materials for local handicrafts. It contributes to local climate stability and protection of soils against erosion. In addition, the local population gathers some honey and wild tubers in the forests.

Some research results show that an increase of 1% of the use of ecosystem services (water) leads to an increase of 0.7% of nickel production and 0.43% of cobalt production. This ecosystem service is therefore an important factor for the productive function of the mining sector in the CAZ.

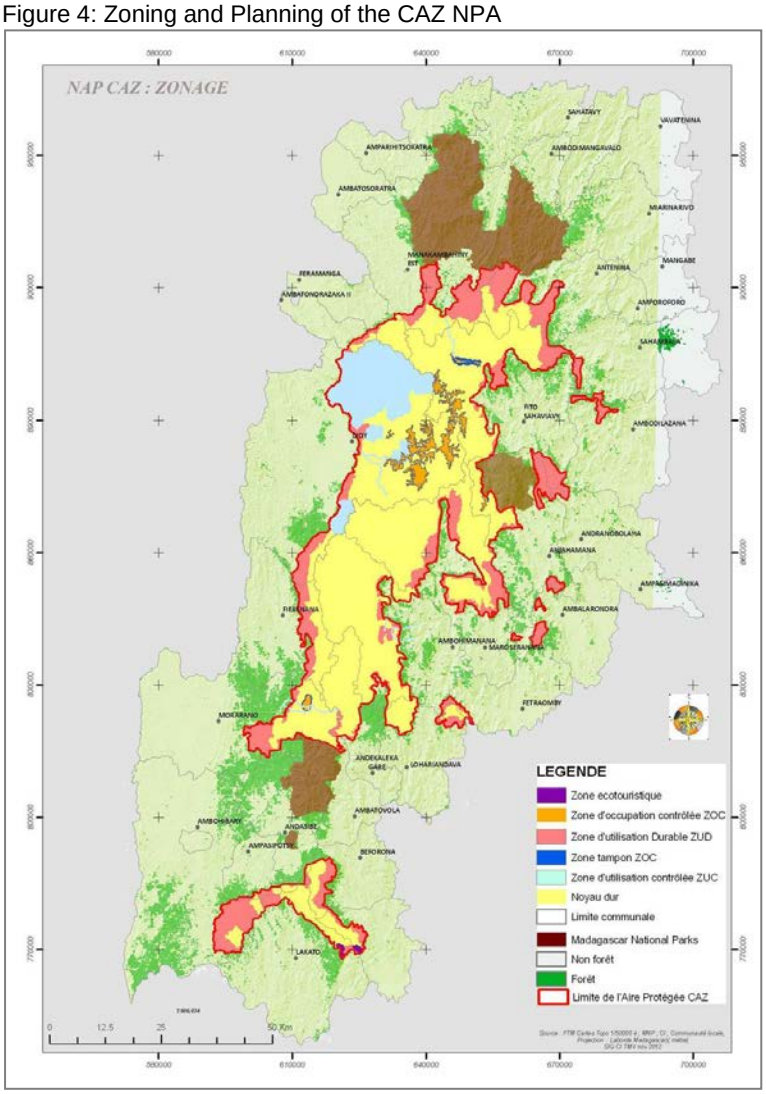
Regulation Service

The CAZ NAP plays an important role for ecological regulation. Preservation of forest cover contributes to mitigate the effects of climate change by regulating the carbon emitted by the neighboring settlements and at national or even international level. In addition, the important vegetation cover provides oxygen, contributing to the regulation of the water cycle.

3.2.4 Zoning and Planning in the CAZ

The different areas and the management regulations for each zone are illustrated on the following map and presented in the table in Annex 1.1.

Figure 4: Zoning and Planning of the CAZ NPA



Source: MEEMF & CI, 2015a : Plan d'aménagement et de gestion (PAG), 2015 -2020

3.2.5 Transfer of Natural Resources Management (TNRM)

The revision of the CAZ PAG in 2015 highlighted that 129 local communities were in charge of the management of natural resources in the forest corridor through TNRM agreements. These communities are grouped in 5 Federations with 66 TNRMs pertaining to areas within the CAZ (63 agreements concern resources outside the PA). A map illustrating the management transfers is found in Annex 1.

3.3 The Fandriana – Vondrozo Forest Landscape

The main physical, biological and economical features of the COFAV are described in the following chapters. Other details are presented in Annex 1.2 of this document.

3.3.1 Location and Sociocultural Background

Administrative Context

With an altitude between 200m and 1,900m, the Ambositra Vondrozo Forest Corridor (COFAV) is located between 46°40' and 47°56' longitude and 20°35' and 23°6' south latitude. It is 300km long and 2 to 50km wide, with a surface of 314,186 ha (established after an update of the boundaries of the PA in 2015[7]). It is part of the Fianarantsoa Province, with 5 regions and 43 communes distributed in 10 districts including Ambositra in the Amoron'i Mania Region; Lalangina, Ambohimahasoa, Vohibato, and Ambalavao in the Haute Matsiatra Region, Ivohibe in the Ihorombe Region; Ikongo, Ifanadiana, and Mananjary in the Vatovavy Fitovinany Region, and the Vondrozo District in the Atsimo Atsinanana Region.

Sociocultural Context

Population and Demography

The population in the corridor is characterized by its heterogeneity and the presence of multiple ethnic groups (Betsileo, Tanala, Bara, and Sahafatra) living in the peripheral areas. This diversity dates back to the 14th and 15th centuries.

Currently, the 43 communes (152 Fokontany) covered by the COFAV have 500,194 inhabitants[8] with over a third almost entirely dependent on the natural resources provided by the PA to meet their food needs (MEEMF& CI, 2015).

Migration

The people living in the peripheral areas of the corridor are mainly from the southeastern coast of the island. These migrants came in successive waves to the Highlands, seeking free and vacant lands.

Today, the migration phenomenon mainly concerns the people on the western side of the corridor where two types of migratory flows have recently been observed:

- The first are the Betsileo, on the edge of the corridor, who migrate in the forests to convert the lowland swamps, or to other areas of the country for major rice cultivation works or coffee harvest;
- The second type of migration involves populations at the back of the corridor, where the saturation of lowlands and demographic pressure drive struggling households to migrate towards the heart of the forest, to the limit of their territory.

Relationship between Humans and Forests: Human Dependence on Natural Resources

In general, and similarly to the CAZ, the people living around the COFAV strongly rely on the corridor's natural resources. The long-standing perceptions and practices of communities at the edge

[7] Source : MEF & CI (2015b). Plan d'aménagement et de gestion du COFAV

[8] CI Madagascar Data. April 2016

of the corridor have established different representations of the forest. These perceptions and associated forest uses have evolved over time. Above all, the forest is viewed as fertile land; a set of plant resources for medicinal use, daily tools, and utensils; food (honey, eel, crayfish, game); or in other words, riches bequeathed by the ancestors. The forest is also sacred and considered as the domain of the Spirit.

On the cultural and customary aspects of the corridor, there are also sacred or prohibited sites like in the CAZ. For instance, for both the Tanala and the Betsileo, forest is a place of "*fady"* of various nature, in specific spaces such as tombs or sites of ancient villages (MEF & CI, 2010). The perspective on forests and cultural and customary practices vary among the ethnical groups (see Annex 1.2)

3.3.2 Description of the Biophysical Environment

Physical Features

As a protected area, the corridor is a natural environmental with unique ecological features, aiming notably at ensuring the preservation of biodiversity and the ecological integrity of its habitats as well as the development of the local population. The ecological values of the Ambositra – Vondrozo Corridor NPA are mainly based on its geological, biological, and ecological characteristics.

As a forest corridor, the COFAV connects three main national parks (Marolambo National Park, Ranomafana National Park, and Andringitra National Park). Therefore, it guarantees genetic flow, crucial to the long-term survival of species, along the corridor as well as altitudinally, in addition to the ecological process. The corridor is an important area for carbon sequestration.

Topography and Soil

The Ambositra – Vondrozo Corridor covers the Eastern Escarpment in Madagascar that divides the forest cover in two distinct zones. The soil is dominated by metamorphic series of the crystalline basement and the schist-quartz-calcareous series (MEF& CI, 2010).

Climate

The northern part of the corridor is dominated by a tropical climate, with an average annual temperature between 10°C and 30°C and a rainfall level of 1000 – 2000 mm. The southern part is characterized by an average annual temperature between 12°C and 30°C and a rainfal level of 2000 – 3000 mm. The high pluviometry in the eastern part of the corridor is due to topography, trade winds, and cyclones (MEF& CI, 2010). The rainy season runs from November to March.

Water Systems

Forty-some rivers originate in the Ambositra - Vondrozo Corridor. While some rivers provide ecological services (irrigation, bathing, drinking water) for the populations in the main watersheds (Mania, Matsiatra, Mananatana, Zomandao, Mananjary, Faraony, Matitana, Manapatra, Mananara) of the five regions, others serve as barriers for the distribution of some lemur species.

Landscapes

The Ambositra – Vondrozo Corridor is part of the Midwest-South Ecological Area (Ivongo and Maropaika), the Highlands Ecological Area (Ambositra in the north to Vinanintelo and Manambolo in the south), and the Cliffs Ecological Area.

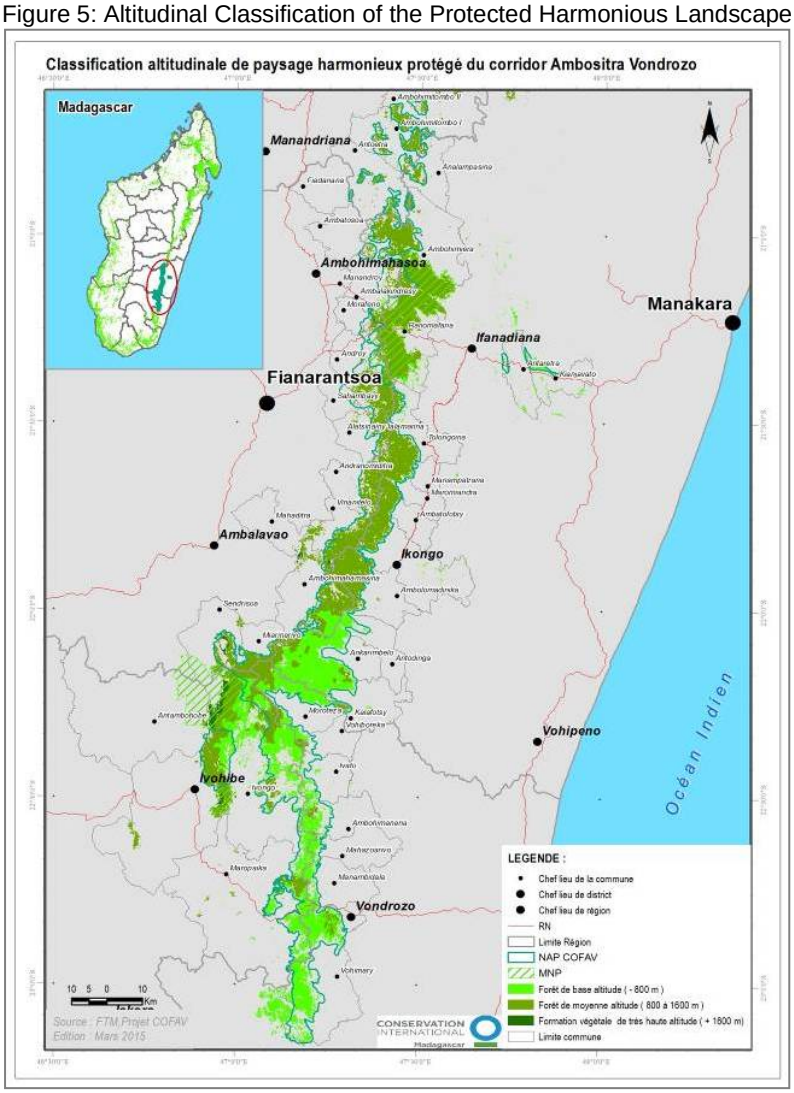
Ecosystems

While the topographies of the eastern and western sides are different, the entire corridor forms part of the dense rainforest of eastern Madagascar, with various ecosystems:

- Forest ecosystem comprising dense lowland rainforests, below 800m;
- Mid-altitude dense rainforests, between 800m and 1,600 m,
- High-altitude vegetation formation above 1,600m, rupiculous vegetation

- Aquatic ecosystem with lakes, rivers, streams, marshes, and swamps.

Figure 5: Altitudinal Classification of the Protected Harmonious Landscape of the COFAV



Source: MEEMF & CI, 2015b : Plan d'aménagement et gestion (PAG) du COFAV, 2015 – 2020

Biological Features

As a protected area, the COFAV is rich in biodiversity. In terms of flora and fauna, 535 species of angiosperms were found, 62% endemic to Madagascar; 186 species of pteridophytes with 72 endemics; 111 species of amphibians; 68 species of reptiles; 37 species of micromammals including 36 endemics (see Annex 1.2).

3.3.3 Type of Uses of and Dependence of Livelihoods on Forest Resources and Forest Products

People Affected by the Creation of the COFAV NPA

According to the ESSP developed in 2010 (MEF & CI, 2010) for the designation of the protected area, the people affected by the project were estimated at 12,501 households, with 7,982 households as key PAPs (63.85%) and 4,519 (36.15%) as minor PAPs. The main activities of the PAPs include, in decreasing order of importance: agriculture (95.96%), livestock (1.12%), handicraft (0.74%), and others such as fishing, hunting, or trade (2.12%).

The creation of the COFAV NPA led to the following economic impacts: diminution of agricultural production related to the loss of crop plots, loss of livelihoods, and loss of sources of income.

After several consultations and surveys, a thorough analysis of their results and a brief technical feasibility study led to the selection of the following sub-projects as alternatives to the restriction of access to natural resources: combined cultivation of corn and beans, farming of *poulet gasy*, duck farming, and improved apiculture. As in the CAZ, these compensation measures have already been provided and monitoring is underway.

Household Economy

The corridor contributes to the livelihood of the neighboring communities and is considered as a means of last resort. The production systems and the economy in the various areas are diversified.

Eastern Side

On the eastern side, household economy varies according to the social category:

- The most well-off group has extensive rice fields and *tanety*. These families capitalize on land and zebus. They produce over 400 kg of coffee and important quantities of banana. Conquering forested lands aims at securing plots for the future generation or for speculation purposes (development, then resale).
- The middle-class has less than 200 kg of rice, 10 *daba* (crates) of coffee and less than 1 ton of banana. This household group supplements its income with the sale of local rum (*toaka gasy*).
- The underprivileged category owns very little or no land. Its income comes mainly from wages (porterage of bananas/local rum jerry cans/basket of litchis, coffee and rice harvest) and the collection of crayfish.

Forest encroachment is a question of survival for the last two categories. They need land to increase food availability. In recent years, a mutation from a production system based on cash-crop and *tavy* to subsistence agriculture has been observed. Revenues come from the sale of four crops: bananas, coffee, beans, and cassava.

Northwestern and Central-West Side

In the northwestern and central-west side of the corridor, dominated by the Betsileo ethnic group, household classification varies according to the land resources (rice fields) available. There are three categories:

- A well-off family has over 1/2 ha of rice fields and does not experience a hunger gap. It owns at least 5 heads of cattle.
- The middle-class owns 0.25 ha to 1/2 ha of lowlands. The hunger gap is between 4 to 6 months.
- The vulnerable group has little or no rice field. They supplement their income and food with agricultural wages, locally or elsewhere (rice field work, porterage). The forest corridor provides this latter category with food and commercial (crayfish, yam) products, that can also be exchanged for rice or cassava.

The local populations also collect raw materials for basketry and handicraft. The income of a Betsileo farmer comes mainly from the sale of rice, off-season cultivation, short-cycle livestock breeding, and handicraft. Tobacco cultivation is becoming an income-generating activity for some households.

South Side

In the Ivohibe District, the Bara are nomadic herders who travel long distances and own huge herds of zebus, a symbol of wealth and pride for an entire people. Households are classified based on the size of the herd. The owner of several zebus can occupy a large area of rice fields and pastures. The less privileged practice slash-and-burn to ensure food and income. Family revenue comes mainly

from the trade of several herds of cattle, of 50% of the rice production, of 40% of the beans harvest, and over 90% of groundnut.

Generally, the production system of the population neighboring the COFAV is based on irrigated or flooded rice paddies. The agro-ecological conditions in the area allow for two rice-growing seasons (early rice, large-season rice). The Betsileo region benefits from large hydromorphic valleys suitable to rice-growing.

Rice-growing is not well-developed in the Sahafatra and Bara lands, where the valleys are deep, and the has to resort to "*tavy*" to meet their rice needs. Rice production secures income, human nutrition, and social duties.

Apiculture

Honey harvest and bee-keeping are also widely practiced in the forest of the Ambositra – Vondrozo Corridor. The bee-keeping technique remains traditional (harvest of wild honey, use of a tree trunk or a rock cavity). Farmers build traditional hives with a trunk (*ramy, vatsilana*) of 50 to 60 cm in length and 30 cm in diameter. The community still harvests wild honey by cutting trees.

Modern apiculture remains marginal in the eastern and southeastern part of of the forest corridor (about 150 improved beehives). Production is for self-consumption at 80%. Modern apiculture is taking off in the Betsileo part (at least 3,000 improved beehives).

Livestock

Communities living at the edge of the COFAV are mainly agro-pastoral farmers. Aviculture is an integral part of farming around the protected area. It brings a substantial revenue for middle to lower class families. The presence of bodies of water allows for the rearing of geese and ducks, particularly ducks for force-feeding.

Pig farming constitutes a reinvestment strategy of income from agriculture or agricultural wages, to be capitalized in land or zebu. The short-cycle system remains semi-intensive. Domestic animals are fed with food scraps, rice bran, banana, and cassava.

Farmers in or around the COFAV all rear cattle. Livestock has above all a social objective (sacrifice, worship of the dead, festivities). Zebus constitute a vital production means to ensure rice productivity (plowing, trampling, fertilization). Cattle are penned inside the forest in the southwestern part of the Corridor (from Ambalavao to Ivohibe). The corridor's ecosystems include abundant humid pastures and fodder trees. Pasture lands are renewed each year by burning.

The corridor is also a trade and labor exchange setting between the Tanala and the Betsileo communities.

Marquetry

In the Amoron'i Mania Region, about 1,500 craftsmen, 1,300 of whom work in Ambositra I and II and over 200 in the communes of the Zafimaniry country, live from wood exploitation for sculpture. The annual wood consumption of all craftsmen is estimated at 112,173 m^3 (Round Wood Equivalent), including 52,662 m^3 of palisander (47%), 19,613 m^3 of rosewood (17%), 14.366 m^3 of ebony (13 %), and 25,532 m^3 of ordinary wood, pine, eucalyptus, and fruit trees (23 %). Wood consumption by the Zafimaniry craftsmen exceeds by 71 % the potential of sustainable production of timber or lumber (all species) of the stands in the potential supply area for craftsmen (JARIALA/ Laboratoire de Recherche Appliquée ESSA-Forets, 2008).

Ecosystem Services

The COFAV secures very important ecological services for the five regions. It provides water reserves that guarantee rice production downstream. Forest cover reduces the impact of flooding and siltation of rice-growing valleys.

Hydrological Services

The Namorona River originating at the Ambositra – Vondrozo Corridor feeds the hydropower plant of Ranomafana. This station supplies electricity to several towns of Fianarantsoa (Alakamisy Ambohimaha, Ambohimahasoa, Sahambavy, Fianarantsoa Urbaine, Alakamisy Itenina, Mahasoabe, Nasandratrony, Andranovorivato, Talataampano) and Vatovavy (Ranomafana, Ifanadiana), to over 25,000 customers (JIRAMA Fianarantsoa, 2009). Therefore, it secures economic and industrial activities in the region.

Other hydropower potentials have been identified at the level of the corridor (Tolongoina, Antanampoha, Vohitrambo, Amboarafibe, Ampitazanana, Tsarakianja, Ambodin'i maharegnina, Ambatofotsy, Sandranata).

Production Services

The forest corridor provides timber resources for settlements at the edge of the forest. Wood is collected in the forest to build mortars and pestles, spade and *goro* handles. It has significant economic interests, providing income for needy families (about 700 households) during the hunger gap, thanks to the sale of hunting products (crayfish, eel, amphibians) and bamboo braiding, mortars and pestles, spade handles, or wood ladles. About 500 families live from the sale of spade handles, mortars and pestles, trays (*sahafa*), sieves for gold mining, wood ladles, and baskets (*garaba)*. A craftsman earns between 100,000 Ariary and 180 000 Ariary annually (Haonasoa, 2010).

The natural resources of the corridor are of vital importance for women. The forest provides increasingly rare raw materials for basketry. It constitutes also a reserve of edible products (fruit, yam, game) and medicinal plants.

Regulation Services

The forest captures carbon and therefore contributes to climate regulation.

Cultural Services

These services are demonstrated by the development of tourism activities. Three community-managed tourist circuits - in Sendrisoa, Andrambovato, and Ambohimahamasina – have been developed in the COFAV.

This activity is a source of employment for the local community. A tracker earns 20,000 Ar to 70,000 Ar each year. A porter is paid between 1,000 to 2,000 Ar per day. Other sites have been proposed by the community to develop this promotion of the forest ecosystem.

A movement of "nature-lover" farmers is spreading among the neighboring communities, representing a significant social capital for development and conservation. There are currently 554 Koloharena organizations in 11 federations, including 6,732 households. These groups share innovations in the production system, notably agricultural intensification, management of farming areas, and management of harvests.

These economic activities represent both threats and opportunities for conservation and sustainable management of the protected area (see Annex 1.2)

First and in the short-run, the progress of conversion of lowlands to rice fields is likely to increase the fragmentation of the forest ecosystem at low and medium elevations. This activity also threatens the

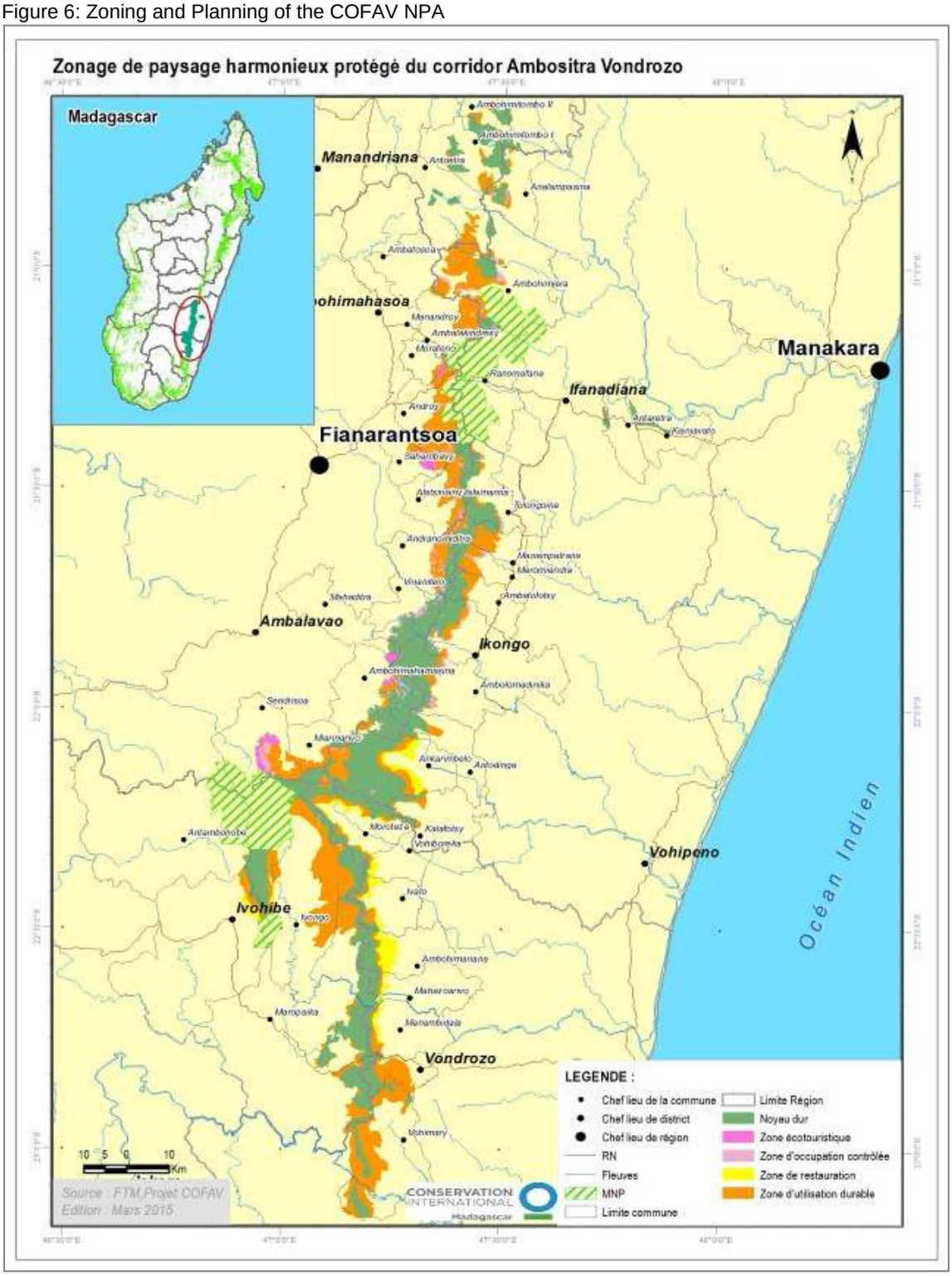
swamp habitats of crayfish and amphibians and disturbs the water regime of the main watersheds. Conversion destroys marsh vegetation and depletes the plant species harvested for various uses (ceilings, basketry).

Forest clearing and the use of fire for cultivation and pasture deplete the soils and vegetation in the long-run. In addition to forest fragmentation, such practices reduce the vegetation cover that mitigates erosion. Excessive runoff might provoke serious flooding of coastal plains and rice-growing basins. Characteristic species of forested grasslands are disappearing and unpalatable grasses (for livestock) predominate.

3.3.4 Zoning and Planning of the COFAV

The protected area comprises a core area, a buffer zone, and a peripheral area. In the latter area, which is contiguous to the buffer zone, human activities still have potential direct effects on the protected area and conversely. The buffer zone has 4 distinct zones: the controlled occupation zones (ZOC), the sustainable use zones (ZUD), the ecotourism and service zones, and the restoration zones.

Figure 6: Zoning and Planning of the COFAV NPA



Source: PAG du Corridor Forestier Ambositra – Vondrozo (2015)

According to the PAG (2015 version; MEF & CI, 2015), the main pressures and threats on the COFAV include forest clearing; illicit mining; illicit logging (selective cutting), causing important damage on habitats; vegetation fire; the use of trails; hunting; and the extension of croplands.

4 Description and Assessment of the Political Framework and the National Regulations Applicable to the Project

4.1 Scoping the Project according to National Policies

During its implementation, the Project must comply with and promote the orientations of the fundamental national and sectorial policies presented below. The planning, evaluation, and implementation of planned sub-projects must take into account these policies.

Table 2: National Policies, Plans, and Strategies and Applicability to the Project

Policy/ Plan/ Strategy	Content	Applicability to the Project
Sustainable Development Goals (SDG)	Among the 17 SDGs, 8 are relevant to the project: • Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture • Goal 5: Achieve gender equality and empower all women and girls • Goal 6: Ensure availability and sustainable management of water and sanitation for all • Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all • Goal 8: Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all • Goal 9: Build resilient infrastructure, promote sustainable industrialization and foster innovation • Goal 13: Take urgent action to combat climate change and its impacts • Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Several components will contribute to achieve the 8 SDGs relevant to the Project: • SDG 13 related to measures on climate change and its impacts is relevant to the entire Project. • SDG 5 on gender will be applied to all activities and sub-projects initiated during the lifetime of the Project. • Component 1 on adaptation through a sustainable agriculture and adaptation program aims at enhancing sustainable development in Madagascar through climate resilience. SDGs impacted by this component include Goal 2 (through the implementation of the sustainable agriculture program for the most vulnerable), Goal 6 (IWRM approach), Goal 8 (creation of small units of transformation and operationalization of the investment fund for sustainable agriculture or renewable energy), and Goal 15 (protection and restoration of terrestrial ecosystems are initiated in the vicinity of the CAZ and COFAV protected areas or in other forest landscapes of high biodiversity value). • Component 2 of the Project focuses on the creation of enabling conditions to reduce and manage climate risks; its main targets for capacity-building are the populations vulnerable to climate change, technical services, CTDs, schools, universities and research centers, private operators, NGOs, and associations. This component will directly or indirectly contribute to achieve SDGs 2, 6, 9, 13, and 15. • Component 3 on the development of renewable energy sources in rural areas of Madagascar will contribute to achieve SDGs 7 and 8. • Component 4 on the reduction of GHG emissions from deforestation of natural resources is related to SDG 15.
General State Policy (PGE)	The objective of the PGE is to establish an inclusive and sustainable	The Project will contribute to achieve 5 (out of 22) challenges of the PGE:

and National Development Plan (PND) for the 2015 -2019 period	development based on inclusive growth against poverty; the priority topics include: • Strengthening of governance, rule of law and instauration of fair justice • Economic recovery through the establishment of a stable social and political environment, preservation of macroeconomic stability, and reestablishment of an attractive business climate • Greater access to quality base social services These topics integrate the gender, humanitarian, social, environmental, territorial dimensions as well as new technologies. The PND is an excellent instrument at the service of the PGE. The strategic orientations relevant to the Project include: • *Orientation 04*: "Adequate human capital for the development process" with the specific objective: "strengthen social protection with a specific focus on vulnerable groups" • *Orientation 05*: "Enhancement of natural capital and better resilience to disaster risks" with two specific objectives targeted: – Ensure the linkage between natural resources and economic development and – Protect, conserve, and sustainably use the natural capital and ecosystems	• Social protection • Water and sanitation through Component 1 on the IWRM and Component 2 on awareness on climate change and capacity-building • Energy efficiency and improved energy access through Component 3, specifically targeting rural populations • Environmental protection, for the whole project, and • Development of the private sector and funding through the Investment Fund Among the 5 strategic orientations identified in the PND, the Project will contribute to achieve the objectives of 2 orientations: • Orientation 04: "Adequate human capital for the development process"; the main targets of the Project are the populations vulnerable to climate change. Gender consideration will be applied to all activities and sub-projects initiated under the project. Special focus will also be granted to women, youth, and the poor. • The Project and all its components will contribute to achieve the specific objectives of Orientation 05 of the PND

National Environment Policy (2010, under revision)	The main objective of the National Environment Policy is to restore a sustainable and harmonious balance between the human development needs and ecological issues. The policy places humans at the center of the environmental concerns. It is divided in 8 orientations including (i) better sharing of responsibilities and establishment of efficient official organizations, (ii) better enforcement of the legal framework, (iii) development of incentives for initiatives leaning towards environmental preservation, (iv) development of sustainable funding for the environment, (v) multi-level improvement of information, education, and environmental communication, (vi) strengthening of prevention and environmental watch efforts, (vii) intensification of control activities, and (viii) strengthening of the control system of the impacts of investments on the environment	The Project takes into account the 8 orientations of the National Environment Policy: • Orientation 1: notably through capacity-building of the various actors (Component 2) or the establishment and support of TNRM and local communities as co-managers of the protected areas (Components 1, 2, and 4) • Orientation 2: awareness on existing legislation (Component 2) and stronger law enforcement to reduce deforestation (Component 4) are planned under the Project • Orientation 3: incentives for environmental protection are included under the investment fund (targeting the private sector) for sustainable agriculture (Component 1) and renewable energy (Component 3) • Orientation 4: through the creation and operation of a national trust fund on climate change to promote the sustainability of achievements and the durability of the Project • Orientation 5: Awareness on climate change and capacity-building focus on several actors at multiple levels (Component 2) and various topics (Components 1, 2, and 3) such as climate change, and climate-resilient agricultural techniques • Orientation 6: Through the capacity-building of STDs and CTDs and availability of information for the various actors (cropping calendar, best practices, etc.)– Components1, 2, and 4 of the Project • Orientation 7: Component 4 supports the STDs to intensify forest control activities in and around the COFAV and CAZ protected areas • Orientation 8: Throughout its lifetime, the Project will consider and implement the provisions of the MECIE decree
National Climate Change Policies and Strategies (PNLCC, 2010)	The PNLCC fits into the implementation of the National Environment Policy with the vision to "*be in possession of all required capacities favorable to the sustainable development of the country, in order to address climate change*". The PNLCC includes 5 strategic orientations (i) Strengthening of climate adaptation efforts, taking into account the actual needs of the country; (ii) implementation of mitigation actions to benefit the development of the country; (iii) mainstreaming of climate change at all levels; (iv) development of sustainable funding instruments; and (v) promotion of research, development, and transfer of	The Project contributes to achieve the 5 strategic orientations of the PNLCC: • Orientation 1: Components 1 (adaptation) and 2 (capacity-building) • Orientation 2: Components 2, 3 (renewable energy), and 4 (reduction of GHGs and deforestation) • Orientation 3: Established approaches of climate-smart landscape and climate-smart agriculture in land-use plans at multiple levels (Component 1). Mainstreaming of climate change in curriculums or development benchmarks (Component 2) will be initiated by the Project • Orientation 4: Creation and implementation of the Climate Trust Fund (Component 1) that will continue to finance various sub-

	technologies, and adaptive management.	projects beyond the closing of the Project • Orientation 5: the sustainable agriculture (Component 1) and renewable energy (Component 3) programs
	In 2006, Madagascar developed its National Adaptation Program of Action (PANA) to address the most urgent and immediate needs of the country	Among the 5 priority sectors, the Project is directly involved in 3 sectors: agriculture, water resources, and forestry; and indirectly in one sector (public health). Among the 12 regions prioritized by the PANA, 4 included in the COFAV and CAZ regions are the intervention areas of the Project. Sub-projects funded through the Investment Fund will also consider this spatial prioritization.
	In 2010, Madagascar also proposed its list of Nationally Appropriate Mitigation Actions (NAMA)	The NAMA prioritize 5 sectors (Energy, Forestry, Waste, Agriculture, and Transportation), 2 of which are impacted by the Project: renewable energy (Component 3), forestry/ protected area (Components 2 and 4).
	Madagascar also has a National Strategy for the Clean Development Mechanism (CDM), currently under implementation. The REDD+ National Strategy is under development. The document on the Intended Nationally Determined Contributions (CPDN) was developed in 2015.	The Project will contribute to the REDD+ national strategy through Components 2 (capacity-building) and 4 (reduction of GHG emissions from deforestation); regarding the CPDN, the 4 components of the Project are aligned with the priorities defined in this document.
National Biodiversity Strategy and Action Plan (NBSAP) for 2015 – 2025	The Strategy focuses on 5 main goals: (i) management of the underlying causes of biodiversity depletion, (ii) maximum reduction of direct pressure on biological diversity by addressing the main causes and promotion of sustainable use of natural resources; (iii) improvement of the state of biodiversity by saving species and preserving genetic diversity, (iv) enhancement of the benefits for all of biodiversity and the services it provides, (v) enhanced implementation of the strategy through participatory planning, improvement and management of the knowledge of targeted actors in general and of the Malagasy population.	The Project intervention areas (Components 1, 2, and 4) are in and around the COFAV and CAZ protected areas. For the Investment Fund focusing on sustainable agriculture (Component 1) and renewable energy (Component 3), sub-projects will be initiated in other landscapes of high biodiversity value. The Project will contribute to achieve these 5 strategic goals.
Forest Policy (Decree 97 – 1200 of October 2, 1997 on the adoption of the Malagasy Forest Policy, under revision)	The forest policy is based on six principles: (i) consistency with the National Development Policy; (ii) conservation of forest resources through appropriate sustainable management; (iii) limitation of ecological risks; (iv) contribution of the forest sector to economic development; (v) empowerment of local actors to manage forest resources; and (vi) adaptation of forest efforts to the realities of the country	These 6 guiding principles are taken into account through Components 2 (capacity-building) and 4 (reduction of GHG emissions from deforestation of natural forests) of the Project.
National Social Protection Policy PNPS	Both documents were established in 2015. The National Social Protection Strategy is articulated around the vision	The strategy is articulated around 4 strategic orientations, 2 of which are taken into account by the Project:

(September 2015) and National Social Protection Strategy (SNPS) for 2016 – 2020	of the Policy: "*All population strata have a social protection coverage by 2050*". The global objective of the Strategy is to "reduce by 10% the vulnerable population in extreme poverty and enhance their resilience".	• Strategic orientation 1: Revenue increase of the poorest – through the capacity-building of populations vulnerable to climate change and the sustainable agriculture program (Components 2 and 1). For hydro-agricultural development, the Project plans a high labor-intensive (HLI) approach • Strategy orientation 2: Improved access to basic social services such as water access, hygiene, enhanced food security, and nutrition initiatives (Component 1)
National Action Plan on Gender and Development (PANAGED)	The National Policy on Advancement of Women (PNPF) was adopted in 2000. It was followed by the definition of a national plan on gender promotion (PANAGED) in 2003. The PANAGED includes the economic development and actions against the feminization of poverty, capacity-building of women and girls, promotion of health and reproductive health rights for women and teenage girls, and the legal status of women through the application of the fundamental rights of women and girls.	The Project integrates the gender perspective. Specific approaches (awareness under Component 2) and activities related to the development of livelihoods or market access are planned for women or women's associations (Component 1).
National Strategy on Water, Sanitation, and Hygiene	This strategy developed in 2012 was established for the 2013-2018 period. Its objectives include efficient and sustainable access to water for at least 6,000,000 people and the application of IWRM by the different actors.	The Project contributes to the implementation of 3 orientations (out of 5) of the strategy: • Orientation 3: Development of integrated water resources management (IWRM) under Component 1 • Orientation 4: Development of public-private partnership for drinking water supply or improvement of the irrigation system (Component 1) • Orientation 5: Sectoral development through by enhancing the resources of the Ministry in charge of water, at all levels (Component 2)
Sectorial Policy Letter for Agriculture, Livestock and Fisheries (LPAEP) and Sectorial Program for Agriculture, Livestock and Fisheries National Agricultural Investment Plan PSAEP/PNIA	Since 2015, Madagascar has a LPAEP and a PSAEP/PNIA for the 2016-2020 period. Agricultural development is a fundamental priority in Madagascar to address the serious problem of rural poverty. The main issues identified for the Agriculture – Livestock - Fisheries sector are mainly the contribution to poverty alleviation, economic growth, and climate change.	The Project contributes to address 5 (out of 6) challenges defined in the PSAEP: • Challenge 1 – Mobilize all actors, by mainstreaming the gender perspective, while focusing on decentralization: The Project integrates the gender perspective as well as the enhancement of decentralization (Component 2) • Challenge 3 – Preservation of achievements and revitalization of the sector after the political crisis of 2009 (Component 1) • Challenge 4 – Achieve an agricultural growth of 6% annually through the sustainable agriculture program (Component 1) • Challenge 5- Make agricultural products available, accessible, and competitive on internal and external markets through better market access (Component 1)

		• Challenge 6 – Better resilience of agricultural production systems to address climate change and promote sustainable agricultural practices in order to reduce GHG emissions through Components 1 (adaptation) and 2 (capacity-building)
National Climate Change Strategy of the Agriculture-Livestock-Fisheries Sector for the 2012-2025 period	The sectorial strategy specifically focuses on relevant issues while remaining consistent with the outlines of the sustainable development policy adopted by Madagascar, aiming at poverty alleviation and improvement of the living conditions of the population, while protecting its natural capital, particularly its exceptional biodiversity. The strategy follows 5 main orientations: • Orientation 1 - Adaptation: The Agriculture- Livestock- Fisheries sector adapts to climate change and must be able to address its impacts by mitigating them using adequate measures • Orientation 2 – Mitigation: Mitigation actions generate socioeconomic benefits for Agriculture- Livestock-Fisheries (Component 1) • Orientation 3 - Mainstreaming: The Agriculture- Livestock – Fisheries sector integrates concerns related to climate change in all its actions (Components 1 and 2) • Orientation 4 - Funding: The Agriculture- Livestock- Fisheries sector has sustainable funding mechanisms for its adaptation and mitigation efforts (Component 1 through the investment fund) • Orientation 5 - Research, technology, knowledge management: The Agriculture-Livestock- Fisheries sector promotes applied research and technical innovations and uses research results on efficient decision-making and development tools to address climate change	The project will contribute to the implementation of the 5 orientations of the strategy: • The sustainable agriculture program and ecosystem-based adaptation (Component 1) will contribute to strategic orientations 1, 2, 3, 4, and 5 • Component 2 on capacity-building fits into orientation 2.
The new Policy Letter on Energy for the 2015-2030 period	It was adopted on September 8, 2015 with the global objective of ensuring energy supply in sufficient quantity, good quality, and low cost. Challenges defined in this document focus on three sectors: biomass (production and use), electricity, and hydrocarbons. The new energy policy that is being finalized was initiated based on a participatory approach, with broad	The Project contributes to the challenges defined by this Policy Letter through its Component 3, which aims at reducing emissions by increasing access to low-emission energy and through energy production.

	mobilization of the private sector. It plans a cleaning-up of the energy sector and an enabling framework for sectoral investments.	
National Tourism Plan (2005)	A National Tourism Plan was adopted in 2005 to support tourism growth while controlling the consequences and advances in the short, medium, and long terms. One of the plan's specific objectives was to ensure that tourism, and particularly ecotourism, leverages direct and sustainable benefits for the village communities while preserving the natural environment.	With its Component 1, the project will implement some community-based ecotourism activities.
National Strategy on Information and Communication on the Environment and Sustainable Development (SNICEDD) – in the finalization phase	In addition to better environmental information and communication for sustainable development, the strategy seeks the improvement of environmental information and communication at all levels. The objectives include: (i) the availability, accessibility, free access, accuracy, and reliability of environmental and spatial information in Madagascar, (ii) environmental knowledge for sustainable development, through communication, (iii) awareness raising of citizens aiming and behavior change towards the environment at all levels and mobilization to reconcile them with the environment, and (iv) empowerment of all actors to be the stewards of the unique and rich environment and natural resources of Madagascar.	The Project contributes to achieve the objectives of this strategy through several activities of Component 2: • Implementation of awareness activities • Dissemination of research results and best practices on sustainable agriculture in local and national media, through flyers, posters, and CI webpage • Development of training modules on climate change for various actors • Capacity-building for STDs and CTDs as local authorities and advisory and support structures for the different sub-projects

4.2 Assessment of the GCF and EIB Environmental and Social Performance and Standards (ESPS) and CI Standards and Safeguard Policies

This assessment identifies the environmental and social standards and safeguard policies applicable to the Project. Safeguard policies currently include those of GCF, EIB and Conservation International (as accredited agencies). With the exception of its policy on gender integration, GCF refers to the policy and performance standards of the International Finance Corporation (IFC) for environmental and social sustainability.

The GCF and EIB ESPS and CI safeguard policies are benchmarks to consider during the environmental and social assessment of sub-projects.

Table 3: Assessment of the Applicability of the GCF Performance Standards

IFC Performance Standard / GCF Policy	Contents	Project Applicability

Performance Standard 1 Assessment and management of environmental and social risks and impacts	This criterion aims to identify and evaluate social and environmental impacts of the Project and to prevent, minimize, and manage negative impacts on the population, communities, and the environment. It emphasizes the need for projects to consult affected communities appropriately using an approach that achieves free, prior and informed consent and promotes improved environmental and social performance through effective management systems. For GCF, projects are classified as category A, B, or C depending on their type, location, vulnerability, and scale of the project, and the scope and scale of potential impacts.	Yes – Potential environmental and social impacts could be caused by agriculture/agro-business, habitat restoration, afforestation and renewable energy projects. This document defines the processes needed for environmental assessments of these activities, the responsibilities of different actors, grievance mechanisms, stakeholder consultations, and dissemination of pertinent information to help affected communities understand the risks, impacts, and opportunities of the Project. A classification of the different subprojects following the IFC standards and national environmental legislation is provided in this document.
Performance Standard 2 Labor and working Conditions	This criterion aims to establish, maintain, and improve the working relationships between workers and management. It promotes equal employment opportunity, equitable treatment of workers and guards against child and/or forced labor. Work conditions must be safe and healthy and promote the wellbeing of employees. The environmental and social assessment must take into account worker protection and promote measures to protect the health and safety of workers and local communities.	Yes – The requirements of this performance criteria are also included in the Malagasy Labor Code (Law 2003 -044 of June 10, 2004) and will need to be applied throughout the Project. This aspect must also be integrated into the assessments for subprojects. The provisions of the Labor Code are applicable to Project staff and also any contractors.
Performance Standard 3 Resource efficiency, pollution prevention and reduction	This criterion aims to reduce negative impacts on human health and the environment by minimizing pollution generated by project activities and by reducing emissions from project activities that contribute to climate change.	Yes – The objectives of this criteria are specifically addressed through the Project components. Component 1 on adaptation through a sustainable agriculture program and ecosystem-based adaptation includes various activities that contribute to the objectives of this criteria, notably: (i) Identification of sustainable agriculture techniques to improve resilience of communities. Component 3 on renewable energy: any activity should be categorized (A,B,C) and implement the required environmental and social provisions. Note that category A subproject will not be eligible under the Project/ Investment Fund.
Performance Standard 4 Community health, safety and security	The objectives of this criterion are to: • Avoid or minimize risks and adverse impacts on the health and safety of the local communities during the project lifetime from both routine and non-routine circumstances • Ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the local community.	Yes - The project management and the environmental assessment process (to be put in place for sub-projects) also include monitoring and evaluation steps as well as a final evaluation of sub-projects. These steps will allow for impacts on the health and safety of local communities to be identified so that measures can be taken if necessary.

Performance Standard 5 Land acquisition and involuntary resettlement	This criterion aims to avoid or minimize displacement of people. When displacement cannot be avoided, it provides a framework for providing assistance to improve or at least restore income sources and/or other means of livelihood.	Yes - Neither components 1 (adaptation) nor 4 (mitigation) envisage land acquisition or physical relocation (resettlement or loss of shelter) or a declaration of public utility. However, restriction of access to natural resources could occur, following a participatory approach, in order to protect natural resources (identification of a conservation area transferred to a local community or protection of a water source). As noted in this document, a mitigation hierarchy of avoidance and reduction of impacts should be applied (avoid, reduce, or compensate). Any restriction of access to resources should be determined for specific zones using a participatory and collaborative approach (forest/land-use zoning). Sustainable agriculture sub-projects are likely to take place on privately-owned land (recognized either officially or through the traditional land tenure system). For component 3 on renewable energy, the exact sub-projects and locations are not known but the project will not lead to involuntary resettlement.
Performance Standard 6 Biodiversity conservation and sustainable management of living natural resources	The objectives of this performance criterion are to: • Protect and conserve biodiversity • Promote the sustainable management and use of natural resources through the adoption of practices that integrate conservation needs and development priorities	Yes – The environmental assessment process of sub-projects will take this issue into account, considering the sensitivity of each of the subproject locations. Mitigation or compensation measures may be needed to reinforce biodiversity rich zones, such as protected areas. The development and management plan (PAG) will also guide sub-projects authorized in the protected area and the peripheral zones.
Performance Standard 7 Indigenous Peoples	This criterion aims to: • Ensure that development process fosters full respect for the human rights, dignity, aspirations, culture, and natural resource-based livelihoods of Indigenous Peoples; • Anticipate and avoid adverse impacts of projects on communities of Indigenous Peoples, or when avoidance is not possible, to minimize and/or compensate for such impacts; • Promote sustainable development benefits and opportunities for Indigenous Peoples in a culturally appropriate manner.	No – The Project will not affect any indigenous population
Performance Standard 8 Cultural heritage	This criterion aims at protecting irreplaceable cultural heritage. The IFC defines cultural heritage as tangible objects and sites having archaeological (prehistorical), paleontological, historical, cultural, artistic and religious values, and unique natural features that embody cultural values such as sacred trees. This definition also includes intangible forms of culture such as knowledge, innovations, and cultural practices of communities embodying traditional lifestyles.	Yes – In addition to zoning and land-management plans (for the implementation of sub-projects), capacity-building activities on the value of cultural heritage will be initiated.

Gender integration Policy	The Gender Policy of the GCF aims to: • Ensure that through the adoption of a gender-sensitive approach, the GCF will have climate-change related results that are more efficient, sustainable, and equitable as well as more efficient impacts • Ensure better resilience and capacity for both women and men to address CC and that women (and men) will contribute to and benefit from the activities supported by GCF • Address and mitigate the potential risks of the project that affect women or men through adaptation and mitigation activities supported by GCF • Contribute to reduce the variation of impacts of CC on women and men that heighten social, economic, and environmental fragilities	Yes – Gender consideration was effective during the preparation and design of the Project. Arrangements will be carried out during the implementation of the Project: • Each Execution Unit will have a gender expert in the team • Each Execution Unit will ensure that all partners and sub-project developers will take the gender aspect into consideration during the lifetime of the project • Under its Components 1 and 2, the Project specifically targets women or women's associations • In addition to women, vulnerable groups and the youth will also be specifically considered by the Project

EIB's Environmental and Social Principles and Standards (ESPS)[9] includes ten standards that are well aligned with the IFC standards (see link in footnote for details):

1. Assessment and management of environmental and social impacts and risks
2. Pollution prevention and abatement
3. EIB standards on biodiversity and ecosystems
4. EIB climate-related standards
5. Cultural heritage
6. Involuntary resettlement
7. Rights and interests of vulnerable groups
8. Labour standards
9. Occupational and public health, safety and security
10. Stakeholder engagement

All of these EIB principles and standards are taken into account in the environmental and social standards of GCF/IFC. However, given that the EIB is primarily an EU institution, there are slight differences in the application of some principles. In the rest of this document, whenever one refers to the application of the EIB (ESPS), if the EIB principles in question are less stringent that the corresponding GCF/IFC principles, then the latter apply and vice versa.

According to EIB's ESPS, all operations shall comply with national legislation and regulations as well as any obligations and standards in the relevant international conventions and multilateral agreements to which the host country is party to as well with the provisions of the following four treaties and conventions: UN ECE Aarhus Convention (related to access to information, public participation and access to justice in environmental matters), UN CBD (Convention on Biological Diversity), UNFCCC and Community approach on the prevention of natural and man-made disasters.

For EIB, projects outside of the EU must be subject to an environmental and social impact assessment (ESIA) procedure if they are likely to have significant and material impacts and risks on the environment, human health and well-being and interfere with human rights. The ESIA must be consistent with the principles contained in the EU EIA Directive and best international practice. The entity in charge of executing the project(s) (i.e. Althelia in the case of the Investment Fund) shall be responsible for putting in place its own systems that will allow for a comprehensive and rigorous

[9] http://www.eib.org/infocentre/publications/all/environmental-and-social-principles-and-standards.htm

environmental and social assessment of impacts and risks, using an integrated approach in order to achieve a high level of protection of the environment taken as a whole.

In addition to the GCF/IFC performance standards, other CI safeguard policies must also be integrated. CI safeguard policies 1(environmental assessment), 2 (protection of natural habitats), 3 (involuntary resettlement), 4 (indigenous peoples), 5 (management of pesticides), 6 (cultural and physical resources), 7 (empowerment and grievance and conflict mechanisms), and 8 (gender integration) are already taken into account in the environmental or social standards of GCF/IFC.

CI Safeguard Policy	**Contents**	**Applicability to the Project**
Stakeholder Involvement	The objective of this policy is to have all stakeholders, including People Affected by the Project, indigenous peoples, local populations, and local civil society organizations associated in the preparation, design, implementation, and monitoring and evaluation process of the Project. The Project developers must ensure that their opinions and concerns are considered and integrated.	Yes- Stakeholder and institutional consultations were initiated at the design stage of the Project. Consultation will also take place at the implementation stage of the Project through the compliance with existing regulations and the valorization of existing structures and mechanisms for the establishment of protected areas (CAZ and COFAV). Consultation will apply to the identification of sub-projects as well as their implementation and monitoring. Promotion of traditional practices under the sustainable agricultural program (Component 1) is also planned. Grievance mechanisms will also be developed for sub-projects initiated outside the CAZ and COFAV.

4.3 Legal Framework of the Environmental and Social Management of the Project

4.3.1 Main Regulations and Legislations related to the Project

Table 4: Legislation related to the Environmental and Social Aspects of the Project

Regulations and legislations	**Contents**	**Applicability to the Project**
Environmental Evaluation		
Law 2015 -003 of February 19, 2015 on the Updated Environment Charter	The Charter defines the following regarding the impact assessment: • Article 4 defines the principle of a required preliminary impact assessment: “the environmental permit is a prerequisite to commence any work”. • Article 13 states that all public or private investment projects, subject or not to an authorization or approval by an administrative authority, or likely to impact the environment, must undergo an impact assessment, the rules and procedures of which will be defined by the MECIE Decree	• The environmental assessment process and procedures applicable to all sub-projects (public or private) of the Project are defined in Chapter 6 of this document • These established process and procedures take into consideration the requirements and standards of GCF, EIB, CI, as well as the provisions of the national legislation
Decree 99-954 of December 15, 1999 on the Compatibility of Investments with the Environment	This decree defines the types of impact assessments based on the technical nature, the size of the project, and the vulnerability of the receiving environment. • The Environmental Impact Assessment	In Chapter 6 of this document: • A categorization grid of the types of impact assessment for sub-projects in accordance with the requirements of GCF, EIB, CI and the national

modified by Decree 2004-167 of February 03, 2004 (MECIE Decree)	(EIA) for: – Projects in (i) sensitive areas as defined by Order 4355 /97 on the definition and delimitation of sensitive areas or (ii) sensitive forest areas as defined by Order 18177/04 – Projects listed in Annex 1 of the MECIE Decree (see Annex 1 of this document), or – Any activities that are likely to have damaging effects on the environment and for which the ONE judges that an EIA is necessary • The Environmental Commitment Program or PREE, it is a simplified environmental and social impact assessment for projects listed in Annex 2 of the MECIE Decree and not located in sensitive areas • Projects not requiring an EIA or a PREE: projects located outside sensitive areas and not listed in Annex 1 or Annex 2 of the MECIE Decree. • The environmental assessment process defined by the MECIE Decree is presented in Figure 8 below The Malagasy legislation defines the EIA as an environmental and social impact assessment.	legislation is presented and will be applied during the implementation of the Project (see Chapter 6.2 on the environmental categorization of sub-projects) • This categorization follows the categorization of the MECIE: EIA, PREE or no EIA and no PREE. • The charter of responsibilities of the main actors in implementing the environmental assessment process according to the MECIE is presented in Annex 3. • In accordance with the provisions of the MECIE Decree and international practices, the environmental assessment process applied to sub-projects will include the following phases: • Screening to define the type of impact assessment required, • Development of the EIA or PREE documentation • Assessment of the EIA or PREE documentation • Environmental control and monitoring after obtaining the environmental permit/authorization • Environmental audit at the closing at the project followed by the delivery of the environmental discharge
	ONE is the operational entity and the unique facility for the MECIE process. It approves the Terms of Reference (ToR) for the EIA (Articles 1 and 12) ONE is the only entity establishing or validating the screening based on a brief description of the project and its location (Article 3)	• The validation of the ToR for an EIA or a PREE is the responsibility of respectively ONE and the parent ministry of the sub-project • Screening to define the type of impact assessment applicable to each sub-project will be done under the Project. Validation of screening is the responsibility of ONE (see 6.3.2 on the screening administrative process) • A screening form applicable to all sub-projects will be developed at the launch of the Project
Interministerial Order 4355/97 of May 13, 1997 on the definition and delimitation of sensitive areas	In its Article 2, this Order defines the sensitive areas as "*areas constituted by one or several elements of biological, ecological, climatic, physico-chemical, cultural, socioeconomic nature, characterized by a specific value or fragility towards human activities and natural phenomena that are likely to modify such elements and/or degrade or even destroy the area".* According to Article 3, sensitive areas are: coral reefs; mangroves; islets; tropical forests; erosion-prone areas; arid or semi-arid areas prone to desertification; swamps;	• The screening form will specify if the sub-project is included in sensitive areas or sensitive forest areas

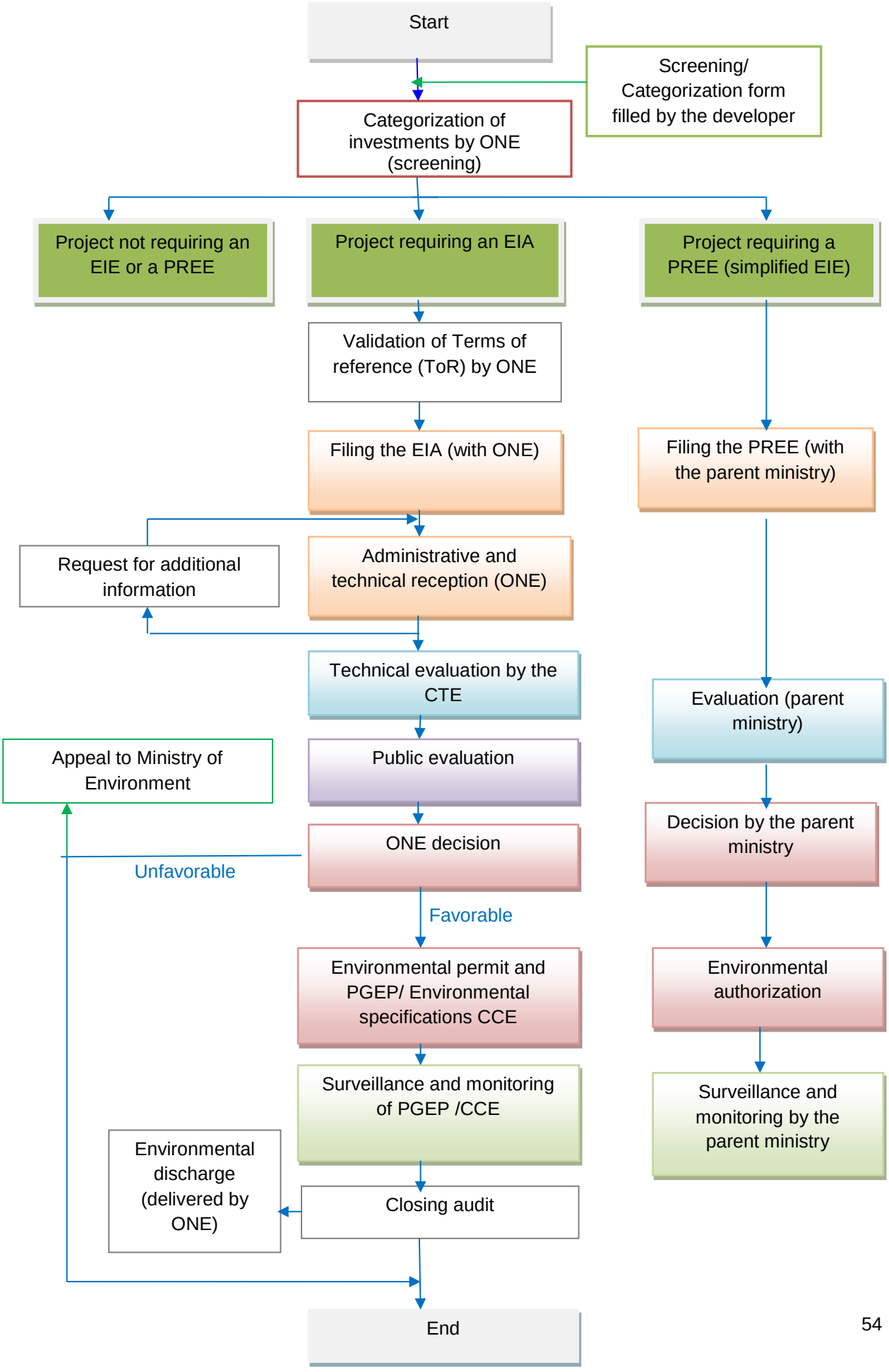
	natural conservation areas; protection strips of underground, mineral, or drinkable water; and paleontological, archeological, and historical sites and their protection strips.	
Interministerial Order 18177/04 of September 27, 2004 on the definition and delimitation of sensitive forest areas	The forest areas defined in this order are considered sensitive areas and are georeferenced.	
Biodiversity		
Law 2015-005 of February 26, 2015 reforming the Management Code for Protected Areas or COAP and its implementing instruments	The COAP states that • The Development and Management Plan (PAG) is one of the management tools of the protected area. This detailed document describes the physical and biological elements of the protected area, its socioeconomic environment, immediate and long-term management objectives, the strategy and development and management programs, and impact indicators and financial needs for a five-year period. Il also defines specific measures and restrictions to ensure the conservation of the Protected Area • The PAG is a five-year plan • The designation of a protected area requires the execution of an environmental impact assessment	• Any sub-project initiated inside the protected area must comply with the zoning defined in the PAG • The implementation of sub-projects inside the protected area does not have any impact on the usage rights of established neighboring communities • Under Component 4 of the Project, for the purpose of sustainable management of protected areas, updating the PAG is planned as an activity • For sub-projects initiated in or around protected areas, in addition to the implementation of the ESMP required for GCF support, the Executive Unit (each PA manager) will continue to implement the ESMP developed for the creation of the PA
Decree 2015-755 of April 28, 2015 on the creation of the "Corridor Forestier Ambositra-Vondrozo" Protected Area Decree 2015-754 of April 28, 2015 on the creation of the "Corridor Ankeniheny – Zahamena" Protected Area	Each decree defines for each protected area: • Its status: respectively a Protected Harmonious Landscape and a Natural Resources Reserve for the COFAV and the CAZ • The management objectives and the type of governance • The zoning of the protected area • For the COFAV, the protected area has a peripheral zone where all activities, with the exception of those already carried out, are subject to a collaborative approach involving all stakeholders and the manager of the PA • The permitted, authorized, or regulated activities for each area • The establishment of a Steering and Monitoring Committee (COS) to monitor the execution of interventions related to the creation of the PA; the members include STDs, CTDs, the manager or delegate manager of the PA as well as all resource people or entities.	• The Project will valorize the COS as a structure involved in the monitoring of sub-projects initiated in and around the protected area • The COS will also be a structure used for the validation of the activity report of the Execution Unit (for the current year) as well for the validation of the work plan of the preceding year • Specifically for the COFAV, with the peripheral zone contiguous to the buffer zone and in which human activities are likely to have direct impacts on the PA and conversely, activities around the PA must consider the provisions of the decree creating the PA and the associated ESMP
Forests		
Law 97-017 of	Under the forest regime, this law regulates	• The usage rights of local populations

August 8, 1997 revising the forest legislation	the forests, which are inalienable and imprescriptible and benefit from several advantages. It defines the principles of logging, cutting permits and usage rights, clearing and vegetation fire, as well as reforestation. This law also presents the applicable law enforcement procedures in regards to forest legislation, hunting, fishing, and nature protection	on forest resources will be defined in the new transfer of natural resource management (TNRM) agreements to be established in or around the protected areas (Component 4) • For better governance of the protected areas, activities to improve law enforcement are planned under Component 4
Decree 2000-383 of June 7, 2000 on reforestation	This decree states that reforestation must preserve and improve the environment and promote the valorization of natural resources. Any reforestation must follow the technical norms to constitute or reconstitute a forest as defined by Law 97 017 on the revision of the forest legislation. The decree distinguishes different categories of reforestation: industrial reforestation for production (timber or firewood), reforestation for protection and ecological restoration, reforestation of social nature (for education or recreation), reforestation for experimentation, study, or research, and economic reforestation for agro-sylvo-pastoral purpose.	• The Project plans restoration activities in the CAZ and the COFAV in accordance with the PAG of the PAs (Component 4) • Around the protected areas, participatory evaluations of land uses, including areas to restore, will be carried out. Restoration plans will then be implemented for each commune (Component 1) • Capacity-building for various actors (local communities and CTDs) will be developed to monitor reforestation (Component 4) • Agroforestry activities (Component 1) or reforestation for energy (Component 3) might also be carried out.
Community-based natural resources management / TNRM		
Law 96-025 of September 30, 1996 on the local management of renewable resources (GELOSE)	This law enunciates the possibility of transfer of the management of renewable natural resources to local communities. The objective is the effective participation of these communities to the sustainable conservation of renewable natural resources in the limit of their territory. The natural resources targeted by the TNRM include forests, aquatic and terrestrial fauna and flora, water, and grazing systems. The management agreement between the technical service in charge of the relevant resources, the local community, and the commune is established for 3 years, renewable for 10 years if management is appropriate.	• Under the Project, the selection of the type of TNRM (GELOSE or contracted management of State forests) depends on the Execution Unit and the context • For the sustainable management of forest or natural resources, activities planned under the project are the creation and renewal of TNRMs (Component 4) and strengthening of local communities and other structures (fire committee, participatory monitoring committee, etc.) under Component 2 • TNRMs are planned either inside or around both CAZ and COFAV protected areas.
Decree 2001 -122 of February 14, -2001 on the implementation of contracted management of State forests	This decree specifies the application of contracted management of State forests: state-owned forests, classified forests, forest stations, artificial stands, and peripheral areas of protected areas. These requested areas must be inside the territory of the requesting local community. Similarly to GELOSE, the duration of the contract between the forest administration is of 3 years then 10 years	
Water		

Law 98-029 of January 20, 1999 defining the Water Code and its implementing instruments	This law applies to surface and underground waters. It sets essential principles such as the public domain of water, the quantitative and qualitative protection of water, and environmental protection notably through the principle of an environmental impact assessment for all developments or works carried out by public or private entities that are likely to affect the environment and the aquatic ecosystem. Water extraction (surface or underground) is subject to an authorization by the relevant authority	• One of the expected results of the Project is the following: *Critical ecosystems providing essential ecosystem services to smallholder farmers under current and future climate conditions are identified, evaluated, and managed as ecosystem-based adaptation measures.* Under Component 1, activities on participatory evaluation of land-use will estimate the arable surfaces and water needs for agriculture and human consumption in order to avoid social conflicts over resources. • Any drinking water supply initiated by the Project will respect the existing regulation: implementation of protection strips • An extraction authorization delivered by the relevant authority will be required for any extraction under the Project
Decree 2003-940 of September 09, 2003 on protection strips	This decree mandates the establishment of protection strips around water extraction points for human consumption, water catchment areas, and any water extraction, supply, and distribution works for consumption.	
Decree 2003 / 941 of September 09, 2003 on water surveillance, on the control of water for human consumption and on access priority to water resources	This regulation prioritizes drinking water in the distribution of water resources. The annex of the decree defines the standards of drinkability for humans.	
Sectorial Laws		
Law 99 - 021 of August 19, 1999 on the management and control policy of industrial pollution	This law applies to industrial activities, or if necessary to small-scale ones, facilities, infrastructures, or exploitations of industrial nature that present causes of danger, inconvenience, or risks of pollutant emission. In addition, it institutes the polluter pays principle.	• This law could apply to both the small transformation units for agricultural products (Component 1) and the required industrial facilities for the production or distribution of energy (Component 3) • For these types of sub-projects, the required environmental assessments (EIA or PREE) will defined the management methods and procedures for pollutants or waste. • For sub-projects that do not require an EIA or a PREE, environmental prescriptions on waste management will be developed.
Tenure framework law 2005-019 on land status	This law classifies three categories of land status: • Land belonging to legal entities governed by public law, falling under state law (public domain and private domain of the State) • Land belonging to private entities: titled private lands managed by the State land services, and untitled private lands managed by the land services of CTDs (communes) (local land office) • Land subject to a specific legal regime of protection. PAs are classified in this category.	For the sustainable management of the protected area: • The demarcation of the boundaries (external and internal) of the protected areas is planned under Component 4 • To avoid any conflict related to the implementation of sub-projects, the Execution Units will pay specific attention to the status of the land where these activities will be located • Even if the Project does not directly support local populations in getting tenure certificates (untitled private property) in and around the protected

		areas, it will facilitate their relationships with the STDs.
Ruling 82-029 of November 6, 1982 on the protection, safeguard, and conservation of the national heritage Decree 83-116 of March 31, 1983 setting the application terms of Ruling 82-029 of November 6, 1982	The protection, safeguard, and conservation of the national heritage fall under these regulations. The regulations indicate that the local authorities must be immediately informed in case of an incidental finding of a national heritage element.	• The requirements of the national legislation are compatible with the safeguard standards of GCF/ IFC, EIB, CI • The respect of existing customary principles in the project areas, related notably to cultural/customary sites (rocks, water bodies, etc.) or cultural heritage (tombs, sacred trees, etc.) will be applicable to all sub-project developers • Any incidental discovery of a cultural/customary heritage element must be reported to traditional and local (Fokontany, commune) authorities as well as to the STD in charge of culture • The sub-project developer will make arrangements to prevent the removal of or damage to objects or sites

Figure 7: National Environmental Assessment Process (from MECIE)



4.3.2 Adequacy of the Classification of Environmental Studies based on GCF/EIB/CI and the National Legislation

GCF adopted IFC's approach for project categorization based on the following environmental and social risks:

- **Category A or I_1**: Projects with adverse social or environmental impacts, effects, or risks that are diverse, significant, irreversible, or unprecedented.
- **Category B or I_2**: Projects with limited adverse social or environmental impacts, effects, or risks generally limited to a site, largely reversible, which can be readily addressed through mitigation measures.
- **Category C or I_3**: Projects with minimal or no environmental or social effects, impacts, or risks.

The adequacy of the sub-project category according to GCF and the national legislation (see Table 4) is explained in the following table:

Table 5: Adequacy of the Classification of Environmental and Social Impacts and Risks based on the CGF/EIB/CI Provisions and the National Legislation

		GCF, EIB and CI categorization		
		Category A/**I_1**	Category B/I_2	Category C/I_3
Type of impact study according to the MECIE	EIA (Environmental Impact Assessment)	EIA **Not eligible for CI/GCF**	EIA	
	PREE (Environmental Commitment Program)		PREE	PREE
	No EIA no PREE		No impact assessment but potential integration of environmental prescriptions	

Under the Project, the applicable sub-project categories are the following:

- ***Category B/I_2*:** With an environmental and/or social analysis including an ESMP, the equivalent of an EIA (according to the national legislation). These sub-projects in category B/I_2 of the GCF are located in sensitive areas or listed in Annex 1 of the MECIE decree.
- ***Category B/I_2*** or ***category C/I_3***: Sub-projects that do not require an environmental and/or social assessment and for which common mitigation measures are sufficient and presented in the ESMP (corresponds to a PREE).
- ***Category C/I_3***: Potential inclusion of environmental prescriptions (no environmental assessment required).

Considering the Malagasy legislation and the requirements of GCF or EIB or CI, the examination of the impact assessments under the Project results in the following:

- ***EIA (category A/ I_1)*** : Sub-projects in category A will not be funded under this Project
- ***EIA (category B/I_2)***: Review by the Malagasy environmental authorities according to the provisions of the MECIE EIB (for private sector activities) or CI/GCF (for public sector activities) after comments from EIB (for private sector activities) or CI/GCF (for public sector actvities)
- ***PREE (category B/I2 or C/I_3)***: Simplified environmental assessment requiring the evaluation of the parent ministry of the sub-project: Ministry of Agriculture, Ministry of Livestock, Ministry of Fisheries, Ministry of Energy, Ministry in charge of Forests or of Forests.

4.3.3 Consultation under the MECIE Process

The MECIE Decree and its implementing instrument Order 6830/2001 of June 28, 2001[10] set the arrangements and procedures of public participation in environmental evaluation. Public participation is defined as the "*association of the public in the environmental evaluation of the EIA documentation in order to provide the needed elements for decision-making* ".

Article 2 of Order 6830/2001 defines the public "*any person affected, or likely to be affected, any person having an interest to state, and environmental NGOs"*. The public comprises people directly or indirectly affected by a project and parties who can potentially influence, positively or negatively, the results of the consultation initiatives. The public is made of 3 main groups:

- People affected by the Project (individuals and families living near the sites of operation of the Project, local authorities
- The public sector (local, territorial, and national administrations)
- Other actors (local, national, and international NGOs, faith communities, universities and research centers, etc.)

The consultation aims at informing the public about the existence of the Project and obtain their feedback.

Existing regulations on impact assessment mandate public participation for investments that require an EIA:

- After filing an EIA with ONE, i.e. during the evaluation stage of the documentation.
- After obtaining the environmental permit, i.e. during the phase of project implementation and environmental monitoring.

In addition to regulatory requirements, the implementation instruments of the MECIE (sectorial regulations, general directive on the execution of an EIA) recommend the participation of the public during the other stages of the EIA procedure, without making it compulsory.

Table 6: Public Participation under the MECIE Process

Project Phase	**Environmental Procedure**	**Public Participation**	**Initiator**
Identification	Preparation – Screening	Not compulsory	
Prefeasibility study	Scoping	Not compulsory except for some large projects	Project developer
Feasibility study	Execution of the environmental impact assessment	Not compulsory except for some projects (based on the ToR)	Project developer
	Evaluation of the environmental impact assessment file	Compulsory	ONE and Technical Evaluation Committee (CTE), CTD
Implementation	Environmental control and monitoring	Compulsory	Developer, ONE, CTE, CTD
End of the project	Closing audit	Not compulsory	ONE, CTE, developer, CTD
Post-evaluation		Not planned by the MECIE	

[10] Order 6830/2001 of June 28, 2001 setting the arrangements and procedures for public participation in environmental assessment

Form of Public Participation during the Review of an EIA File

Public participation is by consultation *in situ* of the documentation, public survey, or public hearing. It includes an informational phase on the project and a consultation phase to obtain public feedback. The decision on the form of public participation is defined by the CTE.

Order 6830 / 2001 provides indicative criteria on the forms of public participation:

- The consultation *in situ* of documents may be required when the investment is below 2 billion Ariary, or when the population living in the location of the project is below 10,000 people;
- The public survey may be required when the project investment is above 2 billion Ariary or if the geographic area of the project covers at least 2 communes or if the population of the project location is above 10,000 people;
- The public hearing may be required for projects that might require a specific convention according to the provisions of Article 49 of the Order, or if the implementation of the project requires expropriations for public utility or displacement of over 500 people.

The MECIE Decree does not include provisions on public consultations for a PREE.

4.3.4 Grievance Mechanism according to the MECIE Process

The MECIE and its implementing instruments do not make explicit reference to grievance mechanisms during the implementation of a project. However, when an environmental permit is delivered, the CCE (annexed to the permit) contains specific provisions on conflict management.

The CCE defines a complaint as a written or verbal grievance against the developer, related to the project activities, expressed by individuals or private entities.

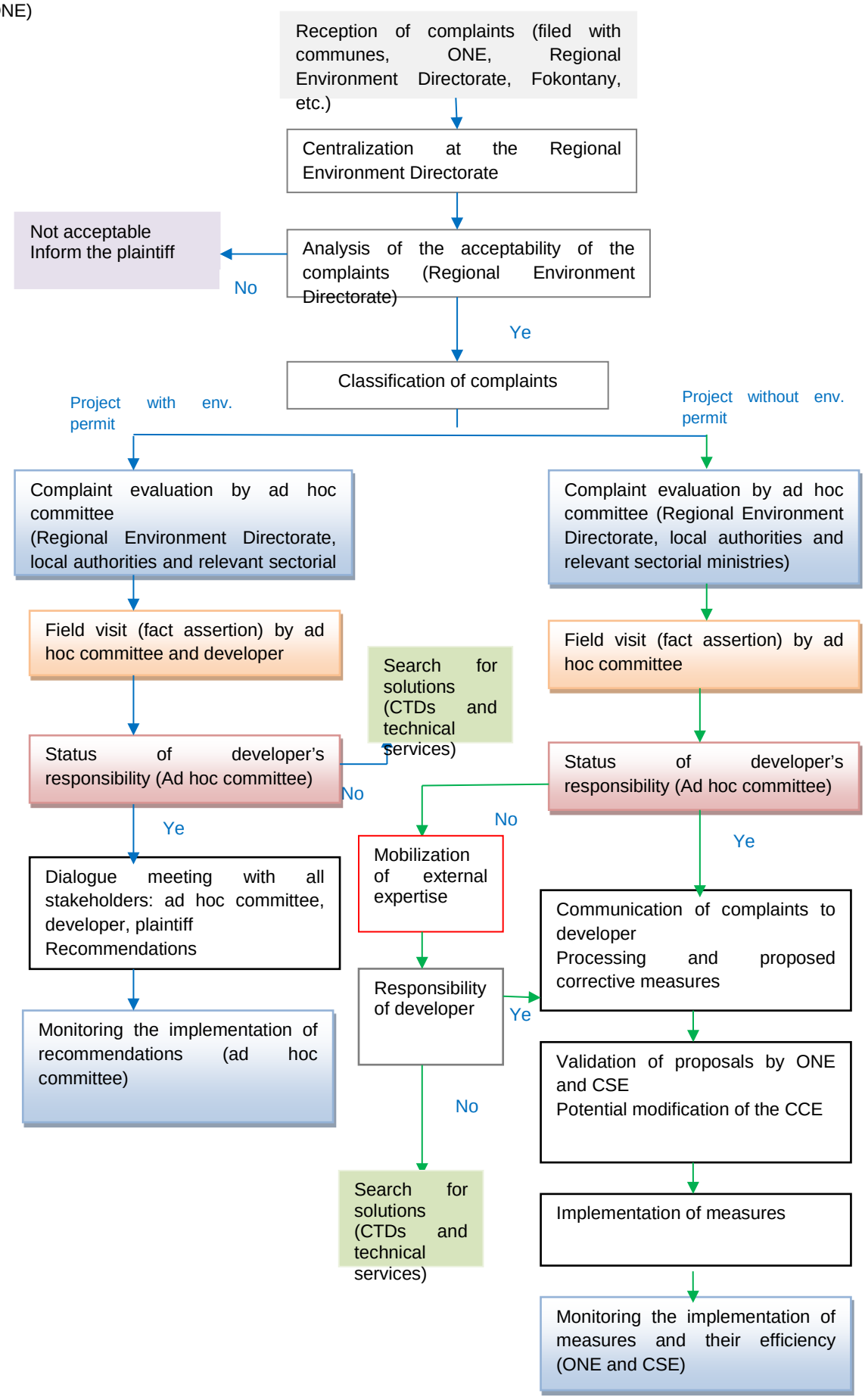
A CCE prescribes:

- The establishment of a complaint registry in each commune affected by the project, with the following information:
- Date of registry of the complaint
- Description of the complaint
- Name and national identification number of the plaintiff or other information
- Agreements or other measures
- Observations
- Signatures of the plaintiff and the developer
- A transcript signed by both parties (plaintiff and project developer) on the resolutions or agreements reached
- Inclusion of the transcript in the periodic environmental and social monitoring report (developed by the developer) to be sent to ONE
- The possibility to establish a mechanism to prevent social conflicts (social convention or Dina, consultation structure, etc.).

For sub-projects requiring a PREE, the MECIE and its implementing instruments are silent on specific measures related to grievance management.

In practice, environmental and social grievance management related to investment projects is the responsibility of ONE (for projects with an environmental permit) and the Regional Directorate in charge of the Environment (for projects without), according to the management mechanism presented below that will be used under this Project.

Figure 8: Environmental and Social Grievance Mechanism for Projects (Source: Ministry of the Environment and ONE)



4.3.5 International Conventions

To date, Madagascar has ratified 17 international conventions related to the environment, reflecting its commitment for social promotion and environmental protection.

The main international conventions related to the Project include: the Convention on Biological Diversity (CBD), The United Nations Framework Convention on Climate Change (UNFCCC), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Rio Convention, the Convention to Combat Desertification, the Convention on the Conservation of Migratory Species of Wild Animals (CMS), the RAMSAR Convention on Wetlands of International Importance especially for Waterfowl Habitat, the Convention Concerning the Protection of the World Cultural and Natural Heritage, the Kyoto Protocol and the International Treaty on Plant Genetic Resources for Food and Agriculture.

At regional level, Madagascar ratified:

- The Algiers Convention on the Conservation of Nature and Natural Resources (Law 70 004 of September 23, 1970). This convention, signed in 1968, adopted innovative approaches for nature conservation by instituting the principle of common responsibility for environmental management by African States;
- The Libreville Declaration on Health and Environment in Africa is a political declaration providing a collaborative and integrative framework to the interfaces of health and environment. Signed by 52 African countries, it aims at preserving ecosystems to decrease the morbidity and mortality due to disease related to environmental degradation in each country.

5 Environmental and Social Impacts and Mitigation or Enhancement Measures

5.1 Approach

The objective of the series of environmental and social analyses in an ESMP is to highlight the main issues during the implementation of the project components and to identify, describe, and evaluate negative and positive impacts.

Based on the results of the analyses:

- Mitigation measures are suggested to address the negative impacts
- Enhancement measures are proposed to strengthen the positive impacts.

Activities, and possibly the related sectors, will be assessed, considering the environmental elements potentially impacted on one hand, and the sources of impacts on the other hand.

All the components of the project will be subject to an ESMP:

1. Adaptation through a sustainable agriculture program and ecosystem-based adaptation (contributing to outcome A7.0 of GCF "Strengthened adaptive capacity and reduced exposure to climate risks");
2. Creation of enabling conditions for reducing and managing climate change risks (contributing to GCF adaptation outcome A8.0 "Strengthened awareness of climate threats and risk-reduction processes" and A5.0 "Strengthened institutional and regulatory systems for climate-responsive planning and development");
3. Development of renewable energy sources in rural areas of Madagascar (contributing to GCF mitigation outcome M6.0 "Increased number of small, medium and large low-emission power suppliers");
4. Reduced GHG emissions from deforestation of natural forests (contributing to GCF mitigation outcome M9.0 "Improved management of land and forest or improved management contributing to emissions reduction").

Generally, mitigation and enhancement measures are fully integrated in the project activities.

5.2 Environmental and Social Issues related to the Project Activities:

Issues Related to the Adaptation through a Sustainable Agriculture Program and Ecosystem-Based Adaptation (Component 1):

The agriculture sector in Madagascar involves 75% of the national population, 86% of all jobs, and 60% of the youth. However, rural populations remain heavily dependent and exert a strong pressure on forests, particularly for subsistence agriculture and wood (energy, raw materials, construction).
Activities under this component include:

- Habitat restoration and management, diversification of revenue-generating activities such as agroforestry, diversified crops, use of organic fertilizers, use of seeds adapted to the climate, construction of irrigation channels, shade-grown plants, system of rice intensification and system of rice improvement (SRI/SRA), short-cycle crops, apiculture and fishing;
- Better access to microfinance institutions and to markets;
- Assessment of the impacts of climate change on smallholder farmers and identification of those farmers most vulnerable to climate change;
- Identification of climate-smart landscape measures that can improve the resilience of agricultural systems and the livelihoods of small farmers;
- Improved resilience of vulnerable communities (smallholder farmers) by strengthening their adaptation capacity (through ecosystem-based adaptation);

This component will complete the other components by contributing to landscape preservation, biodiversity conservation, sustainable management of lands, soil fertility, and protection of surface or underground waters. This practice will also contribute to the improvement or diversification of the revenues of the most vulnerable populations. For some beneficiaries, it will aim at transforming family farming to market-oriented agriculture. By increasing the income of the most vulnerable people, the Project will indirectly contribute to food security and nutrition.

The tenure aspect is also an issue related to sustainable agriculture. While the Project aims at supporting the delimitation of the protected areas, it will also develop partnerships with local services in charge of land tenure (local land offices) or land planning to improve titling or tenure certification for the households vulnerable to climate change or to implement communal management schemes enhancing the balance between conservation and development.

During the implementation of this component, two elements should be considered:

- Potential constraints or limitations – even momentary – experienced by communities due to the various measures of protection, restoration, and preservation;
- Concerns and potential restrictions due to the application of tenure regulations.

Issues Related to the Creation of Enabling Conditions for Reducing and Managing Climate Change Risks (Component 2)

The activities under this component that will be subject to an ESMP include:

- Strengthening the technical capacities of stakeholders and affected entities pertaining to the climate-smart approaches to generate benefits both for mitigation and adaptation while improving livelihoods and maintaining ecosystem services.
- Monitoring and evaluation of the costs and effectiveness of the various climate-smart landscape measures to achieve adaptation, mitigation, and improved livelihoods for the scaling-up and replication of these measures in other regions;
- Ensuring that financial resources are sustained beyond the closure of the project to support climate efforts in high-value landscapes in Madagascar through capital investments in a trust fund dedicated to climate change;
- Integrating strategies and actions of national policies on climate change in the decentralized planning efforts at regional and local levels;
- Strengthening the intervention capacities on climate change of STDs.

This component pertains to the durability aspect of the Project. The creation and operation of the Trust Fund will largely contribute to the sustainability of the Project while securing a funding source for future adaptation and mitigation activities. The efficiency and effectiveness of the Project will be evaluated according to this durability aspect.

However, it should be noted that some risks might exist if:

- The planning, framing, and regulations designed under these enabling conditions are not compatible with local aspirations and contexts.
- The activities cause a rural exodus motivated by the search for a socioeconomic environment more favorable for the application of the received training.

Issues Related to the Development of Renewable Energy sources in Rural Areas of Madagascar (Component 3)

Under this component, the research on and the use of solar power, hydraulic power, and biofuel will be promoted.

In the rural areas, this approach will contribute to the reduction of GHG emissions from deforestation and forest degradation (use of wood for fuel, cooking, and lighting). Furthermore, the use of

renewable energy will have positive impacts on health as households will not be exposed to smoke from wood and charcoal fires.
A better access to electricity in rural areas promotes small agricultural transformation units, resulting in more employment and improved local health services or agricultural services (e.g. availability of vaccines for both humans and livestock thanks to a refrigeration system).

However, access to new and renewable energies may involve some risks:

- Competition with food crops due to immoderate promotion of agro-fuel;
- Pollution from biomass combustion and waste due to the lack of appropriate and pertinent measures;
- Disturbance of water distribution due to non-integrated management of water resources
- Destruction of vegetation cover, loss of forest products (wood, non-timber forest products) because of the infrastructure built.

Issues Related to the Reduction of GHG Emissions (Component 4)

Activities planned under Component 4 mainly concern:

- The reduction of GHG emissions from deforestation of natural forests. This will be done through efficient management of forests, in collaboration with local community groups:
  - Permanent controls and monitoring of the impacts of avoided deforestation activities;
  - Evaluation based on Verfified Carbon Standard (VCS) ;
  - Audits by an independent third party to verify the generated emission reductions.
- The reduction of GHG emissions from agricultural lands:
  - Implementation of sustainable agriculture. The techniques used reduce agricultural emissions;
  - Protection of the remaining natural habitats (forest plots, banks, wetlands, etc.) combined with reforestation and tree plantation using different species in non-forest areas.

These activities are aligned with the activities planned under PAG of each protected area (CAZ and COFAV). On the other hand, compliance with the zoning of each site for the implementation of sub-projects contribute to the sustainable management of protected areas, with the main objective of conserving biodiversity and preserving ecosystem services.

The issues related to the efforts of GHG emission reduction are to:

- Increase the revenue of populations living in and around the protected areas.
- At the same time, guarantee the protection and conservation of biodiversity, which will also increase agricultural yields, render effective management regulations and the legislations on protected areas in order to lower anthropogenic pressures on the forest corridors.

Therefore, the efforts to reduce GHG emissions and the application of the PAG and the ESMP to the protected areas will result in:

- Protection of forests, therefore improving biodiversity conservation and potentially halting slash-and-burn or "*tavy*" practices in the forest corridors. The presence of the protected areas will contribute to community development and bring new cultivation techniques through the application of different alternatives;
- Protection of threatened and vulnerable species and possible regeneration of forest species. Forest corridors, as protected areas, will involve the gradual decrease, although not permanent, of the loss of forest habitats in the PA. In addition, habitat conservation is crucial for fauna species and gives them a chance of reproduction and dispersal.
- Forest species enrichment as the conservation and monitoring of plant species are the foundation of low, medium, and high altitude dense rainforests;
- Last but not least, it is recognized that protected areas are natural solutions to address climate change (adaptation and mitigation).

However, it should be noted that the preservation of protected areas, including the reduction of GHG emissions may:

- Exacerbate pressures in the areas around the NPA;
- Destroy forest stands or decrease forest species in the usage-right areas.

Global Issue Related to the Project' Contribution to Poverty Alleviation

In addition to its contribution to the national policy to address climate change, the Project is aligned with national priorities identified in the National Development Plan as well as with the sectorial frameworks such as the Sectorial Program for Agriculture, Livestock, and Fisheries, the National Social Protection Policy, and the National Policy on Energy. Therefore, it will contribute to poverty alleviation and promotes sustainable development in Madagascar.

Economically, the project will contribute to:

- Improve practices in general (sustainable agriculture, ecosystem-based adaptation, conservation) that strengthen economic resilience despite various risks.
- Ecotourism in particular can be a development factor and constitute an additional source of revenue for both the people working directly in the sector and the local communities.
- Improved well-being of the local population due to increasing household revenues from new activities related to or derived from sustainable agriculture.

Globally, the Project can be a lever for development, both at local and broader levels.
However, the Project must ensure that the improvement of socioeconomic conditions does not have some perverse effects on the respect of social and community values (e.g. encourage consumption that will again exacerbate pressure on resources, individualism, and prioritization of personal interests).

5.3 Risk Analysis, Negative Impacts and Mitigation Measures:

The potential significant adverse impacts of the Project activities are presented in the table below:

Table 7: Significant Negative Impacts and Mitigation Measures

COMPONENT	ACTIVITIES	POTENTIAL ADVERSE IMPACTS	MITIGATION MEASURES	Entities in charge of implementing the measures
Adaptation through a sustainable agriculture program and ecosystem-based adaptation	Agroforestry, diversified crops, use of organic fertilizers, use of resistant seeds, construction of irrigation canals, shade-grown plants, system of rice intensification and system of rice improvement (SRI/SRA), short-cycle crops	- Loss of habitats due to the extension of croplands and increased pressure on natural resources - Change of soil characteristics due to fertilizers and resistant seeds - Contamination risks of soils and subsoils - Risk of increase of pest plant species -Shortage of water resources upstream due to increasingly intensive use downstream - Loss of water (due to poor irrigation systems) with impact on fish-farming and harvest fishing - Social conflicts on the management of water resources, related to the irrigation canals	- Popularization of development and management plans (PAG) - Application of PAG - Collective monitoring of compliance with the PAG - Integrated management of water resources at all levels (local/community, regional) - Identification of sub-projects based on a territorial approach and according to an integrated land-use and management plan at the commune or village level - Technical assistance by the STDs to the communities - Reduced use of chemical farm inputs	- STDs according to the relevant sector - Communities - Conservation International - Other local partner NGOs - Private developer - Althelia
	Apiculture	Abusive and immoderate practice of “modern” apiculture (e.g. frame hives) threatening healthy colonies	Preservation / learning of the ecological and wild apiculture practice	- Agriculture STD - Specialized NGO - Local communities
	Fish-farming	- Disturbance of aquatic ecosystems due to overfishing - Introduction of exotic species	- Community agreements or regulations to control fish-farming activities - Technical assistance by STDs	- Fisheries STDs - Communities
	Better access to micro-funding and markets	- Indebtedness due to the lack of knowledge on microfinance mechanisms - Lack of products for self-consumption due to excessive trade	Mass training in microfinance	- Local microfinance institutions - Conservation International
	Access to drinking water	- Water contamination - Pressure on water resources	- Protection of water sources - Compliance with technical specifications	- Water, hygiene, and sanitation STDS - Communities

		- Competition among users	on the location of sources: minimal distance and location from latrines and waste pits (no latrine or waste pits upstream a catchment or well).	
Creation of enabling conditions for reducing and managing climate change risks	Capacity-building at all levels (training) Sectorial and territorial planning	- Planning, framing and regulations that are not compatible with local aspirations and contexts - Rural exodus motivated by the search for a socioeconomic environment that is more favorable to the application of received training	- Participatory development of reference and framework documents - Training modules adapted to the local context	- CTDs - STDs - Conservation International - Partners
Development of renewable energy sources in rural areas	Agro-fuel and biofuel Biomass Hydropower Solar power	- Competition with food crops - Pollution due to biomass combustion and waste - Disturbance of water resource distribution - Because of infrastructure: destruction of vegetation cover, loss of forest products (wood, non-timber forest products) - Unsustainability of the use of solar power due to the lack of accompanying measures - Spontaneous migration towards production sites to gain better energy access - Loss of income for some households from the reduced trade in fuelwood and charcoal	-Development and application of the integrated land-use planning and management scheme (land-use, resource exploitation, revenue-activities, food security) - Reforestation in relevant areas - Establishment and implementation of a power distribution plan for communities - Social and economic studies to compensate rapidly and durably for the “losses” due to the discontinuation or reduction of the use of fuelwood	- Energy, Forest STDs - ADER - CTD - Private developer - Althelia - Partners
Reduced greenhouse gas (GHG) emissions from deforestation of natural forests	Restoration, reforestation, protection of natural habitats, development of low-emission agricultural techniques	- Introduction of exotic species - Disturbance of forest ecosystems - Restriction of arable lands - Reduction of agricultural productions - Social conflicts	- Application of the PAG - Technical assistance provided by the STDs	- Forest, Environment STDs - Conservation International

In addition to the direct impacts of the Project activities, potential risks might have adverse impacts. Advance knowledge on these risks is an asset for the sound environmental and social management of the Project. The following table provides more details on such risks.

Table 8: Environmental and Social Risks

Environmental or Social Risks	Scope / Rationale	Mitigation Measures
Illicit mining	Forest areas, which constitute the Project's intervention areas, are subject to illicit mining or rushes that might exacerbate deforestation, loss of biodiversity, significant forest degradation, pollution of surface waters downstream, and social conflicts.	- The COFAV and the CAZ are protected areas with official status and the demarcation of their boundaries is underway. In case of illicit mining or rush inside the PA, the presence of the Steering and Monitoring Committee (COS) at the regional or interregional levels will facilitate decision-making on illicit exploitation, as all STDs and CTDs are members of the Committee. - The Mining – Forests interministerial committee, established by interministerial order (Order 7340/2004 of April 16, 2004 creating the committee) helped solve or reach a consensus in most conflicts - Surveillance patrols are periodically initiated in and around the PA. This would help detect the presence of illicit activities as early as possible.
Poverty and pressure on land	The current level of poverty in the Project area, population growth, and shortage of productive lands accessible to smallholder farmers represent potential risks. These aspects are the main drivers of deforestation and will remain a threat to the Project.	- The Project was designed with a participatory forest management approach; local communities are fully involved in management and protection of the sites. - The sustainable use zones and the usage right zones are well defined, both inside the protected areas and in the TNRM sites (in or outside the protected areas). They secure the local populations' access to the forest products they need (based on well-defined specifications). This will stimulate the local communities to take more protection initiatives. - Protected areas fall under the prevailing legislation. This legal protection strengthens the application of regulations prohibiting deforestation, mining, and hunting inside the project zone.
Impacts of improved livelihoods of populations vulnerable to climate change	Better access to market might be an incentive to increase the cultivated areas or the size of herds. In the absence of viable land management and natural resource protection systems, this might lead to overexploitation or degradation of resources in some areas.	Under the approach followed, the Project will implement a monitoring and evaluation arrangement for the Project and sub-projects in order to observe and understand unexpected impacts and to take corrective measures if needed.
Migration and increasing demographic pressure	The Project investments might contribute to attract migrants to the beneficiary communities, in order to benefit from the improvements. This might lead to frictions or conflicts between the established communities and migrants and exert additional pressure on already limited resources.	The project will work with the populations using protection and conflict mitigation measures in order to durably support the investments. It will ensure that the most vulnerable groups are included. The Project will involve local authorities (at the level of the *fokontany*) to assess the status of potential migrations.

5.4 Assessment of Positive Impacts and Enhancement Measures

The main positive impacts derived from the Project include:

- The reduction of the GHG emissions by approximately 10 million tons CO_2 equivalent over 10 years,
- Increased resilience of 114,000 smallholder farmers vulnerable to climate change,

- Better access to renewable energy for 448,000 people living in rural areas,
- Protection of 683,452 million hectares of natural habitats of high biodiversity value and maintenance of ecosystem services.
- Indirectly, benefits for a million people thanks to the sustainable management of forests and agricultural lands, as well as their ecosystem services
- Establishment of a trust fund to continue to finance adaptation and mitigation activities.

The following table presents the positive impacts and the enhancement measures based on activities planned under each component of the Project.

Table 9: Positive Impacts and Enhancement Measures

COMPONENT	ACTIVITIES	POSITIVE IMPACTS	ENHANCEMENT MEASURES
Adaptation through a sustainable agriculture program and ecosystem-based adaptation	Agroforestry, diversified crops, use of organic fertilizers, use of resistant seeds, construction of irrigation canals, shade-grown plants, system of rice intensification and system of rice improvement (SRI/SRA), short-cycle	- Higher profitability of agricultural activities - Food security - Resilience to climatic shocks - Improved social and economic situation	- No exploitation of erosion-prone soils - Regular review of existing information on climate - Integration of agroforestry research results: ecological context, economic conditions, etc.
	Apiculture	- From a biological perspective: Improved pollination - From a socioeconomic perspective: Income increase	- Training of beekeepers in ecological apiculture - Training in honey transformation - Development of the honey sector
	Fish-farming	- Income diversification	- Training in sustainable fish-farming - Development of the sector
	Better access to micro-funding and markets	- Improved management of property by households - Gradual creation of an entrepreneurship culture	- For some adequate areas (based on the context), support to community micro-funding such as a “Village Saving Loan” (VSL), based on experience in other regions of Madagascar - Support to remove potential bottlenecks (lack of initial funds, administrative bottlenecks, etc.)
	Access to drinking water	- Improved health and quality of life for the	- Capacity-building for the management of

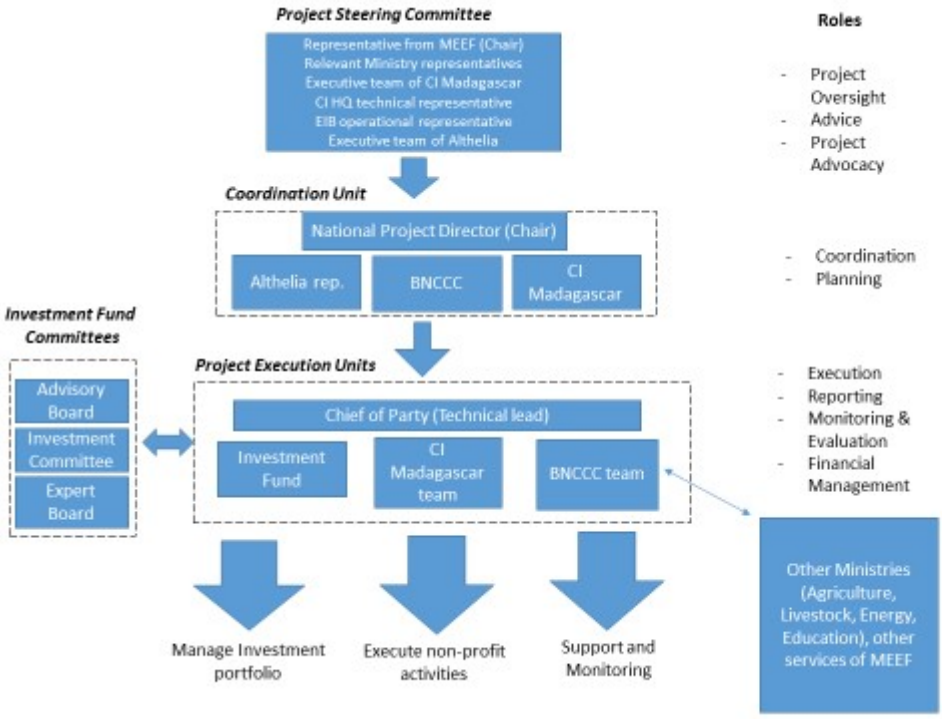
		populations vulnerable to climate change	infrastructure by the beneficiaries - Potential establishment of a *dina*
Creation of enabling conditions for reducing and managing climate change risks	Capacity-building at all levels (training) Sectorial and territorial planning	- Potential structures and human resources with the capacities to catalyze efforts to reduce climate risks	- Development of modules related to climate-smart landscapes, to be used for training and development of policy notes that will be shared during local and national workshops; - Integration of strategies and actions identified in national policies on climate change in regional and local planning; - Creation and provision of capital investments in a trust fund on climate change
Development of renewable energy sources in rural areas	Agro-fuel and biofuel Biomass Hydropower Solar power	- Reduction of wood-cutting, deforestation, and forest degradation, notably in natural forests - Reduction of GHG emissions - Access to electricity - Valorization of waste	- Investment fund to develop and increase private activities on biomass energy, potentially under the new National Ethanol Plan of Madagascar - Restoration of degraded lands to reduce the use of charcoal - Investment fund for renewable energy facilities in rural areas in collaboration with ADER and other governmental projects
Reduced greenhouse gas (GHG) emissions from deforestation of natural forests	Restoration, reforestation, protection of natural habitats, development of low-emission agricultural techniques	Effectiveness of REDD+	-Compliance with VCS standards for the GHG reduction efforts in targeted forests; -Investment to develop other REDD+ programs and projects throughout Madagascar, aligned with the governmental REDD+ strategy. Equitable sharing of carbon revenues.

6 Structure and Environmental Assessment Process of the Project Sub-Projects/ Activities

6.1 Project Organizational Framework

The project is implemented by Conservation International and the European Investment Bank as GCF-accredited agencies. The main structures involved in the execution of the Project are presented in the figure below:

Figure 9: Project Management Structure



The ***Steering Committee*** chaired by the Designated National Authority (BNCCC) and involving the main relevant Ministries (Agriculture, Livestock, Energy, Water, Education, Environment/Forests, etc.), the Executive Team of CI Madagascar and CI Headquarters and the EIB. Its roles include the orientation and the general oversight of the Project and ensuring cooperation between the different actors. This structure plays an advisory role.

The ***Coordination Unit*** chaired by the Project Technical Director and involving BNCCC, CI Madagascar, and Althelia is in charge of:

- Coordination of the execution of the Project components and activities
- Financial management of the Project
- Commission of all technical, budget, financial, and accounting monitoring and evaluation reports as well as all documents required for the Project external audits
- Validation of the annual work plan and the annual progress reports

The ***Project Execution Unit***

- BNCCC: notably on communication and capacity-building activities
- CI Madagascar (CIM) on the planning and implementation of components 1 (adaptation), 2 (capacity-building), and 4 (mitigation). It comprises its central office (in Antananarivo) and the regional branches of Fianarantsoa and Toamasina that are the daily managers of the COFAV and CAZ respectively

- Investment Fund managed by Althelia (office based in Antananarivo) for the planning and implementation of Component 3 on the development of renewable energy sources in Madagascar and of agro-business activities (Component 1)

Designated National Authority (BNCCC):

- While the BNCCC is part of various structures, as Designated National Authority (independent structure), it can both initiate monitoring and evaluation activities and fulfill its prerogatives (initiate control activities, give recommendations, etc.).

Table 10: Areas of Intervention of the Implementation Units for the Execution of the Project and for each Funding Source

Source of Funding (Type of Sub-Projects)	**Intervention Areas of the Execution Units**			
	Component 1 *Adaptation through a sustainable agriculture program and ecosystem-based adaptation*	**Component 2** *Creation of enabling conditions for reducing and managing climate risks*	**Component 3** *Development of renewable energy sources in rural areas of Madagascar*	**Component 4** *Reduced GHG emissions from deforestation of natural forests*
CI Accredited execution agency (public)	BNCCC CIM	BNCCC CIM		BNCCC CIM
EIB, Investment Fund (private)	BNCCC AMF		BNCCC AMF	
Foundation (Trust Fund)	BNCCC CIM Others	BNCCC CIM Others	BNCCC Others	BNCCC CIM Others

Regarding funding from the future Foundation (Climate Change Trust Fund), other structures will also be involved in addition to the Project Execution Units (BNCCC, CIM).

At CI Madagascar, the daily management structures of the COFAV and CAZ remain as Project Execution Units. Each structure has an executive team, sectorial chiefs (*chefs secteurs*), as well as local management units or LMU (See Annex 3). Roles and responsibilities in managing the protected areas are also described in Annex 3.

6.2 Environmental Categorization of Sub-Projects

Based on the nature and scope of sub-projects, the Project activities are classified under Category B/I_2 or C /I_3 (according to the GCF standards) and require, according to the national legislation, an EIA, a PREE, or only environmental prescriptions during their respective implementation.

The main Project activities (other than capacity-building, studies, and tool development) and their categorization are presented in the table below.

Table 11: Categorization of the sub-projects/Main Activities of the Project

Main Activities	**Characteristics of Planned Sub-Projects (with the Classification of the MECIE)**	**Categorization according to the MECIE**	**Categorization according to CI-GCF & EIB**	**Categorization adopted under the Project**
Component 1: Adaptation through a sustainable agriculture program and ecosystem-based adaptation				
Studies and tools	• Studies on the vulnerability of smallholder farmers • Establishment of a database system • Analysis of value chains and marketing studies on promising products • Market research • Development and implementation of annual contingency plans against climate change • Assessment and modelling of the state of ecosystems • Etc.	No PREE, no EIA	Category C	No environmental assessment
Sustainable family agriculture	Hydro-agricultural or agricultural development or rehabilitation (micro-development of irrigation canals) below 200 ha and with local materials	No PREE, no EIA	Category B	ESMP without environmental assessment or environmental prescriptions
Fish-farming	Any small-scale farming project	PREE	Category B	ESMP without environmental assessment
Irrigation system	Sub-project using less than 50% of permanent water flow during the low-water period	No PREE, no EIA	Category B	ESMP without environmental assessment
Drinking water			Category B	ESMP without environmental assessment or environmental prescriptions
Community tourism (Restaurant activity)	Less than 60 diners	No PREE, no EIA	Category B	Environmental prescriptions
Recreational-tourism development	Less than 2ha	No PREE, no EIA	Category B	Environmental prescriptions
Transformation unit	Depends on the products to be transformed, inputs, etc.	PREE or No PREE, no EIA	Category B	ESMP without environmental assessment or environmental prescriptions

Development of cash crops	Cloves, coffee, or vanilla with support for commercialization	EIA or PREE	Category B	ESMP with or without environmental assessment
Restoration of forest habitats outside protected areas	Any reintroduction of species in an area where it was present before	PREE or no EIA	Category B or C	ESMP without environmental assessment or Nothing
Agro-business	Possible use of chemical fertilizers or pesticides	PREE or EIA	Category B	ESMP with or without environmental assessment
Component 2: Creation of enabling conditions for reducing and managing climate risks				
Tools and training	• Development of training modules on CC for different targets (academic, professional, etc.) • Various training activities	No PREE, no EIA	Category C	Nothing
Communication and information on the Project	• Information at the launch of the Project and periodic information • Exchange and dissemination of research results • Scientific communications • Availability of information related to the Project (website)	No PREE, no EIA	Category C	Nothing
Component 3: Development of renewable energy sources in rural areas of Madagascar				
Investment in facilities for renewable energy in rural areas of Madagascar	• Facilities for renewable energy and supply chains • Generation and distribution of clean energy	EIA or PREE	Category B	ESMP with or without environmental assessment
Component 4: Reduced GHG emissions from deforestation of natural forests				
Improved management of lands and forests	Patrol activities and participatory monitoring efforts	No PREE, no EIA	Category B	Environmental prescriptions
	Demarcation of the boundaries of the PA	No PREE, no EIA	Category C	Environmental prescriptions
Periodic verification of VCS (Verified Carbon Unit)	Data collection and analysis on climate, biodiversity, and communities	Nothing	Category C	Nothing
Fire monitoring	Conduct annual monitoring of fires using fire alert systems and analysis of satellite images	No PREE, no EIA	Category C	Nothing
Forest restoration inside protected areas	According to the surface	PREE or no EIA	Category B or C	ESMP without environmental assessment or Nothing
Capacity-building of local communities	Implementation of new TNRMs Capacity-building of local communities	No EIA, no PREE	Category C	Nothing

6.3 Institutional Arrangement for the Implementation of the Environmental Assessment Process of a Sub-Project

6.3.1 Charter of Responsibilities of the Various Actors for the Environmental Assessment Process

The environmental and social assessment process for all sub-projects and activities of the Project (without exception) must integrate the requirements of the GCF, the relevant accredited entity's environmental and social standards (EIB's ESPS for the Investment Fund activities and CI's Standards for the public sector activities) as well as the existing regulations in Madagascar.

Under the Project, the charter of responsibilities of the various actors at each stage of the project cycle is presented in the figure and table below.

Figure 10: Charter of Responsibilities for the Environmental Assessment Process

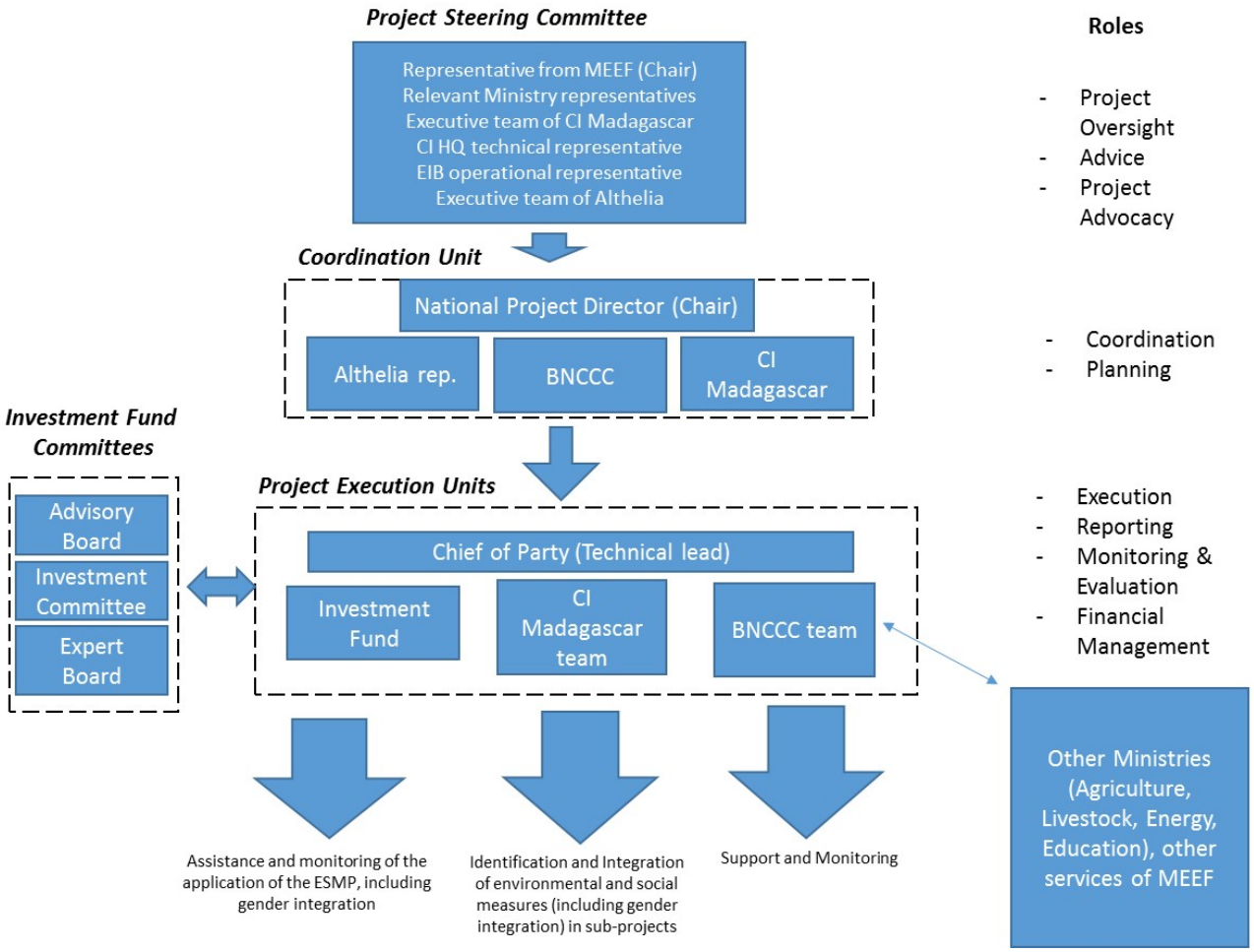


Table 12: Summary of the Charter of Responsibilities for the Environmental Assessment Process Applied to the Project

Phase of the Project cycle	Responsibilities			
	Accredited Entities (CI-GCF Project Agency for public sector activities and EIB for the Investment Fund activities)	Execution Unit (for public investments or funded by the Trust Fund)	ONE	Parent Ministry of the Sub-Project
Identification Preparation Development	• Oversee the application of the ESMPs of the Project including gender integration • Non-objection on the sub-project category and triggered safeguard policies • Provide feedback on the ToR for the EIA • Provide comments on environmental assessments (EIA) • Authorize the filing of EIAs to national authorities • Disseminate the summary of ESMPs on the CI or EIB website	• Oversee the impact assessment process and gender integration • Prepare the screening form on the sub-project(*) • Consult groups affected by the sub-project (*) • Prepare the ToR for the EIA or the PREE(*) • Select consultants for the required environmental assessments (EIA, PREE)(*) • Initiate public consultations during the development of the EIA(*) • Inform the various stakeholders affected by the sub-project (*) • Verify the compliance of the environmental assessments with the ToR(*) • Initiate the submission of the environmental assessments (EIA and PREE) to authorities defined by the MECIE and to the relevant GCF Accredited Entity (EIB or CI-GCF) for EIAs(*) • Communicate the environmental permit and the related Environmental Specifications (CCE) to local authorities and local communities	• Validate the screening form for the sub-project • Validate the ToR for the EIA • Initiate the environmental assessment of the project • Deliver the environmental permit with the annexed CCE	• Validate the ToR for the PREE • Deliver the environmental authorization
Implementation	• Oversee the implementation of financial and technical plans (including ESMPs) • Validate corrective measures (EIA sub-project) • Validate the ToR of mid-term and end-of-project evaluations • Select consultants for the evaluations • Validate the evaluation documents • Disseminate the evaluation results	• Establish environmental prescriptions for sub-projects that do not require either an EIA or a PREE • Prepare the bidding documentation for the execution of the sub-project and integrate the related environmental or social provisions(*) • Select consultants for the execution of sub-projects (*) • Oversee the execution of the ESMP or environmental provisions during the establishment of sub-projects (*) • Support the execution of the ESMP or of the environmental provisions during the exploitation phase of sub-projects	• Initiate environmental monitoring and controls • Validate corrective measures	• Initiate environmental monitoring and controls • Validate corrective measures

Phase of the Project cycle	Responsibilities			
	Accredited Entities (CI-GCF Project Agency for public sector activities and EIB for the Investment Fund activities)	Execution Unit (for public investments or funded by the Trust Fund)	ONE	Parent Ministry of the Sub-Project
		• Identify corrective measures when the measures recommended in the ESMP of the sub-project are insufficient or inadequate (*) • Identify and organize the needed capacity-building activities for the beneficiaries • Submit environmental monitoring reports to the relevant GCF accredited entity (CI-GCF or EIB) and ONE (for an EIA) • Periodically inform the local authorities and the stakeholders affected by the progress of the sub-project (*) • Prepare the ToR for the mid-term and end-of-project evaluation of the Project • Verify the compliance of evaluations with the ToR and provide comments (*)		

When the sub-project is implemented through private funding, the actions followed by the (*) symbol are initiated by the private sector entity that is the beneficiary of the funding.

6.3.2 Administrative Process for the Screening of Sub-Projects

Table 13: Administrative Process for the Screening of Sub-Projects

Step	Action	Execution Unit	Deadline
1	Preparation of the screening form	*Public sub-project* - CI Execution Unit (Main office) - Others	
		Private sub-project Sub-project developer	
2	Validation of the screening form from the private developer	Execution Unit	
3	Non-objection on the sub-project category and the triggered safeguard policies	*Public sub-project* CI –GCF	
		Private sub-project EIB	
4	Submission of screening form to ONE	*Public sub-project* - CI Execution Unit (Main office) - Others	
		Private sub-project Private sub-project developer	
6	Validation of the sub-project screening form	ONE	1 month maximum

The screening form for sub-projects will be prepared at the beginning of the Project implementation.

6.3.3 Administrative Process for the Scoping of Sub-Projects

Table 14: Administrative Process for the Environmental Scoping of Sub-Projects Requiring an EIA

Step	Action	Entity in charge	Deadline
1	Brief study with consultation of stakeholders	*Public sub-project* - CI Execution Unit (Main office and sectors) - Others	
		Private sub-project Sub-project developer	
2	Preparation of ToR for the EIA	*Public sub-project* - CI Execution Unit (Main office) - Others	
		Private sub-project Sub-project developer	
3	Review of and feedback on the ToR for the EIA (for the private sub-project)	Execution Unit	
4	Review of and feedback on the ToR (public or private sub-project)	*Public sub-project* CI –GCF	
		Private sub-project EIB	
5	Adjustment of ToR based on feedback or comments	*Public sub-project* - CI Execution Unit (Main office) - Others	
		Private sub-project Execution Unit	4 days
6	Approval of the ToR for the EIA	ONE	Maximum 1 month

Table 15: Administrative Process for the Environmental Scoping: Sub-Project Requiring an PREE

Step	Action	Entity in charge	Deadline
1	Preparation of ToR for the PREE	*Public sub-project* - CI Execution Unit (Main office) - Others	
		Private sub-project Sub-project developer	
2	Review and adjustment of ToR for the PREE (for a private sub-project)	Execution Unit	
3	Approval of ToR for the PREE	Parent ministry for the activity	Maximum 1 month

6.3.4 Administrative Process for Conducting and Reviewing Environmental Studies

Table 16: Administrative Process for Conducting Environmental Studies – EIA Case

Step	Action	Entity in charge	Deadline
1	Selection of a consultant for the EIA	*Public sub-project* - CI Execution Unit (Main office) - Others	
		Private sub-project Sub-project developer	
2	Execution of the social and environmental assessment	Consultant	
3	Public consultations (for an EIA)	*Public sub-project* - CI Execution Unit (Main office and sectors) assisted by the Consultant - Others	
		Private sub-project Sub-project developer	
4	Validation of the EIA file	*Public sub-project* - CI Execution Unit (Main office) - Others	
		Private sub-project Sub-project developer	
5	Feedback on the EIA (for the private sub-project)	Execution Unit	
6	Feedback and comment on the EIA	*Public sub-project* CI –GCF	
		Private sub-project EIB	Maximum 3 weeks
7	Adjustment of the EIA file	Consultant	
8	Oversight and validation of adjustments	Execution Unit	
9	Authorization to submit the file to ONE	*Public sub-project* CI –GCF	
		Private sub-project EIB	Maximum 2 weeks
10	Environmental assessment	ONE with the participation of the Execution Unit and the developer during the public participation phase	Between 3 and 6 months
11	Decision to deliver the environmental permit	ONE	
12	Communication of the ESMP summary on the website	*Public sub-project* CI –GCF	
		Private sub-project EIB	
13	Communication of the environmental permit and Environmental Specifications (CCE) to the Execution Unit (private sub-project)	Project developer	
14	Communication of the environmental permit and CCE to local authorities	Execution Unit	

Table 17: Administrative Process for Conducting and Reviewing Environmental Studies- PREE Case

Step	Action	Entity in charge	Deadline
1	Selection of a consultant for the PREE	*Public sub-project* - CI Execution Unit (Main office) - Others	
		Private sub-project Sub-project developer	
2	Establishment of the PREE	Consultant	
3	Validation of the PREE file	*Public sub-project* - CI Execution Unit (Main office) - Others	
		Private sub-project Sub-project developer	
4	Review of the file	Sectorial ministry	Between 2 and 4 months
5	Decision: delivery or not of the environmental authorization	Sectorial ministry	

6.3.5 Administrative Process for the Integration of Environmental and Social Measures in the Implementation of a Sub-Project

In addition to the communication or capacity-building activities that are directly initiated by the execution units (BNCCC and CI), activities under Components 1, 3, and 4 mainly follow an outsourcing approach.

The environmental and social measures to integrate are from: (i) the ESMP for a sub-project requiring an EIA, or the PREE document or measures related to environmental and social best practices (for sub-project requiring neither an EIA nor a PREE).
This process should only be triggered after obtaining the environmental permit or authorization for projects requiring respectively an EIA or a PREE.

Table 18: Administrative Process for the Integration of Environmental and Social Requirements in the Implementation of a Sub-Project

Step	Action	Entity in charge
1	Preparation of ToR* or bidding document for the implementation of the sub-project with integration of the required environmental (to minimize negative effects and impacts) and social (that the beneficiaries have to comply with for the durability of the sub-project) measures	*Public sub-project* - CI Execution Unit (Main office) - Others
		Private sub-project Sub-project developer
2	Execution of the sub-project and implementation of the ESMP or the environmental and social prescriptions	Consultant
3	Monitoring and control of the sub-project execution/works including the effectiveness of environmental and social measures Validation of works	*Public sub-project* - CI Execution Unit (Sector for the PREE or environmental prescriptions and main office for EIA) or Others - Parent ministry and CTDs - ONE and CTE (for EIA)
		Private sub-project - Sub-project developer (PREE or environmental prescriptions) - Execution Unit and developer (for EIA) - STDs and CTDs - ONE et CTE (for EIA)
4	Monitoring and evaluation of the sub-project including the efficiency of implemented environmental and social measures	*Public sub-project* - CI Execution Unit (Main office and Sector) or Others - ONE and CTE (for EIA) - Parent ministry and MEEF (for PREE)
		Private sub-project - Project developer (PREE or

		environmental prescriptions) - Execution Unit and developer (for EIA) - ONE and CTE (for EIA) - Parent ministry and MEEF (for PREE)
5	− Preparation of the periodic environmental monitoring report (RSE) required by ONE (only for sub-projects that obtained an environmental permit) with copy to CI-GCF and the Execution Unit (private sub-project) − Preparation of the monitoring report for sub-projects requiring a PREE or the integration of environmental prescriptions − Maintenance of an environmental surveillance registry indicating all environmental and social activities implemented during the cycle of the sub-project	*Public sub-project* - CI Execution Unit (Main office and sector) or Others *Private sub-project* - Project developer
6	Evaluation of the RSE and field review	ONE and CTE
7	Evaluation and validation of the monitoring report for the PREE (private sub-project)	Execution Unit
8	Integration of recommendations from each evaluation of the RSE or the environmental monitoring mission report initiated by ONE /CTE	- CI Execution Unit (Main office) - Others - Private sub-project developer
9	Identification of new mitigation measures when the recommended measures are insufficient or inadequate	*Public sub-project* - CI Execution Unit (Main office) or Others *Private sub-project* - Project developer
10	Validation of measures for sub-projects requiring a PREE	-Parent ministry
11	Feedback and comments on the corrective measures (private sub-project with an EIA)	-Execution Unit
12	Feedback and comments on the corrective measures (private sub-project with an EIA)	*Public sub-project* CI –GCF *Private sub-project* EIB
13	Validation of corrective measures for sub-projects with an EIA	-ONE
14	Before the end of the Project: for some public sub-projects (construction of small infrastructure, reforestation outside protected areas, etc.) transfer of environmental or social monitoring to beneficiaries	*Private sub-project* CI Execution Unit (Main office) Others

*Step 1: when sub-projects do not require an environmental assessment, the *typical environmental or social prescriptions* to include in the ToR or the bidding document have been discussed and validated with the relevant STDs for the sub-project.

6.3.6 Administrative Process for Evaluations, Environmental and Social Performance

According to Article 30 of the MECIE "…*Before the project closes, the developer must carry out an environmental audit. The implementation modalities of such audit will be defined with technical environmental guidelines"*. This audit is submitted to ONE for evaluation and delivery of an environmental discharge. This discharge is required to clear the developer's responsibility towards the State.

The MECIE Decree is silent on any provisions for projects requiring a PREE.

Under the Project, sub-projects requiring an EIA (or PREE) will not be subject to a closing environmental audit as their inherent objective is to be durable.

However, the environmental audit is a voluntary process, in addition to mid-term and end-of-cycle evaluations (including environmental and social aspects). A closing audit at the end of the Project is highly recommended (Components 1, 2, and 4).

Table 19: Administrative Process for the Environmental and Social Performance of the Project

Step	Action	Entity in charge
1	Preparation of the ToR for the environmental audit	Coordination Unit
2	Approval of the ToR	*Public sub-project*

		CI –GCF *Private sub-project* EIB
3	Execution of the environmental audit	Consultant
4	Review and comments on the environmental audit report	Coordination Unit
5	Integration of comments and adjustment of report	Consultant
6	Validation of the environmental audit report	*Public sub-project* CI –GCF *Private sub-project* EIB

6.4 Consideration of the IFC Performance Standards and CI Safeguard Policies in Impact Studies or Mitigation Measures

Sub-projects that might trigger the performance standards or safeguard policies other than the IFC Performance Standard 1 on Assessment and Management of Environmental and Social Risks and Impacts must consider the following actions in environmental and social assessments or measures.

Table 20: Required Actions for Triggered Performance Standards

Performance Standard (PS) Safeguard Policy (SP)	Triggers	Required Actions (for the ESMP for EIA, PREE, or environmental prescriptions)
PS5: Land acquisition and involuntary resettlement	Restriction of access in a zone (case of a TNRM or protection of water sources, etc.)	Measures to maintain usage rights Potential compensation related to the sources of revenue
PS6: Biodiversity conservation and sustainable management of living natural resources	Impacts on a natural habitat (critical or not)	Action plan or measures for the protection of natural habitats and preservation of ecosystem services
PS8: Cultural heritage	Project impacts on cultural or customary heritage	Action plan or measures for the protection of the identified heritage
SP5: Pesticides	Impacts of chemical pesticides or fertilizers on natural environment	Action plan on the management of pesticides and security measures for storage and use Action plan on needed training

6.5 Tools and Recommendations to Implement the Environmental Assessment Process of the Project

6.5.1 Screening Form for Sub-Projects

The national legislation has its own project classification (see 4.3.1 on the national legislation on environmental evaluation) as well as the screening form established by ONE[11].

Under this Project, the screening form will be prepared at the beginning of the Project implementation. Though not exhaustive, the main information to include on the screening form are found in Annex 5.

6.5.2 Content of the Environmental Impact Assessment (EIA)

In the national legislation, the general guidelines on the environmental impact assessment in Madagascar (ONE, 2008) indicates the content of an EIA. At minimum, it must include the following:

- Introduction
- Project background and rationale

[11] ONE screening form, available on the website: www.edbm.gov.mg/.../VF+**Fiche**+de+**tri**+ONE_I2+R1+_Mars+2015.doc (accessed 03/14/16)

- Description of the receiving environment
- Description of the project
- Analysis of variants and impacts
- Analysis of risks and threats
- Summary of the project
- Environmental management plan of the project
- Conclusion
- Annexes including a document certifying the legal situation of the project location site
- A technical summary in French and in Malagasy

IFC performance standard 1 on environmental assessment (IFC, 2012) specifies that the content of the environmental assessment of a Category B project must include the same elements mentioned in the national legislation.

Therefore, under this Project, an EIA will typically contain at minimum the elements presented in Annex 5.

6.5.3 Content of the Environmental Commitment Program

In the national legislation, the MECIE Decree does not define the content of the PREE. However, the sectorial ministries have an outline of this document.
Under the Project, the minimal content required for a Category C sub-project according to GCF and requiring a PREE is found in Annex 5.

6.5.4 Recommendations for the Environmental and Social Management of the Project

The issue is to integrate the environment or the social or institutional aspect as a criterion in the procedures regulating the decisions and interventions of the Project:

- Identify the persons in charge of implementing the environmental assessment process for each sub-project developer
- Make the screening of sub-projects under Components 1, 3, or 4 systematic;
- Introduce in the specifications of service providers contracted for the Project activities some provisions on:
  - The compliance with a number of environmental or social standards for the interventions;
  - The capacity to mobilize, if needed, some expertise on environmental problems related to the contractor's interventions;
- Define and disseminate a framework of best practices integrating the management of environmental and health risks;
- Build an expertise in environmental assessment and management of environmental risks as well as health standards (for example for agricultural products)
- To control the social risks related to participatory and "on-demand' (for public sub-projects) interventions, define and establish rigorous, effective, and equitable frameworks, procedures, and mechanisms to ensure and/or increase the participation of vulnerable groups to the Project benefits.

6.5.5 Recommendations for the Environmental and Social Management of the COFAV and CAZ Protected Areas

It is recommended to:

- Respect the spatial planning (zoning) defined in the PAG for each site of the sub-project initiated in or around any protected area
- Promote the existing and implemented mechanisms of stakeholder participation such as the COS or the grievance mechanism

- Indicate the roles of the delegated manager team in each protected area for the implementation of the environmental and social management system of the GCF Project and other existing tools (ESSP, implementation of the CCE from the creation of the protected area)
- Use the signature of a community convention agreement between CI (the delegated manager of the NPA and execution unit of the GCF Project) and household/community beneficiaries for Component 1 sub-projects as one of the conditions of access to GFC funding. This document helps strengthen both conservation activities (initiated by beneficiaries) and revenue-generating activities
- Launch awareness efforts on the objectives and management tools applied in each NPA

6.6 Capacity-Building Needs in Environmental and Social Management

6.6.1 Assessment of Existing Capacities

This part focuses on the human resources in the Project Execution Units that are affected to environmental and social management.

Conservation International Madagascar
The main roles and responsibilities of the structures of the CI Madagascar Execution Unit are indicated in the following table:

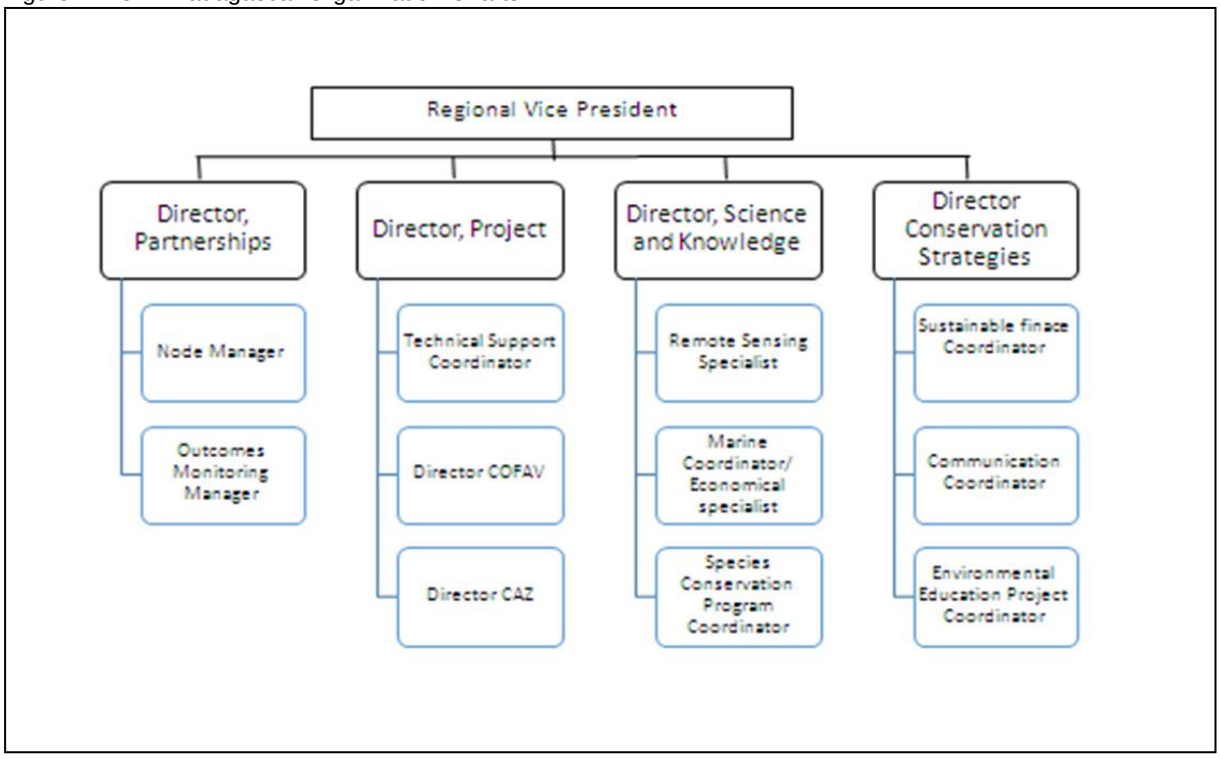
Table 21: Distribution of CI Madagascar Roles and Responsibilities in Environmental and Social Management

Entity	Roles	General Responsibilities	
		Project Implementation	Environmental and Social Management
CI – Madagascar (Main office)	• Support to regional branches • Representing CI Madagascar in the various management structures of the Project (Coordination unit and Steering Committee) • Control of operations at the level of regional branches	• Design of tools for activity management • Occasional support, oversight • Oversight of compliance with procedures and standards • Institutional relations • Global monitoring and evaluation • Communication • Identification, planning, and execution of some activities/sub-projects (Communication, research, etc.)	• Design of tools to implement the environmental assessment and gender processes for the sub-project/ Project ESMP • Coordination of activities related to environmental and social management and gender at the level of regional branches • Supervision and oversight of the application of the Project ESMP in the implementation of sub-projects • Validation of the different annual reports of branches including environmental, social, and gender aspects • Support and advice to regional branches in the implementation of the environmental assessment process of sub-projects or Project ESMP • Global monitoring and evaluation of the implementation of the environmental assessment process and the gender approach • Implementation of the environmental assessment process and gender approach for sub-projects (for some activities)

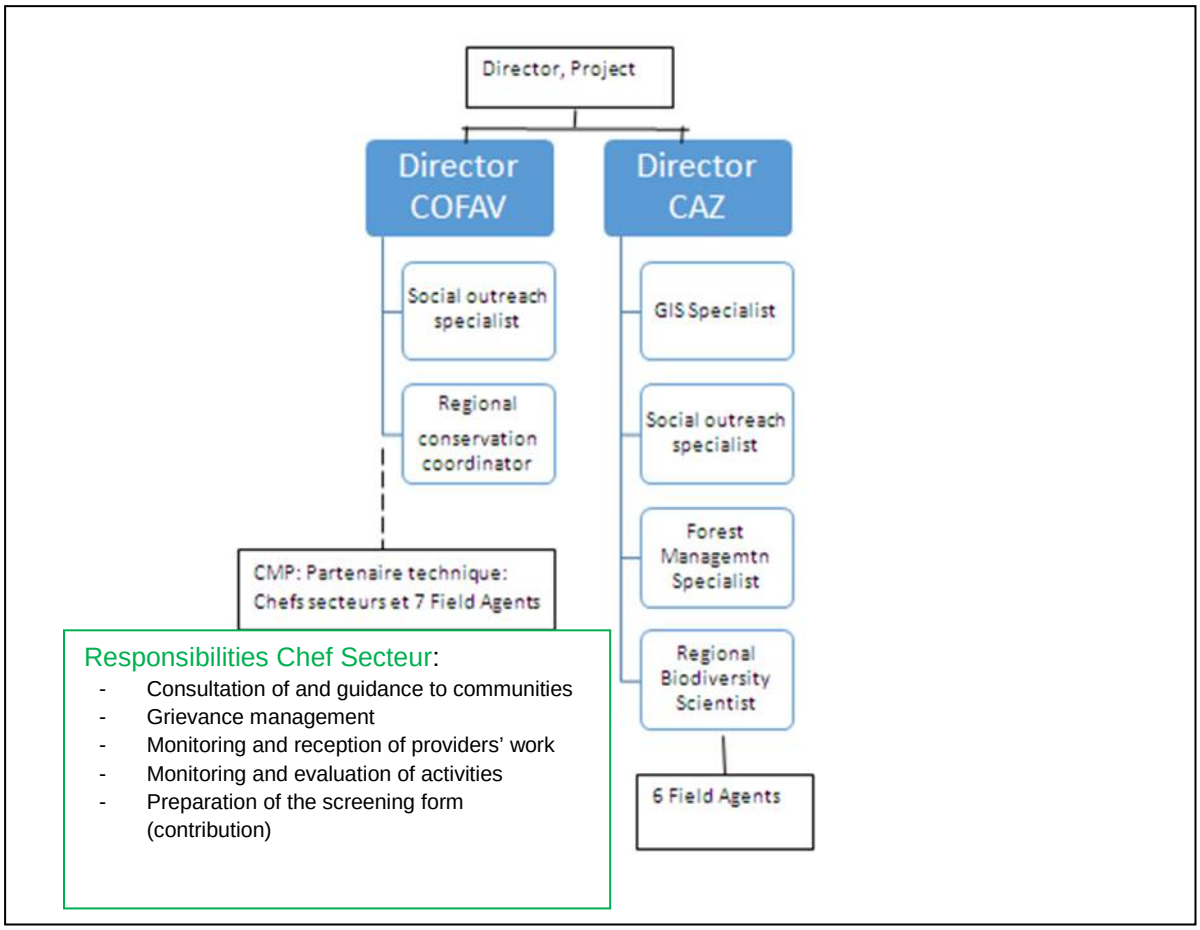
Regional branches (CAZ and COFAV)	• Execution of sub-projects • Support to beneficiaries	• Selection, validation / technical reception of sub-projects • Supervision of service providers • Monitoring and evaluation of sub-projects • Guidance to beneficiaries • Institutional relations at regional level • Communication at regional level	• Implementation of the environmental assessment process and gender approach for sub-projects • Supervision and oversight of the application of the ESMP or environmental and social prescriptions of the sub-project and the gender aspect by providers • Monitoring and evaluation of the integration of the environmental, social, and gender dimension in the sub-projects • Preparation of reports (environmental monitoring reports, annual report including the environmental and social aspect, etc.) • Support and advice to beneficiaries and providers in environmental and social management • Participation in regional platforms on climate change, environmental and social management, etc.

The following figure presents the current organization chart of CI –Madagascar

Figure 11: CI – Madagascar Organization Charts



Source: Conservation International Madagascar



Source: Conservation International Madagascar

The resource people involved in implementing the Project ESMP include:

- At the main office of CI Madagascar: all staff on the organization chart except the Regional Vice President
- For the regional branches, the entire staff and the Chefs Secteurs (at COFAV, representatives of the VOI Federation play the role of Chefs Secteurs)

In general,

- CI Madagascar staff in the CAZ and the COFAV have been employed at least 5 years in their respective position;
- For the implementation of safeguard measures related to the creation of the CAZ and COFAV protected areas, 5 people from the CI Madagascar team (Director Project, Director CAZ and Director COFAV, 2 technical managers CAZ and COFAV) received in February 2015, a training by the World Bank on the ESSMP (Environmental and social safeguard management plan). When the safeguard measures were in effect, the regional staff had already some experience in implementing a project ESMP, including the environmental and social aspect;
- CI Madagascar has also experience in some of the activities planned under the sustainable agriculture program (agriculture, livestock, apiculture, establishment of an irrigation system, supply of drinking water, etc.) and restoration activities in both forest corridors. In addition to knowledge on technical itineraries, these experiences helped gain knowledge on the environmental and social issues and impacts related to these initiatives;
- All Sector leads (*chefs secteurs*) are social organizers and conservationists and have experience in forest conservation and protection, biodiversity, and patrol. Some have been associated with various development activities. In general, their capacity in environmental assessment processes, particularly environmental and social monitoring, is limited.

- Regarding gender, a gender specialist will be hired. For this cross-cutting issue, the entire senior staff of CI Madagascar (main office and branches) followed a training at CI Washington on gender integration in CI's activities and on the rights-based approach gender policy. Under the Project, the Social Outreach Specialist will oversee the gender aspect of the CIM Execution Unit. A gender manager will be appointed at the CAZ regional branch.
- Stakeholder consultation: The CI Madagascar team has some experience as the creation process of protected areas and their daily management and the identification and implementation of compensation measures require a participatory approach.

Althelia
A local office is planned for Althelia in Madagascar with the appointment of a minimum staff. The staff should have at least some expertise in environmental assessment, environmental and social standards and safeguards, and gender aspect.

6.6.2 Capacity-Building Needs

- Execution Units (BNCCC, CIM, and Althelia)
- Ministerial departments (central and regional) notably agriculture, livestock, fisheries, education, water, energy, forests and protected areas, environment
- ONE
- CTDs
- Partners and service providers

The proposed capacity-building activities for these organizations include the following:

- Thorough workshops of two (2) and (3) days at central level and in the 2 forest corridors CAZ and COFAV, including a detailed presentation of the ESMP (required environmental and social standards) and the various implementation aspects of the environmental assessment process (process, procedure, and tools), the territorial environmental management with a case study. These workshops will be conducted by a person from CI-GCF and a national consultant.
- An annual participatory review of 2 days in each forest corridor with public sub-projects (CAZ and COFAV) on the environmental or social actions of the sub-projects in order to identify any issues and weaknesses and propose corrective measures. The main participants will include the Execution Units, STDs, CTDs, representatives of the beneficiaries, service providers and partners, civil societies, representatives of the COS or any other significant regional or local platforms.
- Some beneficiaries are also affected by sub-projects initiated in forest landscapes other than the CAZ and COFAV; annual participatory reviews might also be conducted.
- Once the Trust Fund operational, an annual participatory review of the environmental and social actions from the implementation of the sub-projects will also be adopted by the Project.

Specific training will also be planned:

- For the Execution Units:
  - Evaluation of the efficiency of the environmental measures for sub-projects requiring an EIE or an PREE or nothing
  - Chefs secteurs: environmental or social issues and monitoring
- For beneficiaries (vulnerable population or local communities):
  - Depending on the sub-projects, some techniques related to mitigation measures such as actions against erosion, etc.
  - Techniques and modalities for the environmental or social monitoring of some sub-projects

Other tools will also be developed:

- A procedure manual on the integration of the environmental or social aspect in sub-project implementation
- A database of sub-projects (at each Execution Unit) with an environmental/social section
- A database for grievance management at the level of each Execution Unit.

7 Environmental and Social Monitoring and Surveillance Program

The monitoring program follows the evolution of some elements of the human and natural environments affected by the execution of the Project. It defines actions and means to monitor the actual and potentially long-term effects of the Project on some environmental elements when the impacts are uncertain or if some significant impacts are expected on a particularly sensitive element.

Based on the type of activity to be implemented, the monitoring program focuses on particularly sensitive subjects or elements, both for environmental and socioeconomic aspects.

Monitoring indicators are defined for the program and are elements that are measurable, verifiable, and can be easily observed.

Surveillance focuses on the recommended mitigation measures. The efficiency of these measures can be verified, and if needed, these measures can be adjusted.

7.1 Monitoring Plan

In addition to environmental or social monitoring indicators for each sector / activity type (see table below), other indicators related to the process or the results of the environmental assessment process of sub-projects will also be defined:

- Percentage of sub-projects that were screened
- Number of training/awareness sessions related to social and environmental impacts organized for beneficiaries, providers
- Percentage of sub-projects that had an environmental or social monitoring each year
- Percentage of sub-projects subject to an EIA with the ESMP or a PREE
- Execution rate of sub-project ESMPs
- Percentage of sub-projects that received a complaint.

According to the roles and responsibilities of the various entities involved in the environmental and social management of the Project (see Figure 10):

- Each Execution Unit will keep updated indicators (those mentioned above), the results of which for each component or sub-project will be integrated in the Project annual report
- The Coordination Unit will validate these aspects and may express some recommendations
- The Steering Committee may provide guidance on these aspects.

Table 22: Monitoring Indicators by Activity Type and by Project Component

SECTOR/ TYPE OF ACTIVITY	PROJECT COMPONENT	TYPE OF MONITORING ACTION	INDICATORS, METHODS, AND MONITORING FREQUENCY	ENTITY IN CHARGE
AGRICULTURE, LIVESTOCK, FISH-FARMING, APICULTURE	• Component 1	• Disturbance of water regimes • Effects of introduction or proliferation of invasive species (fauna or flora) due to inadequate agricultural practices (agriculture, livestock, fish-farming, apiculture) • Effects of fertilizer use on soil, sub-soil, and water tables • Improvement or degradation of household revenues on one hand, and tax revenues on the other hand (from improved agricultural practices, development of commercial sectors, or market creation) • Pressure on natural and/or protected habitats	• Presence or absence of dried-up areas, to be monitored annually with communities • Presence of new species, to be verified annually with communities • Chemical and microbiological analyses of soil, sub-soil and streams, to be performed annually • Annual household and STD surveys. With guidance to STDs	• Relevant STDs (Agriculture, livestock, fisheries, water) • ONE and thematic technical partners • Conservation International • Communities
DRINKING WATER	• Component 1	• Disturbance of water regimes • Effects of water quality on populations	• *In situ* observation of the state of water sources and the physical quality of water (semi-annually with communities) • Physico-chemical and bacteriological analyses in case of pollution • Household surveys on waterborne disease and data collection at health centers	• Water STD • ONE • Analysis laboratories • Communities • Conservation International
REFORESTATION, RESTORATION	• Component 1 • Component 4	• Effects of species planted on soil, subsoil, and water tables • Verification of the state of the environment according to restoration: to what degree is the initial landscape rehabilitated? • Verification if the reforestation	• Observations with/by the communities and CI	• Forest STDs • ONE • Local communities • Conservation International

		actions meet the needs of the communities		
ENERGY (Infrastructure)	• Component 3	• Effects of infrastructure location on natural habitats (forests, water, land, air), species, as well as on the living conditions and activities of communities • Effects of potential disturbance: noise, tools, material, or used equipment	• Observations, with the communities and the persons in charge at the Fokontany, STDs, and CI • Consultations and registrations of complaints and grievances	• Fokontany • STDs • CTDs • Communities • Conservation International • Private developers • Althelia
CAPACITY-BUILDING AT ALL LEVELS	• Component 2 • Component 4	• Environmental, social, and economic impacts of ownership, internalization, and integration of climate change and climate risk reduction in planning and activities	• Review of reports established by people trained	• BNCCC • ONE • Conservation International
ECOTOURISM	• Component 1	• Around the protected areas: • Potential change of surface and underground water quality • Efficiency of the treatment of wastewater and solid waste and risk of contamination of the environment • Impact of visits on habitats, fauna and flora • Economic repercussions at all levels (e.g. Decent and durable employment created? Improved household revenue? Improved tax revenues?) • Effects on the social environment and lifestyle.	• Observations and registration at least semi-annually at the level of the Fokontany, in collaboration with the communities, STDs, and CI	• Madagascar National Parks • Fokontany • Communities • STDs • Conservation International
REDD+	• Component 4	• Monitoring and quantification of deforestation and emissions compared to baselines • Effects of revenue-distribution from REDD	• Annual monitoring according to established standards	• BNC REDD • Forest STDs • Conservation International

7.2 Surveillance Plan

Table 23: Surveillance Indicators by Activity Type and by Project Component

PROJECT COMPONENT AND ACTIVITIES	POTENTIAL RISKS OR NEGATIVE IMPACTS	MITIGATION MEASURES	Indicators and Frequency	Entities in charge
Component 1 : Agroforestry, diversified crops, use of organic fertilizers, use of resistant seeds, construction of irrigation canals, shade-grown plants, system of rice intensification and system of rice improvement (SRI/SRA), short-cycle crops	- Loss of habitats due to the extension of croplands - Change of soil characteristics due to fertilizers and resistant seeds - Contamination risks of soils and subsoils - Risk of increase of pest plant species -Shortage of water resources upstream due to increasingly intensive use downstream - Loss of water (due to poor irrigation systems) with impact on fish-farming and harvest fishing - Social conflicts on the management of water resources, related to the irrigation canals	- Popularization of development and management plans (PAG) - Application of PAG - Collective monitoring of compliance with the PAG - Integrated management of water resources at all levels (local/community, regional) - Technical assistance by the STDs for community guidance	- Number of awareness or communication actions on the PAG each year - Number and types of beneficiaries of information on the PAG (annual) - Execution rate (%) of activities included in the PAG and planned under the Project (annual) - Number of tools on IWRM developed and applied at the levels of territories (annual) - Average rate of compliance with IWRM provisions in the various territories (annual by sample) - Rate (%) of beneficiaries benefiting from guidance by STDs (semi-annual)	- BNCCC - Conservation International - Agriculture and Livestock, Water STDs - COS
Component 1 : Apiculture	Abusive and immoderate practice of “modern” apiculture (e.g. frame hives) threatening the healthy colonies	Preservation / learning of the ecological and wild apiculture practice	- Number of people trained in ecological and wild apiculture (annual) - Rate of apiculture success (annual)	- Conservation International - Livestock STDs - Communities - COS
Component 1 : Fish-farming	Disturbance of aquatic ecosystems due to overfishing	Community agreements or regulations to control fish-farming activities Technical assistance by STDs	- Number of community conventions or regulations established (annual) - Average rate of compliance with community conventions or regulations (annual or by sample) - Number of complaints on fish-farming activities addressed (annual)	- Livestock STDs - Communities - Conservation International - COS
Component 1	- Water contamination	- Protection of water sources	- Number of water sources with	- Water and Population STDs

Drinking water	- Pressure on water resources -Competition among users	-Compliance with technical specifications on the location of sources: minimal distance and location from latrines and waste pits (no latrine or waste pits upstream a catchment or well).	protection strips (annual) - Rate of complaints related to drinking water addressed (annual)	- CTDs - Communities - Conservation International - COS
Component 2 Capacity-building at all levels (training) Sectorial and territorial planning	- Planning, framing and regulations that are not compatible with local aspirations and contexts - Rural exodus motivated by the search for a socioeconomic environment that is more favorable to the application of received training	- Participatory preparation of reference and framework documents - Training modules adapted to local context	- Number of reference and framework documents developed (annual) - Number of training modules adapted to the local context developed (annual) - Number of beneficiaries of training modules (annual)	- Education STDs - CTDs - Schools - Conservation International - COS
Component 3: Agro-fuel and biofuel Biomass Hydropower Solar power	- Competition with food crops - Pollution due to biomass combustion and waste - Disturbance of water resource distribution - Because of infrastructure: destruction of vegetation cover, loss of forest products (wood, non-timber forest products) - Unsustainability of the use of solar power due to the lack of accompanying measures - Spontaneous migration towards production sites to gain better energy access - Loss of income for some households from the reduced trade in fuelwood and charcoal	-Development and application of the integrated land-use planning and management scheme (land-use, resource exploitation, revenue-activities, food security) - Reforestation in relevant areas - Establishment and implementation of a power distribution plan for communities - Social and economic studies to compensate rapidly and durably for the “losses” due to the discontinuation or reduction of the use of fuelwood	- Number of integrated land-use planning and management schemes developed and validated (annual) -Surface reforested in ha (annual) -Number of power distribution plans established (annual) -Number of new beneficiaries of electric power (annual) -Number of social and economic studies related to the reduction of use of fuelwood (annual) - Average execution rate (%) of compensation measures recommended in studies (annual)	- CTD - BNCCC - Forest, Energy STDs - Private developer - Althelia - Other partners
Component 4:	- Introduction of exotic	- Application of the PAG		

Restoration, reforestation, protection of natural habitats, development of low-emission agricultural techniques	species - Disturbance of forest ecosystems - Restriction of arable lands - Reduction of agricultural productions - Social conflicts	-Technical assistance provided by the STDs	– Execution rate (%) of activities included in the PAG and planned under the Project (annual) – Rate (%) of social conflicts resolved related to the application of the PAG (annual) – Restored surface (ha) /year / Protected Area – Number of beneficiaries who have received technical assistance from STDs (annual)	- Communities - STD - Conservation International - COS

8 Stakeholder Consultations

8.1 Completed Public Consultations

During the preparation of the Project document and in accordance with the provisions and requirements of the environmental and social standards required by GCF, EIB and CI, Conservation International Madagascar organized various consultation sessions of stakeholders at central and regional levels.

The stakeholder consultations included the main actors involved in the project: beneficiaries, local communities, technical services and ministerial departments, partner organizations, local authorities, and research centers in order to highlight the environmental and social issues of the Project and contribute effectively to its sustainability.

The overall objective of the stakeholder consultations was to involve the different actors, as well as populations in the final decision-making on the Project. Note that these consultations were related to the 'not-for-profit' activities that are to be executed through the grant managed by CI Madagascar and the BNCCC. The planned investment through the Investment Fund managed by Althelia will be subject to specific consultations for each subproject as these are identified and defined. These consultations will follow the procedures as described in this ESMP to ensure compliance with the requirements of the GCF, those of the EIB, and the national legislation, and they may also include Althelia-specific provisions based on Althelia's own standards.

These consultations have enabled:

- Strong involvement of the GCF Designated National Authority (the BNCCC) in the preparation of the Project documentation following a participatory and iterative approach. The BNCCC has contributed to the development and validation of the logical framework, the definition of the management structure of the project, and reflections on the Trust Fund;
- Association of the various relevant ministerial departments in the development of the logical framework, exchanges on how to approach the implementation of sub-projects (by capitalizing on experiences in the area), on the planned sustainable agriculture activities as well as the definition of the roles and responsibilities of STDs and CTDs in the execution of the Project;
- Organization of four regional consultation meetings in November 2015 (2 for CAZ and 2 for COFAV) that mobilized 188 individuals including 61 women (32%)
- The participation of 857 individuals (citizens, representatives of local associations and VOI or federations, of local authorities such as the mayor or president of the "*Fokontany*", farmers, students, teachers, etc.) and expression of 2,101 opinions in the list of grievances for 49 communes (29 for the COFAV and 20 for the CAZ). The participation rate of women (as citizen or representing an association) was at about 20%.

In general, in the regional consultations and list of grievances, the main suggestions received during the consultation process have been integrated into the Project apart from requests for construction of social infrastructure (health centers, schools etc.), or rehabilitation and/or construction of rural roads. The consultations helped to confirm that the key issues causing deforestation or degradation of forests are the conversion of land for agriculture, illegal mining and forestry operations, the extreme vulnerability of households, poverty and poor governance of natural resources (lack of law enforcement and limited monitoring).

The methodology applied to stakeholder consultation is presented in Annex 6. The detailed results of the consultations are presented in the stakeholder consultation report developed by CI Madagascar (see Annex 12 submitted with the funding proposal).

8.2 Stakeholder Consultation and Participation during Project Implementation

The public consultation procedure has the ambition of securing the social acceptability of the Project at national, regional, and local level, gathering all actors in an information sharing network on both the environment and the subject *per se*.

Stakeholder participation during implementation is reviewed for a sub-project and the Project.

8.2.1 Stakeholder Consultation during the Lifecycle of a Sub-Project

This chapter is relevant for all sub-projects (public or private) or funded by a grant, the Investment Fund, or a Trust Fund. The participation procedure applied to the *Sustainable Landscapes in Eastern Madagascar Project* is presented in the table below.

Table 24: Stakeholder Consultation applied to a Sub-Project

Phase of the sub-project cycle	**Main steps of the environmental assessment**	**Responsibility of the Execution Unit or Other structures or Developer (private sub-project)**	**Stakeholder participation**
Identification	Screening / Preliminary environmental assessment	Preparation of the screening form	Consultation of beneficiaries
Preparation	Environmental and social scoping	Preparation of the ToR for the EIA	Consultation of groups affected by the project and associations/ local NGOs/ local authorities/ STDs, and local actors
		Preparation of the ToR for the PREE	Consultation of beneficiaries and local authorities
		Identification of environmental and social issues and main impacts (No EIA or PREE required)	
Formulation of the sub-project	Execution of the environmental assessment	Development of EIA	Consultation of groups affected by the project and associations/ local NGOs/ local authorities/ STDs, and local actors
		Development of PREE	Consultation of beneficiaries and local authorities
		Identification of environmental and social measures	
Evaluation (technical, financial, environmental)	Environmental assessment	Participation in public consultation (if EIA)	Public consultation initiated by ONE (if EIA)
Technical approval of the sub-project	Official approval of the environmental authority EIA or PREE	Integration of environmental measures in bidding document Definition of environmental responsibilities of beneficiaries	
Execution of sub-project	Environmental and social control (compliance) and monitoring (efficiency)	Environmental and social monitoring	Beneficiary associations, local authorities and STDs and other local actors involved in the establishment and monitoring of sub-projects
	Environmental control and monitoring	Gradual withdrawal of the Execution Unit (for public sub-projects) and transfer of environmental and social monitoring to beneficiaries	Beneficiaries, CTDs, STDs, and other local actors

This consultation process will fully associate populations vulnerable to climate change and beneficiaries in order to identify their needs and monitor and evaluate activities with the objective of citizen control, exchange of knowledge, participation and social efficiency.

8.2.2 Levels of Stakeholder Consultation and Participation in Project Implementation

The main stakeholders of the Project include:

- The Project steering committee
- Technical and sectorial ministries at all levels
- Territorial authorities (regions, communes, and Fokontany)
- Local communities that are managers of natural resources and vulnerable populations: members of local communities, customary and traditional authorities, village committees (water management committee, surveillance committee), women's or youth associations
- Existing and operational advisory bodies associated with the creation of the protected areas such as the Steering and Monitoring Committee (COS) instituted by the Management Code for protected areas
- Civil society involved in environmental and social areas
- University, training institutions, and research centers
- Entities involved in transformation and trade of agricultural products, actors from the relevant commercial sectors
- Service providers
- Private sub-project developers

Generally, the principles of participation for the various actors are applied to all sub-projects

- Types of participation based on targets: information, awareness, consultation, or dialogue
- Promotion of existing advisory bodies or platforms
- Targets (local communities and vulnerable populations) are associated for the preparation, implementation, and monitoring of activities relevant to them. Local authorities will be associated in the identification of sub-projects to the extent possible.
- Participation methods of the various groups of actors: meetings, forum, website, etc.
- Means of communication created and used by the Project: meetings, forum, local and national media, radio, brochures, or posters
- At least once a year, meetings with advisory bodies.

National Level

The Project has a steering committee chaired by the DNA (representative of the Ministry of Ecology, Environment, and Forests) and involving the main relevant Ministries (Agriculture, Livestock, Energy, Water, Education, Forests, etc.), the Executive Team of CI Madagascar and CI Headquarters, the Executive Team of Althelia and the EIB (See Figure 3).

Given the mandate of this structure, the main parent ministries of the activities initiated under the Project participate in the orientation and general oversight of the Project.

Regional Level

For the implementation of the PND (National Development Plan), to be developed as a Regional Development Plan (PRD) at regional level, an interministerial committee at regional level will be established to align the various activities and implement their monitoring and evaluation. The Project will promote inter-sectorial dialogue at regional level.

Case of sub-projects initiated by CI –Madagascar

The decree creating a protected area provides for the establishment of a Steering and Monitoring Committee (COS). COS members are designated by interregional order. The COS is in charge of monitoring the execution of actions planned in the creation decree.

The committee is co-chaired by the Regional Directors of the environment and includes representatives of relevant STDs at the level of regions (2 regions for the CAZ and 5 for the COFAV), CTDs (commune and region), delegated manager, as well as all resource persons or entities.

The main responsibilities of the COS are to: (i) provide guidance and advice on the management of the PA, (ii) provide advice on technical documentation of the PA (annual work plan, annual work and financial report, amendments and new versions of the PAG, deadline change), (iii) contribute to inter-sectorial conflict resolution.

The intervention areas of the Project being inside the PA and in the neighboring communes, CI Executive Units will promote this arrangement under the Project.

8.2.3 Grievance Mechanisms

As with stakeholder participation, CI Madagascar will also promote the existing arrangements implemented under the creation of the protected areas, according to the respective environmental specifications of the COFAV and the CAZ.

These arrangements will be applied for the entire Project and resume the mechanism listed in paragraph 4.3.2.3 on the grievance mechanism according to the national legislation.

In each commune affected by the Project activities, a registry will be established on the complaints related to the project. The Execution Units will be in charge of informing the population about the grievance mechanism.

The registry at the level of each commune should include the following information:

- Date of registry of the complaint
- Name and national identification number of the plaintiff or other information
- Agreements or other measures
- Observations
- Signatures of the plaintiff and the developer
- A transcript signed by both parties (plaintiff and project developer) on the resolutions or agreements reached
- Inclusion of the transcript in the periodic environmental and social monitoring report (developed by the developer) to be sent to ONE (for sub-projects requiring an EIE) or in the technical monitoring report for projects subject to a PREE and without an environmental assessment.

During the Project implementation, grievances might occur (notably related the the restriction of access to natural resources). The recommended procedure in these cases for the Project includes the 3 following sequences:

- the Some complaints can be solved at the level of the community itself with the collaboration of the plaintiff(s) and local (CTDs or STDs) or traditional authorities to reach an amicable resolution;
- Resolution of some disputes with the Steering and Monitoring Committee (COS) or a conflict management committee at the sector level (case of COFAV) or the association of sectorial ministries; or
- Appeal to relevant jurisdiction.

A conflict prevention mechanism will also be established:

- Support to local communities (by Execution Units or the private sub-project developer) to establish a *dina* (social convention),
- Associate local communities in sub-project planning and implementation.

Case of Inter-Sectorial Conflicts

Several tools (at different levels) are planned or promoted to manage inter-sectorial conflicts during the Project implementation:

- National: The Project steering committee including different representatives of the sectorial ministries
- Regional
  - The interministerial dialogue to implement the Regional Development Plan
  - The COS established after the creation of the protected areas for conflicts in and around the PAs

8.2.4 External Communication, Information Dissemination, and Access

Activities related to communication and information dissemination are already planned under Component 2 of the Project and will be implemented at central level and in the 2 forest corridors. These include:

- Information to stakeholders on the launch of the Project inside the two corridors
- Dissemination of research results and best practices, using local and national media, flyers, posters, and the CI webpage
- Communication and dissemination of the results of scientific studies carried out by the Project
- Creation and maintenance of a webpage on the CSA/CSL and eco-certified products
- Organization of annual workshops to share research results and CSA best practices

In addition to these initiatives, the following provisions will be applied to all sub-projects (public or private):

- Sub-project requiring an EIA
  - Communication of the environmental permit and the environmental specifications to communes affected by the Project
  - Public presentation of the results of monitoring missions performed by ONE
  - Public availability (for *in situ* examination) of the ESMP documentation and the environmental permit at the office of the relevant Execution Unit, project developer, or project site.
- Sub-project requiring a PREE
  - Communication of the environmental authorization to the relevant commune and Fokontany
  - Public availability (for *in situ* examination) of the PREE documentation and the environmental authorization at the office of the relevant Execution Unit or sub-project developer.

8.2.5 Participation in Involuntary Resettlement (in Exceptional Circumstances)

Generally, the Project does not forecast any involuntary resettlement. CI and EIB, as implementing agencies, recognize that the population will not be displaced from the lands they occupy, in accordance with the measures on international human rights such as Convention 169 of the International Labor Organization (OIT 169).

CI (in the case of public sector activities) or EIB (in the case of private sector activities), with the support of the Project Coordination Committee, will ensure that:

- If relocation of populations is deemed necessary in exceptional circumstances, it must only occur with their *free, prior, and informed consent*. GCF Performance Standard 5 (Acquisition of lands and involuntary resettlement).

- Consent of the affected populations can only be obtained and should only occur following adequate procedures established by international and national laws, providing the opportunity of effective representativeness of the relevant people.

CI or EIB (depending on whether displacement is related to the public or private sector activities) and the Execution Units will work on the needs of vulnerable groups among the displaced people, particularly those living below the poverty line, landless people, the elderly, women and children, ethnic minorities, or other displaced people who cannot be protected by the national legislation in terms of compensation related to land ownership.

9 Gender mainstreaming and action plan

Objectives of gender mainstreaming analysis and action plan

The objective of this gender mainstreaming analysis and action plan is to provide context on gender issues relevant to the project and to outline specific actions that will be taken within the project to ensure that men, women and vulnerable groups identified by the Project have the opportunity to equally participate in, and benefit from, the Project. Along with the stakeholder engagement plan (see chapter 8 of the Environmental and Social Management Plan), this plan is part of the project's commitment to equitable stakeholder participation.

The plan takes into account that Project activities cover a range of operational scales from communities to national agendas with subprojects that involve field-based implementation as well as broader knowledge management and capacity building activities at regional and national levels. Gender implications and considerations will be different within each of the sub projects in this project and will apply through all the phases of the Project.

National context and governing framework

In 2011, the World Economic Forum ranked Madagascar 71 out of 135 countries for gender equality, although it is ranked within the top ten countries in Africa (African Development Bank, 2015). Although Madagascar performs relatively well within Africa for some measures of gender equality, significant gender gaps remain and in recognition of this the Government has developed a National Plan for Gender Promotion that aims to mainstream gender integration into all development interventions.

In rural Madagascar the different roles and responsibilities of men and women in society, and different gender norms mean that they can be impacted by climate change in different ways. For example, in the agricultural context, women tend to care for household gardens and subsistence agriculture, while men are more likely to engage in for-profit cash crops. Men and women also often have different opportunities to access agricultural support and information, and agricultural land is generally owned by men.

Key gender issues for the project

Conservation International has undertaken studies to understand gender differences in roles, perceptions of agricultural and climate risks and risk coping strategies at both the CAZ (Rao *et al*., in prep) and COFAV landscapes (CI & Conforme, 2014). These studies provide a baseline and show that in general, men and women have complementary roles in agriculture and similar perceptions of the impacts of climate change, but that they differ in some of the strategies used to cope with the risks. While food security is perceived to be a major issue by both men and women smallholder farmers, women tend to adopt coping strategies focused on changes at the household level (such as reducing food consumption and seeking food from relatives/neighbors) while men are more likely to seek off-farm revenues. The majority of both men and women (<80%) report observing the impacts of climate change and requiring support to address climate related issues (Rao *et al*., in prep).

Other studies by CI in the CAZ landscape have highlighted that children suffer additional hardship because some families are forced to take them out of school and/or send them away to work in order to cope with weather related events such as cyclones (Harvey et al., 2014; Rakotobe et al., 2016). While these studies provide useful background and confirm gender differences in agricultural roles and the impacts of climate change, they also confirm the need for detailed consideration of gender as part of the detailed design process of project activities with beneficiaries at the local level.

Gender approach- startup phase

In 2012, CI adopted its institution wide gender policy, defining that the organization commits to "actively work to incorporate gender issues and anticipate gender-related outcomes in our design and implementation phases" of its projects[12]. The EIB has taken note of the GCF's remarks during the accreditation process regarding the lack of a written gender policy in the assessment of its operations. For all the projects where it is the accredited agency, the EIB is currently working to get this policy ready. Althelia's ESG policy includes a commitment to community engagement without discrimination, specifically highlighting "the most socially and economically vulnerable and marginalized, and paying particular attention to gender inequalities in decision making and benefit sharing", alongside equal opportunities requirements for project employees.

In 2014, CI Madagascar, commissioned a study on gender integration for its interventions (CI & Conforme, 2014) and its recommendations have and will be followed in this Project, notably by:

- Involvement of men and women in project design through stakeholder consultations and differentiated consideration of their priorities and concerns (see the Stakeholder Consultation report provided as annexes 12a and 12b of the Proposal package for details);
- Gender promotion in the following areas:
    - Village level activity-planning to identify specific efforts focusing on gender inequalities related to climate change. This will use gender sensitive data on smallholder farmer vulnerability to climate change and the results of consultation with women. This activity (planned under Outcome 1) is to ensure that the detailed design of sub-projects to address climate change adaptation are tailored for the needs of each of the target villages in the CAZ and COFAV landscape.
    - For the various activities/sub-projects, the Execution Units will take into account the different needs and priorities of women (and women's associations) and of men, and activities will be designed in detail taking into account the specificities of each of the sectors concerned (e.g. agriculture, livestock, water, forests, fisheries), while also taking account of local customs. The identification of many of the project activities (e.g. for sustainable agriculture support) is also participatory and therefore the ideas and concerns/grievances of the various actors (men or women) will be considered during the selection and formulation of these activities.
    - Capacity-building (Outcome 2) will specifically address identifying measures to deal with inequalities or imbalance between men, women and vulnerable groups. For example: (i) awareness for the effective recruitment of women for jobs created in sustainable and climate-resilient businesses, (ii) training of local communities so that women form part of the decision-making structure, (iii) specific training with women on revenue-generating activities or training targeting young adults and other vulnerable people; and (iv) use of awareness and communication tools adapted to women (e.g. when the proportion of illiterate women is higher than for men as is often the case).
    - Definition of specific indicators on gender aspects under the Project. While some of the necessary baseline data has been collected during previous studies and project formulation, there remains a need for more data collection during the project implementation to guide the detailed design of sub-project activities. Detailed gender specific data on project beneficiaries will need to be collected at each Project locality. This will include more detailed information on gender roles relating to resource management and decision-making. This data will be used for both participatory planning purposes and for Project monitoring and evaluation (see below).

[12] https://library.conservation.org/Published%20Documents/RBA%20gender%20policy%20statement.pdf

Gender approach - Project implementation phase

The Project will ensure that there are a number of different strategies in place that will allow vulnerable groups to openly voice their opinions on specific issues. At the same time, the Project will ensure that these strategies are sensitive to local cultural norms and do not inadvertently encourage a deepening of power imbalances. These strategies will need to include men and encourage their active support for the Project and avoid singling out women as primary agents responsible for resource management decisions.

From the launching of the project, exchange sessions and/or harmonization of approaches and tools will be organized by the Project Coordination Unit (PCU), supported by a project gender specialist to ensure that Project staff are able to address gender integration throughout the Project lifecycle based on a thorough understanding of the drivers of change and the gender dynamics.

For the effective gender integration during the lifecycle of each sub-project, the following aspects will be applied:

- Integrating gender aspect in the Terms of Reference of field interventions, monitoring and evaluation as well as in any bidding documents for contractors;
- Requiring all subprojects receiving investment from the fund to implement gender policies covering equal opportunities within the project and targeting gender equality in access to project benefits. Such policies will be assessed during due diligence of the project and monitored throughout the life of the investment;
- Development of a protocol for the collection of gender sensitive information;
- Monitoring of gender-related measures and tools during the lifecycle of the Project, the assessment of the efficiency of such measures and tools, and the proposed improvement measures;
- Associating partner structures in the Project implementation, such as the Ministry in charge of population that works on gender issues, women's associations, NGOs working on climate change and gender, etc.;
- Training service providers and developing guidance tools.

Monitoring and Evaluation

The project's monitoring and evaluation activities will ensure that necessary data is collected for measuring the gender specific indicators (or indicators for which gender disaggregation is needed) already included in the Project monitoring and evaluation framework (see section H of the Project Proposal). At project start-up the indicators will be further refined and additional ones identified as needed. Gender related indicators will also be included when relevant in any contracts or grants made during the Project. All subprojects receiving investment from the investment fund will be required to demonstrate positive impacts in all Althelia's impact areas, including inclusivity. This includes key performance indicators to monitor equal access to project benefits.

Along with other indicators, the gender monitoring data will be used by the Project Coordination Unit to inform adaptive management for Project programming. In addition to the ongoing monitoring, for evaluation of the Project efforts will be made to:

- Present lessons learned on gender integration and highlight any strengths and weaknesses;
- Analyze changes in the level of participation by different groups (men, women, identified vulnerable groups);
- Analyze changes in the awareness of gender issues among Project staff and stakeholder groups.

Gender mainstreaming responsibilities

Gender mainstreaming actions and activities for the Public sector activities are the responsibility of the Gender Expert to be hired by CI who will be reporting to the Project Director. Responsibility for gender mainstreaming in the Project will rest with the Project Director and the PCU. The project has allocated sufficient resources to support both the Gender Expert and the PCU to manage gender mainstreaming activities.

Monitoring and Evaluation will be the responsibility of the Monitoring and Evaluation team of the Project and will be fully integrated into the Project's M&E system.

The case of sub-projects funded by the Investment Fund and the Climate Change Trust Fund

Given that all sub-projects must comply with GCF and EIB's environmental and social standards (as well as Althelia's), Althelia will designate resource people within the ESG team and its associates with the specific responsibility of integration of gender considerations into its subproject. As for the case of the public sector activities, gender will be integrated into the identification and selection of subprojects (objectives, components) and beneficiaries, and must be taken into account by any service providers involved in the sub-projects, including sex-disaggregated indicator monitoring at the output, outcome and impact level and the consideration of gender in follow-up activities and monitoring and evaluation.

Regarding the Climate Change Trust Fund to be created, the Trust Fund will develop a gender integration policy that complies with the requirements of GCF, EIB, CI and any national legislation that applies. This policy will need to be in place before an application is made to the GCF for the returns from the Investment Fund to be added to its capital and before the Trust Fund considers funding any projects.

Gender Action Plan

Project Outcomes	Proposed Actions and Targets
1. Strengthened adaptive capacity and reduced exposure to climate risks	• Provide gender training to 100% of regional agriculture service staff and any implementing partner staff responsible for providing sustainable agricultural support/training to vulnerable households • Conduct annual gender sensitive monitoring to track knowledge and vulnerability levels of the households targeted in the project • Conduct gender sensitive participatory planning of village level activities to improve sustainability of agriculture and strengthen climate change resilience (in 100% of targeted villages) • Provide training, support and inputs for sustainable agriculture techniques for vulnerable households, targeting 50% of trainee participants being women • Provide support to producer associations (including women's associations) and encourage female participation/membership of these associations, targeting 60% of women trainees (of sustainable agriculture trainings) becoming members by year 5 (10% target in year 2) • Target 26,840 jobs (of which 50% for women) are created by businesses receiving investment from the Investment Fund
2. Strengthened awareness of climate threats and risk-reduction processes	• Production of gender sensitive training modules covering climate change, sustainable landscape planning and approaches, gender mainstreaming in climate change activities and sustainable agriculture • Provide training sessions using methods to ensure that both men and women are able to participate (50% target participation of women) • Develop an information exchange platform to disseminate learning and training with a focus on including women and youth, with a target of ensuring that 142,800 people (50% female) are informed about climate risk reduction options by the end of year 5.
3. Strengthened institutional and regulatory systems for	• A gender sensitive methodological guide for regional and local authorities on how to integrate climate responsive planning is

climate-responsive planning and development	developed and disseminated • Gender mainstreaming is included in 100% of updated regional and local planning documents that integrate climate-responsive planning • Monitoring and Evaluation system for the CAZ and COFAV landscapes is designed to capture and report relevant gender sensitive information • Gender policy for the Madagascar Climate Change Trust Fund is developed as part of the Fund's guidance and policy documents • Develop a gender-sensitive strategic plan for the Trust Fund • Develop gender sensitive grant making procedure and proposal
4. Increased number of low emission power suppliers	• Low emission energy installations and suppliers are invested in through the Investment Fund, resulting in 447,000 benefitting from low emission energy sources (of which target is 50% female)
5. Improved management of land and forest contributing to emission reduction	• Encourage increased participation of women in local management structures responsible forest management, targeting 25% of association members being women by end of year 5 and identifying and implementing steps to include women on the association committees.
Cross-cutting	• Professional skills on gender mainstreaming for all project staff and key partners are updated so that they are informed, trained, and able to effectively ensure gender integration into all aspects of the project
	• Two gender specialists (CI Madagascar and CI HQ) ensure the backstopping on gender integration within this project • Althelia ESG team includes gender expertise to ensure gender integration is assessed at all subprojects
	• Integrate gender into the monitoring and evaluation system to ensure that impact, outcome and output indicators are gender sensitive when appropriate and feasible
	• Gender sensitive indicators tracked through the monitoring and evaluation system
	• Share information on gender integration into climate change project by reporting on gender differences for indicators in annual reports and publications

.

10 Timeframe and Required Resources

10.1 Measure Implementation Timeframe

The implementation timeframe of measures related to the environmental assessment process applied to the Project is established according to the following table.

Table 25: Measure Implementation Timeframe

Topic	Activity	Sub-project entity / Type of sub-project	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	…..
Institutional measures	Designation of the various people in charge of environmental, social, or gender aspects	Execution Unit	X										
		Private developer (funding by the Investment Fund)		X	X	X							
		Other developers (funding by the Trust Fund)								X	X	X	X
Measures related to the environmental evaluation process	Screening	Execution Unit		X	X	X	X	X	X	X	X	X	X
		Private developer		X	X	X							
		Other developers								X	X	X	X
	Implementation of mitigation measures and prescriptions			X	X	X	X	X	X	X	X	X	X
	Implementation of environmental and social monitoring and surveillance			X	X	X	X	X	X	X	X	X	X
	Annual participatory meeting	Forest corridors COFAV and CAZ		X	X	X	X	X	X	X	X	X	X
		Other forest landscapes			X	X	X	X	X	X	X	X	X
		Implementation								X	X	X	X

Topic	Activity	Sub-project entity / Type of sub-project	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	…..
		of the trust fund											
	Mid-term and final evaluation	Components 1, 2, and 4 initiated by BNCCC and CIM			X		X						
		Components 1 et 3 initiated by Althelia					X					X	
Capacity-building	Execution Unit		X		X								
	Awareness of beneficiaries and other actors (providers, CTDs, STDs)			X	X	X	X	X	X	X	X	X	X
Tool development and implementation	Preparation of the screening form		X										
	Preparation of the procedure manual on the environmental assessment of sub-projects		X										
	Implementation of the procedure manual on the environmental assessment process			X	X	X	X	X	X	X	X	X	X
	Development of databases on the environmental and social component of sub-projects(development)	Execution Units		X									
		Private developer		X	X	X							
		Other developers								X	X	X	X
	Maintenance and exploitation of sub-project databases			X	X	X	X	X	X	X	X	X	X
	Development of databases on grievance	Execution Unit	X										
		Private developers		X	X	X							

Topic	Activity	Sub-project entity / Type of sub-project	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	…..
	management for sub-projects	Other developers								X	X	X	X
	Maintenance and exploitation of grievance databases			X	X	X	X	X	X	X	X	X	X

10.2 Resources Required for the Implementation of the ESMP

Table 26: Available Resources for the Implementation of the ESMP

Sections	Entity	Status	Observations
Human Resources	CIM	– ***Staffing***: Adequate; A gender specialist will be hired – ***Basic qualifications*** *(environmental assessment, gender, participation*): average to good – ***Level of experience***: average to good	Capacity-building to be initiated (see 6.6.1)
	Althelia	– Staff to be recruited	Minimum profiles defined (see 6.6.1)
Policy	CIM	***Gender***: same policy as used at CI Washington	Reference: - " Rights-based approach gender policy" (Conservation International)
		Environment: same policy as used at CI Washington	Insert website address
	Althelia	Environment	Insert website address
Tools	CIM	Gender directive: Same tool as used at CI Washington	- Directive for gender integration in conservation programming - Gender integration in funding proposals
	Execution Units (Althelia, CIM)		To be developed (see 6.6.2) - Environmental assessment procedure manual for sub-projects, to be developed - Database of sub-projects including environmental assessment procedures - Database on grievance management

Bibliography

African Development Bank, 2015. African Gender Equality Index 2015, AfDB

Bidaud C., 2012, « REDD+, un mécanisme novateur ?. Le cas de la forêt de Makira à Madagascar», *Revue Tiers Monde* 3/2012 (n°211), p. 111-130

Brimont L., 2014. Le coût de la réduction des émissions issues de la déforestation et de la dégradation des forêts (REDD +) à Madagascar. Thèse pour obtenir le grade de docteur délivré par l'Institut des Sciences et Industries du Vivant et de l'Environnement (AgroParisTech) de France, 284p

Conservation International, 2016a. Cadre Logique du Projet, 14p

Conservation International, 2016b. Rapport sur les consultations publiques du Projet « Promotion de l'adoption des mesures "climate-smart landscape" pour améliorer la résilience des communautés vulnérables et réduire les émissions de gaz à effet de serre provenant des forets et des autres terrains de production », 71p

Conservation International, 2015, Environmental and Social Management Framework - CI-GEF Project Agency, 99p

Conservation International, 2013. Directive pour l'intégration du genre dans la conservation, 12p

Conservation International & CONFORME, 2014. Étude de l'intégration du genre dans les Interventions de Conservation International à Madagascar – Cas du corridor forestier Ambositra – Vondrozo, 65p

Conservation International, 2012, Directives pour l'intégration du genre dans la programmation de la conservation, 13p

Conservation International, 2012. Rights-based approach gender policy, 3p

Directions Régionales de l'Environnement, de l'Écologie, de la Mer et des Forêts Alaotra Mangoro & Atsinanana et Conservation International, 2015, Nouvelle Aire Protégée du Corridor Ankeniheny – Zahamena, Plan d'aménagement et de gestion (2015 – 2020), 82p

Direction Générale de la Météorologie, 2008 : Le changement climatique à Madagascar, 31 p.

Green Climate Fund, 2011. Annexe III Interim Environmental and Social of the Fund, (GCF/B.07/11) 3p

Haonasoa 2010 Gestion durable des forêts communautaires par l'aménagement et valorisation de sites touristiques d'Ambalavao, région de Haute Matsiatra, Madagascar. , MADAGASCAR

IFC, 2015. Système de gestion environnementale et sociale – Manuel d'application général, 64p

IFC, 2015. Système de gestion environnementale et sociale – La trousse à outils, 74p

Jariala, 2008. Évaluation de l'offre et de la demande en produits forestiers ligneux des artisans Zafimaniry dans la région d'Ambositra, 59p

LAND RESSOURCES, 2009. Rapport bibliographique relative à la création de laNPA Corridor Forestier Fandriana- Vondrozo, 16p

Ministère de l'Environnement et des Forêts et Conservation International, 2010. Plan de sauvegarde sociale, plan opérationnel de sauvegarde, Etude d'impact environnemental et social de la Nouvelle Aire Protégée du Corridor Forestier Ambositra – Vondrozo, 261p avec annexes

Ministère de l'Environnement et des Forêts et Conservation International, 2012. Reserve des Ressources Naturelles, Plan de gestion environnementale et de sauvegarde sociale, 136p

Ministère de l'Environnement, de l'Écologie, de la Mer et des Forêts et Conservation International, 2015, Plan global d'aménagement et de gestion du Corridor Forestier Ambositra - Vondrozo, 85p

Office National pour l'Environnement, 2011, Cahier de Charges Environnementales - Plan de sauvegardes sociales et environnementale de l'aire protégée « Corridor Forestier Ambositra – Vondrozo » (COFAV) – Régions Atsimo-Atsinanana, Vatovavy-Fitovinany, Amoron'i Mania, Matsiatra-Ambony et Ihorombe, 10p avec annexes

Office National pour l'Environnement, 2008. Directive générale pour la réalisation d'une étude d'impact environnemental à Madagascar, 48p

Office National pour l'Environnement, 2013. Cahier de Charges Environnementales - Plan de sauvegardes sociales et environnementale de l'aire protégée « Corridor Ankeniheny – Zahamena » (CAZ) – Régions Atsinanana et Alaotra Mangoro ; 7p

Office National pour l'Environnement, Ministère de l'Environnement et des Forêts, Conservation International, Madagascar National Parks, FTM, NORAD, , 2013. Évolution de la couverture des forêts naturelles à Madagascar, 2005 -2010, 42p

Oldeman L.R., 1988. *An Agroclimatic Characterization of Madagascar,* ISRIC, FOFIFA, IRRI , 64 p

PNUD 2014 Quatrième rapport national de la Convention sur la Diversité Biologique – Madagascar

Rakotobe Z.L., Harvey C.A., Rao, N.S., Dave, R., Rakotondravelo J.C., Randrianarisoa J., Ramanahadray S., Andriambolantsoa, R. Razafimahatratra H., Rabarijohn R.H., Rajaofara H., Rameson H., & MacKinnon J.L. 2016. Strategies of smallholder farmers for coping with the impacts of cyclones: A case study from Madagascar. *International Journal of Disaster Reduction **17**: 114-122.*

Région de l'Anosy, 2005. Plan Régional de Développement, 52p

Société Financière Internationale, 2012. Normes de performance en matière de durabilité environnementale et sociale

Vieilledent G, C Grinand et R Vaudry (2013). Forecasting deforestation and carbon emissions in tropical developing countries facing demographic expansion: a case study in Madagascar. Ecology and Evolution 3(6): 1702-1716

World Resources Institute et al., 2015. Green Climate Fund Handbook, 28p

Annex 1: Description of the Receiving Environment

Annex 1.1 - Ankeniheny – Zahamena Corridor (CAZ)

A Biophysical Environment of the CAZ

Soil
The geological substratum in the region is a crystalline basement, comprising the elements of the *Beforona-Alaotra* group and characterized by rocks and minerals of amphibolite, charnockite, and amphibole and many intrusions of basic and ultrabasic rocks (MEF &CI, 2012).

Climate
The general climate of the region is characterized by two wet seasons, the hot and rainy season from September to May and the cool season with light rains from June to August (MEF & CI, 2012).

The dry season is not well-marked; rainfall is only the lowest during this period (Direction Générale de la Météorologie, 2008) that is also often under the influence of cyclonic winds. Air humidity is high in the interior of forests and can reach 85%. The annual average temperature is 21°C and the average level of annual rainfall is 2,503 mm (Direction Générale de la Météorologie, 2008)

Water Systems
In addition to its ambient hyper-humid tropical climate, typical of the eastern side of Madagascar, the region also has an important river system. Eight large rivers and several river systems of the three regions in the Toamasina Province originate in the mid-altitude rainforest. The Sahatandra and Ivohitra Rivers feed the hydropower plant of Andekaleka, supplying electricity to Antananarivo. Ivondro and Rianila feed the Volobe plant that serves Toamasina.

Biological Features
Surveys of the ecological features and biodiversity richness of the CAZ NPA, through two Rapid Assessment Programs (RAP) and various studies showed its wealth in biodiversity. Flora species, including epiphyte, heliophilous, and ombrophilous plants, are diversified due to the different types of habitats. The hyper-humidity and soil diversity in the NPA are also favorable to the development of some plant species.

Flore (MEF& CI, 2012)
The number of plant species identified in the corridor reaches 2,043 with five endemic families, 72 endemic genera, and 1,585 endemic species or an endemism rate of 85%. Many species of orchids and palm trees also present are endemic to the CAZ.

Fauna (MEF& CI, 2012)
Lemurs
The CAZ NPA is home to 21 species of lemurs, including eight species threatened by extinction according to the IUCN[13](*Indri indri* EN[14]; *Propithecus diadema* EN; *Varecia variegata* CR[15]; *Eulemur fulvus* VU[16]; *Eulemur rubriventer* VU; *Hapalemur griseus* VU; *Prolemur simus* CR; *Daubentonia madagascariensis* VU). Other species were recently discovered including *Microcebus lehilahytsara*, *Allocebus trichotis*, *Prolemur simus*, and *Cheirogaleus crossleyi*. The CAZ NPA has 70% of the world

[13]International Union for Conservation of Nature
[14] EN: Endangered
[15] CR: Critically Endangered
[16] VU: Vulnerable

population of *Indri Indri*, 80% of the world population of *Propithecus diadema*, and 70% of the world population of *Varecia variegata variegata*.

Birds:
At least 89 species of birds are found in the CAZ NPA, with an endemism rate of 70%. Many species are threatened (e.g. *Lophotibis cristata, Aviceda madagascariensis, Atelornis pittoïdes, Pseudobias wardi, Monticola sharpei, Dromaeocercus brunneus, Hartertula flavoviridis, Randia pseudozosterops, Sarothrura watersi,* etc.). About 50% of the world population of the Madagascar Serpent-Eagle *Eutriorchis astur* is found in the corridor.

Amphibians and Reptiles:
The region is relatively rich in herpetofauna with 129 species of reptiles and amphibians, some rare and/or endemic. Three species of amphibians, the Black-eared Mantella (*Mantella mylotympanum*), the gecko *Paroedura masobe* or the frog *Scaphiophryne boribory* are endemic to the area and listed as Critically Endangered (CR) by IUCN. Two other species of Mantella, *Mantella crocea* and *Mantella aurantiaca*, are endemic to the CAZ.

Type of Uses of and Dependence of Livelihoods on Forest Resources and Forest Products in the CAZ

Household Economy
Agriculture
Agriculture is the main element of the rural economy around the Ankeniheny-Zahamena Corridor. Therefore, the CAZ NPA should focus on agriculture, particularly on improved agricultural practices.

The traditional agricultural system is extensive and dominated by itinerant slash-and-burn practices, therefore constituting the main pressure on forests. The population depends on the forest for soil fertility. However, this dependence is not sustainable and goes against biodiversity conservation.

Agriculture generates several sources of revenue. The population grows cash crops such as coffee, banana, cloves, ginger, and litchis. Surplus subsistence crops are also sold, notably rice, but also corn or groundnut. In some areas, particularly on the western side of the forest, some families grow and sell vegetables.

The isolation of some communes around the CAZ (for example Manakambahiny Est, Antenina, Fito, Maroseranana, and Ambohimanana) hinders the promotion of commercial agriculture due to the difficult access to markets and collection points. Therefore, the population focuses heavily on subsistence agriculture. Itinerant agriculture and *teviala* are deeply rooted in these areas.

In addition to agriculture and livestock, the secondary elements of rural economy include wood-cutting, charcoal-making, mining activities, day labor, and small trade. Handicraft activities such as basketry and carpentry provide additional income for some households. A small number of civil servants are present in the CAZ landscape, mainly in the education and health sectors. Wood-cutters are found everywhere but at a higher concentration in and near Anjahamana, Andranobolaha, and Didy. Based on the prevailing socioeconomic conditions, the *Sihanaka* use forest resources, particularly timber products, to supplement their revenues.

On the eastern part of the corridor, exploitation of precious wood (including palisander, rosewood, and ebony) is often practiced by young men to supplement their income.

There is illicit and small-scale mining of resources (gold, rose quartz, etc.) in the CAZ. Migrations are increasingly frequent to search for precious stones. Legal mining occurs outside of the protected area.

Graphites in the rural commune of Andasibe are exploited by Société Izouard. The Ambatovy Project exploits nickel and cobalt in the Ambatovy-Analamay Forest, in the rural communes of Ambohibary and Andasibe. The latter is a large-scale mining project and contributes to the rural economy. However, close collaboration between the company and the corridor managers is essential to manage the environmental risks of the mining activities.

Generally, the rural population in the CAZ lives in poverty and precariousness. Some households are more privileged than others. The average annual income of households around the CAZ is around 300,000 Ar (MEF& CI, 2012).

The local population remains highly dependent on forest resources. Villagers harvest honey, yam, and weaving materials in the forests. Fish, shrimp, crayfish, and eel are collected in forest streams or rivers originating in the forest. Some products (such as honey and crayfish) are sold and represent an additional income for households. In particular, the livelihoods of the *Bezanozano* and the *Betsimisaraka* strongly depend on the forest, particularly during the hunger gap when the level of hunting and gathering increases. A large part of the population also uses the forest as pasture (in the areas of Didy et Morarano Gare for instance) and a source of medicinal plants. Finally, housebuilding materials are mostly collected in the forest.

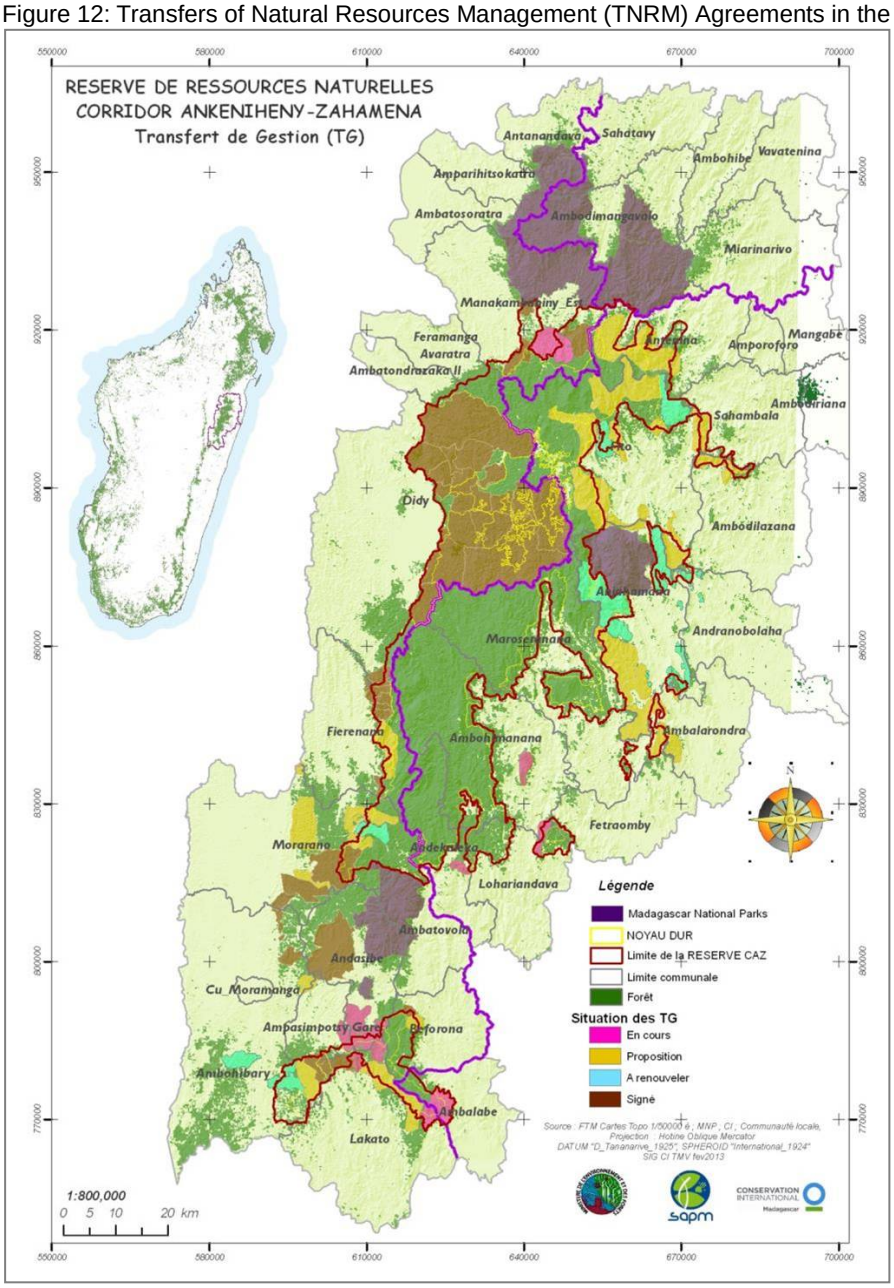
Zoning and Planning of the CAZ

Table 27: Zoning and Planning Principles in the CAZ

Zone	Characteristics	Management Objective	Limitation of use
Core area	Intact forest or requiring interventions for rehabilitation	Protection Restoration	- Prohibition of product extraction, fires, and clearing - Cultual practices not detrimental to biodiversity are authorized
Controlled Settlement Zones (ZOC)	Can combine forests, agricultural lands, and settlements	Sustainable use of resources	According to specifications and rules to be established based on the characteristics and PAG of each zone
Sustainable and Controlled Use Zones (ZUD and ZUC)	Can combine forests, agricultural lands, and settlements	Promotion of resources (including ecotourism)	Based on zoning and the detailed development plan to be established

Transfers of Natural Resources Management

Figure 12: Transfers of Natural Resources Management (TNRM) Agreements in the CAZ NPA



Source: Plan d'aménagement et de gestion (PAG), 2015 -2020

Annex 1.2 - Fandriana – Vondrozo Corridor (COFAV)

A Sociocultural Background of the COFAV

Sociocultural Background

Population and Demography
In addition to its rich biodiversity and high rate of endemism, the Ambositra - Vondrozo Forest Corridor is characterized by its heterogeneity and the presence of multiple ethnic groups living in the peripheral areas. Socioeconomic relationships among these groups have always been strong as the forest corridor has never been a barrier to migration or trans-forest trade. Far from being a frontier or an impassable obstacle, the forest has been a place of contact and circulation in history (MEEMF& CI, 2015)

Population density varies from one district to the next: the communes of the Ambohimahasoa District have the highest density with an average of 148 inhabitants/km². The Ivohibe communes have the lowest density at less than 10 inhabitants/km². The Ambositra, Vohibato, Lalangina, Ambalavao, Ikongo, Vondrozo, and Ifanadiana districts are in the medium category, at about 55 inhabitants/km².

Demographic growth also varies. In the Betsileo country, it amounts at 2.5% per year; in the Tanala country (Ikongo and Ifanadiana), it is largely inferior, at 2%. The Vondrozo communes have an average population growth rate of about 2.2% annually.

Main Ethnical Groups
The Betsileo, the Tanala, the Bara, and the Sahafatra are the main groups at the edges and peripheral areas of the COFAV. They are concentrated in the west, east, and south of the corridor.

The Betsileo form the majority of the population on the western side (over 90% in the western communes). On the eastern and southern fringes, various ethnic groups coexist even if the Tanala, Bara, and Sahafatra are in slight majority.

The Betsileo are also the majority in the Ambositra District with a small presence of Tanala and other groups. In the Ifanadiana District, the Betsileo and the Tanala constitute the major part of the population at respectively 75% and 14%. In Vondrozo, the Sahafatra, Tanala, and Antefasy dominate. In Ivohibe, the original Bara « *tompontany* » only represent over half of the total population (52%), the main migrants being the Betsileo, Antefasy, Antemoro, and Antesaka.

Historical Settlement
The people living in the peripheral areas of the corridor are mainly from the southeastern coast of the island. These migrants came in successive waves to the Highlands, seeking free and vacant lands. On the western side of the corridor, the Lalangina and Arindrano (Ambalavao area) have experienced an influx and high density of population since the 15th century when small clans arrived. On the eastern side, a group of migrants of Arab influence, the Zafiraminia, came during the first waves. This group spread on the East Coast before gradually reaching the cliffs and the highlands. The settlement process of the corridor's peripheral areas occurred therefore in ascending waves, following the tributaries of the Matitanana, Sandranata, Manambondro, and Rienana, then in descending waves, from the Highlands down the escarpment. Strong family ties exist between the populations up and down the escarpment as a result of these migration movements (MEEMF& CI, 2015).

Current Migration Situation

Today, there are two types of migratory flow in the COFAV. The Betsileo migrate to the forests to convert the lowland swamps, or to other regions of the country for major rice cultivation works or coffee harvest. Recognized for their ability for rice field plowing and terracing, the Betsileo workforce is highly prized by the Tanala for major rice cultivation works or conversion of coffee plots to rice paddies, which has become increasingly common these recent years. This type of migration concerns mainly young and landless households. Frequent contact with the Tanala often results in permanent settlement with transfer of land or marriage alliance.

The second type of migration involves populations at the back of the corridor, where the saturation of lowlands and demographic pressure drive struggling households to migrate towards the heart of the forest, to the limit of their territory.

Relationships between Humans and Forests

Human-Forest Relationships for the Betsileo and the Tanala
Forest is a place of fady. These taboos are related to the history of ancestors who lived in the forest. Respecting taboos means honoring the spirits of the wild and the ancestors. Taboos are also the arguments used by local communities to prohibit forest access to foreigners (MEF & CI, 2010).

The forest is also considered an integral part of the ancestral territory. Taboos serve to strengthen the relationship with the territory, by building an alliance with nature and ancestral spirits and prohibiting access to other groups.

Human-Forest Relationships for the Bara
The forest is a space at the edge of the human world for the Bara, as well as the domain of the spirits. All the areas known to shelter spirits are sacred and associated with many taboos. In the past, the forest played a marginal role for the Bara economic system, which was mainly based on extensive livestock farming and rice cultivation. Today, the forest is a source of food supplements through hunting and gathering. The forest is also viewed as a huge livestock penning area. In the past, it was used to hide livestock in case of invasion of an enemy clan. Because of the belief of spiritual presence and potential danger for humans, it was the perfect place for the Bara to hide their herds. The presence of zebus is a sign of appropriation and of the new economic role of the forest.

Forest does not belong to anybody but all the descendants of the common ancestor may exert their rights. Raising large lineage herds inside the forests builds an alliance between the group of descendants, wild spirits, and ancestral spirits. The Bara have long played the role of forest guardians as "*tompon-tany*" (legitimate hereditary owners), controlling access of groups of various origins and limiting exploitation and extension of slash-and-burn agriculture.

Human-Forest Relationships for the Zafimaniry
The *Zafimaniry* country covers three main communes: Ambohimitombo I, d'Ambohiitombo II, and Antoetra. The Zafimaniry population is a Betsileo sub-ethnic group with a civilization closely linked to forest and wood. Zafimaniry art, or rather sculpture, is a true cultural and historical richness, perpetuated from one generation to the next and making the reputation of the area.

This Zafimaniry precious heritage is dominated by sculpture of various articles as well as the construction of "*tranomena*". Works are made by hand and show exceptional originality and specificity. Zafimaniry wood-crafting has been recognized as a "World Heritage" on May 17, 2004 in close collaboration with the Ministry in charge of Tourism and UNESCO.

While the relationships between humans and forests around the COFAV were previously regulated by the collective respect to spirits and ancestors – a view at the origin of its long-term conservation-individuality and uncontrolled conquest of the forest - the last stronghold - for short-term gains and

long term land-grabbing are increasingly prevailing at the expense of ecological balance and the sociocultural value of the forest.

Biophysical Environment

Physical Features

The various ecosystems in the COFAV preserve and maintain an important biological diversity. A refuge for fauna and flora, the forest corridor guarantees the links among the various communities of both fauna and flora. It also serves as reproduction, feeding, rest, and shelter areas for the different species. Finally, the forest corridor helps species recolonize places where they were extirpated due to disturbance.

The COFAV largely contributes to the global recognition of the island of Madagascar for its biological wealth. The different vegetation types of the eastern rainforest, with the rupiculous vegetation, offer habitats for several species endemic to the country or even the southeastern region.

Water Systems

Forty-some rivers originate in the Ambositra - Vondrozo Corridor: the Sahatorendrika, Fisakana, Mania, Ivato, Fanindrona, Nosivolo, Mananjary, Namorona, Matitanana, Ionilany- Faraony, Manampatra, Mananara, Matsiatra, Mananatanana, Zomandao provide ecological services (irrigation, bathing, drinking water) for the populations in the main watersheds (Mania, Matsiatra, Mananatana, Zomandao, Mananjary, Faraony, Matitana, Manapatra, Mananara) and serve as barriers for the distribution of some lemur species.

Ecosystems

The diverse ecosystems in the Ambositra – Vondrozo are very rich in flora. There are over six hundred species of angiosperms and over two hundred species of pteridophytes. These ecosystems are also the home of animal species endemic to Madagascar or to the region itself.

This corridor plays a major role for:

- Serving as a refuge for many species;
- Preserving the gene pool and ecological processes;
- Ensuring genetic flow, crucial for the long-term survival of species;
- Forming a center of endemism with the surrounding remnants of forests, hosting numerous endemic plants;
- Serving as a “bridge” between two existing national parks for plants and animals. The Ambositra - Vondrozo NPA is very rich in biodiversity, with remnants of primary forests and a diversity of characteristic habitats of the eastern region of Madagascar.

Diversified habitats and physical conditions in the COFAV are favorable to the development, diversification, and multiplication of species. Species observed here belong to many taxonomic groups. Many species endemic to Madagascar, unique species to the protected area or the region, and species on the IUCN Red List have been observed in the corridor.

Biological Features

Since the 1995 workshop that gathered biologists and identified the Ranomafana – Andringitra – Ivohibe (three existing protected areas) corridor as an unknown site rich in biodiversity, a series of inventory of many taxa have been carried out.

Information on the biodiversity of the Ambositra – Vondrozo forest corridor were compiled based on the results of various studies.

Flora

Angiosperms

Survey results in the corridor indicate 535 species of angiosperms, 62% of which are endemic to Madagascar. The floristic composition of the Ambositra - Vondrozo forest corridor is homogenous for the dominant upper strata species. The vegetation structure is also homogenous with four distinct strata. As the altitude decreases, the size of trees increase.

Pteridophytes

The number of species reaches 186, including 72 endemics, 31 rare species, two new species (*Diplazium* sp, *Xiphopteris* sp) for science, and two others observed for the first time in Madagascar. The pteridophyte flora in the corridor is rich and diverse but remains poorly known. The forest corridor is a reservoir of species for the gradual rehabilitation of the biodiversity of the Ranomafana National Park, heavily impacted by anthropization before its designation.

Fauna

Lemurs

There are 17 lemur species/sub-species observed, among which 8 are nocturnal (*Microcebus rufus, Microcebus jollyae, Lepilemur microdon, Avahi peyrierasi, Avahi betsileo, Lepilemur betsileo, Cheirogaleus major,* and *Daubentonia madagascariensis*) and 9 diurnal (*Varecia variegata, Propithecus edwardsi, Eulemur rubriventer, E. fulvus rufus, E. cinereiceps, Hapalemur griseus ranomafanensis, H.g.gilberti, Prolemur simus*, and *Hapalemur aureus*). New species/sub-species are currently being identified.

Reptiles and Amphibians

The Ambositra – Vondrozo corridor is home to 111 species of amphibians, including an Endangered species (*Mantella bernhardii*) and two Vulnerable species (*Anodonthyla montana* et *Scaphiophryne marmorata*), according to the 2008 IUCN Red List. There are 68 species of reptiles, including *Matoatoa spannringi*.

Small-mammals

There are 36 species of endemic small mammals and one introduced species in the Ambositra – Vondrozo corridor. A rare aquatic micro-mammal, *Limnogale mergulus* is also found here.

Birds

The Ambositra –Vondrozo corridor has 94 species of birds, including 65 species endemic to Madagascar and 22 regional endemics. Among these birds, 33 species are on the 2008 IUCN Red List, two are Critically Endangered (*Neodrepanis hypoxantha, Sarothrura watersi*), and three are Vulnerable (*Mesitornis unicolor, Brachypteracias leptosomus, Atelornis crossleyi*).

Fish Fauna

The information on fish come only from biological inventories performed in and around the Vondrozo Classified Forest, with 17 species of fish, including six endemic to Madagascar and three to the Vondrozo region. Their conservation status is the following: two Critically Endangered species (*Bedotia* sp Vevembe, *Paratilapia* sp Vondrozo), one Endangered species, and two Vulnerable species (*Agonostomus telfairi, Paretroplus polyactis*). In addition, 4 species of crustaceans (crab and crayfish) and at least 55 species of Lepidoptera were found in the corridor.

Type of Uses of and Dependence of Livelihoods on Forest Resources and Forest Products

Household Economy

The production systems and the economy in the various areas are forest-dependent and diversified.

Eastern Side
Household economy varies according to the social category:

- The most well-off group has extensive rice fields and *tanety*.
- The middle-class has less than 200 kg of rice, 10 *daba* (crates) of coffee and less than 1 ton of banana. This household group supplements its income with the sale of local rum (*toaka gasy*).
- The underprivileged category owns very little or no land. Its income comes mainly from wages (porterage of bananas/local rum jerry cans/basket of litchis, coffee and rice harvest) and the collection of crayfish.

The forest slash-and-burn system has decreased and is being replaced by "*fafatra*" or slash-and-burn of shrubby and herbaceous regrowth. The farmers start to abandon rain-fed rice production due to a decrease in yields. The diminishing soil fertility drives the spread of land conversion: a large part of the coffee plantations and irrigable valleys is converted into low rice fields to increase the production of paddy.

The revenue of the population comes from the sale of four crops: banana, coffee, beans, and cassava. Cassava and banana mainly serve for food security even if some are sold along the corridor and via the FCE (Fianarantsoa- Côte Est) route.

Banana is a commercial food crop and provides significant income from December to March. Banana collectors work in the area and export them through Fianarantsoa or Antananarivo. About 100 tons of banana transit through the Tolongoina station to Fianarantsoa. Beans provide an annual revenue of 18,000 Ar to 120,000 Ar per household during the hunger gap (Haonasoa, 2010). The FCE train is generally used for the transportation of a significant quantity of cassava to Fianarantsoa. An extension of the cultivated area of sugarcane was also observed. Sugarcane juice is used to sweeten coffee and/or to produce the local rum for trade, providing additional household income of 30,000 Ar to 280,000 Ar annually (Haonasoa, 2010). Other cash-crops are emerging: ginger cultivation has experienced a significant increase near the rural commune of Tolongoina (200 tons per year). Other households have introduced vanilla and pepper that are well adapted to the local climate.

Northwestern and Central-West Side
Rural markets in the Highlands (Ialamarina, Mahazony, Ambatosoa) have developed thanks to local rum and tobacco. The trade of local rum helps young households buy some rice fields.

South Side
Generally, the production system of the population neighboring the COFAV is based on irrigated or flooded rice paddies. The agro-ecological conditions in the area allow for two rice-growing seasons (early rice, large-season rice). The Betsileo region benefits from large hydromorphic valleys suitable to rice-growing.

Rice-growing is not well-developed in the Sahafatra and Bara lands, where the valleys are deep. Household revenues come from the sale of 20 to 50% of the rice production. Off-season cultivation, notably potato and beans, forms an integral part of the cultivation system on rice paddies. This practice is mostly popular in the Betsileo region.

Slash-and-burn agricultural practices are generalized in the COFAV. Its importance varies among the regions. In the eastern and south-eastern part of the Corridor, two cycles of beans follow rain-fed rice. The Betsileo and the Bara associate or rotate corn and beans.

The crops are replaced by cassava by the third year before the fallow period.

Cultivation on hillsides or *tanety* is dominated by tubers (cassava, taro, sweet potato) and legumes (mainly beans, groundnut, and *voanjobory*).

Citrus plantation ornaments Betsileo villages and is resuming in the Ialamarina and Vohibato District. In this area, fruit cultivation (litchi, mango, avocado, and citrus) occupies the bottom of slopes. In a remote locality, fruit are for self-consumption. Initiatives to improve orchards have been initiated: popularization of new varieties of citrus, renewal of orchards, and training of farmers.

The presence of several water bodies originating around the Corridor has recently promoted the development of freshwater fish-farming. Over 1,900 fish-farmers –rice-cultivating fish-farmers were identified in the neighboring communes. Fish serves both as food and source of income.

Livestock

Cattle breeding is practiced in and around the COFAV. Fattening is a source of significant revenue for privileged households, to buy rice, particularly in the Bara country. Lowlands and shores (*zamana*) provide quality pastures for zebus. Cattle are penned inside the forest in the southwestern part of the Corridor (from Ambalavao to Ivohibe). The corridor's ecosystems include abundant humid pastures and fodder trees. Pasture lands are renewed each year by burning.

The corridor is also a trade and labor exchange setting between the Tanala and the Betsileo communities. A commercial flow of zebus transits around the Corridor for a certain period of the year. The eastern family buys some cattle on the highland markets (Mahasoabe, Ambalavao, Ihosy). Cattle are brought by foot across the corridor. Other households come to buy coffee and/or local rum to be resold in the Highlands. This trade helps young households acquire land and mitigate the hunger gap.

The Betsileo farmer is an expert in rice-field works. Part of the work force temporarily migrates eastward for coffee harvest, lowland work, or rice paddy terracing. On the other hand, the Tanala, known for their land clearing skills, offer their service to the Betsileo to develop lands for corn-beans cultivation using slash-and-burn.

Young people come in the Ambalavao or Ialamarina region to buy tobacco for resale in the East. About a hundred men come and go year-long on the trails crossing the corridor, contributing to human settlements and makeshift trade.

Impacts of Economic Activities on the COFAV

These economic activities represent both threats and opportunities for the conservation and sustainable management of the COFAV protected area.

First and in the short-run, the progress of conversion of lowlands to rice fields is likely to increase the fragmentation of the forest ecosystem at low and medium elevations. This activity also threatens the swamp habitats of crayfish and amphibians and disturbs the water regime of the main watersheds. Conversion destroys marsh vegetation and depletes the plant species harvested for various uses (ceilings, basketry).

Forest clearing and the use of fire for cultivation and pasture deplete the soils and vegetation in the long-run. In addition to forest fragmentation, such practices reduce the vegetation cover that mitigates erosion. Excessive runoff might provoke serious flooding of coastal plains and rice-growing basins. Characteristic species of forested grasslands are disappearing and unpalatable grasses (for livestock) predominate.

Currently, 5,023 households have been identified as settled in 25 communes in the lowlands inside the PA. Several factors have driven farmers around the COFAV to conquer new arable lands. Population growth associated with the uncontrolled immigration flow led communities to search for lands at the periphery and/or inside of the corridor. This phenomenon led to the saturation of

convertible lowlands in the old settlement areas. Agricultural perimeters extended to the very core of the forest, to the traditional limit of the Betsileo territory and the Tanala areas. Other groups are motivated by securing lands for future generations.

In addition, low agricultural productivity, narrowness of valleys, and the rugged relief limit the development of rice cultivation and dry farming outside of the corridor. The fall of coffee export has reduced the income of farmers, who resort to seasonal cultivation.

Collection of wood for construction and other uses and of plant fiber for basketry are threats to the habitat of animal species and increase their vulnerability. Hunting and gathering are increasingly irrational and might lead to species extinction.

Traditional apiculture increases the risk of forest fires when fire is uncontrolled during harvest.

Illicit mining has increased in the past two years and congests, silts, scours, and sometimes diverts water streams. Extraction also results in landslides on shores. There are multiple impacts: water deficit, water flow reduction, water pollution, and disturbance of the aquatic ecosystem. Gapes and scrapes provoked by clearing and uprooting lead to loss of precious wood, disturbing the ecosystem and reducing the potential for carbon capture. This activity also causes the flight of animal species and the loss of plants.

However, human economic activities also have positive impacts on biodiversity preservation in the Ambositra – Vondrozo Forest Corridor:

- Zebu penning inside the forest and apiculture maintain the interest of the population to preserve this resource.
- The forest territory still has historical and sacred sites of huge value for the local populations and its conservation is considered very important.

Zoning and Planning of the COFAV

Table 28: Zoning and Planning Principles in the COFAV

Area	Surface (ha)	Characteristics	Management Principles
Core area	152,085 ha 48.41%	– Sanctuary of biological, cultural or customary, historical, esthetic, morphological, and archeological interest – Strict preservation area	– Area for conservation and scientific purposes – Prohibited activities: Any human uses, interventions, activities, and settlements except research, and pedestrian use of existing trails
Controlled settlement areas (ZOC)	13,172 (4.19%)	– Cultivation and sometimes settlement areas – Undisturbed swamps or wet grasslands – Forest or slash-and-burn cultivation areas	– Areas subject to specifications defining prohibited activities (clearing, extension of croplands, etc.) and authorized activities (patrol and surveillance, ecological monitoring, or use of existing trails)
Ecotourism and service areas	456ha (1.45%)	– Customary areas or areas with panoramic views – Presence of fauna and flora species characteristic of the Corridor's biodiversity	– Areas for TNRMs – Tourism visits and guidance subject to existing regulations – Prohibited: Urbanization
Sustainable Use Zones (ZUD)	129,780 ha (41.31%)	– More or less degraded areas – Very vulnerable to anthropogenic and climate effects.	– Regulated and controlled use of renewable natural resources. – Area of application of usage rights

			- Regulated movement of herds - Prohibited: clearing, hunting, collection of protected species
Restoration area	14,578 ha (4.64%)	- More or less degraded area in the PA	All activities are prohibited except efforts related to restoration and rehabilitation studies

Annex 2: Classification of Investment Projects according to the MECIE Decree

Investment Projects Requiring an EIA	Investments Projects requiring a PREE
• Located in (i) sensitive areas as defined by Order 4355 /97 on the definition and delimitation of sensitive areas, including coral reefs, mangroves, islets, tropical forests, erosion-prone areas, arid or semi-arid areas prone to desertification; swamps; natural conservation areas; protection strips of underground, mineral, or drinkable water; and paleontological, archeological, and historical sites and their protection strips or in (ii) sensitive forest areas as defined by Order 18177/04 • Listed in Annex 1 of the MECIE Decree • Any activities that are likely to have negative impacts on the environment and for which ONE judges that an EIA is required	• Projects listed in Annex 2 of the MECIE Decree • Projects not located in sensitive areas

Annex 1 of the MECIE Decree:
Project Requiring an Environment Impact Assessment (EIA)

Any activities listed below or meeting one of the following thresholds require an environmental impact assessment:

- Any developments, facilities, and works that might affect sensitive areas
- Any plan, program, or policy that might modify the natural environment or the use of natural resources, and/or the quality of the human environment in urban and/or rural areas
- Any use or transfer of technology that might have harmful consequences on the environment
- Any liquid storage of a capacity above 50,000m^3
- Any regular, frequent, or occasional transportation by road, rail, or air of hazardous materials (corrosive, toxic, infectious, radioactive, etc.)
- Any population displacement of more than 500 people
- Any developments, facilities, and works that might have harmful consequences on the environment, due to their technical nature, scale, or the sensitivity of the receiving environment. These activities can include:

Infrastructure and Development / Agriculture / Livestock

- Any road construction and development project, paved or not
- Any railway construction and development project
- Any railway rehabilitation project exceeding 20km
- Any construction, development, and rehabilitation project of an airport for international, regional, and national purposes and/or a runway exceeding 1,500 m
- Any development, rehabilitation, and maintenance project (particularly dredging) of main and secondary ports
- Any installation project of a maritime or river port
- Any excavation and backfilling project exceeding 20,000 m^3
- Any improvement project of development areas
- Any nuclear energy project
- Any hydropower facility over 150 MW
- Any thermal power plant with a capacity over 50 MW
- Any installation project of a power line with an electric voltage greater than or equal to 138 KV
- Any hydroelectric dam project with a retention area of more than 500 ha

- Any development project of waterways (including dredging) over 5 km
- Any hydro-agricultural or agricultural development or rehabilitation project of more than 1,000 ha
- Any industrial or intensive livestock project
- Any water extraction (surface or underground) over 30 m^3/h
- Any spreading project of chemical products that might impact the environment and human health due to its scale

Renewable Natural Resources

- Any introduction of new animal or plant species or genetically-modified organisms (GMO) on the national territory
- Any forest logging over 500 ha
- Any collection and/or hunting and sale of species that were never traded
- Any creation project of parks and reserves, terrestrial or marine, of national and regional scope
- Any introduction of species found in Madagascar but not in the introduction area
- Any sport hunting or recreational fishing project

Tourism and Hospitality

- Any hotel development with an accommodation capacity above 120 rooms
- Any recreational and touristic development on a combined area over 20 hectares
- Any restaurant with a capacity exceeding 250 diners

Industrial Sector

- Any industrial unit **requiring an authorization,** in accordance with the prevailing regulations of Law 99-021 of August 19, 1999 on the management and control policy of industrial pollution
- Any industrial transformation facility of products of animal origin (cannery, curing, processed meat, tannery, etc.)
- Any facility for animal feed production, with a capacity of over 150 t/year

Various Product and Waste Management

- Any storage facility of pesticides with a capacity above 10 tons
- Any recovery, disposal, or treatment unit of domestic and industrial waste, and other hazardous waste
- Any treatment or disposal facility of hospital waste exceeding 50 kg/day
- Any type of storage of radioactive products and/or waste
- Any storage of hazardous materials
- Any domestic sewage treatment unit

Mining Sector

- Any mechanized mining exploitation or extraction
- Any exploitation of radioactive substances
- Any physical or chemical treatment on the mining exploitation site
- Any research project of a magnitude defined by joint order of the Ministries in charge of the Environment and Mining, starting at the development and/or feasibility phase

Hydrocarbons and Fossil Energy

- Any oil or natural gas exploration project using the seismic and/or drilling method
- Any extraction and/or pipeline transportation project of oil or natural gas
- Any industrial extraction and exploitation project of coal or coking

- Any facility project for crude oil refinery, gasification, and liquefaction over 20,000 oil-equivalent barrels/day
- Any offshore facility project
- Any extraction project of bituminous substances over 500 m^3/days
- Any storage project of oil or derived-oil products or natural gas of a combined capacity exceeding 25,000 m^3 or 25 million liters

Annex 2 of the MECIE Decree:
Investment Requiring an Environmental Compliance Program (PREE)

Infrastructure and Development / Agriculture / Livestock

- Any periodic maintenance project of a paved road exceeding 20 km
- Any periodic maintenance project of an unpaved road exceeding 30 km
- Any industrial project in the exploitation phase
- Any hydropower facility between 50 and 150 MW
- Any thermal power plant between 25 and 50 MW
- Any land development for the installation of communal facilities of over 5,000 spectators or on more than 3 ha
- Any hydroelectric dam with a retention area between 200 and 500 ha
- Any hydro-agricultural or agricultural development or rehabilitation project of an area between 200 and 1000 ha
- Any semi-industrial or small-scale livestock project

Renewable Natural Resources

- Any forest logging of over 150 ha
- Any permit for the capture and sale of fauna species for export
- Any creation project of parks and reserves of communal and private scale
- Any reintroduction of a species in an area where it was previously present
- Any use or diversion of a classified and permanent watercourse, involving over 50% of its flow during the low-water period
- Any permit for the collection and sale of species for export
- Any increase of the fishing effort in marine areas by type of resource (a preliminary stock assessment is required)

Tourism and Hospitality

- Any hotel development with an accommodation capacity between 50 and 120 rooms
- Any recreational and touristic development on an area between 2 and 20 ha
- Any restaurant with a capacity between 60 and 250 diners

Industrial Sector

- Any industrial unit **requiring a declaration,** in accordance with the prevailing regulations of Law 99-021 of August 19, 1999 on the management and control policy of industrial pollution
- Any small-scale transformation facility of products of animal origin

Various Product and Waste Management

- Any storage of pharmaceutical products over 3 tons

Mining Sector

- Any mining research project (see Mining Code, PR case)
- Any small-scale exploitation project (see Mining Code, PRE case)

- Any extraction of mining substances in deposits classified as rare
- Any gold-mining involving over 20 people on a radius of 500 m and less
- Any storage project with a combined capacity over 4,000 m^3
- Any underground storage project with a combined capacity above 100 m^3
- Any mechanized quarry extraction project

Annex 3: Charter of Responsibilities for the Implementation of the MECIE Process

The figure and table below show the roles of the various structures for the implementation of the MECIE process. The main actors include:

- *The National Environment Office (ONE)*: Sole facility ensuring the compatibility of investments with the environment, under the Ministry in charge of the Environment. ONE's main responsibilities are to:
  - Determine the type of environmental assessment to be performed
  - Validate the ToR of an Environmental Impact Assessment (EIA)
  - Coordinate the CTEs and lead the evaluation of the EIAs
  - Deliver the environmental permit for a project requiring an EIA
  - Coordinate the CSEs and lead the monitoring of the compliance with the environmental management plans
  - Deliver the environmental discharge for a project requiring an EIA

- *Technical Evaluation Committee(CTE):* An *ad hoc* committee in charge of evaluating the EIA file. Its members include ONE, the representative of the Ministry of the Environment, Ecology, and Forests (MEEF), and the environmental units of relevant ministries.

- *Environmental Monitoring Committee (CSE*): An *ad hoc* committee in charge of monitoring the project environmental management plan (PGEP, including both environmental and social aspects, the equivalent of an ESMP) and the efficiency of measures applied to the social and environmental elements affected by the project. It includes the same members as the CTE established for the project to review the EIA file.

- *Ministry of the Environment, Ecology, and Forests (MEEF):* Supervises ONE and controls the implementation of the MECIE process. The Ministry is represented in the CTE and CSE.

- *Sectorial Ministry*: Represented by the environmental unit (Cellule environnementale or CE) in the environmental assessment process of projects requiring an EIA. For a project requiring a PREE or simplified EIA, the parent sectorial Ministry is in charge of:
  - Validating the ToR of the PREE (not mandatory)
  - Evaluating the PREE file
  - Delivering the environmental authorization
  - Monitoring the application and efficiency of measures (jointly with the MEEF)
  - Delivering the environmental discharge (at the request of the project developer)

- *Environmental unit*: This unit is established in each sectorial Ministry and is in charge of integrating the environmental aspect in the relevant sectorial policies to achieve sustainable development. The sectorial Ministry is represented by the environmental unit in the CTE and CSE.

Table 29: Roles and Responsibilities of the Main Actors for the Environmental Assessment Process (according to the MECIE)

EIA Process (References According to the MECIE)	**ONE**	**Sectorial Ministry**	**Ministry in charge of the Environment**	**CTDs - Commune**	**Other actors**	**Project Developer**
Screening *(Article 3 of the MECIE Decree)*	Validate screening Decision on the type of impact assessment (EIA or PREE or nothing)					Develop a document based on the brief description of the project and its location
Preparation of the Terms of Reference (ToR) of the EIA /PREE *(Article 12 of the MECIE Decree)*	Define the content of the ToR for the EIA	- Participate in the preparation of the ToR - Define the content of the ToR for the PREE			Any natural or legal person (public or private) can be called upon to contribute to the preparation of the ToR	Prepare a draft ToR for the EIA or PREE
Execution of the EIA or PREE *(Article 11 of the MECIE Decree)*				Can be consulted during the development of the EIA or PREE file –at the initiative of the developer except if required by the ToR	Can be consulted during the development of the EIA or PREE file – at the initiative of the developer except if required by the ToR	Establish the EIA or PREE document
Submission of the EIA or PREE for review *(Articles 13 and 14 of the MECIE Decree)*	- Administrative and technical reception of the EIA - Transmission of EIA documents to relevant entities	- Technical and administrative reception of the PREE file (environmental unit or CE)				Pay the fees for the environmental assessment and monitoring of the ESMP (for EIA)
Evaluation of the EIA *(Articles 15 - 26 of the MECIE Decree)*	- Establish the CTE - Ensure the coordination of the CTE - Lead the technical evaluation of the file	- Receive a copy of the EIA document from ONE (CE) - Participate in the CTE (CE) - Perform the technical evaluation of the PREE file (CE) - Give an opinion on the PREE file (CE)	- Receive a copy of the EIA document from ONE (CE) - Participate in the CTE (CE) - Control the compliance of the technical evaluation	- Can be associated to the technical evaluation of the EIA document by decision of ONE - Can be a delegate of the responsibilities of the CTE for the evaluation	By decision of ONE, relevant environmental organizations or other experts can participate in the technical evaluation of the EIA file	
	CTE: Decision on the form of public participation			Organize public consultation on the		

EIA Process (References According to the MECIE)	ONE	Sectorial Ministry	Ministry in charge of the Environment	CTDs - Commune	Other actors	Project Developer
				EIA file		
	Participates in the public consultation on the EIA file	Participates in the public consultation on the EIA file	Participates in the public consultation on the EIA file	Participates in the public consultation on the EIA file	Can participate in the public consultation on the EIA file	Participates in the public consultation on the EIA file
	Establish the evaluation report by the public					
Delivery of the environmental permit *(Article 27 of the MECIE Decree)*	Deliver the environmental permit (ONE DG) based on the technical evaluation report of the CTE and the public evaluation	Deliver the environmental authorization (Minister) based on the technical evaluation report of the CE				
Appeal in case of permit refusal *(Article 28 of the MECIE Decree)*			Deliver the environmental permit (Ministry) if the appeal was rejected by ONE			Send a letter to the Ministry in charge of the Environment
Environmental control and monitoring *(Articles 29, 30, 32, and 33 of the MECIE Decree)*	Coordinate the environmental monitoring related to the EIA through the CSE Participate in the environmental monitoring related to the EIA	- Participate in the environmental monitoring related to the EIA (CSE member) - Initiate control activities jointly with the parent Ministry and the Ministry in charge of the Environment, in relation with the EIA or PREE files - Coordinate and participate in the environmental monitoring of the PREE - Recipient of the periodic environmental monitoring report	- Participate in the environmental monitoring related to the EIA (CSE member) or PREE - Initiate control activities jointly with the parent Ministry and the Ministry in charge of the Environment, in relation with the EIA or PREE files - Recipient of the periodic environmental monitoring report	- Recipient of the periodic environmental monitoring report - Participate in the environmental monitoring related to the EIA		- Execute the provisions of the ESMP - Prepare the periodic environmental monitoring reports

EIA Process (References According to the MECIE)	ONE	Sectorial Ministry	Ministry in charge of the Environment	CTDs - Commune	Other actors	Project Developer
Environmental audit *(Article 30 of the MECIE Decree)*	- Evaluate the environmental audit document - Deliver the environmental discharge	Evaluate the environmental audit document	Evaluate the environmental audit document	Associate with the evaluation of the environmental audit document		Prepare the environmental audit document
Other responsibilities						
In case of upset of environmental balance during the application of the PGEP /ESMP *(Article 30 of the MECIE Decree*)	Approve adjustment measures					Proposition of necessary measures of adjustment Implementation of measures
Sanctions Absence of an EIA for new investments *(Article 7 of the MECIE Decree*)	Statement on the lack of environmental permit	Involve in the statement	Involve in the statement			
		Jointly pronounce the suspension of activity				
Sanctions for non-compliance with the PGEP *(Articles 36 and 37 of the MECIE Decree)*	- Send a warning letter by registered mail					
	- Make the decision on the sanctions - Suspend or withdraw the environmental permit	- Involve in the decision on sanctions - Pronounce the halt or suspension of ongoing works		- Involve in the decision on sanctions		
Tools *(Articles 8 and 9 of the MECIE Decree*)	- Propose threshold values - Develop environmental standards and technical environmental guidelines	- Participate in the development of thresholds and standards - Participate in the development of technical guidelines	- Participate in the development of thresholds and standards - Participate in the development of technical guidelines			

The environmental assessment process initiated under the implementation of the GCF Project will comply with the terms in this table.

Annex 4: Management Structures of the CAZ and COFAV Protected Areas

Figure 13: Management Structure of the CAZ Protected Area (Source: Plan d'aménagement et de gestion du CAZ, 2015)

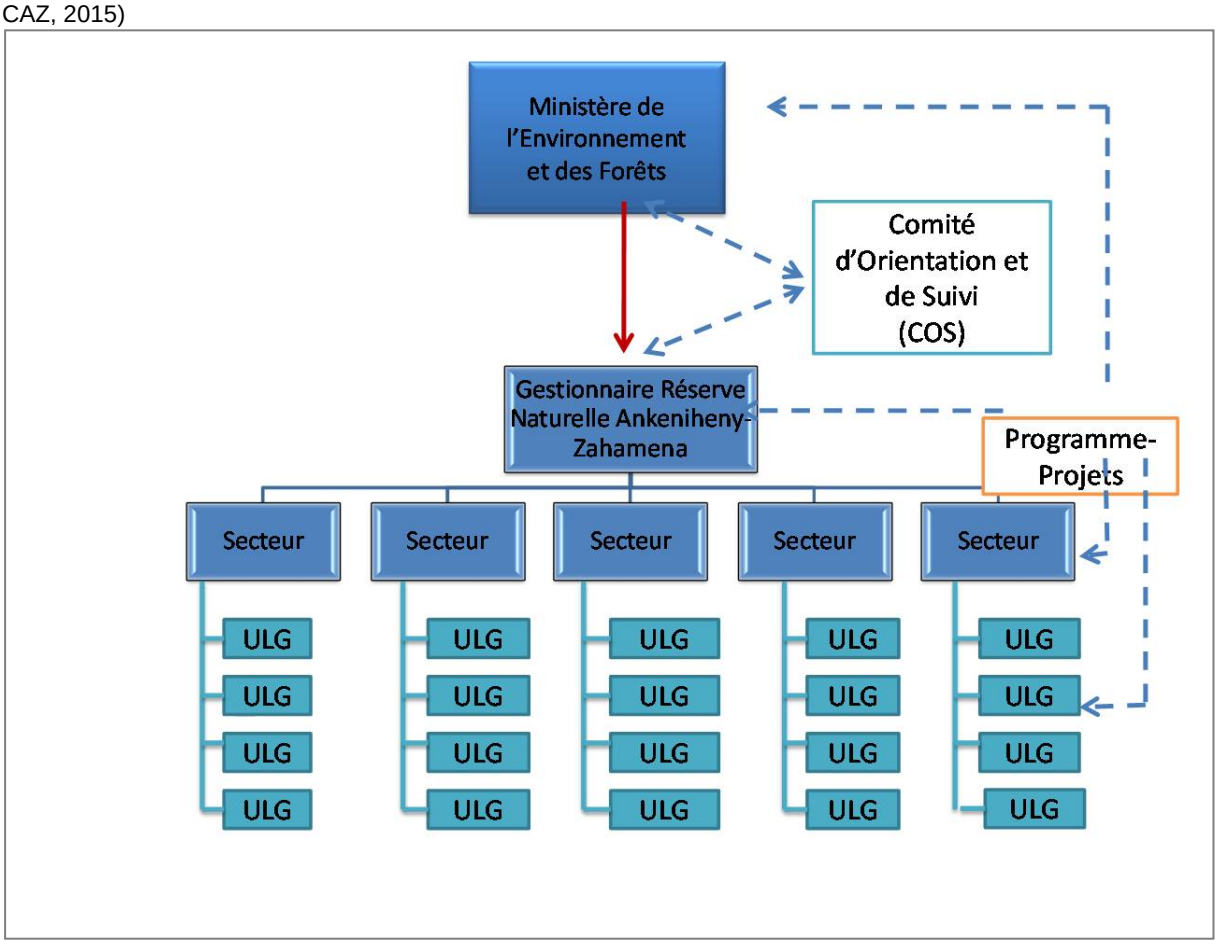


Figure 14: Management Structure of the COFAV (Source: Plan d'aménagement et de gestion du COFAV, 2015)

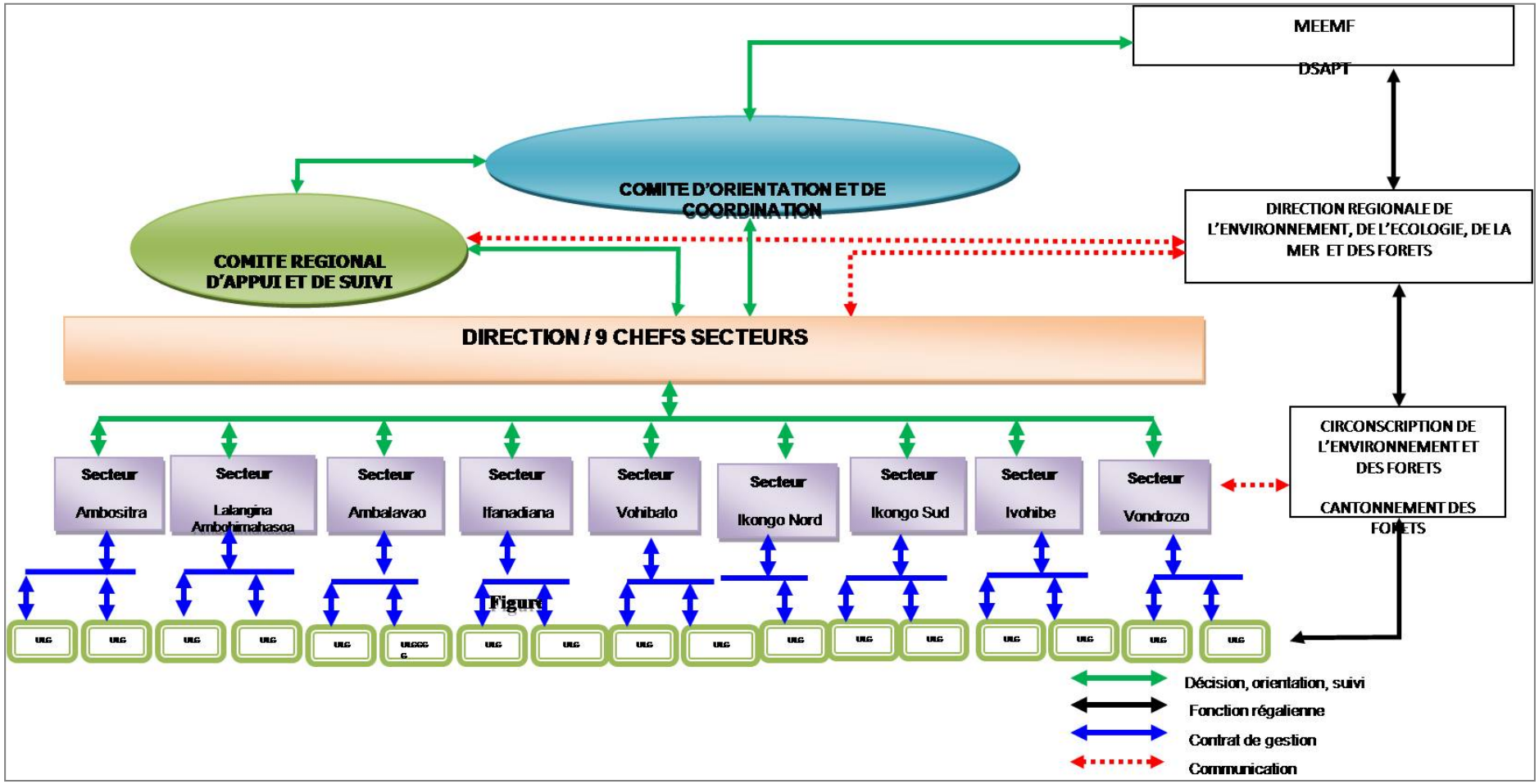


Table 30: Responsibilities of Entities involved in the Management of the COFAV and the CAZ

Entity	Main Responsibilities
Management of the Protected Area	• Design and implement the operational strategy of the PA • Ensure the preservation of the integrity of the PA (control and surveillance, etc.) • Propose strategies and orientations for the management implementation of the PA • Design and implement the PAG, the operational plan, and the annul work plan for the PA • Monitor and evaluate the results according to the management plan • Ensure the durability of the management system
Chefs secteurs (sector chiefs) COFAV: 9 sectors CAZ: 5 sectors	• Coordinate the activities at the level of the sector • Implement the annual work plan • Ensure the management of the PA at local level • Control/watch the PA • Reporting and preparation of activity reports for the COFAV Manager • Identify actions for the sound management of the PA • Provide technical, organizational, and institutional support to local management units
Local Management Units correspond to the areas managed by communities through TNRMs	• Propose and implement the detailed management plan and specifications at local level • Propose and implement the annual work plan of the unit • Propose and carry out micro-projects at local level • Perform the reporting of activities implemented at the level of the LMU • Ensure the compliance with the specifications and the technical sustainability standards • Prepare and apply the Dina (social convention) • Ensure the respect of cultures and traditions • Ensure the mobilization, awareness, and education of the community • Implement conservation agreements • Ensure surveillance in their part of the PA: patrol, guard duty, etc. • Report offences to the relevant authorities

Annex 5: Content of the Technical Tools for the Implementation of the Environmental Assessment Process of Sub-Projects

Content of the Screening Form

The main information to be integrated in this tool include, but are not limited to the following:

- *General information on the sub-project:* Sub-project title, developer, duration, geographic location, encroachment in sensitive areas, main activities
- *Description and rationale of the sub-project*
- *Main environmental and social impacts*
- *Triggered GCF standards and CI safeguard policies*
- *Mitigation measures*
- *Proposed categorization of the sub-project:* EIA or PREE or "neither EIA nor PREE"
- *Opinion of the Execution Unit on the categorization:* for a private sub-project
- *Recommendations on environmental prescriptions for sub-projects not requiring an environmental assessment (neither EIA nor PREE)*

Content of the Environmental Impact Assessment file (EIA)

Under this Project, the typical content of a sub-project EIA must include at least the following elements:

- *Analytical summary:* concise presentation of the main conclusions and recommended measures
- *Reminder of the regulatory, legal, and administrative framework* of the environmental assessment and the preparation of the study. Identification of international conventions related to the environment acceded by the country and relevant to the Project. Identification of triggered performance standards.
- Description of the planned Project
- *Data on the receiving environment of the Project*. Brief delimitation of the area and description of basic physical, biological, and socioeconomic conditions.
- *Results of stakeholder consultations*
- *Analysis of environmental impacts*. Estimated positive and negative effects of the Project, if possible in quantitative terms. Identification of mitigation measures and of any residual negative effect. A simplified analysis of risks and threats might be required.
- *Climate change adaptation measures (notably for sub-projects requiring facilities or using a significant area of land)*
- *Environmental and Social Management Plan:* including mitigation, corrective, and compensation measures as well as the surveillance, monitoring, and institutional strengthening measures
- *Institutional aspects*: estimation of the roles and capacities of environment services; responsibilities in the implementation of mitigation measures; capacity-building in environmental management of executing entities.
- *Implementation schedule and estimated costs for the execution of the ESMP*: Implementation schedule of measures to be taken under the Project and estimated investment and operational costs for mitigation, surveillance, monitoring, and capacity-building
- *Integration of the ESMP to the Project:* integration during planning, design, budget development, and implementation. This step includes the insertion of the required environmental provisions in the bidding document.
- *Annexes*: Legal situation of the location of the sub-project for sub-projects initiated on private land, etc.

Content of the PREE

The minimal content required for a Category C sub-project (according to GCF) requiring a PREE under the Project includes:

- A brief introduction
- *A brief review of all estimated adverse environmental and social effects:* technical description of each mitigation measure; assessment of any potential effect of these measures on the environment; identification of links with other mitigation plans for the Project (for example: conservation action plan for cultural heritage). Mitigation of pollution and nuisances.
- *Environmental and social surveillance and monitoring:* technical description of surveillance measures including parameters, methods, sampling sites, frequency of measures, detection limits (when appropriate), and thresholds for corrective measures, surveillance, and monitoring procedures, and reporting.
- *Climate change adaptation measures*
- *Institutional aspects*: Estimation of the roles and capacities of environmental services: responsibilities for the implementation of mitigation measures; capacity-building needs in environmental management of executing entities
- *Implementation schedule and estimated costs:* implementation schedule of measures to be taken under the Project and estimated investment and operational costs for nuisance mitigation, surveillance, monitoring, and capacity-building.
- Integration of the PREE to the sub-project: during planning, design, budget development, and execution of the Project. This step also involves the insertion of environmental provisions in the bidding document.

Annex 6: Stakeholder Consultations

Objectives

The global objective of stakeholder consultations is to associate the various actors and the populations in the final decision-making on the Project.

The specific objectives of stakeholder consultations are to:

- Provide to interested actors accurate and relevant information on the Project under development, and on its evolving logical framework (components, outcomes, outputs, result indicators, activities)
- Invite actors to give their feedback on the Project proposals and enter in a dialogue to build trust
- Promote local knowledge by integrating it in the formulation of the Project approaches or activities
- Provide the foundation for a collaborative implementation of actions planned under the Project and the organization of its implementation.

Approach

The adopted approach during the development of the Project Document and the Environmental and Social Management Plan will be participatory, focusing on individual and collective discussions with the relevant actors.

The consultation session involves:

- Presenting the Project: background and rationale, objectives, outcomes, outputs, intervention and implementation strategy
- Gathering inputs, concerns, and suggestions on the Project or related to its environmental and social management
- Presenting the development process of the Project Document, its different phases and schedule
- Identifying the charter of responsibilities of stakeholders and capacity-building needs for the implementation of the Project and its durability.

To maximize the opinions and inputs collected from local communities and vulnerable populations, a grievance registry, with a summary in Malagasy of the Project, was made available in each commune affected by the Project in the CAZ and COFAV PAs, for a period of 3 weeks after the regional public consultation session.