## Part I: Project Information

**GEF ID**
**10939**

**Project Type**
FSP

**Type of Trust Fund**
LDCF

**CBIT/NGI**
CBIT **No**
NGI **No**

**Project Title**
Upscaling Ecosystem-based Adaptation for Madagascar?s Coastal Zones

**Countries**
Madagascar

**Agency(ies)**
UNEP

**Other Executing Partner(s)**
Ministry of Environment and Sustainable Development

**Executing Partner Type**
Government

**GEF Focal Area**
Climate Change

**Sector**
Mixed & Others

**Taxonomy**
Focal Areas, Influencing models, Stakeholders, Gender Equality, Capacity, Knowledge and Research

**Rio Markers**

**Climate Change Mitigation**

No Contribution 0

**Climate Change Adaptation**

Principal Objective 2

**Biodiversity**

**Land Degradation**

**Submission Date**

9/21/2023

**Expected Implementation Start**

6/1/2024

**Expected Completion Date**

5/31/2028

**Duration**

48In Months

**Agency Fee($)**

675,064.00

**A. FOCAL/NON-FOCAL AREA ELEMENTS**

| Objectives/Programs | Focal Area Outcomes | Trust Fund | GEF Amount($) | Co-Fin Amount($) |
|---|---|---|---|---|
| CCA-1 | Outcome 1.1: Technologies and innovative solutions piloted or deployed to reduce climate-related risks and/or enhance resilience | LDCF | 2,574,929.00 | 23,356,733.00 |
| CCA-1 | Outcome 1.2: Innovative financial instruments and investment models enabled or introduced to enhance climate resilience | LDCF | 2,681,882.00 | 1,836,753.00 |
| CCA-2 | Outcome 2.1: Strengthened cross-sectoral mechanisms to mainstream climate adaptation and resilience | LDCF | 590,410.00 | 1,020,000.00 |
| CCA-2 | Outcome 2.3: Institutional and human capacities strengthened to identify and implement adaptation measures | LDCF | 1,258,715.00 | 960,680.00 |
| | | **Total Project Cost($)** | **7,105,936.00** | **27,174,166.00** |

**B. Project description summary**

**Project Objective**

To enhance resilience of local livelihoods and ecosystems, with a focus on gender equity, in coastal zones of Madagascar to the adverse impacts of climate change

| Project Component | Financing Type | Expected Outcomes | Expected Outputs | Trust Fund | GEF Project Financing($) | Confirmed Co-Financing($) |
|---|---|---|---|---|---|---|
| Component 1 Climate-resilient governance and planning in coastal zones of Madagascar | Technical Assistance | **Outcome 1.1** Strengthened institutional capacity for the coordination of adaptation action in coastal zones | ***Output 1.1.1*** *Participatory development of capacity needs assessments; terms of reference and statutes; and actions plans for three (3) CRGIZC/Platforms to strengthen their legitimacy, mandate, and sustainable financing*<br><br>***Output 1.1.2*** *Training and workshop series for four (4) CRGIZC/Platforms and MEDD-BNCC-REDD+ for a better coordination of adaptation actions in coastal areas* | LDCF | 253,208.00 | 400,000.00 |

| Project Component | Financing Type | Expected Outcomes | Expected Outputs | Trust Fund | GEF Project Financing($) | Confirmed Co-Financing($) |
|---|---|---|---|---|---|---|
| Component 1 Climate-resilient governance and planning in coastal zones of Madagascar | Technical Assistance | **Outcome 1.2:** Strengthened capacity of local and regional actors for mainstreaming adaptation in coastal zone planning processes | ***Output 1.2.1*** *Revision of the Atsimo Atsinanana PRD for effective EbA planning at the regional level*<br><br>***Output 1.2.2*** *Development of a guide for the participatory development of SACs and PCDs for effective EbA planning at the local level*<br>***Output 1.2.3*** *Revision of twenty (20) SACs and twenty (20) PCDs to effectively integrate EbA approaches through a cross-sectoral and participatory process* | LDCF | 458,246.00 | 620,000.00 |
| Component 2: Ecosystem-based adaptation in response to climate risks | Investment | **Outcome 2.1** Enhanced community capacity to implement EbA approaches and locally manage natural resources to increase climate resilience | ***Output 2.1.1*** *Eight (8) orphan LMMAs reactivated and upgraded for increased climate resilience of marine ecosystems and related livelihoods* | LDCF | 709,021.00 | 560,680.00 |

| Project Component | Financing Type | Expected Outcomes | Expected Outputs | Trust Fund | GEF Project Financing($) | Confirmed Co-Financing($) |
|---|---|---|---|---|---|---|
| Component 2: Ecosystem-based adaptation in response to climate risks | Investment | **Outcome 2.2** Enhanced environmental protection and rehabilitation by local authorities and communities for adaptation benefits | ***Output 2.2.1*** *3,000 ha of mangroves and coastal forests restored for adaptation benefits through community-based approaches*<br><br>***Output 2.2.2.*** *2,000 ha of degraded/deforested watersheds rehabilitated for adaptation benefits through community-based approaches*<br><br>***Output 2.2.3.*** *100 ha of coastal vegetation restored for adaptation benefits through community-based approaches* | LDCF | 2,341,593.00 | 14,351,897.00 |

| Project Component | Financing Type | Expected Outcomes | Expected Outputs | Trust Fund | GEF Project Financing($) | Confirmed Co-Financing($) |
|---|---|---|---|---|---|---|
| Component 3: Blue and Green Economy Approach for Resilient Ecosystem-based | Investment | **Outcome 3.1:** Increased diversification of income-generating activities and businesses to enhance | ***Output 3.1.1*** *Four regional business incubators tailored to ecosystem-based social enterprises are created and operationalized*<br><br>***Output 3.1.2*** *Training/technical support and/or equipment provided to 1,200 individuals from 20 incubated businesses, including women and youth, to build capacity of ecosystem-based businesses*<br><br>***Output 3.1.3*** *A sustainable financing and investment platform for ecosystem-based businesses developed* | LDCF | 2,433,706.00 | 8,960,989.00 |

| Project Component | Financing Type | Expected Outcomes | Expected Outputs | Trust Fund | GEF Project Financing($) | Confirmed Co-Financing($) |
|---|---|---|---|---|---|---|
| Component 4: Awareness raising and knowledge management for upscaling | Technical Assistance | **Outcome 4.1:** Strengthened awareness and knowledge of EbA approaches to support upscaling of project results across Madagascar?s coastal zones | ***Output 4.1.1*** *A project communication strategy developed and implemented, including awareness raising strategy on climate change and EbA aimed at local stakeholders*<br><br>***Output 4.1.2*** *A coastal EbA upscaling strategy and knowledge-sharing mechanism developed* | LDCF | 309,328.00 | 400,000.00 |
| Monitoring and Evaluation (M&E) | | | | LDCF | 262,456.00 | 570,000.00 |
| | | | **Sub Total ($)** | | **6,767,558.00** | **25,863,566.00** |

| Project Management Cost (PMC) | | |
|---|---|---|
| LDCF | 338,378.00 | 1,310,600.00 |
| **Sub Total($)** | **338,378.00** | **1,310,600.00** |
| **Total Project Cost($)** | **7,105,936.00** | **27,174,166.00** |

**Please provide justification**

**C. Sources of Co-financing for the Project by name and by type**

| Sources of Co-financing | Name of Co-financier | Type of Co-financing | Investment Mobilized | Amount($) |
|---|---|---|---|---|
| Recipient Country Government | Ministry of Agriculture and Livelihoods of Madagascar (MINAE) | Grant | Investment mobilized | 20,468,212.00 |
| Recipient Country Government | Ministry of Environment and Sustainable Development of Madagascar (MEDD) | Grant | Investment mobilized | 5,188,934.00 |
| Recipient Country Government | Ministry of Environment and Sustainable Development of Madagascar (MEDD) | In-kind | Recurrent expenditures | 963,600.00 |
| GEF Agency | UNEP | Grant | Investment mobilized | 50,000.00 |
| Donor Agency | IFAD (DEFIS program) | Grant | Investment mobilized | 503,420.00 |
| | | | **Total Co-Financing($)** | **27,174,166.00** |

**Describe how any "Investment Mobilized" was identified**

The co-finance projects categorized as ?Investment Mobilized? were identified through a process of scoping and analyzing relevant projects that can contribute to the implementation and objectives of the proposed LDCF project, and that share a focus on improving the livelihoods of coastal communities of Madagascar through ecosystem-based approaches and resilience building. Further details are provided in the table in section 1a) 3.

**D. Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds**

| Agency | Trust Fund | Country | Focal Area | Programming of Funds | Amount($) | Fee($) | Total($) |
|---|---|---|---|---|---|---|---|
| UNEP | LDCF | Madagascar | Climate Change | NA | 7,105,936 | 675,064 | 7,781,000.00 |
| | | | **Total Grant Resources($)** | | **7,105,936.00** | **675,064.00** | **7,781,000.00** |

**E. Non Grant Instrument**

NON-GRANT INSTRUMENT at CEO Endorsement

---

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

**F. Project Preparation Grant (PPG)**

PPG Required **true**

**PPG Amount ($)**

200,000

**PPG Agency Fee ($)**

19,000

| Agency | Trust Fund | Country | Focal Area | Programming of Funds | Amount($) | Fee($) | Total($) |
|---|---|---|---|---|---|---|---|
| UNEP | LDCF | Madagascar | Climate Change | NA | 200,000 | 19,000 | **219,000.00** |
| | | | **Total Project Costs($)** | | **200,000.00** | **19,000.00** | **219,000.00** |

# Meta Information - LDCF

LDCF true
SCCF-B (Window B) on technology transfer false
SCCF-A (Window-A) on climate Change adaptation false

Is this project LDCF SCCF challenge program?
false

This Project involves at least one small island developing State(SIDS). false

This Project involves at least one fragile and conflict affected state. false

This Project will provide direct adaptation benefits to the private sector. true

This Project is explicitly related to the formulation and/or implementation of national adaptation plans (NAPs). false

---

This Project has an urban focus. false

---

This Project covers the following sector(s)[the total should be 100%]:*

| | |
|---|---|
| Agriculture | **0.00%** |
| Natural resources management | **0.00%** |
| Climate information services | **0.00%** |
| Coastal zone management | **100.00%** |
| Water resources management | **0.00%** |
| Disaster risk management | **0.00%** |
| Other infrastructure | **0.00%** |
| Health | **0.00%** |
| Other (Please specify:) | **0.00%** |
| Total | **100%** |

---

This Project targets the following Climate change Exacerbated/introduced challenges:*

Sea level rise true

Change in mean temperature true

Increased climatic variability true

Natural hazards true

Land degradation true

Coastal and/or Coral reef degradation true

Groundwater quality/quantity false

---

# Core Indicators - LDCF

### CORE INDICATOR 1

Total

Male

Female

% for Women

Total number of direct beneficiaries

0

0

0

0%

### CORE INDICATOR 2

Area of land managed for climate resilience (ha)

0.00

### CORE INDICATOR 3

Total no. of policies/plans that will mainstream climate resilience

41

### CORE INDICATOR 4

Male

Female

% for Women

Total number of people trained

1,085

551

534

49.22%

To calculate the core indicators, please refer to Results Guidance

# OBJECTIVE 1

Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaption

## OUTCOME 1.1

Technologies and innovative solutions piloted or deployed to reduce climate-related risks and / or enhance resilience

View

## OUTCOME 1.2

Innovative financial instruments and investment models enabled or introduced to enhance climate resilience

View

# OBJECTIVE 2

Mainstream climate change adaption and resilience for systemic impact

## OUTCOME 2.1

Strengthened cross-sectoral mechanisms to mainstream climate adaption and resilience

View

## OUTCOME 2.2

Adaptation considerations mainstreamed into investments

View

## OUTCOME 2.3

Institutional and human capacities strengthened to identify and implement adaptation measures

View

# OBJECTIVE 3

Foster enabling conditions for effective and integrated climate change adaption

## OUTCOME 3.1

Climate-resilient planning enabled by stronger climate information decision-support services, and other relevant analysis, as a support to NAP process and/or for enabling activities in response to COP guidance

View

## OUTCOME 3.2

Increased ability of country to access and/or manage climate finance or other relevant, largescale, pragmatic investment, as a support to NAP process and/or for enabling activities in response to COP guidance

View

## OUTCOME 3.3

Institutional and human capacities strengthened to identify and implement adaptation measures as a support to NAP process and/or for enabling activities in response to COP guidance

View

## Part II. Project Justification

### 1a. Project Description

**PART II: PROJECT JUSTIFICATION**

**describe any changes in alignment with the project design with the original pif**

*Changes in the project design from the PIF*1. The project strategy has been moderately restructured in terms of project outcomes and outputs, though keeping the same approach to contribute to the overall objective of the project, established at PIF stage.

2. Two of the regions where the project will be implemented were modified from the PIF following a highly consultative and iterative selection process led by the Madagascar government and more specifically the MEDD/BNCC-REDD+. It was also influenced by the recent publication of the NAP which established new priority regions for climate change adaptation in the country.

3. Component 1 was restructured and divided into two outcomes. The first one is now only dedicated to the strengthening of institutional capacities for the coordination of adaptation action in coastal zones. CRGIZC/Platforms (*Comite R?gional Gestion Int?gr?e Zones Cotieres- Regional Committee for Integrated Coastal Zone Management*) will be supported to strengthen their legitimacy and become more operational in the coordination of climate change adaptation in coastal zones. Building on the PIF?s output 1.1.3, the second outcome of the Component 1 is now focused on the revision and elaboration of regional and local level development plans to integrate climate change and ecosystem-based adaptation (EbA) dimensions.

4. Under Component 2, the outputs formerly under the outcome 2.1 of the PIF were separated between the outcome 1.2 (see the above paragraph) and the outcome 2.1 which now includes a single output directed towards the support to orphan locally managed marine areas (LMMAs). A new output has been added to the outcome 2.2, in addition to the mangroves and forests restoration outputs, it foresees the complementary restoration of coastal vegetation.

5. The component 3 was remodeled to integrate the creation of regional business incubators supporting the incubation of local entrepreneurs and providing them with financial services adapted to climate-resilient social enterprises and MSMEs.

6. The following table summarizes the changes made as a result of the consultations organised during the PPG phase, in terms of the project?s regions of interventions; outcomes and outputs; and co-financing:

Table 1 Summary of changes in project design with the PIF

| As written in the PIF | Revised or added during PPG | Reason for the change |
|---|---|---|
| *Regions of implementation* | | |

| | | |
|---|---|---|
| Atsinanana, Boeny, Menabe, Vatovavy-Fitovinany | Atsimo-Atsinanana, Boeny, Diana, Menabe | Update of the regions from PIF was deemed necessary to better align with the recently published NAP, as well as to ensure greater participation in the selection process and appropriation of the project by different stakeholders. |
| *Project strategy* | | |
| Outcomes | | |
| Outcome 1.1: Strengthened institutional capacity and policy and legislative framework for EbA in coastal zones<br>- | Outcome 1.1: Strengthened institutional capacity for the coordination of adaptation action in coastal zones<br>Outcome 1.2: Strengthened capacity of local and regional actors for mainstreaming adaptation in coastal zone planning processes | The outcome 1 was split into two to highlight two types of intervention regarding institutional capacity building: a) coordination of adaptation action; and b) integration of CCA into planning documents |
| Outcome 2.1: Enhanced community capacity and planning framework to plan and implement EbA approaches and locally manage natural resources to increase climate resilience | Outcome 2.1: Enhanced community capacity to implement EbA approaches and locally manage natural resources to increase climate resilience | Outcome rephrased to focus on implementation, as planning was consolidated under Outcome 1.2. |
| Outcome 2.2: Enhanced environmental protection and rehabilitation by local authorities and communities for adaptation benefits | None | N/A |
| Outcome 3.1: Increased diversification of income-generating activities and businesses to enhance communities? climate resilience | None | N/A |
| Outcome 4.1: Strengthened awareness and knowledge of EbA approaches to support upscaling of project results across Madagascar?s coastal zones | None | N/A |
| Outputs | | |

| | | |
|---|---|---|
| Output 1.1.1: Three (3) training sessions a year organized to provide technical assistance and training to the National ICZM Committee, each of the four Regional ICZM Committees, and BNCC-REDD+ on mainstreaming EbA, and on developing partnerships and financial sustainability plans, for better coordination of adaptation action in coastal areas<br><br>And<br><br>Output 1.1.2: Regulation developed to strengthen National and Regional ICZM Committees? legitimacy, mandate and sustainable financing | Output 1.1.1 Participatory development of capacity needs assessments; terms of reference and statutes; and actions plans for three (3) CRGIZC/Platforms to strengthen their legitimacy, mandate, and sustainable financing<br><br>And<br><br>Output 1.1.2 Training and workshop series for four (4) CRGIZC/Platforms and MEDD-BNCC-REDD+ for a better coordination of adaptation actions in coastal areas | These changes, which remove support for National ICZM and restructure the outputs under first a strengthening of CRGIZC and then ongoing support for coordination of adaptation action, were necessary to address the suspension of the National ICZM Committee and the need to support the reformulation of the regional committees (which were not suspended) for greater legitimacy in this new institutional context. Given the new context, Output 1.1.2 of the PIF was reviewed and integrated as part of the process involved in the new Output 1.1.1 in the form of the identification of new entry points for potential actions on the legal framework.<br><br>This second output was deemed important by stakeholders to provide support on coordination both to the CRGIZC/Platforms and MEDD-BNCC-REDD+, given their respective roles in the space of adaptation. |

| | | |
|---|---|---|
| Output 1.1.3: Twenty (20) Municipal Planning Schemes (SACs) that integrate EbA approaches developed or updated through a cross-sectoral and participatory process<br><br>And<br><br>Output 2.1.1: Twenty (20) communal development plans (PCDs) that guide the implementation of EbA priorities and the sustainable management of natural resources developed or updated through a cross-sectoral and participatory process | Output 1.2.3 Revision of twenty (20) SACs and twenty (20) PCDs to effectively integrate EbA approaches through a cross-sectoral and participatory process<br><br>Output 1.2.2 Development of a guide for the participatory development of SACs and PCDs for effective EbA planning at the local level | Consultations revealed there was less of a need for development of new documents, and more on revisions where these had not yet taken place. Given the close linkages between these two documents (SACs and PCDs), it was deemed more logical to develop them jointly in 20 targeted ?communes? or municipalities through a streamlined process, which explains why Outputs 2.1.1. and 1.1.3 were merged.<br><br>NEW Output: Consultations and documentation review revealed there was no consistent guidelines available to have a streamlined and replicable process nationally. Given the extensive experience of other projects in this area, there is an opportunity to capitalize on this experience and develop clear guidelines that can be applied through this project, and then be refined/finalized based on the results of their application through this LDCF project. |
| - | Output 1.2.1: Revision of the Atsimo Atsinanana PRD for effective EbA planning at the regional level | NEW Output: Consultations revealed there was no up to date PRD for Atsimo Atsinanana, which would be a requirement for the development of SACs and PCDs. |
| Output 2.1.2 Five (5) new locally managed marine areas established for increased climate resilience of marine ecosystems and related livelihoods | Output 2.1.1 Eight (8) orphan LMMAs reactivated and upgraded for increased climate resilience of marine ecosystems and related livelihoods | Consultations revealed that there were dozens of LMMAs in place with no support, and as such were not operational. This support was deemed more important and relevant than creating new LMMAs, which as described as ?quick and easy? in and of itself. |
| Output 2.1.3 Five (5) fisheries management plans developed for marine fisheries, including provisions for sustainable catches and fishing practices to increase ecosystem and livelihood resilience to climate change | Deleted | Consultations showed that regional level fisheries management plans were recently produced in all regions. However, their decentralization at local level is required, and as such are now proposed as part of the support to LMMAs under Output 2,1,1. |

| | | |
|---|---|---|
| Output 2.2.1:<br>3,000 ha of mangroves and coastal forests restored for adaptation benefits through community-based approaches | None | N/A |
| Output 2.2.2:<br>2,000 ha of degraded/deforested land rehabilitated upstream of degraded wetlands and small lakes through community-based approaches to increase climate resilience of ecosystems and communities | None | N/A |
| - | Output 2.2.3: 100 ha of coastal vegetation restored for adaptation benefits through community-based approaches | This output was added to cater to the needs of a new region selected during PPG: Atsimo Atsinanana. |
| Output 3.1.1: 100 climate-resilient ecosystem-based cooperative businesses established, with a focus on women and youth, and sustainable business plans developed | Output 3.1.1: Four regional business incubators tailored to ecosystem-based social enterprises are created and operationalized | The Output was rephrased to reflect the refined approach proposed by the project. As such, the project focuses on setting up incubators that will then support different businesses/entrepreneurs, rather than only establishing new businesses without a mechanism to ensure sustained support and capacity-building. |
| Output 3.1.2:<br>A sustainable financing and investment platform for ecosystem-based businesses established and operationalized | Reordered to 3.1.3 | Reordered to improve logical flow |
| Output 3.1.3:<br>Training/technical support and/or equipment provided to 1,200 entrepreneurs, including women and youth, to build capacity of ecosystem-based businesses | Reordered to 3.1.2 | Reordered to improve logical flow |
| Output 4.1.1:<br>A project communication strategy developed and implemented, including awareness raising strategy on climate change and EbA aimed at local stakeholders | None | N/A |
| Output 4.1.2:<br>A participatory M&E and learning framework developed and implemented | Deleted | This was removed as it is part of responsibilities of UNEP and PMU. |

| | | |
|---|---|---|
| Output 4.1.3:<br>A coastal EbA upscaling strategy and knowledge sharing mechanism developed | Renumbered to 4.1.2. | N/A |
| *Cofinancing* | | |
| PIF cofinancing 21,142,450 USD | Total cofinancing in CEO ER increased to 26,670,746 | The changes in two of the target regions resulted in a modification of the cofinancing plan. The cofinancing plan has also been updated during the PPG phase on the basis of the confirmed cofinancing commitments. |

1a. *Project Description*.

1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description);

Problem statement

7. The problem that the proposed LDCF project seeks to address is that communities in the coastal regions of Madagascar remain highly vulnerable to the impacts of climate change, including impacts of sea-level rise, increased temperatures, and increased frequency and intensity of droughts, floods and tropical storms and cyclones. This is due to a range of both biophysical and socio-economic factors (as described above).

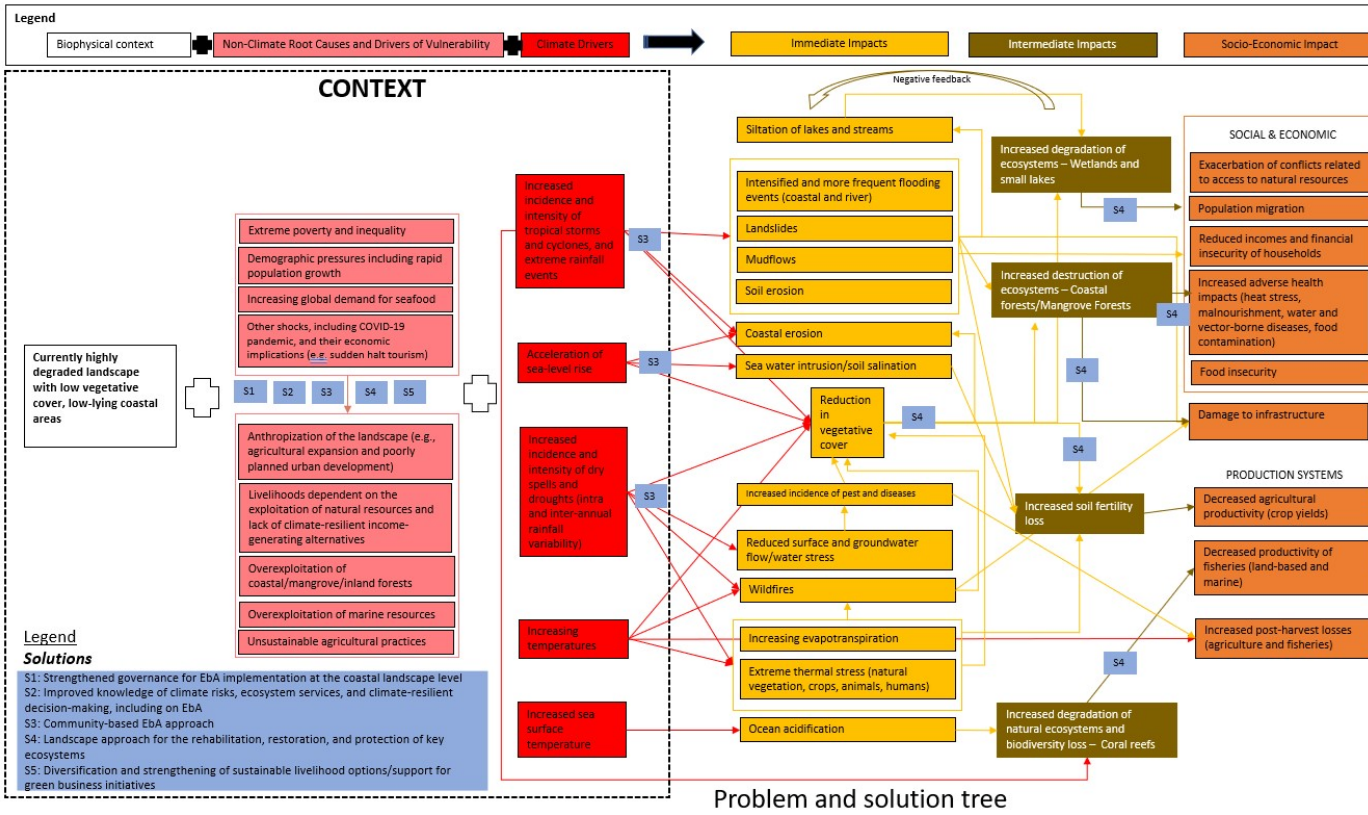
8. The coastal communities of Madagascar, including in the four target regions, rely on coastal ecosystems and the goods and services they provide for livelihoods and well-being, as well as for the attenuation of climate change impacts. Malagasy coastal ecosystems support the livelihoods of more than 75% of the local population[1]1 by, for example, providing natural habitats for marine species of importance for small-scale fisheries; as a source of commercially valuable non-timber forest products (NTFPs); to support crop and livestock production; etc. Coastal ecosystems also contribute to protecting coastal zones and livelihoods from the adverse impacts of climate change, via the provision of a range of services: for example, mangroves protect coasts from storm surges, erosion, flooding; and healthy coral reefs provide the first line of coastal defense by reducing wave energy by an average of 97%[2]2; etc. This is significant, as Madagascar has historically faced significant climate threats and is considered the country at highest exposure to, and risk of, cyclonic activity in Africa. Indeed, climate information ranging from the middle of the last century to date indicates the frequent occurrence of climate hazards including cyclones, droughts, flooding, and landslides. Among them, cyclones and storms have been the most damaging ones: between 1961 and 2017 cyclones caused 1,193 deaths, destroyed 0.6 million houses and directly and indirectly affected 4 million people. Floods were the second most destructive climate disaster, affecting more than 0.3 million people during the same period[3]3.

9. The continued degradation of the coastal ecosystems due to human activities and climate change increases the vulnerability of the coastal areas and populations. For instance, terrestrial and mangrove deforestation, compounded by intensifying tropical cyclones, contribute significantly to the increased vulnerability of coastal zones to flooding and coastal erosion. Similarly, degradation of mangroves, seagrass beds, and coral reefs due to unsustainable fishing practices, is compounded by degradation

associated with sea temperature rise. Associated soil erosion across watersheds also leads to sedimentary changes downstream in marine and freshwater bodies, causing important losses in benthic biodiversity[4]4, thereby threatening human health, food security, and livelihoods. The interactions between climate change threats and the non-climate drivers of vulnerability are summarized in Figure 1 below (Problem Tree).

10. At the same time, interventions to reduce the vulnerability of the coastal zones of Madagascar through the rehabilitation of coastal ecosystems have, to date, taken place mainly at a small pilot scale. In the past, these measures have also been insufficiently supported by enabling factors, such as institutional engagement, sustainable management plans and community ownership to ensure their long-term sustainability and potential for upscaling. Indeed, in many cases, setting up the mechanisms for the local management of natural resources is a prerequisite to ensure broader ownership of their sustainable management in the context of EbA, and without such support restoration efforts are often not sustainable in the longer term. Moreover, these need to be followed up by interventions to ensure these new mechanisms are fully functional, and significant efforts are required upfront to build capacity at local level, which is not always the case. As such multiple Locally Managed Marine Areas (LMMAs) remain ?orphaned? across Madagascar, meaning they have been put in place, yet their capacity is limited as they are not receiving capacity-building support to become fully autonomous.

Figure 1 Adaptation Problem and Solution Tree




11. Below is a detailed description of the evolution of the climate change drivers contributing to the adaptation problem as observed in recent decades, as well as projected through climate models for the coming decades. Observed and projected impacts on ecosystems and human systems are then detailed, including as compounded by anthropogenic (non-climate) drivers.

*Observed climate change*

- Temperature

12. The analysis of historical trends and changes in climatic parameters shows a significant rise in temperatures throughout the country over the period 1961-2017. On this timeframe, minimum and maximum temperatures have increased by +0.04 and +0.05?C/year respectively. In parallel, the temperature indicators show an upward trend in extreme events[5][5]. This statement is confirmed by the Figure 2 which presents the evolution of observed annual temperature from 1951 to 2020 with lower temperatures represented in yellow and highest temperatures in dark red.

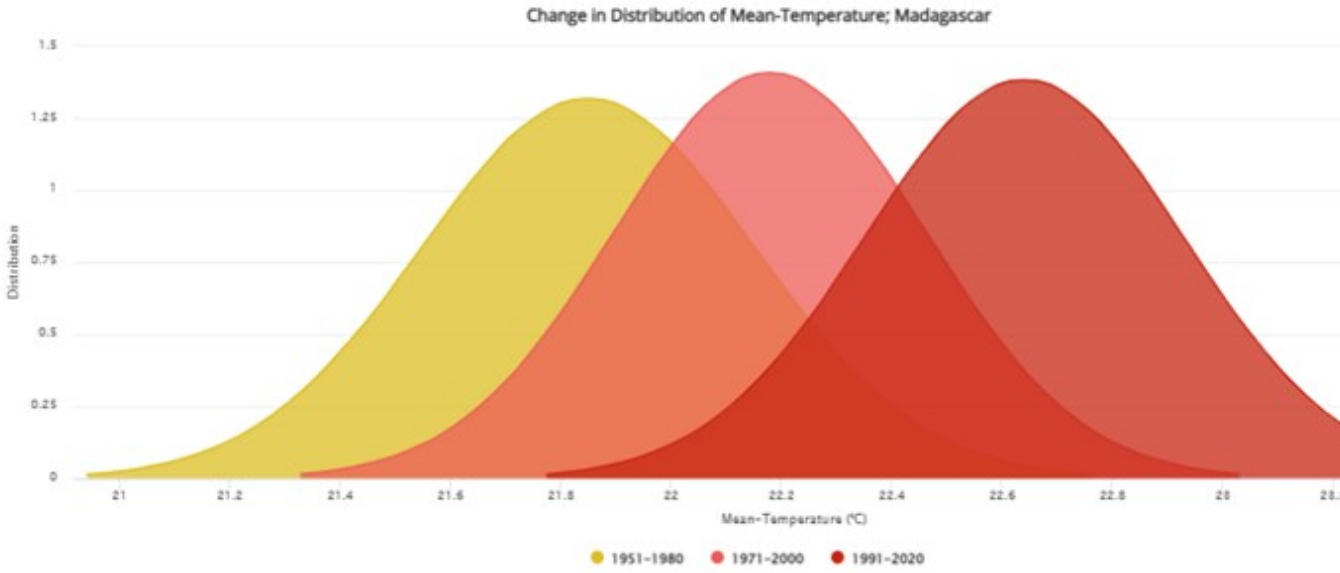



**Figure 2: Change in distribution in mean temperature for Madagascar for the period 1951-2020[1]**

[1] World Bank Climate Change Knowledge Portal, 2023. Current climate - Trends and variability [online]. Available from: https://climateknowledgeportal.worldbank.org/ [Accessed 20 Apr 2023].

- Precipitation

13. Based on the data recorded in most of Madagascar weather stations, annual rainfall is decreasing in the country, particularly in the eastern and south-eastern parts of the island[7][6]. A decrease in winter and spring precipitation has been detected in most regions[8][7]. However, these results have to be considered with caution as other data available do not confirm what is stated in the cited national documents. As a matter of fact, the Figure 3 presents the precipitation trends over three time periods: 1951-2020, 1971-2020 and 1991-2020. The analysis of this graph indicates that there is very high inter-annual variability in total annual precipitation, yet none of the trends observed over the three periods are significant, which signifies that, according to this data set, annual precipitation did not significantly change[9][8]. This is to a certain extent illustrating the uncertainty and the interpretation variability that can be found on this kind of variable.

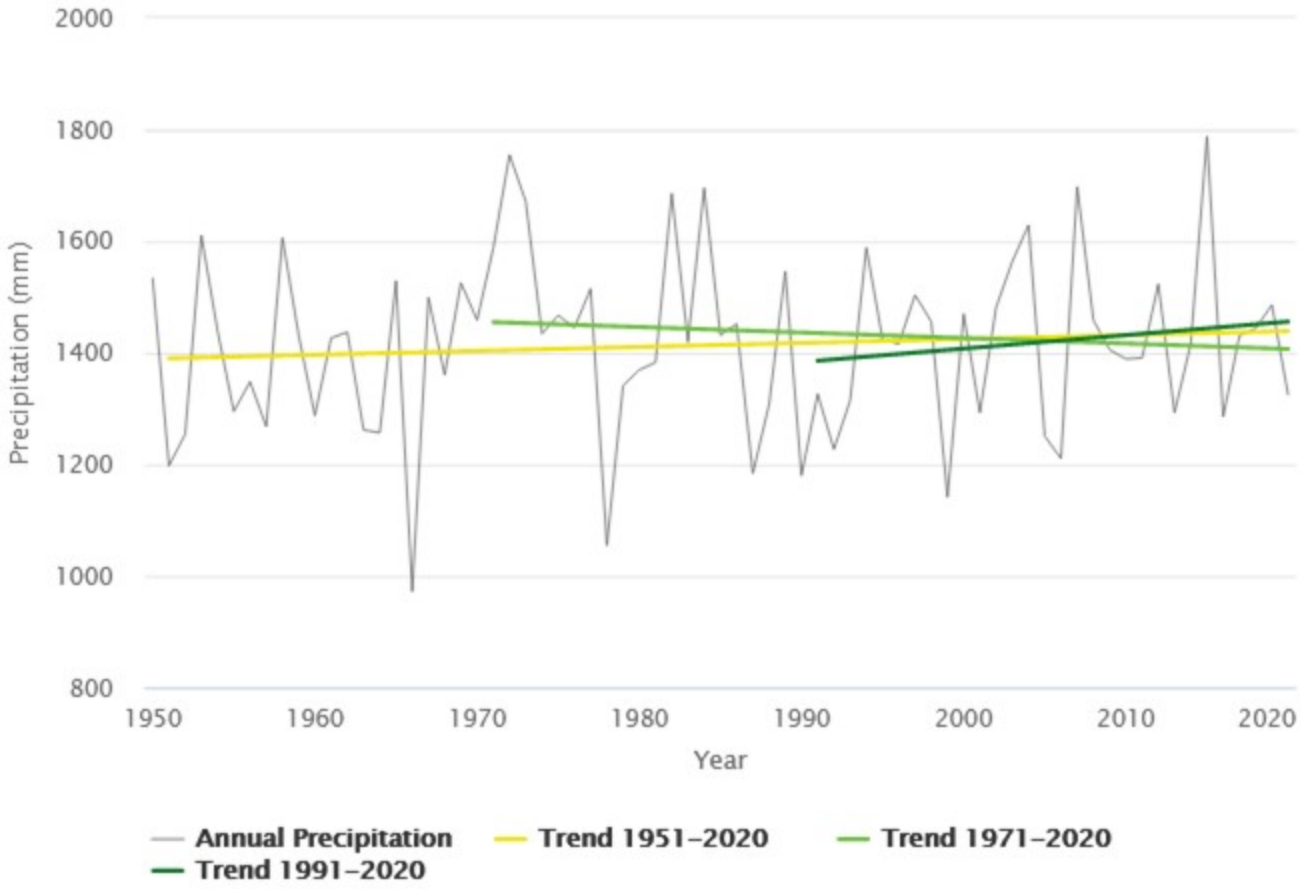



**Figure 3: Precipitation annual trends with significance of trends per decade over the period 1951-2020 (yellow), 1971-2020 (light green) and 1991-2020 (dark green)[10][9]**

- Sea-level rise and water temperature

14. Figure 4 presents the historical sea level for coastal Madagascar for the period (1993-2015). National records indicate that the sea level has been gradually rising, at a rate of +1.57 mm/year between 1993 and 2017[11][10], which is lower than the global rise estimated at +2.87mm/year[12][11]. Sea temperature in the western Indian Ocean increased by +0.60?C between 1950 and 2009[13][12].

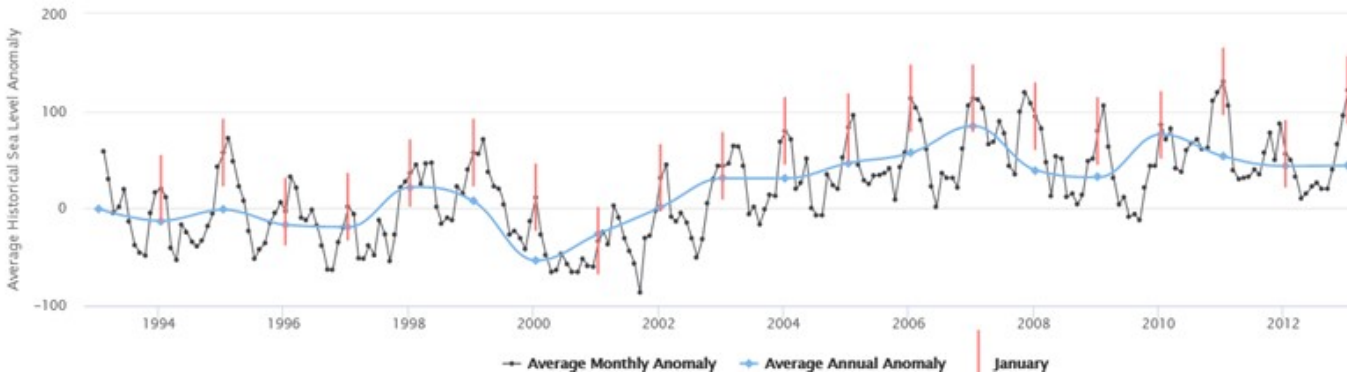



**Figure 4: Historical sea level for coastal Madagascar for the period (1993-2015)[14]13**

*Climate Change Projections*

15. The climate projections below are presented ? when data were available ? separately for the four regions targeted by this LDCF/GEF project. The figures presented correspond to two shared socio-economic trajectories (SSPs) combined with greenhouse gas (GHG) emission scenarios (RCPs) projected by 2050. The SSPs are intended to provide a snapshot of future climates based on defined emissions, mitigation efforts and development pathways[15][14]:

•SSP2-4.5: Intermediate pathway in which trends continue without substantial deviations and GHG emissions stabilize before the end of the 21st century at a low level;

•SSP5-8.5: Pathway assuming an energy-intensive, fossil fuel-based economy leading to a continued increase in GHG emissions.

The modelled projections presented below are those used in the sixth and final assessment report of the Intergovernmental Panel on Climate Change (IPCC).

- Temperature

16. In terms of air temperature, in response to increasing greenhouse gas (GHG) concentrations, the two trajectories univocally project a significant increase ? which extent depend on the period of the year - over all regions targeted for the implementation of the project. According to the data presented in Table 2, the largest temperature increase should be experienced in Boeny using SSP2-4.5 scenario and Menabe using SSP4-8.5 scenario.

Table 2: Projected mean-temperature anomaly for 2040-2059 in the four regions targeted for the implementation of the project (reference period 1995-2014) with SSP2-4.5 and SSP5-8.5**[16]**[15]

| Region | SSP2-4.5 | SSP5-8.5 |
|---|---|---|
| Atsimo Atsinanana | [+0.9?C; +1.3?C] | [+1.3?C; +1.7?C] |
| Boeny | [+1.1?C; +1.3?C] | [+1.4?C; +1,6?C] |
| Diana | [+1.0?C; +1.2?C] | [+1.3?C; +1.6?C] |
| Menabe | [+0.9?C; +1.5?C] | [+1.4?C; +1.9?C] |

- Days with heat index >35?C

17. This variable is defined as the total count of days per year where the daily mean Heat Index rose above 35?C. A Heat Index is a measure of how hot it feels once humidity is factored in with air temperature[17][16] and thus provides a good representation of thermal comfort of the human body.

18. According to both scenarios, the number of days in which the 35?C Heat Index will be passed by 2050 will significantly increase in three of the four regions targeted by the project: Boeny, Diana and Menabe. These are all located on the western coast of the island. Along with the current climatology, increases will remain circumscribed to the hottest period of the year, the rainy season. Conversely, projections indicate that this variable will not be modified in the region of Atsimo-Atsinanana.

Table 3: Projected heat index <35?C anomaly for 2040-2059 in the four regions targeted for the implementation of the project (reference period 1995-2014) with SSP2-4.5 and SSP5-8.5**[18]**[17]

| **Region** | **SSP2-4.5 (day/year)** | **SSP5-8.5 (day/year)** |
|---|---|---|
| Atsimo Atsinanana | <1 | <1 |
| Boeny | +7.3 | +16.6 |
| Diana | +7.0 | +20.6 |
| Menabe | +16.0 | +26.7 |

19. Moreover, the intensity of the maximum daily precipitation is expected to increase, a factor which has implications for the risk of flooding[19][18]. Likewise, the duration of dry spells is expected to increase significantly in all coastal regions, which could have direct effects on water stress, including for crops and agricultural productivity. Atsimo Atsinanana region is frequently affected by cyclones and flooding, but drought is becoming an increasingly present challenge due to declining rainfall[20][19].

- Precipitation

20. Table 4 is presenting precipitation anomalies with reference to the period 1995-2014 for both scenarios. The interval represents respectively the minimal and the maximal precipitation anomaly that are projected throughout the year. Overall, negative anomalies are found at the beginning of the rainy season (from October to December) and the largest positive anomalies are projected between February and March. However, it is important to note that future projections of precipitation are less certain than projections of temperature change due to high natural year-to-year variability[21][20].

Table 4 : Projected precipitations anomaly for 2040-2059 in the four regions targeted for the implementation of the project (reference period 1995-2014) with SSP2-4.5 and SSP5-8.5**[22]**[21]

| Region | SSP2-4.5 (mm) | SSP5-8.5 |
|---|---|---|
| Atsimo Atsinanana | [-14; +16] | [-16; +6] |
| Boeny | [-26; +6] | [-21; +10] |
| Diana | [-11; +19] | [-35; +9] |
| Menabe | [-11; +10] | [-13; +9] |

- Extreme precipitation events

21. In response to global warming, heavy precipitation events are expected to become more intense in many parts of the world due to the increased water vapor holding capacity of a warmer atmosphere. At the same time, the number of days with heavy precipitation events is expected to increase[23][22]. This means that intense events will likely recur more frequently, which can negatively affect the flooding risk[24][23]

22. This trend is reflected in Madagascar as, as presented in Figure 5, almost all regions targeted by the project will see their largest 1-day precipitation increase. This statement is not valid for the northern half of Menabe, the southern continental part of Boeny and the northern part of Atsimo Atsinanana where this variable is projected to remain unchanged.


**Figure 5 : Projected largest 1-day precipitation anomaly[25][24]**

23. Most importantly, a recent study found that climate change increased the likelihood and intensity of the rainfall associated with tropical cyclones Ana and Batsirai in 2022[26][25]. Both the frequency but also the ?rainfall load? of tropical cyclones are projected to increase and they are increasingly compounding either with other cyclones (such as in January and February 2022, or in February and March 2023 disasters) and with other climate extreme events such as the severe droughts experienced in the south. Overall, the most significant climate impacts are expected to come from the increased intensity of cyclonic events, Madagascar being one of the regions of the world where the largest increases are expected[27]26 [28]27.

- Sea-level rise

24. Using both scenarios, the projected sea-level rise are comparable as presented in Table 5.

Table 5: Projected sea-level rise of coastal Madagascar (2040-2059) **[29][28]**

| | **SSP2-4.5 (m)** | **SSP5-8.5** |
|---|---|---|

| | | |
|---|---|---|
| Madagascar | 0.25 | 0.27 |

25. Data available indicate though that regions will be impacted disparately depending on their location on Madagascar territory. As a matter of fact, the Middle-West (Menabe) is expected to be exposed to an accelerated rise in average sea level, in the order of 7.4 mm/year, including a retreat of the coasts of between 5 and 6 cm/year. Projections in the North-West (Boeny) are less alarmist and forecast an annual sea-level rise between 3 and 4 mm/year[30][29].

26. In terms of sea water temperature, as this variable is projected to rise in the South of the Indian Ocean, a similar effect is likely to occur in Madagascar[31][30].

- Soil moisture and potential evapotranspiration

27. As more recent data do not exist for these variables, the information presented here is based on the 5th assessment report of the IPCC.

28. Soil moisture is an important indicator for drought conditions. In addition to soil parameters and management, it depends on both precipitation and temperature, as higher temperatures translate to higher potential evapotranspiration. Projections for annual mean soil moisture values for the topsoil (from the surface to a depth of 1 meter) show a slight decrease with an optimistic scenario (RCP2.6) and a stronger decrease of 5 % under a more pessimistic scenario (RCP6.0) by 2080 compared to the year 2000. However, similarly to precipitation projections, a large year-to-year variability and modelling uncertainty exist with some models projecting a much stronger decrease in soil moisture[32][31].

29. Potential evapotranspiration is the amount of water that would be evaporated and transpired if sufficient water was available at and below land surface. Since warmer air can hold more water vapor, it is expected that global warming will increase potential evapotranspiration in most regions of the world. In line with this expectation, hydrological projections for Madagascar indicate a stronger rise of potential evapotranspiration. Under the pessimistic scenario (RCP6.0), potential evapotranspiration is projected to increase by 4 % in 2050 compared to year 2000 levels.

*Observed climate change impacts*

30. During PPG consultations, several impacts of extreme climate events were reported, of which notably:

- Decrease in household income sources;
- Spread of infectious diseases (respiratory disease, allergy, ...), seasonal disease;
- Material and fishing equipment washed out to sea, increasing difficulties in navigation, decrease in fishing time and catches (id. in Diana);
- Damage to infrastructure due to cyclones and sea level rise
- E.g. In **Atsimo Atsinanana**, frequent storm destruction including of 20% of the village following the cyclones between 1992 and 2004;
- In 2015, the sea water penetrated up to 65 meters inland in the region of **Atsimo Atsinanana**.
- Flooding of roads and railroads by the sea
- To cope with SLR, stones blocks have been installed in **Menabe** but according to locals, this strategy is not sufficient to avoid beach erosion.
- Water scarcity

•The drying-up of rivers, the sedimentation and silting of estuaries due to consecutive droughts and poor water catchment management which created ecological discontinuities between freshwater and seawater ecosystems.
•Severe agricultural droughts and food insecurity (lengthening of the hunger season);
•Wildfires
•E.g. From 2001 to 2021, **Boeny** lost 25.0kha of tree cover from fires and 91.7kha from all other drivers of loss. The year with the most tree cover loss due to fires during this period was 2016 with 4.90kha lost to fires ? 54% of all tree cover loss for that year. Stakeholders at the workshop in Boeny in December 2022 also mentioned the recent wildfire in the protected area near Soalala in Boeny, causing major fauna and flora loss.
•Data from the Regional Office of Environment, Ecology and Forest shows that from 1990 to 2010, more than 100,000 ha of dry forest had disappeared in the **Menabe** region due to fires, illicit exploitation, and forests being converted into agricultural land[33][32].
•Displacement of populations.

31. On this last point, it is important to recognize that through human migration, climate change impacts across the country have repercussions beyond the areas where they directly occur. For instance, the south-west of the country is particularly arid and has been experiencing recurring droughts as well as weather-related damages to fishing that escalated into the current famine which hit that region the hardest, and which has been coined ?the first famine in modern history caused entirely by climate change?[34][33],[35][34]. As a result, rural populations often shift to fishing as an alternative livelihood and source of food[36][35], which contributes to marine resources depletion. People also migrate northward to escape hunger, in search of additional resources to exploit, with several migrants engaging in fishing activities[37][36]. The year 2020 has seen even higher rates of migration, linked to the COVID-19 pandemic. This is a problem for the proposed project intervention areas, as some populations migrate to other areas (including Menabe and Boeny), where they engage in unsustainable fishing practices principally targeting lucrative products for export to China such as shark and sea cucumber[38][37], but also practice slash-and-burn agriculture that is fueling deforestation, triggering user conflicts, and further endangering endemic wildlife[39]38.

- Local perception and awareness of climate change

32. The community consultations conducted within the framework of the development of this project document revealed significant awareness of ongoing climate changes and its effect on local ecosystems and their communities among coastal communities. Focus groups and visits to fishing communities demonstrated these communities being fully aware, worried about, and experiencing sea level rise, marine flooding, and coastal erosion. For instance, participants at the workshop in Atsimo Atsinanana mentioned increased occurrences of infectious diseases such as respiratory diseases, and allergies. Fishermen also talked about the increasing sailing difficulties that they are facing while navigating. The consultation carried out in Menabe indicated an increasing occurrence of flood events and flooding of the Morondava river combined with an increased frequency of cyclones. Participants even linked the latter with the high deforestation rate experienced in recent years in the area and the related reduction in forest cover. Similarly, coastal communities consulted in Boeny indicated that their village was flooded with rising frequency and attributed it to climate change. In Diana, fishermen demonstrated a clear perception of the link between climate change and its impacts on the marine fishery resource as they ascribed changes in fishing season and decrease in fishing time and catch to changes in climate conditions.

*Projected climate change impacts and baseline drivers of vulnerability*

33. There are 5 main risk areas addressed by this project: Mangroves, corals and sea grasses, coastlines, coastal forests and freshwater marshes. Overall, climate change is likely to exacerbate: (i) direct fatalities and infrastructure losses associated with cyclones and storms, affecting all sectors including tourism; (ii) decreasing crop and fisheries yields due to extreme events, increasing air and sea-surface temperatures and soil fertility loss (resulting in increased food insecurity); (iii) toxic dinoflagellate contamination in marine and fresh water habitats (which often flourish after disastrous storms), resulting in increasing mortality from ciguatera fish poisoning[40][39]; (iv) outbreaks of vector-borne diseases and pest. (See Project Document Figure 13).

34. A high severity threat is the overexploitation of the mangrove wood resources. Households rely heavily on mangrove charcoal for energy as there is less than 20% electrification in many areas. In addition, there is high demand from urban areas for charcoal from coastal zones. Combined with timber extraction and illegal logging, fuelwood collection, and agricultural expansion, 21% of Madagascar?s mangrove forests have been deforested between 1990 and 2010[41]40. All interviewees in both Boeny and Menabe pointed out the problematic extraction of wood from mangroves and forests, for charcoal production, as well as for furniture and boat production. WWF data show that 12,611 ha of mangrove forests were lost in the Tsiribihina and Manambolo deltas during the same period[42][41]. There are also more recent trends of concern for mangrove cover. For instance, recent research[43]42 has shown that (perhaps counterintuitively) increasing household incomes associated with the commodification of marine products such as octopus, seaweed and sea cucumber, is driving demand for mangrove wood. This is associated with its use in kilns to produce lime from seashells to render houses, a practice which improves durability, and is considered a status symbol. During the field visits of the PPG phase, interviewees also highlighted the pollution of mangroves by soil coming down from degraded land areas in upstream catchments as well as macro and micro contaminations arriving from surrounding cities or from the sea. (See further details on Table 12 of the Project Document).

35. According to the last IPCC AR6 WG2 report, **mangroves have low to moderate adaptative capacities**. Non-climate drivers are likely to further compound the burden of future environmental changes and related hazards. In fact, mangroves will be less able to keep up with climate change impacts including sea-level rise which will in turn reduce their ability to act as a natural shoreline protection, thus placing an increasing number of people at risk of coastal flooding and hit of increasingly powerful sea waves. Their degradation and/or clearance will have an adverse effect on the biodiversity and biomass present in these types of ecosystems, unbalancing natural habitats that are, among others, suitable as nurseries, shelter and spawning areas for aquatic, terrestrial, aerial and microbial species. These trends also bring concerns about the reduced capacity of mangroves to naturally filtrate waste and stormwater runoff into the coastal ocean which will reduce the water quality available[44][43].

36. Overall, **the major climate-induced drivers negatively impacting mangroves are sea-level rise (high certainty) and marine heatwaves (medium confidence). They are also likely to be moderately affected by the increase in air temperature and storms.** Combined with the most pressing non-climate drivers in the projected area of intervention, this will reduce the mangrove?s ability to provide adaptation services such as protection from sea level rise, storms, and heat waves as well as provisioning services of food and other goods important for local livelihoods.

37. The anthropogenic degradation and destruction of coral reefs and seagrass beds will cause disturbance and disappearance of critical habitats for an extremely rich and productive marine biodiversity The consultation conducted within the framework of the PPG confirmed mostly the use of

destructive fishing practices and overfishing. Indeed, there is evidence that fishermen are using inappropriate fishing nets and thus do not respect the legal size for fish or crab capture. In Atsimo Atsinanana, black coral is exploited for construction purposes which leads to habitat loss and thus reduce the ability of fish populations to regenerate. As the halieutic resource becomes more and more scarce, fish landings have been constantly decreasing in recent years with some fish populations that locally disappeared. This, in turn, is pushing fishermen into the negative cycle of further extending their fishing areas and accepting increasingly small and juvenile captures. (See further details on Table 13 of the Project Document).

38. Overall, **coral reefs will be strongly impacted by increasing temperature, marine heatwaves, ocean acidification and storms (high confidence) which will eventually lead to coral bleaching and dieback.** Compounded with the non-climate drivers of ecosystem degradation outlined above, this is expected to have significant adverse impacts on fish breeding grounds and habitats. **Loss of sea grass beds (biomass and diversity) due to ocean temperature increase and increased algae bloom leading to a loss of breeding grounds and habitats for key larger fish species.** In this context, **their ability to provide adaptation services in the form of food, income and shoreline protection to coastal communities will be drastically reduced**[45][44].

39. According to the communities consulted within the framework of the PPG, coastlines are currently threatened by a variety of anthropogenic pressures. Among the most cited is the unplanned and uncontrolled construction on the roadside and near the shoreline, which accelerates soil artificialization and weakens the coastline structure, impeding their wave blocking role. Degradation of the coastline is being compounded by observed climate change, including the increasing sea-level rise, leading to beach erosion, beach surface area reduction and storm surges.

40. These observations are all the more problematic in that they reduce the adaptation services provided by these areas. In addition, the sedimentation and silting of estuaries is creating ecological discontinuities which in turn negatively affect species environment, life cycles and migration processes. As a corollary, water contamination and sediment overload are affecting species and prevent local communities from living in a healthy environment with access to clean freshwater and sea.

41. **Coastlines and sandy beaches are expected to be strongly impacted by sea-level rise and storms (high confidence) as well as (with lower confidence), temperature increase and marine heatwaves.** The projected changes in climate patterns are likely have the following impacts on coastal areas: (i) increased coastal erosion; (ii) a significant increase in saltwater intrusion, and soil salinization[46]45, compounding the problems already being seen associated with anthropogenic pressures. (See further details on Table 14 of the Project Document).

42. Across coastal watersheds, forests are primarily threatened by slash-and-burn for agriculture and pastures, as well as being overexploited for wood energy, a problem which has been occurring for several decades, and which contributes to high levels of sediment loading downstream. In fact, slash-and-burn agriculture is estimated to contribute 80-95% of forest loss annually across the country, while wood energy extraction is estimated to contribute 5-20% of deforestation annually[47]46.

43. Around the country, deforestation and forest degradation continue at a steady pace despite reforms that have been undertaken since the 1990s. Over the past 20 years (2001?2021) there has been an estimated loss of 4.85 million hectares of tree cover, equivalent to a 25% decrease in tree cover, and a gross estimate of 2.52 gigatons of CO2e ? carbon dioxide equivalent greenhouse gas emissions[48][47]. According to projections, the loss will accelerate over the coming decade due to, amongst others, agricultural expansion for livestock farming, uncontrolled fires, illicit logging, wood exports, and excessive consumption of wood energy; researchers predict that 38?93% of the forest present in 2000 could disappear by 2050[49][48]. The COVID-19 crisis has exacerbated forest clearing, which has been

taking place increasingly in protected areas as new migrants come in, but also to make space for high value crops such as vanilla (northeast), and for illegal crops including marijuana (e.g., in the northern part of the country). Deforestation is particularly acute in coastal areas of the East coast of the country, and in sensitive ecosystem types such as coastal dry forests and mangroves. Given the high rate of endemism, this deforestation and degradation has a more considerable effect on biodiversity loss than elsewhere.

44. During the PPG consultation, communities recognized and deplored the degradation and deforestation of the coastal forests. In Atsimo Atsinanana and Menabe, they indicated that the construction wood used to build fishing pirogues was becoming more and more rare. They also noted the disappearance of certain species, including in special reserves, other parks, and protected areas. Local communities also assumed that deforestation was correlated to the destruction of honey plants and thus responsible for the migration of bees to other regions. Participants highlighted that deforestation directly contributes to severe soil erosion, the reduction of water availability along watersheds, the siltation of rice fields and of the lotic zone. Erosion is indeed a central problem for productivity in a country with already one of the lowest soil productivities in the world[50]49. Finally, they were also blaming deforestation for local climate change and its impacts, including increasing frequency and severity of cyclones and storms.

45. As expressed by local communities, the increasing pressure imposed by deforestation, land-use change and unsustainable agricultural practices is likely to alter the regulation services offered by coastal forests including the regulation of local climate, water quality and quantity along rivers, downstream and in estuaries. It will also affect the protective role they ensure in terms of soil erosion, surface water runoff, and natural and climate hazards. In addition, the depletion of the forest resource is already leading to the increasing scarcity and difficulty of wood supply and the related non timber forest products. Finally, the reduction in forest cover decreases the recreational potential of these areas and thus the related economic opportunities that could bring resilience to Malagasies at national to local scale.

46. Overall, these non-climate drivers of forest degradation will be compounded by **increased temperature and droughts. These are projected to impact forest successions, which are already threatened by agriculture and other factors contributing to deforestation. Projected climate impacts include destruction of coastal forests due to strong winds and cyclones, more frequent and intense wildfires**[51][50] [52][51]**, and salinization of groundwater tables due to sea level rise.** This will reduce the forests? ability to provide protection from sea level rise, storms, and heat waves and provision services in terms of wood and non-timber forest products. In addition, **the reduction of forest cover is causing drastic soil erosion which in turn, along with heavy precipitation and storms, facilitate the occurrence of landslides, threatening human lives, infrastructure and natural resources**[53][52]. (See further details on Table 15 of the Project Document).

47. **Climate change is likely to exacerbate damage to coastal freshwater marshes and their ecosystem services due to increased sediment runoff after cyclone associated with heavy rainfalls.**

-

Table 6 Overview of existing conditions in the different areas of intervention

| Region, ecosystem types, and main livelihoods | Main climate-impact drivers of vulnerability | Non-climate root causes and drivers of vulnerability | Main climate-impact drivers of vulnerability | Direct and indirect climate change impacts and challenges mentioned during PPG consultations |
|---|---|---|---|---|
| **Diana**<br>Type of ecosystems:<br>Mangroves<br>Agricultural watersheds<br>Coral reefs<br>Seagrass beds<br>Coastal forest<br>Livelihoods<br>- Octopus fishing on foot (women)<br>- Collection of fish<br>- Transformation of fish (cleaning, drying) (women)<br>- Selling of fish (women)<br>- Fishing ? net and angle based (men)<br>- Beekeeping | - Increasing sea water temperatures and ocean acidification<br>-Increasing temperature/intensity and frequency of heat waves<br>- Terrigenous sedimentation of coral reefs<br>- Bigger waves, making it more difficult to get out into open sea | - Increase in the number of fishermen/intensive fisheries; encroachment of foreign large scale fishing actors<br>- Deforestation for pirogue construction<br>- Intensive fisheries<br>-Coastal development | - Increasing sea water temperatures and ocean acidification<br>-Increasing temperature/intensity and frequency of heat waves<br>- Terrigenous sedimentation of coral reefs<br>- Bigger waves, making it more difficult to get out into open sea | - Change in fishing calendar<br>- Shortening of fishing season<br>- Lower catch<br>- Scarcity of trees/wood for pirogue construction |
| **Atsimo Atsinanana**<br>Type of ecosystems:<br>Coastal forest<br>Wetlands<br>Livelihoods<br>- Fishing (men)<br>- Fishmonging (women)<br>- Fishing on foot (women)<br>- Smoking of fish | -Sea-level rise<br>-Increasing frequency and intensity of tropical storms<br>-Increasing temperature/intensity and frequency of heat waves<br>-Meteorological drought<br>- Heavy sedimentation<br>-Coastal erosion | - Increase in the number of fishermen<br>- Intense deforestation, including for pirogue construction, firewood, slash and burn agriculture<br>- Illegal and unsustainable fishing practices<br>-Coastal development | -Sea-level rise<br>-Increasing frequency and intensity of tropical storms<br>-Increasing temperature/intensity and frequency of heat waves<br>-Meteorological drought<br>- Heavy sedimentation<br>-Coastal erosion | - Shortening of fishing season<br>- Lower catch<br>- Location and productivity of fishing grounds are changing, fishermen have to go further out<br>- Scarcity of trees/wood for pirogue construction |

| | | | | |
|---|---|---|---|---|
| **Boeny**<br>Type of ecosystems:<br>Mangroves<br>Marine environment<br>Agricultural watersheds<br>Livelihoods<br>- Fishing (men)<br>- Fish monging (women)<br>- Transformation of fish (cleaning, drying) (women)<br>-Selling of fish (women) | -Increasing frequency and intensity of tropical storms<br>-Increasing temperature/intensity and frequency of heat waves | - Intense deforestation, including for pirogue construction, firewood, slash and burn agriculture<br>-Sedimentation<br>-Coastal development<br>-Wildfires | -Increasing frequency and intensity of tropical storms<br>-Increasing temperature/intensity and frequency of heat waves | - Small tornados<br>- Lower catch<br>- Shortening of fishing season<br>- Location and productivity of fishing grounds are changing, traditional knowledge of where the fishing grounds are does not suffice anymore. fishermen sometimes must sail far to catch fish or up to 15 days (Mahajanga FG)). |

| | | | | |
|---|---|---|---|---|
| **Menabe**<br>Type of ecosystems:<br>Mangroves<br>Agricultural watersheds<br>Coral reefs<br>Coastal forest<br>Livelihoods<br>- Fishing (men)<br>- Fish monging (women)<br>- Transformation of fish (cleaning, drying) (women)<br>- Selling of fish (women)<br>- Crab fishing for own consumption<br>- Charcoal production (women)<br>- Vegetable gardens (sweet potato, herbs) | -Sea-level rise<br>-Increasing frequency and intensity of tropical storms (e.g. Past cyclones have cause considerable damage to the village, destroying 20% of houses, and perceived frequency seen as increasing)<br>- Flooding<br>- Increasing sea water temperatures and ocean acidification<br>-Increasing temperature/intensity and frequency of heat waves | - Not enough fresh water to practice agriculture, soils around village not useable<br>-Sedimentation<br>-Increase in the number of fishermen /intensive fisheries; encroachment of foreign large scale fishing actors<br>-Wildfires | -Sea-level rise<br>-Increasing frequency and intensity of tropical storms (e.g. Past cyclones have cause considerable damage to the village, destroying 20% of houses, and perceived frequency seen as increasing)<br>- Flooding<br>- Increasing sea water temperatures and ocean acidification<br>-Increasing temperature/intensity and frequency of heat waves | - Location and productivity of fishing grounds are changing, traditional knowledge of where the fishing grounds are does not suffice anymore. fishermen sometimes must sail far to catch fish - up to 15 km (Morondava FG).<br>- Climate change has an influence on local customs and culture. young girls have to go fish shrimp (Mentioned in Morondava)<br>- Not enough fresh water to practice agriculture, soils around village not useable |

-

Root causes of vulnerability

*Population growth, extreme poverty, and other demographic pressures*

48. Madagascar is experiencing rapid population growth (2.8% annually), and coastal communities in particular are experiencing extreme poverty. Hence, the landscape is facing growing anthropic pressures, including through urbanization (estimated at 4% rate per year), and reducing areas available for agricultural production. Population migration from the south to the north, due to economic and climatic woes, is also contributing to demographic pressures. Similar patterns of migration have been observed coastward of inland populations in response to climate change-driven agricultural failure, insecurity, and the attraction of perceived lucrative fishing opportunities[54]53. In Atsimo Atsinanana, PPG consultations outlined that the number of small-scale fishers had almost tripled in the past 5 years. The lack of access to land for the new arrivals leads to competition over land and natural resources and creates user-conflicts, as both formal and informal settlements expand, including into Protected Areas. Growing

populations also increase demand for a number of resources, be it for fish as a central source of protein, or charcoal to power stoves and smoke fish (for example). This is driving environmental degradation as people adopt unsustainable practices and increases vulnerability to various shocks.

49. A low degree or absence of formal education (illiteracy) in coastal villages/communities. This means that beneficiaries? capacity would have to be built on almost any income generating activity the project would support, even fishing. It also makes it very challenging to set up saving schemes for e.g., women?s associations (as illustrated by the FGD in Morondava during the field visit in December 2022). This lack of capacity and low business literacy in communities makes it also difficult for producers to integrate new segments of the value chain (eg. product collection and transport to the rest of the country). This may lead to strong dependance upon middlemen for their livelihoods and sustainable revenues. Also, poverty and the absence of alternative income generating possibilities is identified as leading to unsustainable natural resource extraction. The FGD in Morondava pointed out that people are fishing for both crabs and fishes that are not fully mature yet, as there simply is not enough to eat. Underlying public health issues, including lack of availability of contraceptives (see Gender Analysis for more information), means that women and young children often have to engage in small scale and unsustainable fishing activities such as small fish and small shrimp to make ends meet. Apart from agricultural work, rural households have few alternative activities that can generate sufficient income to mitigate the impact of crop failure and weather shocks[55][54].

*Rising global demand for seafood*

50. As stated above, there has been a rising demand at the local level for seafood. In addition, there has been an emergence of new international export markets, and as a result many of Madagascar?s fisheries have transitioned from subsistence- to market-oriented in recent decades. For example, market demand for live crabs for export to China has grown significantly in recent years, leading to price increases of 500% since 2011 and subsequent pressure on wild stocks. In 2014, national production reached 3,087 Tons of which 75% was exported to China[56]55. Hence, high market demand and high prices for seafood, combined with lack of regulations, are driving the overexploitation of resources. Indeed, recent observations have shown that industrial vessels continue to expand in both extractive capacity and spatial range, fueling concerns over foreign industrial fishing occurring within the marine territories of Madagascar, both legally[57][56] and illegally (e.g., there is growing evidence that illegal industrial fishing occurs frequently nearshore, including in MPAs and LMMAs)[58][57].

**Preferred solution**

51. The proposed solution is to reduce the vulnerability and build the climate-resilience of communities in the coastal areas of Madagascar through the upscaling of Ecosystem-based Adaptation (EbA) approaches. The project will focus on improving the state of key ecosystems in four vulnerable coastal regions, and supporting institutional and community-based structures, plans and strengthened capacity for the long-term sustainable management of ecosystems and the upscaling of EbA approaches in other coastal areas of Madagascar. Moreover, it will work on economic activities around ecosystem-based value chain development (e.g., apiculture) and ecotourism, to strengthen livelihoods and ecosystem health, with a focus on women and youth entrepreneurs. Supporting coastal communities in the shift towards sustainable livelihood strategies that allow degraded ecosystems to be regenerated will strengthen the climate resilience of both the ecosystems as well as the communities that rely on their services for livelihoods, well-being and protection.

**Barriers**

*Barrier 1: Limited institutional capacity at regional level for coordination of adaptation actions*

52. Systemic and cross-sectoral approaches are needed to achieve significant advancements in terms of climate resilience. However, in Madagascar, there is a limited multi-sectoral and multi-stakeholder coordination for adaptation planning and implementation in coastal areas. For the coastal zones, an obvious entry point at the institutional level is Integrated Coastal Zone Management (ICZM) Committees. While the National ICZM Committee (CNGIZC) was suspended in 2021, the remaining ICZM Committees at the regional level (CRGIZC), have the potential to make significant contributions to adaptation objectives due to their inherent cross-sectoral nature, and the support from national and regional institutions which making them more sustainable. Yet, they still lack the capacity to fully engage with climate change issues due to insufficient institutional legitimacy, capacity, and ability to secure sources of long-term funding for their operations. In fact, their role is currently broadly limited to awareness raising activities, despite the fact that they have great potential to act as coordinating platforms for GIZC, as well as to support planning, implementation and monitoring of adaptation interventions, including EbA. As a result, these committees lack sustainable financial resources to broaden the scope of their activities, as well as the mechanisms to effectively coordinate with the national level to contribute to policy-making and the implementation of policy priorities. Once properly capacitated, the Regional ICZM Committees could have an important role in supporting local and regional development planning (and the integration of EbA), including by leveraging their capacity to engage local actors across sectors.

53. In addition, coordination and planning of adaptation actions at regional level is also limited in a certain extent by the lack of updating and implementation of critical planning documentation such as Regional Development Plans (PRD). PRD are the translation into concrete activities for the next ten years of the land use planning axes defined in the Regional Land Use Plan (Sch?ma regional d?am?nagement du territoire ? SRAT). In Menabe and Boeny, PRD have been reviewed under PAZCI to include climate change adaptation considerations. While, the PRD for Diana also integrates climate change concerns, the one for Atsimo Atsinanana does not. For all regions, capacity for implementation of priority actions remains low.

*Barrier 2: Limited capacity at local level for adaptation planning*

54. Similarly, local planning is critical to respond to the challenges of climate change adaptation at local scale. This process aims at defining the strategic vision, the main adaptation principles and assess local vulnerabilities to climate change while involving relevant stakeholders in order to, first, raise awareness and second, elaborate concrete prioritized adaptation activities in various sectors. In Madagascar, the two main local planning instruments are the Communal Land Use Plans (Sch?ma d?am?nagement communal; SAC), and the Communal Development Plans (Plan communal de d?veloppement; PCD). However, the PPG consultations showed that overall human, technical, and financial capacities to ensure efficient adaptation planning at local level are low.

55. SACs refer to land use planning, over a fifteen-year timeframe. It aims at strengthening the communes? capacities in managing their territory and to meet their needs related to development and

environmental protection. In 2020, PAZCI supported the development and the adaptation mainstreaming into twenty SAC. However, among all communes targeted by this project, only a few of them have been supported to mainstream adaptation in SACs through recent or ongoing adaptation initiatives. Moreover, despite the recent publication of a practical guide for the integration of adaptation to climate change into the SAC as part of the PRCCC programme, there is no information about the effective implementation of this guide on a broader scale.

56. PCDs are local development plans which are aimed to present over a period of four years the development goals, strategy, programmes, projects, and means of implementation for a commune. Although they are recognized to ? combined with an investment, a capacity building plan and adequate sustainable resources management strategies ? tackle land-tenure issues, in most of the communes targeted by this project, PCDs are either outdated or inexistent. More precisely, in Boeny and Diana Regions, 35 SACs and PCDs have been drawn up that fully integrate climate concerns through GIZ support. In the Menabe Region, AFD?s support would have enabled the development of a few PCDs, but this is not currently documented. For Atsimo Atsinanana, due to the absence of climate change adaptation considerations in the PRD, the planning approach would not have allowed taking into account the specific actions necessary in terms of adaptation at the communal level either.

*Barrier 3: Limited capacity for local management of natural resources*

57. Sustainable natural resources management practices are widely recognized as being a low cost and effective way to improve the resilience of coastal communities to climate change by ensuring the long-term provision of ecosystem services, including for adaptation. Regrettably, in the areas targetted by this project, continued unsustainable use and degradation of the coastal zone ecosystems resulted in their reduced capacity to provide the goods and services that coastal communities rely on for their livelihoods and wellbeing. This can be attributed to the limited local capacities in managing natural resources associated with unsustainable agricultural and fisheries activities. These practices are currently being exercised without management plans or official mechanisms that allow the transfer of natural resource management to local communities in order to empower them to implement, monitor and enforce these plans.

58. During the last two decades, the Locally Managed Marine Area (LMMA) is a management instrument that has known an increasing popularity in Madagascar as they empower communities to manage their local natural resources. These have grown significantly in number in the country since the first one was established fifteen years ago: according to the MIHARI network, over the last decade more than 200 LMMAs have been created across the country. However, consultations conducted during the PPG phase revealed that, beyond their creation which is quite straightforward, they require extensive capacity-building efforts to become fully operational and independent over time.

*Barrier 4: Limited capacity to engage in the blue-economy for EbA-based businesses.*

59. Coastal communities still rely heavily on single sources of income, predominantly agriculture or fisheries, which can be supplemented by products from unsustainable value chains (e.g. mangrove charcoal), thereby making them particularly vulnerable to climate shocks. This reliance on these limited sources of income is also resulting in the overexploitation of natural resources and degradation of

ecosystems, which is further increasing the communities? vulnerability. Alternative climate-resilient livelihoods are very limited, as are opportunities to engage in the blue-economy for EbA-based businesses, including as it relates to NTFPs, agriculture, or fishery value chains. Women in particular face significant barriers in engaging with climate-resilient value chains.

60. In the fisheries sector, there is limited transformation of marine products and limited value addition, caused by a lack of processing equipment and facilities, as well as technical knowledge. There is also poor infrastructure for storing fresh products, leading to significant post-harvest losses. At another level, the dispersed nature of small-scale fisheries means fishers rely on private sector collectors to access markets, and post-harvest actors hold disproportionate negotiating power. Hence, incentives to adopt climate-resilient and improved management practices are limited for fishers, as economic benefits end up in the hands of other actors higher in the value chain. To address these imbalances, it is critical to empower fishers, improve their representation in management processes (see barrier 3), and address data deficiencies to enhance transparency and provide an evidence base for decision-making .

61. Poor organization of producers and other actors of the other value chains, reflected through low membership to cooperatives and producer organizations (in particular for women) also contributes to limiting market access, and to the inability to get fair prices for various products. Moreover, where these organizations do exist, they often lack the capacity (technical, financial, human) to scale up operations or to invest in the development of new EbA-based products. This is reflected, amongst others, in the absence of sustainable business plans, as well as technical and hardware support for those organizations.

62. In the tourism sector, there exist significant opportunities for ecotourism, as the country?s natural landscape and culture are highly sought after. However there is a lack of skilled labor, weak infrastructure, and poor international accessibility in comparison to other tourist destinations in the country. The risk of cyclones and tropical diseases have been identified as constrictive to the activity as well.

*Barrier 5: Limited knowledge about climate risks and EbA for scaling the adoption of adaptation*

63. The adoption and implementation of good management practices, be it for fisheries, agriculture, or more broadly natural resources, is severely impeded by a lack of awareness of the linkages between climate, ecosystem health, and livelihoods. Importantly, there is no information which can be derived on the potential interactions between the current state of ecosystems and the potential impacts of climate change on those. The situation is particularly dire for marine ecosystems in the country. Communities lack the tools required to monitor species and ecosystems in a participatory manner that encourage ownership and empower them to track the status of their environment and livelihoods. Without such information, they are therefore unable to make evidence-based decisions regarding the management of natural resources and adaptation. Good natural resources and fisheries management, with community-led efforts, is low cost and effective and can improve the resilience of coastal communities to climate change by ensuring the long-term provision of ecosystem services, including for adaptation. However, it cannot be achieved without increased awareness of climate risks to the sectors and how to integrate and scale-up EbA solutions. In fact, the lack of knowledge and awareness is so important that it affects decision-making not only at the local level, but is also reflected by the absence of policies targeting small-scale fisheries specifically. This lack of capacity has also affected the ability to monitor the sector,

whereby, specific species remain overexploited. Improved access to information and strengthened knowledge could, however, enable communities and policy makers to monitor ecosystems and understand relationships with climate change and anthropogenic behaviors, and make decisions on how to manage resources for the long term .

64. The proposed project has been designed while taking into consideration lessons learnt from past projects and, wherever possible, replicating and scaling up good practices. Past projects of particular relevance are presented in Table 7, with the key lessons relating to implementation arrangements and community engagement, adequate planning in light of existing political and security risks, as well as the need to replicate good practices in relation to ecosystem management and EbA, in particular in the regions targeted by the project.

Table 7: Baseline initiatives and lessons learnt

| Title | Donor | Budget | Period | Description | Lessons Learnt | Implications for project design |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| Adapting coastal zone management to climate change considering ecosystem and livelihoods (PACZ1) | GEF (ID 4568)<br><br>UNEP | $U5.3 M | 2014-2023 | LDCF resources were used to address the vulnerability of coastal zone of Madagascar to current and expected climate change and the lack of capacity to cope with it. The LDCF project created adaptive capacity among all social groups, whether government or communities, from the local to the central administration level, while ensuring that the local environment would be protected and managed in a way that allows it to withstand climate change impacts and to provide continued livelihoods. It included demonstration interventions at pilot sites in four coastal regions ?Menabe, Boeny, Atsinanana, and Vatovavy Fitovinany to restore, protect and sustainably manage productive ecosystems, as well as invest | A report on best practices has been produced and lessons learned will be further documented in the ongoing Terminal Evaluation. Some lessons learnt relevant to the design include:<br><br>? The level of involvement of the Head of Region and/or their development team in the promotion of ICZM constitutes a determining factor of regional dynamism both in the planning of actions to be undertaken and at the level of application in the field.<br><br>? It is essential to promote the search for partnerships or financing in order to provide essential support for the proper functioning of the Regional ICZM Committee/Platform without compromising either the nature of the process or influencing the major orientations of the integrated approach.<br><br>? The quarterly meetings of the Regional Committee make it possible to bring out the elements of the follow-up of | ? For Outcome 1.1., the project proposes that regional involvement in the promotion of ICZM will be ensured through the support to the four CRGIZC/Platforms and the revision of Atsimo Atsinanana Regional Development plan to incorporate EbA into planning at regional level.<br><br>The efforts to date initiated by the PAZC I project to secure sustainable financing for the Committees will be analyzed and built upon, while taking into account recent changes at national level regarding the CNGIZC in assessing continued feasibility.<br><br>The four CRGIZC/Platforms will be supported in their day-to-day mandates to ensure regular and efficient coordination of ICZM at regional scale.<br><br>? As per the Output 1.1.2, CRGIZC/Platforms will be supported to strengthen their |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | in the restoration of coastal barriers and buffers such as sea walls and dykes. Project interventions consisted of: i) a strengthening of scientific and technical capacity towards adaptation in coastal zones; ii) the implementation of key adaptive measures and technologies in vulnerable sites iii) and the creation of an enabling policy environment towards stronger coastal resilience. | the implementation of the actions undertaken as well as the possible rectifications in the phase of implementation and also to validate the partnership agreements with other stakeholders which allow to achieve the objectives of ICZM.<br><br>? To ensure ownership and sustainability of support to small enterprises, it is important to build the capacity of communities on how to calculate profitability and to make savings, to strengthen their technical knowledge of the activity and above all to actively involve them in each process to have a general knowledge of the enterprises.<br><br>? Engage communities that are made up of young people and adults physically fit throughout the process of planting mangroves through the adoption of the High Intensity of Labor (HIL) approach.<br><br>? Co-management of resources in order to manage fisheries resources | legitimacy, mandate, and sustainable financing. In this respect, the role of the Head of Region in coordinating the CR GIZC/Platform will be clarified including its ability to designate the entities involved in the platform.<br><br>This project, under component 3 in particular, seeks to innovate in terms of support for entrepreneurs. It acknowledges the needs identified, including on financial literacy, as a potential.<br><br>For restoration efforts, several good practices will be replicated, including the HIL approach.<br><br>For the management of natural resources, the project will also support LMMAs and the co-management of natural resources. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | sustainably and to avoid overexploitation of resources by authorized and unauthorized operators. | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Second South West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFish2) | World Bank IDA Credit ($65M) IDA Grant ($9M) GEF Grant ($6.4M) JPHRD Grant ($2.73M) | | 2018-2023 | The objectives of the project are to support the improvement of the governance of priority fisheries for their national and community sustainable management, support the adoption of sustainable management of target fisheries, and promote alternative activities and support target fishermen to facilitate and access these alternative activities. The project was planned to be implemented in the following high-priority intervention areas: Ambaro-Ampasindava Bay in the Diana Region; Antongil Bay in the Analanjirofo Region, the Melaky Region, and in the priority areas of the Atsimo-Antsinanana Region and the Androy Region. The priority sectors concerned crab, shrimp, lobster, | The 2022 PIR presents a few areas of lessons learnt[59][58]. Amongst those, the fact that with the COVID-19 pandemic and the plague epidemic, a fallback of the countries on themselves was observed, preferring to focus on their national response and recoveries rather than on regional activities. This impacted several of the regional activities and components. | The risk associated with global disturbances such as COVID-19 on government priorities was considered in the project design. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | octopus, demersal fish (living above the seabed on a non-permanent basis), sea cucumber and tuna. The proposed LDCF project aligns with Components 2 and 3 of SWIOFish2 (i.e. Component 2. Strengthening capacities for priority fisheries management and Component 3. Strengthening capacities for engagement in alternative fishing practices and livelihoods activities, for which grant financing is about $18.13M), and will therefore be able to capitalize on the results of those interventions and replicate best practices where relevant. | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Sustainable Coastal Fisheries Project Phase 1 (PCD) | KfW | US$10.77 M | 2018-2023 | The Project, under the Madagscar National Parks Investment Fund phase IV, aimed to contribute to the sustainable management of marine natural resources in Madagascar coastal areas, to increase incomes of the local population to contribute to the improvement of the sustainable management of natural resources in the priority areas. Within a four-year period the project implemented the concepts of "Locally Managed Marine Areas (LMMA)" for co-management of marine and coastal protected areas. Project intervention areas were: Parc National Nosy Hara and surroundings, R?serve de Biosph?re de Sahamalaza/Iles Radama, Baie d'Antongil (from Vinanivao to Tanambe), Parc National | The ex post evaluation of the National Park Investment Fund project provides some areas of lessons learnt. This includes, for instance, the importance of strong partnerships with local NGOs to increase the efficiency in carrying out support to MSMEs; the important of local buy-in for natural resources management, etc. | The proposed LDCF project will build on this experience with the implementation of LMMAs (Output 2.1), and lessons learnt from the project will used during the project implementation. Moreover, the two initiatives shall build on each other?s interventions to support the sustainable management of marine and coastal ecosystems, and income diversification strategies.<br><br>At the time of the PPG, it was not possible to consult further documentation on PCD phase 1. However, the extensive experience of KfW in Madagascar through the support in four phases to Madagascar National Parks Investment Funds was taken into consideration. In fact, the lessons learnt from earlier phases of MNP project led to the design of a project focusing on LMMAs, and as such the approach being successful is being replicated by this project. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | de Kirindy Mite surroundings (coastal and marine areas), Southwest (Veondriaka et Soariaka), zone Nosy Ve Androka. AHT provided Technical Assistance to MNP itself and, in cooperation with MNP and four NGOs, to six LMMAs in different regions throughout Madagascar (including Menabe). The objective of the project was to contribute to the sustainable management of natural resources in Madagascar?s coastal and marine areas as well as to increase the income of local communities. | | Moreover, the project will seek out strong local partners for the implementation of support across regions. |

| | | | | | | |
|---|---|---|---|---|---|---|
| Implementation of the Strategic Action Programme for the protection of the Western Indian Ocean from land-based sources and activities (WIO-SAP) | Nairobi Convention/GEF<br><br>UNEP | $US10.9M | 2016-2023 | The project has the following four components:<br>A: Sustainable Management of Critical Habitats: coral reefs, mangroves, and seagrasses. Outcomes under this component will include a) critical habitat management through pilot interventions and b) the development and adaptation of tools and methods to support coastal planning and management.<br>B: Improved Water Quality: Untreated wastewater and effluents are causing a decline in water quality in the region, threatening public health and ecosystems. Outcomes under this component will include improved quality of coastal ?receiving? waters through pilot interventions and a framework for monitoring and | The 2022 PIR for the project presents some areas of lessons learnt and good practices.[60][59] In particular, the project has worked in other countries (Kenya and Tanzania) on a Guideline on economic valuation of coastal and marine resources for the region developed in 2019 with WIOSAP support and is being applied in conducting a macro-economic assessment of MPAs, Locally Managed Areas, critical habitats with rich fisheries resources. Moreover, the project has been developing Collaborative Strategies for Sustainable Management of Mangroves in the Boeny Region Littorale, Madagascar, which could be replicated to other regions if deemed successful. | The LDCF project will review and where applicable replicate best practices piloted through WIO-SAP in critical habitats, especially mangroves, while always taking into account climate change vulnerability.<br><br>The economic valuation guidelines may be useful in the context of the different regions of Madagascar covered by the project, to influence key policy decisions towards sustainable management of their marine resources. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | managing these pollutants. C: Sustainable Management of River Flows: Human activities and climate variability have altered the drainage systems of many rivers in the region. Such alterations threaten coastal habitats, shorelines, public health, and livelihoods. Outcomes under this component will include environmental flow assessments (EFAs) and implementation of EFA plans in the region, including through pilot interventions. D: Governance and Regional Collaboration: The degradation of critical marine and coastal ecosystems in the region can be partially attributed to inadequate governance frameworks. Activities under this component will include an improved knowledge | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | management system (see the Nairobi Convention?s Clearing House Mechanism) and exchange mechanisms, as well as updated policies and stronger institutions. | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Sustainable Management of the Environment Programme (PAGE) | GIZ | | 2015-2020 | PAGE / GIZ supported key state actors (at national and regional level) and Civil Society working in the areas of intervention of the Program to contribute to the sustainable management of natural resources. At the local level, these are the actors of the municipal administration in and around protected areas as well as public inter-municipal cooperation bodies (OPCI) and basic communities (CoBa). Within a regional and municipal planning framework (Regional Land Use Planning Scheme ? SRAT and Communal Development Plan - SAC), the themes aimed at reducing deforestation and landscape and forest restoration are carried out at different levels: national through political | A report for the project highlights some good practices[61][60], many of which apply directly to this LDCF project. They relate to ecosystem-based livelihood diversification; strengthening the institutional legal, and planning frameworks for sustainable use of natural resources; and capacity strengthening for climate change adaptation. Amongst those, we note a strong communication and engagement process to reduce barriers for the participation of women, which led to high participation rates and women engaging actively in decision-making processes; taking a systemic/value chain approach to develop sustainable sources of wood energy and its market reduces significantly pressures on ecosystems; the development process of spatial planning tools not only creates a reference document, but also increases capacities and partnerships across | The good practices developed by PAGE were integrated into the project design, in particular as it related to the development of SACs and the development of ecosystem-based livelihoods. The communication and knowledge management dimension on Component 4 of the project can in particular replicate good practices as outlined in the PAGE best practices report. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | support and strategic, regional and local for operational activities. In the Boeny region, PAGE / GIZ supported the honey value chain from to improve the income of communities living in and around protected areas, so that they are more involved in the protection of the natural and forest resources of their environments, supported land use planning (SRAT and SAC), worked with local associations to disseminate agricultural and fishing techniques adapted to climate change, supported Komanga (a platform of CSOs) to conduct advocacy work on the effects of climate change and appropriate adaptation measures, and much more. | local and regional levels, and the SACs even enabled communes to negotiate financing for different infrastructure projects. | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Conservation and Sustainable Use of Biological Diversity in the Northwestern Landscape | LDCF/GEF (ID9606) ? Conservation International | USD6.8M | 2019-2023 | In order to reverse this trend and foster the full recognition of the PA role in the sustainable development of the region, the project supported targeted interventions in and around the five target PAs. Taken together, the five PAs protect a corridor of the most intact natural habitats in Boeny. The objective of this project was ?to strengthen the long-term conservation and sustainable use of biodiversity in the Northwestern Landscape of Madagascar?. This objective was aimed to be achieved through the implementation of two project components that were expected to deliver three main outcomes. The first component of the project focused on strengthening the management | The project MTR[62][61] highlights the following two lessons learnt: 1. Projects designed based on active consultations with stakeholders are relatively more effective as the design is realistic and also garners ownership from associated<br><br>stakeholders<br><br>2. Capacity of Implementing Partners is critical for thorough and timely progress reporting | The project PPG phase conducted extensive consultations, building on a first phase of consultations during PIF development phase. The SEP provides details of this, as well as what is planned for the implementation phase.<br><br>Moreover, the capacity of the EA will be built through Component 1, and strong NGO partners will be sought to support the implementation of Components 2 and 3 of the project. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | and sustainable financing of the five PAs in Boeny to reduce threats on natural resources. The activities under this component were designed to result in an increased management effectiveness of the 5 targeted PAs (outcome 2.1). Activities to address long term financing improved financial sustainability of the 5 PAs (outcome 2.1). The second component of the project were though to encourage livelihood activities that support sustainable use of biodiversity by local communities in and around the targeted PAs to strengthen PA protection efforts and improve community well-being in the buffer zones of the PAs. In addition, the proposed project was built to enhance previous GEF investments that have been | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | made to establish the CMK and Bombetoka-Beloboka reserves by improving their long term financial sustainability. | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Creating a network of resilient MPAs in globally significant areas of the Western Indian Ocean | Blue Action Fund - Wildlife Conservation Society | Eur3.8M | 2019-2023 | The Western Indian Ocean is a socially and biologically diverse region that contains some of the world?s most extensive and most climate resilient coral reefs and mangroves, which are critical sources of protein, coastal protection, and income to coastal populations. Yet, the integrity of the region?s ecosystems is threatened by the overexploitation of fisheries, habitat clearing, and pollution. These threats are exacerbated by the impacts of climate change, including sea level rise, coral bleaching, and storm events. The project addresses these challenges by expanding and improving a network of climate resilient, sustainable and effectively managed marine protected areas in the Western Indian Ocean, | Good practices promoted by the project include: Co-management of fisheries; Community mapping; Creating sustainable employment<br><br>Opportunities; Post-harvest loss reduction; Initiatives to increase value added in supply chains; Protection of coral reefs; and Protection of seagrass beds. | Lessons learnt will be integrated with regards to work on community management of small-scale fisheries and marine-related supply chains of particular interest. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | and ensuring their associated sustainable use zones are conserved.<br>WCS was set to design and revise management plans for a total of 6,040km2 of MPAs, including 2,950 km2 of new or expanded protected areas, and provide resources, instruments, and capacities to implement the plans in Kenya, Tanzania and Madagascar.<br>The project was designed to enhance the community management of sustainable small-scale fisheries and work towards reducing post-harvest losses and improving marine-related supply chains. The project would thus contribute to maintaining the critical ecosystems in the region and ensuring sustainable livelihoods for coastal communities.<br>The project intervened on the north-west | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | coast of Madagascar, north of the Boeny sites of this proposed LDCF project. | | |

65. The objective of the project is to enhance resilience of local livelihoods and ecosystems, with a focus on gender equity, in coastal zones of Madagascar to the adverse impacts of climate change.

**Component 1: Climate-resilient governance and planning in coastal zones of Madagascar**

**Business-as-usual scenario:**

66. Climate change is recognized as a major threat to the coastal areas of Madagascar, and to the well-being and socio-economic development of coastal populations.[63]62 Addressing the impacts of climate change in coastal areas has been identified as a priority in national adaptation strategies and plans, including the 2021 National Adaptation Plan and the 2016 first NDC. However, the governance and planning frameworks at national, regional, and communal levels do not provide an adequate supporting environment for a comprehensive and continued integration of adaptation (including EbA) considerations in the development of Madagascar?s coastal zones or the implementation of scaled up adaptation initiatives in these areas.

67. More specifically, there is a limited multi-sectoral and multi-stakeholder coordination which is necessary for adaptation planning and implementation in coastal areas. This results in inefficiencies in accessing finance and in missed opportunities for synergies between initiatives. To address this part of the issue, a National ICZM Committee (CNGIZC) was created in 2009, whose role was to ?to promote and coordinate the action of the various authorities responsible for coastal and marine areas and to ensure the follow-up of the coherence of the implementation of the Action Plan at the different levels of governance, within the framework defined by the National Policy and Strategy for the sustainable development of coastal and marine areas of Madagascar?[64]63. The establishment of Regional ICZM Committees (CRGIZC) was to be approved by the CNGIZC, and under this framework the PAZC I project successfully established Regional ICZM Committees (CRGIZC) in one of the target regions (i.e., Boeny) and supported the strengthening of the existing one in the Menabe region. In total, four CRGIZCs were supported to develop an ICZM Action Plan for the period 2018-2022, integrating climate change considerations and adaptation priorities. These Regional Action Plans informed the revision of the National ICZM Action Plan (2018-2022), which integrates adaptation measures. However, during the Council of Ministers of December 15, 2021, the suspension of the CNGIZC within the Prime Minister's Office was adopted. This has left the existing CRGIZCs without an institutional umbrella for GIZC coordination at the national level, and despite their significant potential, the Regional ICZM Committees still lack sufficient institutional legitimacy, capacity, and secure sources of long-term funding for their operations. Moreover, their functions are currently largely limited to awareness-raising[65]64, despite the fact that these structures have great potential to act as coordinating platforms for GIZC as well as adaptation action in coastal areas, as well as to support planning, implementation and monitoring of adaptation interventions, including EbA. These potentialities have been recognized in the Menabe region, and as such WWF has taken over support for the CRGIZC established in the PACZ 1 project. To circumvent the challenges associated with the suspension of the CNGIZC, the CRGIZC has been reformulated and renamed Regional ICZM Platform (PFGIZC), with membership from the original CRGIZC (i.e., members from the decentralized services of the ministerial departments, elected officials and local authorities) having been expanded to include local NGOs and CSOs, amongst others.

68. On the other hand, a systematic approach for the integration of adaptation considerations and EbA approaches in policy and planning processes for coastal zones is lacking at present. As a result, while multiple adaptation measures have been piloted in the coastal zones of Madagascar, including in the target regions, these initiatives have been at a relatively small scale and followed a piecemeal, localized approach. To address this, the PAZC I project as well as the GIZ-funded PAGE and ProSOL projects contributed to revisions to the Regional Development Plans (Plan r?gional de d?veloppement; PRD) of the Menabe and Boeny regions to include climate change adaptation considerations. The PRD for Diana

also integrates climate change concerns, but the one for Atsimo Atsinanana does not. The PRD is the translation into concrete activities for the next ten years of the land use planning axes defined in the Regional Land Use Plan (Sch?ma regional d?am?nagement du territoire - SRAT), but capacity for implementation of priority actions remains low.

69. Similarly, at the local level, there is low capacity for adaptation planning. The main planning instruments in Madagascar are the Communal Land Use Plans (Sch?ma d?am?nagement communal; SAC), and the Communal Development Plans (Plan communal de d?veloppement; PCD). The SAC is a reference document that sets out fifteen-year guidelines for land use planning, and it aims above all to strengthen the capacity of the communes in the management of their territory and to meet the needs related to development and environmental protection. It constitutes the basis for the medium-term objectives and activities to be identified in the PCD. There are currently only a few communes which have been supported to mainstream adaptation in SACs through recent or ongoing adaptation initiatives, including most recently in 2020 the PAGE/GIZ project having supported twenty communes for their SAC development. Part of the SAC process piloted previously included setting up Communal Development Committees (or CCD) to ensure the effective participation of the commune's citizens in the development of the SAC. In addition, in 2019, as part of the Capacity Building Program and Conditions for Sustainable Adaptation to Climate Change (PRCCC), the National Environment Office (ONE) developed a practical guide for integrating adaptation to climate change into the SAC through a strategic environmental assessment approach. No information is currently available on the implementation of this guide.

70. The PCD, on the other hand, is a four-year framework describing the development goals, strategy, programmes, and projects, and means of implementation for a commune. It is accompanied by an investment and capacity building plan. PCDs can be an effective tool for addressing climate change adaptation issues, when combined with the development of adequate sustainable resources management strategies or sub-plans, and when land tenure issues can be tackled. While the vast majority of communes are thought to have a PCD, they may be rapidly outdated, and their development is generally the result of an exogenous intervention under the initiative of Technical and Financial Partners. In the Boeny and Diana Regions, 35 SACs and PCDs (2020-2025) have been drawn up that fully integrate climate concerns through GIZ support. In the Menabe Region, AFD's support would have enabled the development of a few PCDs, but this is not currently documented. As for their implementation, no information has been reported. For Atsimo Atsinanana, while the PRD touches upon the topic of climate change, the adaptation planning approach proposed does not sufficiently integrate the local level, and would therefore not be easily operationalized in its current form. While a 2016 guide for the elaboration of the PCDs[66]65 taking into account the cultural dimension has been elaborated, only a limited number of communes have benefited from their implementation. Moreover, there remains a significant need to apply more participatory approaches in PCD processes, as well as to integrate sustainable resources management sub-plans and EbA approaches within them.

**Adaptation scenario:**

71. The project proposes to address the gaps in the enabling environment for climate-resilient planning and coordination of adaptation action at the national, regional, and local levels, by supporting the integration of adaptation considerations in relevant policies and plans, and by building capacity of national, regional, and local actors to engage with, and implement, EbA.

72. The capacity of the national climate change office (BNCC-REDD+) to fully fulfil its mandate to coordinate climate change adaptation in Madagascar will also be strengthened through training and exchange opportunities.

73. In line with the BNCC-REDD+ and the regional DREEDs priorities to enhance the legitimacy and role of the regional ICZM Committees/Platforms in multisectoral coordination of integrated coastal management and EbA mainstreaming, the project will provide support for the reformulation and the operationalization of Regional ICZM Committees/Platforms, followed by ongoing support for the coordination of adaptation action, and specific training on the implementation of EbA. Throughout, the project will adopt a Training of Trainers approach to ensure that the capacity-building activity results are sustainable and can be scaled out, including here where Regional ICZM Committees/Platforms could ultimately be replicated across other coastal regions of the country. Appropriate legislative instruments will be put in place to further institutionalize the Regional ICZM Committees/Platforms, and to strengthen their mandate and core funding. The roles and responsibilities of the Regional ICZM Committees/Platforms in coordinating adaptation in coastal areas will be clarified in the action plans, and collaboration with BNCC-REDD+ strengthened. Sustainable financing strategies will be developed to support the long-term operations of the Regional ICZM Committees/Platforms, including self-financing and public and private financing options scoped at PPG stage. As a result, the coherence and efficiency of adaptation actions in the targeted coastal areas will be strengthened through the enhanced multi-sectoral and multi-stakeholder coordination provided by the strengthened Regional ICZM Committees.

74. The project replicates the approach to PRD revisions used in PAZC I to update the Atsimo Atsinanana PRD. It will also support the integration of adaptation (including EbA) approaches into SACs in the selected communes of the four regions through a participatory approach, building on the work done by the PAZC I project at the regional level. It is equally important that the communes where the PAZC II will intervene prioritize the development of PCDs in order to lay the foundations for sustainable development and EbA. This approach will make it possible to strengthen the anchoring of the project at the local level.

75. As a result, adaptation considerations will be able to be integrated in coastal development planning in a more coordinated and coherent manner, synergies between adaptation initiatives strengthened, and adaptation financing used more efficiently.

**Table 8 Proposed planning instruments and scaling up from PAZC 1**

| **Region** | **Planning interventions** | | | | | **Scaling up/strengthening existing structures/plans** |
|---|---|---|---|---|---|---|
| | **PRD** | **PCD** | **SAC** | **LMMA** | **CRGIZC** | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Atsimo Atsinanana** | x | x | x | | x | ●Revising PRD<br>●Revising PCDs and SACs in 5 communes [67][66]<br>●Support for orphan LMMAs (number TBD at inception)[68][67]<br>●Set up of CRGIZC (scaling up from PAZC 1) |
| **Boeny** | | x | x | x | x | ●Revising PCDs and SACs in 5 communes<br>●Support for orphan LMMAs (number TBD at inception)<br>●Support for CRGIZC set up in PAZC 1 |
| **Diana** | | x | x | x | x | ●Revising PCDs and SACs in 5 communes<br>●Support for orphan LMMAs (number TBD at inception)<br>●Set up of CRGIZC (scaling up from PAZC 1) |
| **Menabe** | | x | x | x | | ●Revising PCDs and SACs in 5 communes<br>●Support for orphan LMMAs (number TBD at inception)<br>*No support is planned for the Menabe CRGIZC set up under PAZC 1, as it is currently supported by WWF. |

**Outcome 1.1: Strengthened institutional capacity for the coordination of adaptation action in coastal zones**

*Output 1.1.1 Participatory development of capacity needs assessments; terms of reference and statutes; and actions plans for three (3) CRGIZC/Platforms to strengthen their legitimacy, mandate, and sustainable financing*

76. Building on the experience from WWF in Menabe with the PFGIZC, the project proposes to explore the need to support the reformulation of the existing and operational CRGIZC in Boeny, as well as operationalize PFGIZCs in Diana and Atsimo Atsinanana towards a clearer mandate on climate action and EbA coordination and planning, and expanded membership to include CSOs, VOIs, and other relevant partners. To achieve this, the project proposes to adopt good practices from the PAZC I experience, as well as that of WWF in Menabe. The process, according to the PAZC I Good Practices Report published in 2023, should involve the following steps:

1) Conduct interviews with local authorities and civil society organizations concerned with coastal zone management in order to identify needs and existing capacities in terms of ICZM;

2) Conduct information workshops for regional authorities aimed at identifying potential members of the CRGIZC;

3) Conduct individual interviews with potential stakeholders of the future Regional ICZM Committee (ministerial departments, professional associations, civil society organizations);

4) Organize working session and consultations with the main actors and stakeholders concerned by the region to know the existing capacities in terms of ICZM as well as the needs for strengthening in the field of ICZM;

5) Conduct the participatory development of the terms of reference and the statutes ( prerogatives , the definitive members and the field of intervention);

6) Proceed with the formalization of the process by establishing the final status of the Regional Committee/Platform when the members of the permanent entity are known; and

7) Develop a Regional ICZM Committee/Platform action plan and sustainable financing strategy. These actions are aimed at strengthening the legitimacy, mandate and financing, CRGIZC/Platform.

77. The formalization process will contribute to strengthening the authority and legitimacy of the ICZM Committees/Platforms, and have financial implications, setting up a framework for the long-term sustainable financing of the Regional ICZM Committees/Platforms. throughout the process, the project proposes to take on lessons learnt identified by PAZC I, including:

? The level of involvement of the Head of Region and/or their development team in the promotion of ICZM constitutes a determining factor of regional dynamism both in the planning of actions to be undertaken and at the level of application in the field;

? It is essential to promote the search for partnerships or financing in order to provide essential support for the proper functioning of the Regional ICZM Committee/Platform without compromising either the nature of the process or influencing the major orientations of the integrated approach;

? The quarterly meetings of the Regional Committee make it possible to bring out the elements of the follow-up of the implementation of the actions undertaken as well as the possible rectifications in the phase of implementation and also to validate the partnership agreements with other stakeholders which allow to achieve the objectives of ICZM;

? The members of the CR GIZC/Platform are appointed by decree ? signed by the Head of Region on the proposal of the sectors or entities concerned.

78. On item 7), the success to date of the efforts initiated by the PAZC I project and other projects to secure sustainable financing for the Committees will be analyzed and built upon, while taking into account recent changes at national level regarding the CNGIZC in assessing continued feasibility. Lessons learnt will help to support the further development of sustainable financing options that involve inclusion in national and/or local government budgets, and partnerships with other relevant initiatives. During the PPG consultations, the following strategies for CR GIZC/Platform financing have been identified as the most feasible options to promote and further develop during the project as part of the CR GIZC/Platform action plans and sustainable financing strategies (activity 1.1.1.3):

? Mandatory allocation of regional fiscal budget for ICZM Committees and requirements for local governments to match part of the regional funds; etc. This is based on the premise that the Committees will be delivering essential services on behalf of the regional government. This financing option would enable the coverage of the core funding for the ICZM Committees? services, while other partnerships will also be explored to fill gaps in financing.

? Funding from the region and the Malagasy government could also be leveraged through the Public Investment Program (PIP) framework for the coverage of salaries of the permanent secretariats of the CR GIZC/Platform.

? Partnerships developed with both international and national Civil Society Organizations to leverage further funding. The CR GIZC?s association status enables it to respond to various project calls at the national and international levels.

? Partnerships with the Private Sector through Corporate Social Responsibility (CSR). Madagascar, with the support of the Ministry of Environment and Sustainable Development, has initiated a CSR mechanism to encourage businesses to engage in environmental activities. Several companies and enterprises are already participating in CSR activities in Madagascar. The GIZC, which involves both public and private stakeholders, can collaborate with businesses operating in coastal areas to secure funding for its initiatives as part of their CSR efforts.

? Generating revenues by selling goods and services. The GIZC plays a crucial role in resolving conflicts, supporting local communities, and acting as an intermediary in coastal regions. As part of

their financing strategy, CRGIZC may offer services such as awareness-raising, education, and lobbying to both public and private sectors.

? There is also a range of experiences from around the world in developing and implementing innovative financing instruments and platforms for ICZM, which could be replicated or adapted by the project. Possible innovative options to be further analyzed and developed during the project implementation include inter alia payments for ecosystem services; taxes, levies, and rents on public coastal services.

? Another option is to create regional funds serviced by donor contributions and other income arising from the sale of goods (publications, software) and services. These mechanisms could however be difficult to implement first because of their quite recent activity and the need for trust, visibility and time it takes to implement mechanisms.

Proposed list of activities:

? Activity 1.1.1.1. Needs and capacities assessment for ICZM and coordination of adaptation action in three regions (Boeny, Diana and Atsimo Atsinanana).

? Activity 1.1.1.2. Two (02) workshops per region for the institutionalization of CRGIZC/Platform in charge of coordinating activities related to climate change adaptation (10 people/workshop - at least 40% women), including identifying potential members of the CRGIZC; distribution of roles and responsibilities between the different actors involved for the coordination of the implementation of adaptation actions; and definition of the legal framework necessary for their legitimization (10 people/workshop). This activity will yield the participatory development of the terms of reference and the statutes (prerogatives, the definitive members and the field of intervention)

? Activity 1.1.1.3. Develop Regional ICZM Committee/Platform action plans and sustainable financing strategies, that are inclusive and incorporate elements of a gender-sensitive approach

*Output 1.1.2 Training and workshop series for four (4) CRGIZC/Platforms and MEDD-BNCC-REDD+ for a better coordination of adaptation actions in coastal areas*

79. Technical assistance, training and advisory services will be provided to the CRGIZCs/Platforms by the project. The support will focus both on (i) strengthening the technical capacity of the Regional Committees to coordinate adaptation actions in coastal areas across sectors and stakeholders, and (ii) supporting the Regional Committees to develop strategic relationships and partnerships with key actors (e.g., regional administrations, civil society organizations, donor-funded projects), to strengthen and consolidate their role as a coordinating platform.

80. At the same time, the capacity of BNCC-REDD+ to fully fulfil its mandate to coordinate climate change adaptation in Madagascar will be strengthened through training and exchange opportunities, and good practices (including participation in relevant regional and international events).

Proposed list of activities:

•Activity 1.1.2.1. Training program/workshop series on climate change adaptation and gender mainstreaming in CC-related policies, strategies and programmes, including:
•Four (04) Regions benefiting from a Training Workshop on climate risk assessment and identification of adaptation options, 10 persons per region and BNCC-REDD+.
•Four (04) Regions benefiting from a training workshop on strategic planning and budgeting for adaptation projects (10 people per region and BNCC-REDD+)
•Four (04) Regions benefiting from a Training Workshop on the development of climate change adaptation plans (10 people per region and BNCC-REDD+)
•Four (04) Regions benefiting from a seminar on project impact measurement and resource mobilization for adaptation projects (10 people per region and BNCC-REDD+)
•Capacity-building programme provided to BNCCC-REDD+ for coordination of climate change adaptation actions in coastal areas
•Activity 1.1.2.2. Participation in at least three (3) relevant international exchange events for BNCC-REDD+

**Outcome 1.2: Strengthened capacity of local and regional actors for mainstreaming adaptation in coastal zone planning processes**

*Output 1.2.1 Revision of the Atsimo Atsinanana PRD for effective EbA planning at the regional level*

81. The integration of the dimensions of adaptation to climate change in the Regional Development Plan (PRD) is essential to ensure the effectiveness of territorial development planning, especially in the regions most affected by the effects of climate change, but has yet to be completed in Atsimo Atsinanana. The dimensions of adaptation include: the management of water resources, the protection of coastal zones, the management of risks linked to extreme climatic phenomena, the promotion of resilient agriculture, the planning of responsible fisheries and territorial planning. The integration of these dimensions of adaptation to climate change in the PRD is generally done in two stages: 1) Carry out a climate vulnerability assessment of the region, identifying the potential impacts of climate change on the different socio-economic sectors and ecosystems of the region; and 2) Integrate the results of the climate vulnerability assessment into the PRD. This integration can be done through the establishment of specific climate resilience objectives and the integration of adaptation actions and is accompanied by the establishment of indicators for monitoring and evaluating adaptation. The revision of the Atsimo Atsinanana PRD will leverage the experience of Boeny and Menabe regions who revised their PRD to integrate EbA with the support of the PACZ1 project.

82. The importance of participation should be stressed: involving local stakeholders in decision-making and taking into account the needs and aspirations of local communities in this process is essential. This participatory approach will ensure better acceptance/ownership and therefore greater effectiveness of the adaptation measures put in place under the PRD.

Proposed list of activities:

•Activity 1.2.1.1. Participatory development of the PRD for Atsimo Atsinanana, including climate vulnerability assessment of the region (with a focus on gender aspects), identifying the potential impacts of climate change on the different socio-economic sectors and ecosystems of the region

*Output 1.2.2 Development of a guide for the participatory development of SACs and PCDs for effective EbA planning at the local level*

83. The project proposes to extract lessons learned and best practices for the development process of SACs and PCDs that integrate EbA/climate change concerns and compile them into a development guide that can be used in all communes across the country. As stated earlier, there are existing guides, such as the 2019 PRCCC practical guide for integrating adaptation to climate change into the SAC through a strategic environmental assessment approach, but for which no information is currently available on the implementation of this guide; and the 2016 guide for the elaboration of the PCDs taking into account the cultural dimension but without direct consideration for sustainable resources management sub-plans and EbA approaches within them. Hence, the project proposes to build on these guides and revise them appropriately (with attention to a gender-sensitive approach, to ensure gender equity), as well as engage in a dissemination campaign to reach as many communes as possible on a national scale.

84. The project will also actively seek to integrate lessons learnt and good practices used in the PAGE/GIZ project, to create the enabling environment for the broader adoption of EbA and SLM (including in mangrove, coastal forest and small-lake ecosystems). Good practices include favoring a participatory, iterative and integrated approach in the development process of the PCDs; promoting the consultation, involvement and mobilization of all stakeholders in the development of the Communes; and engaging in a spatial planning process that values the potential of each sub-region.[69]68 To support the participatory process, it may also be necessary in some communes to set up Communal Development Committees.

85. In terms of risks management for the project, it is important to note that restrictions/changes in natural resources usage may be brought about by SACs and PCD, hence guidelines will take into consideration the need for mitigation of natural resources use conflicts in the development of SACs/PCDs.

Proposed list of activities:

- Activity 1.2.2.1. One (01) national workshop for the elaboration of the Terms of Reference for the integration of EbA in the communal plans
- Activity 1.2.2.2. Consultative process for the development of guidelines for SAC and PCD development, integrating climate change and EbA dimensions
- Activity 1.2.2.3. Four (04) regional workshops for the popularization of the guide (20 persons/region, at least 40% women)
- Activity 1.2.2.4. National level dissemination campaign

*Output 1.2.3 Revision of twenty (20) SACs and twenty (20) PCDs to effectively integrate EbA approaches through a cross-sectoral and participatory process*

86. Using the tools developed under Output 1.2.2, SACs will be developed, reviewed, or updated in selected communes for the project intervention areas through participatory processes and with support from the Regional ICZM Committees/Platforms, fully integrating adaptation and EbA approaches into

local strategic development priorities. The roles and responsibilities of different stakeholders in the implementation of the plans will be clearly defined, and the planned priority actions will be costed. This will set the scene for the participatory development PCDs which will systematically integrate EbA and good natural resources management practices in coastal communities.

87. The SAC and PCD are strategic development documents that hold official national and international recognition and serve as reference documents for both public and private investments. After implementing the SAC and the PCDs, the commune is able to generate additional revenues through local property taxes and market taxes, or service provision such as water supply, thereby supporting the generation of commune?s income. Consequently, the review and endorsement of the SACs and PCDs is expected to increase the commune's income, enabling it to finance public infrastructure and prioritized development actions in the PCDs. Communes with validated PCDs may also receive taxes or rebates to finance their activities.

88. The project will also identify and establish strategies for the long-term innovative financing of the EbA actions integrated in the SACs, including in some cases in alignment with Component 2 and 3 interventions. During the PPG phase, a number of financing opportunities were identified, which will be explored further during project implementation on a case-by-case basis as local conditions are key determinants to the feasibility of the different options. This will be done through the participatory stakeholder consultation processes and expert services under activities 1.2.3.4. and 1.2.3.5. These financing options could include sources such as schemes involving pro-biodiversity production, where a transition toward more sustainable production practices can support EbA activities; Ecotourism activity mechanism where diversification of revenues can support EbA interventions; Community entrepreneurship support where businesses such as aquaculture can contribute to reducing pressures on ecosystems and generate a sustainable source of funding for natural resource management; Microlending aggregation/private debt mechanism for better access to finance where when aligned with community entrepreneurship can bring benefits for EbA action; and Risk mitigation mechanism (e.g. nature-based insurance schemes), which could provide immediate funding for post-storm restoration of coastal ecosystems, for example. To ensure sustainable financing is feasible, the project will ensure that a prioritization of adaptation actions in the SACs is done through: (i) economic cost-benefit analysis of the adaptation options; and (ii) identification of co-benefits between the adaptation actions and development objectives.

89. The project will also support revisions to PCDs, on the premise that participatory land-use planning has the potential to bring important adaptation benefits to communities and ecosystems when climate change issues are clearly integrated. Participatory mapping and diagnostic exercises will be undertaken, as part of the PCD process, in each targeted commune to map coastal areas and their natural resources/ecosystems, and to identify their importance for climate resilience, as well as their status and drivers of degradation. Dynamics in terms of resource use and slash and burn practices in upstream areas will also be mapped. The mapping process enables resource users to better understand their resource use patterns, the state and trends of these resources, and the dynamic of threats acting upon them. Categorization of the areas with high and lower pressures can also help to identify priority areas for sustainable land use practices, reforestation, natural regeneration, and restoration activities[70]69

(feeding into Outcome 2.2). These types of mapping exercises can also form part of the enabling environment for future interventions and the involvement of the private sector, such as for Payment for Ecosystem Services schemes[71]70.

90. The project proposes to also support the development of relevant sub-plans in PCDs (e.g., mangrove areas management plan), with clear EbA and SLM strategies. Participation in the mapping and concept modelling workshops will encourage community members to participate in the development of priorities for the local development plans and sub-plans. Specifically, the PCD should identify the priority areas for ecosystem rehabilitation (mangrove/costal forest) considering first and foremost climate dimension including vulnerability to climate change; potential provision of adaptation services; as well as land tenure and land uses conflict mitigation. For mangroves and coastal forests, these strategies/plans will also include measures to address some of the drivers of forest degradation, and in particular climate-impact drivers (e.g. selection of climate-resilient species; prioritization of areas facing less rapid SLR). For non-climate drivers, these could include, for example, the promotion of improved stoves to reduce mangrove wood demand and/or the establishment of sustainably managed woodlots of fast-growing species to provide alternative sources of charcoal and timber, or the more sustainable management of agricultural land so that runoff is reduced upstream. By addressing non-climate drivers, these measures would contribute to preserving or enhancing the adaptation services provided by these healthy ecosystems. In communes concerned, sustainable management plans for coastal wetlands will also be developed, including considerations for the cultivation of ?Rambo? (*Lepironia articulata*) and Raphia.

91. To the extent possible, the PCD processes will also take into consideration land tenure aspects and will be making recommendations to deal with land conflicts, in particular those triggered by climate migration. It is essential to ensure that such issues are effectively being addressed, to ensure security of access rights to private and common pool ecosystem services.

92. Finally, as part of the PCDs, investment and capacity building plans will be developed through the participatory stakeholder consultation processes and expert services under activities 1.2.3.4. and 1.2.3.5. The investment plans will include the costed adaptation actions, as well as the proposed sustainable financing mechanism for those actions, to ensure that they can continue to be implemented beyond the contributions of this LDCF project.

Proposed list of activities:

- Activity 1.2.3.1. One (01) Regional workshop per region for the framing and launching of the integration of EbA in the communal plans (with at least 40% women as participants to the workshop)
- Activity 1.2.3.2. Twenty (20) communal workshops for the planning of the development of the PCD and SAC (with at least 40% women as participants to the workshop)
- Activity 1.2.3.3. Facilitate participatory resource mapping in the target communities and identification of intervention sites for EbA activities. This entails co-development and refinement of criteria for site selection and prioritization. The criteria will include ecological criteria, such as the state of degradation and the relative restoration benefit in terms of adaptation, livelihood support and ecosystem-based

value chain development or expansion potential, mitigation potential, and practical criteria such as accessibility.

- Activity 1.2.3.4. 30h of consultancy per commune for the participatory evaluation of climate risks and vulnerability, drafting of framework documents integrating climate risks in the communal references, prioritized cost-effective EbA options and an investment plan.
- Activity 1.2.3.5. Twenty (20) communal workshops for the validation of PCDs and SACs integrating a climate resilience objective, prioritized cost-effective EbA options and an investment plan (with at least 40% women as participants to the workshop)
- Activity 1.2.3.6. Four (04) regional workshops for the institutionalization of the communal references developed (20 people/region, at least 40% women), with learnings feeding into the final version of the Guidelines for mainstreaming EBA in PCD and SACs (Output 1.2.2)

**Component 2: Ecosystem-based adaptation in response to climate risks**

**Business-as-usual scenario:**

93. The continued unsustainable use and degradation of the coastal zone ecosystems result in their reduced capacity to provide the goods and services that coastal communities rely on for their livelihoods and wellbeing. Furthermore, they increase the vulnerability of coastal communities to the impacts of climate change, further reducing agricultural and fisheries yields and thus increasing food insecurity and poverty, which in turn result in further pressure on the already-degraded ecosystems. While pilot ecosystem rehabilitation interventions, including those of the PAZC project, have resulted in promising results, there is an urgent need to upscale and institutionalize these good practices[72]71. Without management plans and mechanisms for the transfer of natural resources management to local communities, and the empowerment of communities to implement, monitor and enforce these plans, the degradation of coastal ecosystems will continue, and coastal populations will remain highly vulnerable to climate change impacts.

94. In the project areas, mangroves suffer from increasingly high levels of degradation due to fuelwood collection, timber extraction and agricultural development[73]72, as well as overfishing and sediment loading associated from upstream deforestation. Some mangrove areas have been converted to rice farming and salt production, while others have been cleared for the development of urban areas. Sea-level rise, changing precipitation patterns, more frequent and intense cyclones and flooding events associated with climate change are also threatening mangroves, all of which are reducing their capacity to provide key adaptation services. Similar challenges are faced by highly fragmented coastal forests present in all four target regions, which are decreasingly able to play their key role in erosion and flood prevention.

95. Watershed degradation and erosion upstream, largely a consequence of poor agricultural practices, also affect coastal and marine environments through sedimentation and siltation, particularly on the west coast of Madagascar[74]73. Coral reefs, for example, suffer not only from bleaching events due to higher temperatures and pressures from unsustainable or excessive fishing (from both industrial and small-scale

fisheries[75]74), but also from siltation from the accumulation of excess sediment in bays, in some case due to upstream erosion. Wetlands are also severely affected, yet they have received little conservation or research attention and their current status is largely unknown[76]75.

96. As a means to empower communities to manage their local natural resources, Madagascar has adopted Locally Managed Marine Areas (LMMAs) in numerous coastal communities. These have grown significantly in number in Madagascar since the first one was established through Blue Ventures more than 15 years ago. According to the MIHARI network, over the last decade more than 200 LMMAs have been created in Madagascar.

97. LMMAs require adequate legal mechanisms to transfer the management of natural resources to local communities, thereby building ownership and improving compliance with laws. There are three such legal mechanisms : through the application of traditional community regulations (?*dinas*?), by the transfer of natural resources management to local level, or by the creation of marine protected areas (MPA).

98. At this time, the main issue remains in providing ongoing support to existing LMMAs. While the process of creating LMMAs can be relatively straightforward, they require extensive capacity-building efforts to become fully operational and independent over time. Those LMMAs without ongoing support from NGOs are often referred to as ?orphan? LMMAs.

**Adaptation scenario:**

99. Through Component 2, communities will be supported in sustainable ecosystem management at the local level, and in ecosystem restoration, both as strategies to reduce climate risks and increase climate resilience.

100. Under Outcome 2.1, communities will be empowered to take charge of the management of their natural resources, building on Madagascar?s existing know-how, mechanisms, and networks of Locally Managed Marine Areas (LMMAs). For many LMMAs created under the transfer of natural resources management at the local level legal framework, contracts need to be renewed, and Outcome 2.1 will focus efforts on these. Creating an LMMA serves a dual purpose for the local communities. By focusing on local management or co-management of natural resources in marine and coastal areas, LMMAs aim both to assert communities' rights of access to resources and to empower them for sustainable management. Beyond simple conservation, the objective of LMMAs is therefore the sustainable management of resources through a participatory and inclusive governance system for user communities. Apart from focusing on the conservation dimension, activities under this Outcome will hence also support the development of sustainable fisheries/natural resource use plans and strategies, to ensure adaptation benefits (in the form of income and livelihood opportunities) can continue to be provided by marine ecosystems. As such, the communities will be empowered to implement, monitor, and enforce the strategies and plans developed, so that the sustainable natural resource use practices introduced by the project can be adopted for the longer term. Throughout the plans, specific actions to develop sustainable financing schemes to support the implementation of the proposed activities will be

presented. These interventions will be closely coordinated with Component 3, which will further assist the target communities in establishing ecosystem-based businesses and negotiating collaborations with the private sector for the development of specific value chains.

101. Under Outcome 2.2, the project will engage communities and other stakeholders in the implementation of interventions to conserve and restore key coastal ecosystems and implement strategies for their sustainable management and use. As a result, ecosystem services that strengthen communities? resilience to climate change impacts will be restored. Mangroves and coastal forests will be rehabilitated and protected, enhancing their ability to provide protection from extreme weather events, including cyclones and floods, and to slow down shoreline erosion. The rehabilitation of watersheds will reduce erosion and the resulting sedimentation and siltation downstream. This will not only benefit wetlands, but also marine environments and mangrove ecosystems downstream. Similarly, beach areas suffering from coastal erosion due to extreme events such as cyclones (especially in Atsimo Atsinanana) will be stabilized using native plant species.

102. The communities, local authorities, CRGIZC/Platforms and civil society organizations (including local associations) will be fully engaged in the planning, implementation and monitoring of the ecosystem-based adaptation measures, and their capacity will also be built through targeted training. To enable scaling out, a Training of Trainers approach will be undertaken.

**Outcome 2.1: Enhanced community capacity to implement EbA approaches and locally manage natural resources to increase climate resilience**

*Output 2.1.1 Eight (8) orphan LMMAs supported for increased climate resilience of marine ecosystems and related livelihoods*

103. For improving the sustainability of small-scale fishing operations in Madagascar, local management initiatives have been shown to be more successful than top-down approaches[77]76. The project therefore proposes to support eight Locally Managed Marine Areas (LMMAs) that were established in the project regions, but where the original management contract has run out and needs to be renewed. Where necessary and possible, the project will support the ?upgrade? of the legal form of the LMMA, to ensure stronger natural and marine resource protection and management. As a first step, the project will coordinate with the MIHARI network and key LMMA promotors (e.g., WWF, Blue Ventures, WCS, CI, FAPBM) to identify those LMMAs that are in need of contract renewal and proceed to a selection of eight LMMAs to support under the project. Selection criteria will be jointly developed and may be submitted for approval to the Sydney Promise Steering Committee, so that they can contribute to Madagascar?s conservation targets. The Sydney Steering Committee oversees Madagascar's efforts to tripling the surface area of its marine protected areas, a challenge Madagascar set itself in Sydney (2014, Australia, World Parks Congress) to sustainably manage its marine resources and contribute to the global goals of protecting 30% of the planet.

104. During a baseline study for the eight selected LMMAs, the project will:

- assess the changes needed and potentially the expansion of LMMAs to include both natural resources and marine resources, in case the LMMA was only limited to either one of these.

- assess the potential to engage or strengthen the engagement of private sector stakeholders that can help support the income opportunity and livelihood dimension of the resources covered by the LMMA, by creating market access and additional job opportunities (e.g., processing) for specific products.

- Ensure coherence of actions with the regional Plan d?Am?nagement des P?cheries (PAP), as well as the PCDs developed/revised under Component 1 of the project, and any other relevant existing plans, strategies, and policies

- The potential benefits of community surveillance for the effectiveness of the management plans

105. For each of the focus eight LMMAs, the project will accompany the communities in going through the different procedural steps to renew, expand or upgrade their LMMA management framework. The project will accompany the communities in developing or strengthening surveillance approaches (e.g. community surveillance with corresponding ?cahiers de charge? for surveillance monitoring and reporting), and the finance mechanisms for management of the LMMA. A limited number of mechanisms may be relevant for such financing. These include concession fees and specific arrangements for businesses developed as part of the project (see component 3). It seems that companies like Copefrito give small contributions to the LMMA management association for each kg of octopus collected, as a contribution to sound conservation of marine resources. Other mechanisms may include: visitors fees (exclusively in areas that are attractive for tourism, such as Diana); or carbon credit for mangrove restoration (however, this mechanism is not available for now in Madagascar; and it seems quite unrealistic at the scale of a LMMA since it requires very high capacity to develop project design document and monitoring of carbon).

106. More importantly, it is the capacity of the LMMA management structure to fundraise that may generate sustainable financing. As for Regional ICZM Committee/Platform, LMMA management may hence be attractive for donors who want to support or sustain field activities that work. Hence, financing strategy should be approached not only from a business model perspective but also in terms of storytelling, reporting, communication, structuring of the organizations, etc. All these elements are considered in an extensive guide on financing mechanisms for MPA recently published by BlueSeeds[78]77.

107. As part of the support provided by the project to LMMAs, the following various ways to finance LMMAs will be considered to promote the sustainability of LMMA but also foster community involvement and environmental conservation;

•Ecotourism: Develop ecotourism activities, such as guided tours, scuba diving, boat excursions, etc. Revenues from sustainable tourism can contribute to the financing of protected area management.

- User Fees: Implement user fees for commercial and recreational activities within the protected area, such as commercial fishing, diving, boating, etc. These fees can be reinvested in management and conservation efforts.
- Partnerships with Conservation Organizations: Collaborate with conservation organizations, environmental NGOs, and foundations to secure additional funding. They may provide grants, technical resources, and management expertise.
- Training and Awareness Programs: Organize educational and awareness programs for visitors, local communities, and schools. Registration fees for these programs can generate revenue.
- Volunteer and Community Work: Encourage volunteer and community participation in protected area management. This can reduce labour costs and strengthen local support.
- Carbon Markets: If the protected area contributes to carbon emission reduction through marine ecosystem preservation, explore participation in carbon markets to generate sellable carbon credits.
- International Funding: Seek international funding to support conservation and sustainable management projects.
- Sale of Local Products: Sale of products from local communities involved in protected area management, such as crafts and sustainably caught seafood, to generate income.
- Crowdfunding: Utilize crowdfunding platforms to raise funds from the public that support the conservation of the protected area

108. The project will build on the lessons learnt through other organizations having worked extensively in this field. For instance, the Blue Ventures experience yielded important lessons on the required approaches for successful LMMAs, which are summarized as: (a) co-management rather than community-management; (b) the permanent field presence of a supporting NGO; (c) a management focus on locally important natural resources; (d) the implementation of poverty alleviation initiatives aimed at reducing barriers to management; (e) decision-making by resource users rather than scientists; (f) a diversified, entrepreneurial funding model; and (g) an emphasis on monitoring and adaptive management. The project will pay special attention to the remaining challenges identified by Blue Ventures (see Table 22 of the Project Document for details).

Proposed list of activities:

- Activity 2.1.1.1. Undertake a consultative process for the selection of the 8 targeted orphan LMMAs, and identify and determine the precise needs for each of the selected eight orphan LMMAs, in terms of scope of the LMMA (e.g., only marine or also natural resources such as mangroves), legal form, local management organization dynamics (including surveillance), local ecosystem-based business development and value chain potential, private sector engagement
- Activity 2.1.1.2. Facilitate the (re) establishment of the local grassroots community(ies), as well as the LMMA management committee/organization/association, ensuring that at least 50% of the participants are women.
- Activity 2.1.1.3. In case of a marine LMMA: translate the regional fisheries plan to community level, requiring an update of the identification of stakeholders, delimitation of the territory, diagnostic analysis of resources and use, and management development guidelines
- Activity 2.1.1.4. Accompany the LMMA management committee in drawing up or updating the management and financing plan, and developing their capacity to sustainably finance their activities (including fundraising and financing mechanism development but also develop organizational skills,

manage costs, increase influence and recognition, surveillance, monitor impact and activities, etc.): identification of management objectives, planning of the implementation and development of a plan capacity building capacity building plan and a programme and monitoring system

•Activity 2.1.1.5. Align the plan with the Dina and accompany the LMMA management committee in submitting the plan to local authorities, relevant ministries, and support the negotiation of the specifications of the management contract and the terms or references (stipulation of roles and responsibilities of all parties involved)

**Outcome 2.2: Enhanced environmental protection and rehabilitation by local authorities and communities for adaptation benefits**

*Output 2.2.1 3,000 ha of mangroves and coastal forests restored for adaptation benefits through community-based approaches*

109. The project will engage in participatory resource mapping and identification of intervention sites for the ecosystem restoration activities, as part of Output 1.2.3. Subsequently, based on those established priorities, communities will be engaged in the planning and implementation of community-based reforestation and assisted natural regeneration (ANR) for mangroves and coastal forests. In order to promote effective ANR, the project will take participants through transect walks through the project sites at the beginning of the project, to identify new growth, and what measures need to be taken to protect them. The project team will then actively support monitoring of the ANR process with regular walk-throughs and identify any areas where adaptive management measures must be taken. Where necessary, nurseries will be established, and adequate fire prevention measures will be put in place. Moreover, the project will support the development of management and exploitation plans for the areas being restored, which will also ensure equitable access to the natural resources present in these areas. Good practices for mangrove restoration identified in PACZ1 will be applied (e.g. proper diagnostics of the areas require at least a year of observation; clear identification of roles and responsibilities for follow ups; process to select adequate species; etc)[79]78, and improvements made where relevant. For example, it is anticipated that the project will promote a High Intensity Labour approach, rather than rely on volunteers, to ensure fair and equitable work opportunities for project beneficiaries. The project proposes to engage Community Based Organizations (CBOs) and women's groups, which may take place if possible during fishing off seasons and when water levels are low, and respond to immediate employment needs in the areas of intervention. The project also proposes to actively support development of community surveillance mechanisms and technical specifications for surveillance monitoring and reporting. Restoration works will be carried out on communal land, though rehabilitation on private land may also be considered necessary in which case specific land owners permissions would be obtained.

Proposed list of activities:

•Activity 2.2.1.1. Development of a plan for implementation of restoration activities, identifying roles and responsibilities, material needs, with a gender-sensitive approach that takes into account the needs of women and men for the development of the plan.

•Activity 2.2.1.2. Establish nurseries and a seedling monitoring protocol to increase survival rates

•Activity 2.2.1.3. Develop a monitoring and management plan for the restored ecosystem. This includes monitoring the effects of natural resource use for ecosystem-based products and value chains, and co-identifying procedures to adjust management, as well as support negotiations of access rights to the natural resources. As much as possible, this process will engage vulnerable groups, including potential climate migrants. The possibility of setting aside areas which can be exploited jointly between locals and migrants will be explored.
•Activity 2.2.1.4. Provide training and awareness raising regarding the ecosystems and their benefits to wider communities in the area, ensuring that at least 50% of the participants are women.
•Activity 2.2.1.5. Implement restoration activities, including provision of required materials

*Output 2.2.2. 2,000 ha of degraded/deforested watersheds rehabilitated for adaptation benefits through community-based approaches*

110. Restoration activities will be undertaken in catchment areas upstream of coastal areas (specific sites to be identified during implementation, and linked to priorities identified in the resource mapping exercises as part of the SAC and PCD development/updating under Output 1.2.3), to reduce soil erosion and nutrient loading downstream. This will involve reforestation using native and climate-resilient tree species, as well as the restoration of degraded land. In order to ensure the long-term sustainability of these interventions, the project will work closely with local land users to introduce appropriate Sustainable Land Management and Sustainable Forest Management practices and raise awareness of the negative environmental impacts of unsustainable agricultural and forest management practices, amongst others.

111. In addition to the full engagement of communities, the capacity of local authorities, the CRGIZC/Platforms and civil society organizations to support the planning, implementation and monitoring of the ecosystems restoration interventions will also be built through training and engagement in the project activities. This approach also applies to Output 2.2.1.

Proposed list of activities:

•Activity 2.2.2.1. Baseline study to identify and map degraded land and forest areas upstream from wetlands, estuaries and coastal ecosystems, and the pathways that lead to nutrient loading and siltation downstream. Physical runoff paths as well as land management practices that lead to soil erosion and runoff will be mapped. Identify if upstream land is private and collaborate with DREDD on location identification.
•Activity 2.2.2.2. Baseline study to identify suitable native and climate resilient species for reforestation, as well as current soil conservation practices already adopted by land users.
•Activity 2.2.2.3. Facilitate participatory decision making on prioritization of restoration of degraded upstream land and forest and placement of natural sediment barriers. The criteria will take into account both the downstream affected areas (e.g. the state of degradation of the wetland and coastal ecosystem and the relative restoration benefit in terms of biodiversity and ecosystem functioning, adaptation benefit potential, livelihood support and ecosystem-based value chain development or expansion potential in the downstream system) and the upstream areas (mitigation potential, but also the potential

to develop ecosystem-based value chains from the plants used for catchment stabilization, and practical criteria such as accessibility).

- Activity 2.2.2.4. Organizing awareness raising campaigns of soil erosion and land degradation in the catchment areas for both communities and private landowners, with a gender-sensitive approach to ensure that 50% of the people targeted by awareness campaigns are women.
- Activity 2.2.2.5. Development and delivery of training activities and site demonstration workshops on Sustainable Land Management and Sustainable Forest Management practices, and on the placement of natural sediment barriers, ensuring that 50% of the participants are women.
- Activity 2.2.2.6. Support the establishment and operation of native plant nurseries
- Activity 2.2.2.7. Support private landowners in restoration activities. For public land: Work together with existing associations (with a focus on women associations) and VOI on the ground.
- Activity 2.2.2.8. Support the development or improvement of a watershed management plan that incorporates Sustainable Land Management and Sustainable Forest Management practices, which includes a monitoring plan for the targeted catchments and technical specifications for local communities to be involved in the surveillance.

*Output 2.2.3. 100 ha of coastal vegetation restored for adaptation benefits through community-based approaches*

112. In the Atsimo Atsinanana region, coastal areas suffer from cyclone activity and related coastal erosion. Here the project will engage in stabilizing beaches with native vegetation to make them more resilient to tropical cyclone impacts, in priority areas identified under the PCDs in Output 1.2.3.

Proposed list of activities:

- Activity 2.2.3.1. Baseline study to identify what native grass and shrub species are best suited for stabilizing the beach areas.
- Activity 2.2.3.2. Support the establishment and operation of native plant nurseries
- Activity 2.2.3.3. Development of a monitoring and management plan for the targeted beach areas

**Component 3: Blue and Green Economy Approach for Resilient Ecosystem-based Livelihoods in Coastal Areas**

**Business-as-usual scenario:**

113. Coastal communities continue to rely on the unsustainable exploitation of ecosystems and natural resources for livelihoods (e.g., unsustainable agricultural practices, overfishing and destructive practices, poorly managed tourism, overexploitation of wood and unsustainable harvesting of NTFPs), resulting in environmental degradation, and further increasing the communities? vulnerability to the impacts of climate change. Hence, there is a need for local communities to be supported in deploying more productive, resilient, and sustainable livelihood strategies in the face of climate change. In order to effectively implement livelihood diversification and value chain strengthening, communities need further: (i) access to knowledge, technologies, equipment and materials / inputs for production and value-addition; (ii) capacity for the processing or transformation of products for value-addition and their commercialization; (iii) access to finance / investment; (iv) experience on cooperative approaches; and (v) financial and business management skills.

114. There are two different markets in Madagascar that deserve consideration when aiming at developing entrepreneurship. The first one is a small-scale local market dedicated to local and national markets. It is generally largely diversified and includes production such as artisanal fisheries, production of honey, kitchen gardens products, small livestock, etc. This market is important for diversification of livelihoods and also sustains the provision of food throughout the year in local communities. Such markets can extend towards the national scale with a small degree of specialization for processed products that can be sold in the capital. However, such value chains remain largely unprofitable, cannot bring important revenues to the communities unless they are more specialized, and then bring dependencies to the communities.

115. The second market is a global market for specialized, high value-added products. It comprises specific fisheries such as octopus, but also sea cucumber and seaweed farming. The global market can provide important revenues to communities. However, a high level of specialization in some areas towards one end-buyer also brings dependance towards this value chain and the off-taker. Off-takers are generally businesses with the power to invest and upon which small-scale producers largely depend on. There are numerous examples of such dependencies in cash crop cultivation on land (sisal, cotton, rice, etc.). These two markets hence bring different benefits and constraints to the communities. Depending on the product, the end-buyers can be different, as well as the degree of specialization of the producers, bringing revenues but also dependance on one production. It is important to find the right balance in value chain development to bring enough benefits to build resilience but not create over-dependance.

116. Main segments of the rural production value chains in Madagascar generally include the producers (generally MSME), a local collector (generally a MSME or SME), a retailer/exporter (generally an SME or larger company). But the value chains are highly diversified and include a large variety of end-buyers, intermediaries, and size of organizations, for both local and global market value chains. If processing occurs, this also adds new segments before sending to consumer. The milk value chain (Figure 6 ) is a good example of the important diversity and complexity of circuits.

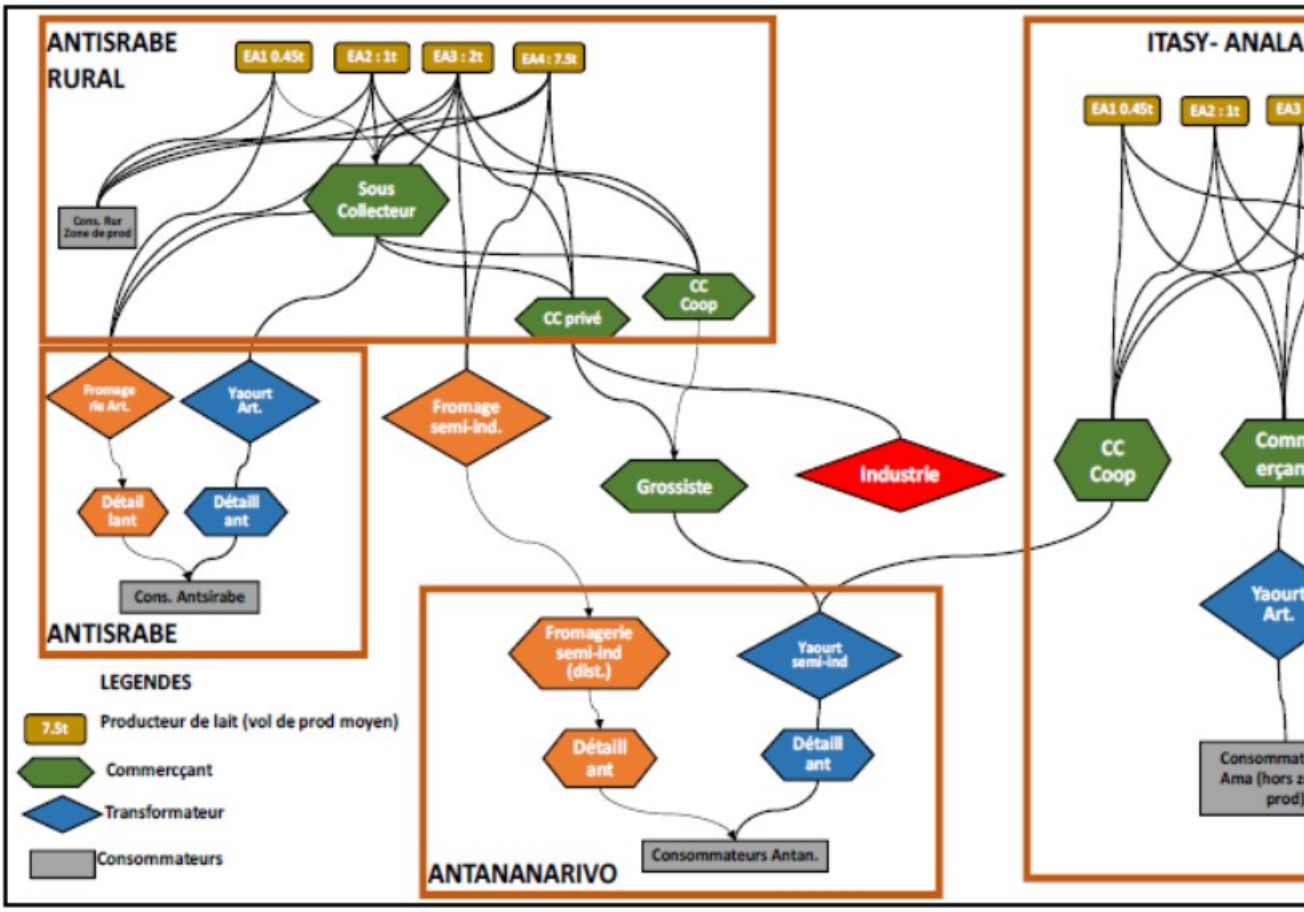



**Figure 6: The milk value chain for a sample of dairy farms (B?li?re et Lan?on, 2020[80|79)**

117. There have been efforts in developing groups of interests and structure these groups into cooperatives (such as the MIHANTRA women cooperative described in the box below). The aggregation of small-scale producers is important to be able to defend interests of smallholders in front of collectors and ensure long-term collaboration with shared benefits. Too often, collectors being the only one that can organize transit of goods across the country, they can put pressures on producers to reduce their selling prices. Organizing producers through grouping structures could hence not only build a strong voice but also possibly enable producers to organize themselves the collection and transport across the country to exporters, retailers or processers. Producers would hence integrate downstream segments of the value chain within their organization and get more of the value-added of the products. However, these efforts have resulted in too few collective companies and producer organizations. There are important needs to assist with the emergence of social enterprises in coastal communities.

**Box 3 The MIHANTRA Social Enterprise example**

MIHANTRA is a female-led social enterprise in Mahajanga, Boeny. Focusing specifically on enabling women economically, its name means 'helping others?. The cooperative has existed for 3 years and is active in 4 districts around Mahajanga. 10 women in the Mahajanga workshop manufacture fiber glass fishing boats (pirogues) and rescue boats, and life jackets. Originally operating with a seed grant, the enterprise is now fully self-reliant. The boats are leased to fishermen who are also members of the enterprise. Every 4th day, the men return from fishing, and the revenue from the catch is distributed according to the following scheme: 1/5 is for the enterprise, 3/5 is wages for the boat crew, 1/5 is for the repayment of the pirogue. Apart from manufacturing the boats, the women in the company are also active in the processing of the fish as well as lobsters between January and October. The enterprise contributes to local ecosystem protection in that it replaces precious (mangrove) wood as a building material. The lighter weight of the boats makes them more agile, allowing the fishermen to cover greater distances when looking for fishing grounds. The proceeds of the enterprise have also allowed for the purchase of sewing machines, which can provide the women with extra income during the fishing off-season.

118. Development of social enterprises can be supported by NGOs. An interesting example of NGO engaging in social enterprise development is SAHANALA[81]80. The company was created by NGO Fanamby, managing 4 protected areas and a natural monument (All?e des Baobabs) in Madagascar. The main objective is to support and strengthen the capacities of local communities by professionalizing them and integrating them into a federation strong enough to face international markets, and support conservation activities (biodiversity) in their regions. Fanamby remains on the Sahanala board of directors to support associations in their environmental choices and to ensure that they also support conservation activities in the protected areas that involve them. Sahanala has since expanded its areas of intervention and is becoming a major player in rural development in more than 10 regions of Madagascar. To date, it has 4 federations. Such an example is inspiring and needs support to be replicated elsewhere in the country. Unlike Sahanala, most NGOs targets social and environmental objectives and they often lack the business literacy and experience of business development to support social enterprise, and as such also require additional support and necessary training for this.

119. Past livelihood diversification interventions have usually been at a small scale and focused heavily on provision of equipment for production. Capacity building for value chain strengthening, and in particular interventions that extend beyond the production phase to also address the transformation and commercialization of products, have been very limited despite being great interest in these. Today, the limited transformation and commercialization of existing agricultural and fisheries products is restricting the income they can bring and capture an important part of the value-added. Though at a very small scale, PAZC I support for small producers and producers? organizations, including training on group sales and valuation and transformation techniques and the provision of basic materials to assist sales, were found to bring benefits to local stakeholders. Practical lessons learned on the implementation of crab aquaculture, community fisheries management, beekeeping in mangrove areas and other climate-smart value chains such as Rambo and ecotourism have been documented by the project PACZ1. The focus on PACZ1 was on direct support to producers to improve the resilience of livelihood practices or diversify income sources with more resilient alternatives. UNEP article ?Bend, but never break: weaving

a climate-proof future? [82][81]documents the stor ies community members reducing the reliance on rice cultivation, highly vulnerable to rainfall variability, through the diversification of income from apiculture in the mangrove and coastal forests or the cultivation of Raphia Lepironia articulata highly demanded for handicrafts. The design of this second phases builds on the lessons from PACZ1 which showed the importance of aggregating producers in associations and supporting value addition and the need to establish linkages with private operators and off takers to access markets.

120. On specific value chains, such as apiculture, there have been numerous interventions to encourage the adoption of improved techniques and increase production (including through PAZC I). Yet, there is still a need to catalyze the transfer of knowledge and skills from successful producers to the wider community, and to develop other parts of the value chain including commercialization.

121. The access to formal finance remains difficult for entrepreneurs in rural communities, especially for women who suffer from a reduced ability to participate in economic activities. Women struggle to get bank accounts and the requirement of financial institutions to have guarantors before lending money also inhibits their ability to run their own business and sustain viable income generating activities. Also, most financing mechanisms revolve around micro-credit and these are not adapted to larger-scale social enterprise development. The main challenge is hence to de-risk social enterprise development and ensure that they can be of a minimum size to be able to work with banks. It is expected that the de-risking of such development can include grant or guarantees to create a blended finance mechanism. Mechanisms can be complex but it is important that they address all challenges of the value chain to be sustainable.

122. Savings groups mechanisms are a key element for access to finance for unbanked communities. Specific tools can help such groups to thrive. Hence, the SEEP network[83]82has promoted on the use of digital tools for savings groups on records, procedures and transactions. These have largely helped creating new incentives for market actors, reducing the cost of training, and dramatically increasing the potential for outreach. Digital savings groups may also improve the user experience, offering greater transparency and time efficiency for members; and enhance impact, expanding access to financial and non-financial services in underserved markets. One advantage also could be the digitalization of money in order to avoid the stealing of the boxes (happening quite often, according to field mission reports). Though digitalization of money is growing rapidly in Madagascar, the feasibility of such tool should be verified.

123. The grouping of smallholders is also an important aspect of the condition of emergence of profitable markets. Once secured, the value chain should be supported by groups of producers in order to reach a minimum threshold of production. There are many examples of successful cooperation of groups of interests in the targeted regions, from farming cooperatives (supported by numerous projects such as the GIZ cooperative business school or the CASEF project) to fisheries local associations.

124. The regulatory framework around grouping structures may sometimes also be limiting to their development. Very often, the regulatory framework for business development, quality control

certification, transport and processing of products is a limitation to the access of small-scale producers to integrate more segments of the value-chain. They leave the value-addition to bigger companies with more means to overcome such regulatory barriers. Such producers? enterprises could however develop downstream if they got the necessary external support and related financing.

**Adaptation scenario:**

125. The project proposes to support the development of local climate-resilient value chains and other revenue-generating activities, diversifying revenue streams for year-round income generation. Through the development and diversification of local livelihoods based on coastal and marine resources, the communities? resilience to the impacts of climate change is strengthened through three complementary pathways. First of all, the diversification of livelihoods and income sources increases the resilience to climate shocks, in that when climate events affect one productive sector, communities may have other sources of livelihood to provide a buffer. Secondly, the introduced and strengthened livelihood activities are designed to be more resilient to climate change impacts than some of the existing practices. And thirdly, the introduction of more sustainable livelihoods and production practices reduces pressure on fragile ecosystems and can also incentivize their rehabilitation (e.g., through income from ecotourism), thus enhancing their ability to provide ecosystem services that help attenuate impacts of climate change (e.g., coastal protection, erosion control).

126. The value chains to be supported are inherently rooted in an ecosystem-based approach; where project interventions will focus on promoting conservation and the sustainable use of the ecosystem services and natural resources that they rely on in an equitable way. Value chains rooted in coastal terrestrial as well as marine ecosystems will be considered. Around mangrove, coastal forest, coastal sand dunes, and coastal wetland ecosystems, climate-resilient value chains to be explored for further development include beekeeping (honey), mangrove crabs and bamboo, as well as products in which local women have expressed specific interest, such as *Lepironia articulata* (?rambo? or ?mahampy?) for basketry and straws, raphia, satrana palmtree, callophyllum (for essential oil), mangrove silk, cloves, poultry, bananas, cinnamon, and market vegetables.

127. The list of product value chains, both for local and global markets to be considered of importance for climate resilience in communities close to marine ecosystems, mangroves, forest, wetlands or lakes are presented in the figure below.

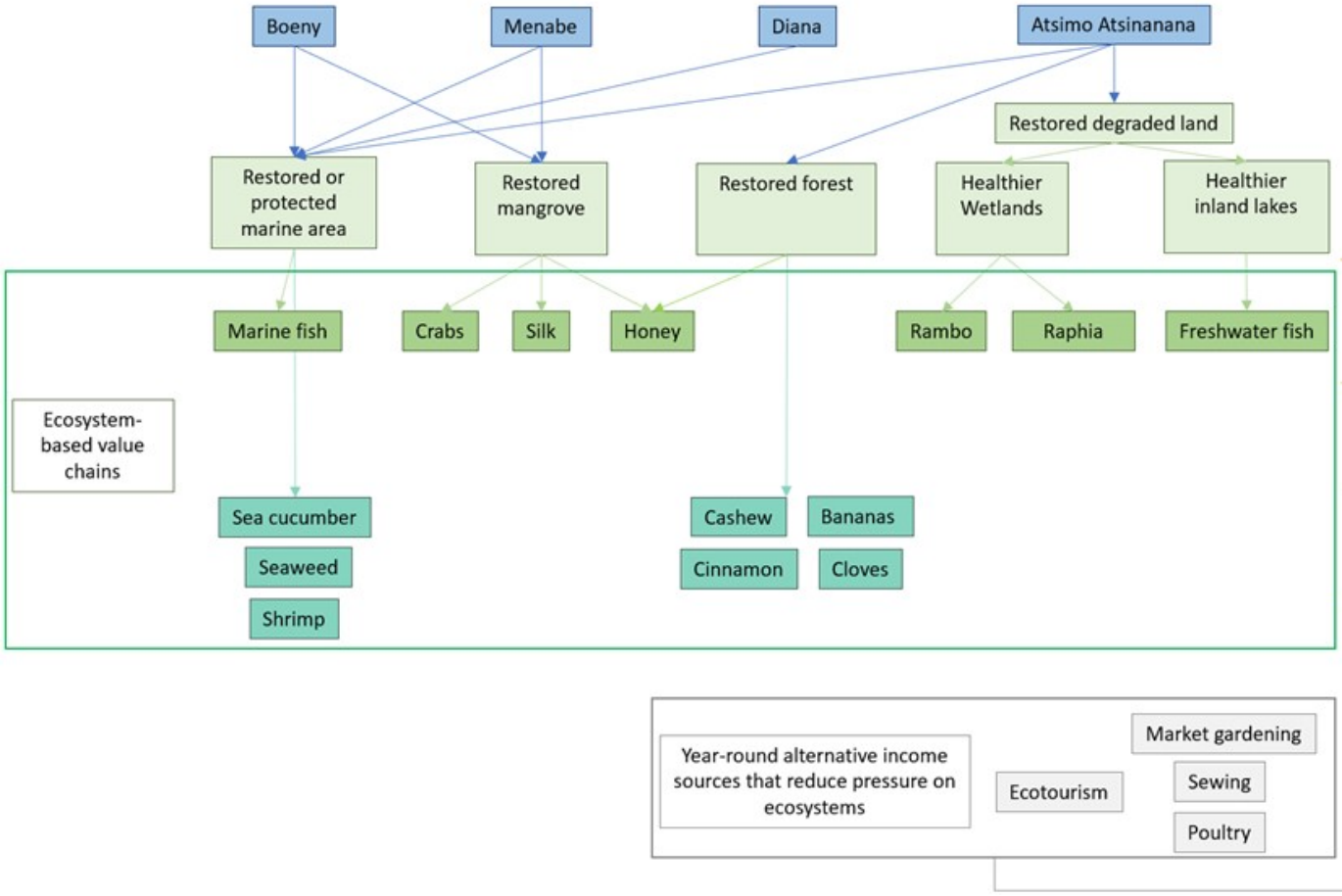



**Figure 7: Value chains important for climate resilience in marine, coastal, lake, forest and wetlands ecosystem communities**

128. More generally, in areas with high levels of degradation of ecosystems, any activity that helps small-scale producers to diversify the revenues and move away from destructive fishing, farming or logging practices should also be considered. These value chains deserve more effort to be developed.

129. The model proposes to develop new value chains and strengthen existing relevant ones by focusing on the organization of small-scale producer groups and support towards business development to access the needed markets, capture most of the value and sustain their development. This approach is alike for both local and global value chains. The model will focus on the identification of leaders of producers with interest and skills to develop the necessary business activities, such as: creating a small-scale processing workshop for fish products or vegetables; organize the collection and transport to Antananarivo; the development and sale of new products based on local production for tourism operators in the country or to be exported; etc.

130. Those leaders with a social enterprise objective will receive support in the form of business advisory services to be able to strengthen or develop a profitable business model for the enterprise. The proposed incubator program will support during a period of 6 months the development of the social

enterprise, while providing training, necessary expertise when required (legal support, business administration, technical expertise, etc.).

131. In addition to technical assistance, the long-term sustainability of social enterprises will be ensured by supporting the development and access to different forms of financing. It will include, for example, i) using incubators set up by the project as platforms to connect more mature MSMEs with potential investors and financial institutions; ii) raising awareness of financial institutions of the differentiated needs of multiple actors along the ecosystem-based value chains; or iii) providing seed funding to producers? associations to set-up micro-loans revolving funds to sustain the financing of small-scale producers and stimulate the growth of production volume for the targeted value chains

132. Importantly, the social enterprise should offer more sustainable - less input, less invasive or destructive - growing, tending, harvesting, or equipment maintenance services. The structure of the social enterprise should enable for shared benefits across the value chain, but not limiting the agility of the enterprise in its decision-making. Both local and global value chains will be considered, and the potential for creating sound revenues to communities while sustaining the profitability of a social enterprise that collects, processes or sells products.

133. The livelihoods of communities dependent on marine ecosystems will be enhanced with support for the development of sustainability-focused entrepreneurs and businesses operating along the fisheries and sustainable low-to-no-input aquaculture value chain (and even positive impact for seaweed or sea cucumber farming[84]83). Multiple value chains will be supported in each intervention zone, ensuring that they respond to the needs and ambitions of both men and women, while adapted to the local constraints of production, distribution and respond to a local or national demand.

134. For the value chains selected in a specific intervention zone, the project will either support the formalization of/establishment of associations and producer organizations or provide capacity-building to those already in place, with a focus on women and youth. For producer organizations, technical support, equipment, and training for the adoption of sustainable production approaches will also be provided through the project.

135. For fisheries and aquaculture/mariculture value chains (e.g., sea cucumbers, seaweed, and shrimp), attention will be on creating opportunities for local entrepreneurs and businesses to render the value chain more environmentally sustainable. Value chain activities should not jeopardize ecosystem service provision capacities of the local marine (or lake) environment but should enhance them. The activities should therefore at the very least be concentrated on low-to-no-impact production. The project will apply the IUCN Global Standards for Nature-based Solutions to aquaculture activities support and will explore together with the enterprises what opportunities exist in the local context to generate net positive benefits to the marine and coastal environment (waste treatment, recirculation) ? c.f. Section 3.11 and the SRIF for more details. The project will also support these local actors in enhancing their negotiating power towards fair prices along the value chain, capacity to invest independently from offtakers, re-localization of the chain supplies (ice, boats, transport and logistics, etc.)

136. Additionally, the project will evaluate opportunities to support enterprises in creating some income activities (e.g., sewing activities, small livestock and poultry keeping) that are not ecosystem-based, but that do no harm and provide alternative income opportunities in typical production ?down? periods of the main ecosystem-based products, or that reduce pressure on existing ecosystems (e.g., by providing alternatives to income from charcoal production).

137. Also, the project could support entrepreneurs which provide innovative goods and services to supply the targeted value chains? producers. For instance, the MIHANTRA social enterprise builds fiberglass boat to support the fisheries value chains. There will necessarily be need for local supply of the value chains and this could create sound business opportunities at scale. It is expected that the newly created or strengthened social enterprises, once profitable, will seek to expand and grow thus supporting themselves the development of the production by small-scale producers.

138. Models to be adopted by the project will ensure the business advisory services are self-sustained beyond project implementation, including for example support from other projects willing to include a livelihood component, or through a mechanism of fee to support the operational costs of the incubator. The project will work towards a set of standardized training materials which will address topics such as basic financial literacy, development of sustainable business plans, and more, to ensure the success of the livelihood activities in the long term. Technical support and equipment for the storage, transformation, and commercialization of products will be provided. Moreover, the project will ensure that the transformation and commercialization of products from the targeted value-chains are done close to the production areas and within the communities, bringing additional benefits locally (e.g., reducing travel time to markets for women, reducing spoilage of harvested products, and diversifying and increasing incomes).

139. The logic of intervention of component 3 can be summarized in the figure below. Activities are detailed in the component description. The approach revolves around the creation and operation of four regional platforms which will incubate social enterprises that will then foster the development of small businesses and producers attached to the social enterprise value chain. The small businesses will aim to be organized within producers? organizations that could assist with material support of the producers and support investment. The platform will also seek to mobilize private finance actors to support social enterprises development.

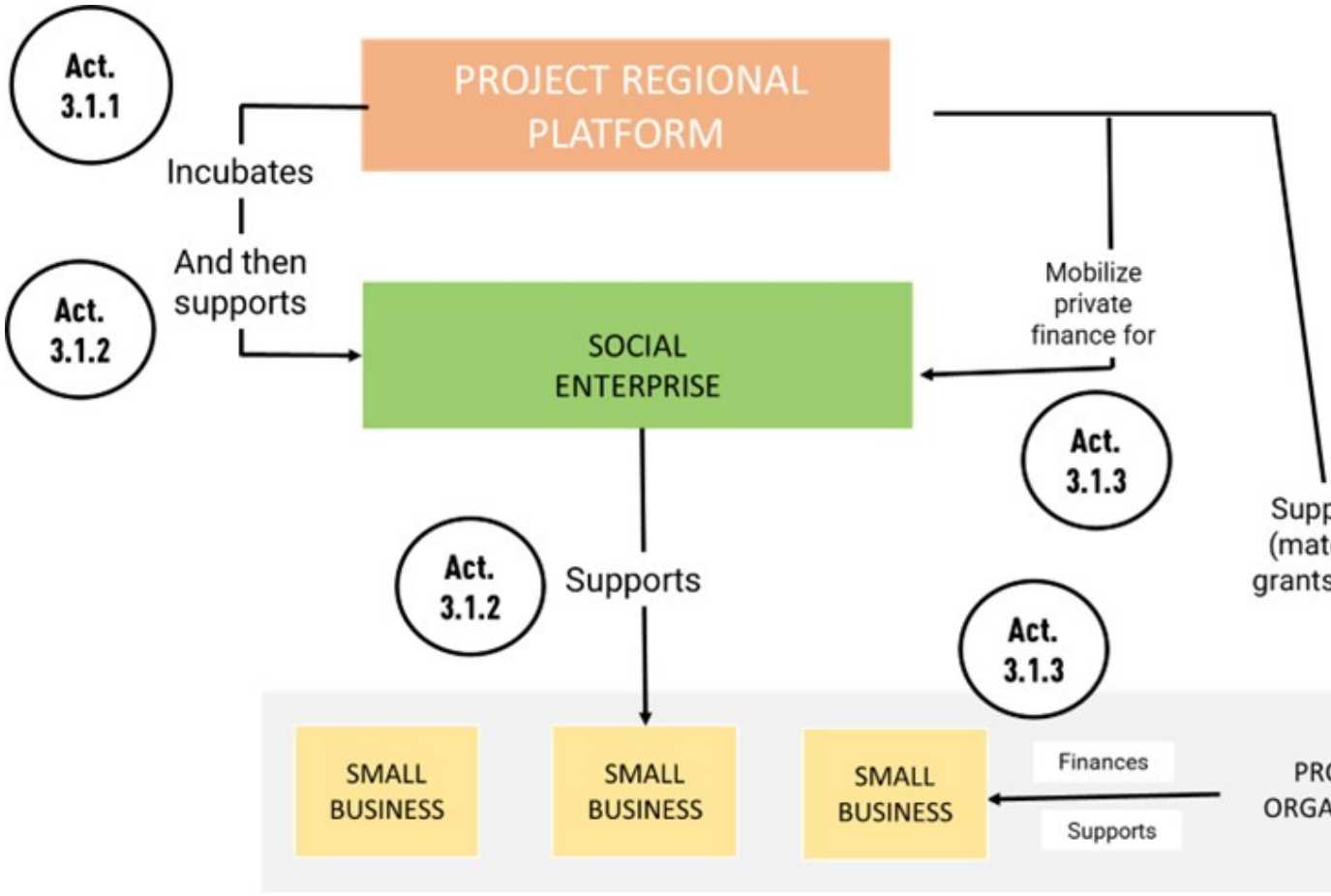



**Figure 8: logic of intervention for the component 3 "increased diversification of income-generating activities and business to enhance communities' climate resilience**

**Outcome 3.1: Increased diversification of income-generating activities and businesses to enhance communities? climate resilience, with attention to gender equity.**

*Output 3.1.1 Four regional business incubators tailored to ecosystem-based social enterprises are created and operationalized*

140. The approach for the development of value chains (be they local or global) should seek a large scale of implementation and impact from the beginning, aiming at replicating the good practices and focusing only on proactive actors and community leaders. This will take the form of support programmes for each of the four regions of project intervention. These programmes will be repeated on an annual basis, gather a dedicated small team with business expertise, knowledge of the local actors, capacity to

mobilize and convince. The support programmes will include a combination of collective trainings, face-to-face interviews with entrepreneurs, expert support, meetings with other actors of the value chain, etc.

141. The project will first assess and confirm the needs for market reach, capacity building, capital expenditures and potential for low impact as well as climate adaptation contribution for each of the value chains investigated. When carefully assessed, the needed support will be provided to new or existing entrepreneurs for social enterprises. This will take the form of regional scoping studies, that will start from the regional workshops results and develop on the financial, material, capacity and market needs of entrepreneurs. Also, the scoping studies should confirm the rationales for adaptation to climate change for the value chains selected and entrepreneurs supported. The value chains will hence be selected based on important criteria: 1) their low-to-no impact on ecosystems and possibly even positive environmental impacts; 2) the extent of revenue diversification for producers (revenues that are very different from the other activities of the producer, and not associated like for instance fisher and fish processor) and for the community; 3) the long-term perspective of the market; 4) the potential for rapid development and presence of technical or organizational obstacles to development; 5) the exposure to risk; 6) the expected social and economic benefits. In specific cases and areas, these criteria may be adjusted for the consideration of specific needs of adaptation.

142. The project should look first at already existing value chain that need transformation towards more sustainable practices. If possible and if compatible with expected results of the project, such transformation may create immediate benefits at scale.

143. While scoping studies are being finalized, the project will also aim at developing regional support platforms. They will be important structures of the project and composed with a technical and a financing facility. Their governance should be carefully designed in order to be sure that they can last for a long time after the end of the project. For this, they should seek collaboration with existing structures to gain legitimacy and regional recognition (i.e. CRGIZC/Platform). They should gather local expertise (coaches and local consultants or regional branches of national companies or NGOs dedicated to business support), prepare action plans for support and outreach meeting to the local population. It is likely that there would be limited business support expertise available to operate in regions (based on the fact that a few specific organizations or consultants could be identified during field missions), hence the project should seek consultants and partners in Tananarivo to be able to operate in regions during the incubator campaigns. For instance, the project will aim to work with national actors already active in the accompanying of local (women) focused associations, such as RENAFEP (R?seau national des femmes de la p?che de Madagascar) for the small-scale fishing sector.

144. The coaches will be trained through to be able to cover important elements of the business incubator: basic financial literacy, business planning methods, how to assess your skills and knowledge for your next business, necessary administrative skills and accounting, secure the prefinancing and capital expenditures for the launch of the business, etc. Also, specific components of the training will include the capacity for coaches to assess and push for positive impact in the business developed. Such consideration is not easy for business coaches so it will need to be carefully designed and explained, not to be too theoretical but neither anecdotical. Overall, the training of coaches should be organized through ?bootcamps? where future coaches will be trained intensively for a week and the skills and capacity to

operate validated at the end of the camp. One camp can be organized every year prior to the incubator campaign.

145. Once the regional platforms are created and effective, the incubation programmes will be launched. These programmes over 6 months will be organized every year from second year of the project in each region (total 2 incubation periods in 4 regions, 8 incubator programmes in total). These will consist of meetings with social enterprises proponents in order to clarify the business ideas they have or propose to them specific value chains to explore and develop. Importantly, the trainers will bear in mind the potential businesses selected as part of value chain development actions (regional scoping studies). They may present some examples of businesses with expected investment and revenues, required skills and training, risks, etc. The objective of the incubation will be to accelerate the development of ecosystem-based value chains social enterprises. It is expected that approximately ten proponents will be supported for each incubation programme.

146. The objective of the incubation programme is to select 40-50 climate-resilient ecosystem-based social enterprises for incubation with a particular focus on women, youth, and other vulnerable groups. Out of 40-50, it is expected that only 20 to 30 will be established legally and their business model launched.

147. There have been past experiences of incubation programmes for social businesses in Madagascar, including in agribusiness[85]84, through the Business Incubation Communities (BIC) Africa Acceleration Programme for Women[86]85, the INCUBOOST Programme of the European Union[87]86, the INCUBONS programme for social entrepreneurs[88]87, the UNDP accelerator lab. For these examples, implementing partners are most often institutional organizations with specific expertise (e.g. *Institut International de l?Agriculture Tropicale*).

148. The project will also seek to develop a mechanism to ensure the sustainability of the incubation process in order to continue the action of local development with impact on climate adaptation. This could ensured by sound governance of the platform (along with the CRGIZC). The regional platform will seek to be anchored in existing structure or services, such as the CRGIZC (if possible), and potentially other regional services such as the Chamber of Commerce, the DREDD, or the Economic platform of the MPEB. In the early stages of the project, the feasibility of anchoring the regional platform on existing organizations will be assessed carefully.

149. For the project, it will be necessary to mobilize implementing partners at different levels. At national level, an implementing partner with experience in business support and with a good understanding of the ecosystem-based businesses will be needed. There are several such NGOs in Madagascar that focus on impact business development: Tafo Mihaaavo[89]88, Fanamby (already

mentioned above)[90]89, Tany ifandovana[91]90 operates in 3 regions of Atsinanana, Boeny and Menabe already. An NGO will offer flexibility of action and reactivity, while the governance and regional recognition of the platform can be ensured by twinning the structure on an existing recognized public body. A sound review of potential implementing partner, potential workforce, experience, skills, and also a vision of social entrepreneurship will need to be conducted during the project inception phase to identify the sound partner to be mobilized. Specialized international technical assistance should also be provided to ensure sound implementation of the logical framework, and good practices from other international initiatives., as well as training of technical assistants.

150. Another key element is the sustainable financing of the platform to operate incubator programme over time. The financing mechanism for such an incubator programme will be supported by grants only, as most incubator do worldwide (early stage businesses are very difficult to finance by private actors, so incubators are almost exclusively non profitable and require either public support of philanthropy grants to operate). For this reason, an NGO to operate the regional platform on a day-to-day basis is necessary during the project. Main sources of revenues include public support as well as grants from donors as part of development projects with interest in community entrepreneurship for ecosystem-based activity. For this reason, it will be important to develop the communication of the incubator programme with a specific branding and visibility so that future development projects may be interested in contributing to the programme and the platforms.

Proposed list of activities:

- Activity 3.1.1.1. Identify and determine the scope of the ecosystem-based value chains to engage in each intervention zone. Review of local and global value chains for marine and coastal ecosystem-based products, regional market studies for marine and coastal products
- Activity 3.1.1.2. Review of past experiences and current project of small businesses incubation in Madagascar, meeting with main actors
- Activity 3.1.1.3. Conduct a needs analysis for local, inclusive and environmentally sustainable value chain development for the selected value chains in the intervention areas, identification of outreach and implementation methodology at scale (regional scoping studies)
- Activity 3.1.1.4. Development of the regional support platforms ? structure development, mobilization of local expertise in business development, outreach through meetings and design of the specific action plan for each targeted area; development of a mechanism to ensure the sustainability of the incubation programme after the end of the project
- Activity 3.1.1.5. Two annual rounds of incubation and support in regions ? (8 incubator programmes) for social enterprises

-

*Output 3.1.2* Training/technical support and/or equipment provided to 1,200 individuals from 20 incubated businesses, including women and youth, to build capacity of ecosystem-based businesses

151. Working with newly created but also existing climate-resilient social enterprises, the project will seek to ensure their growth, mostly through the increase of small-scale producers joining the social enterprise production model (either joining the cooperative, the association or producing for the social enterprise). The objective will be to support the economic activities of 1,200 small-scale producers through the 20 social enterprises. Since each business could be based on a minimum of 60 producers at their early stages, this objective of 1,200 is a sound target for the project.

152. To achieve this, the project will start with the capitalization on business plans for small-scale producers part of the social enterprises value chain. These business plans will take the form of technical and economical leaflets: model of production that comes with business figures and proved profitability low risk and adapted to the local context. These leaflets, as well as the needed material for oral presentation, will be the necessary elements to convince newcomers to the value chain and provide the necessary trust on new value chains implementation. These leaflets and related material will be developed by the regional platforms with full participation of the entrepreneurs that were incubated under Output 3.1.1. These will cover aspects such as sustainable production and practices, needed gears and material, required investment, post-harvest storage, processing and transformation of products, and all other needed information for producers. Social safeguards measures will be considered in the business plan of social enterprises supported by the project.

153. Where necessary, the project through the regional platforms could provide specific material to new producers. For instance, the social enterprise could provide the first necessary gear to collect, conserve or transport mangrove crabs, as an incentive to producers to join the value chain permanently. However, such support remains very expensive and sometimes not efficient. The project should hence seek to keep such investment for incubated businesses that are very promising in terms of impact.

154. Social enterprises will also be supported to establish strategic partnerships (including with private sector actors) to strengthen resilient value chains and market access. Partnerships with private sector actors will be value chain-specific, will focus on the environmental sustainability aspect of value chains, and will involve an inclusive strategy of intervention where the role of the private sector, the producer organizations, and other stakeholders will be identified and coordinated at various stages of production.

155. Also, the regional support platforms and national team of support will help identify gaps in technical capacity within the value chains/business areas for the implementation of the sustainable business plans developed. The capacity of the groups to adopt and implement sustainable production approaches, and to process and market products from the selected climate-resilient value chains/businesses, will be built. Technical support and training, as well as equipment and materials, will hence be provided for adopting and strengthening the value chains/businesses in the project areas, with the view of introducing and supporting sustainable and improved production approaches (e.g. low-to-no-input aquaculture in cages, integrated rice-fish culture, waste reduction and recycling) and best practices, and the transformation of products (and by-products) to yield higher returns.

156. The development of small business opportunities should be carefully monitored in order to ensure an equitable benefit sharing and secure income generation among smallholders. Successful

producers will also be trained to share their experiences and to transfer knowledge and skills to the wider community, so that these income-generating activities can be further developed.

Proposed list of activities:

- Activity 3.1.2.1. Development of simple technical and economical leaflets for each of the selected ecosystem-based value chains in targeted regions
- Activity 3.1.2.2. Technical support for the development of social enterprises (legal support for contracts, product development, marketing, sales, technical support and R&D, food safety and hygiene, logistics, public-private partnership development, communication and marketing, etc.)
- Activity 3.1.2.3. Training and support material, business assistance for social enterprises to assist small producers development

*Output 3.1.3 A sustainable financing and investment platform for ecosystem-based businesses developed.*

157. In addition to providing technical support to the development of value chains social enterprises which will in turn promote sound development of small businesses, the access to finance is a key element to be provided to all the value chain actors in order to ensure a fast development of the businesses. This Output will be dedicated to support the entrepreneurs and value chains social enterprises in sustaining a better access to funds and capital for the development of their activities.

158. Social enterprises should be financed through banking system in the form of loans, but it is anticipated that access of such enterprises to banks will not be easy during early stages development. The regional platform should hence ensure that incubated enterprises provide the necessary financial documentation to access loans and are able to finance their activities. The regional platforms will also aim at providing technical assistance for access to finance and support provided will help the business to be credit worthy.

159. Going further and in the two last years of the project, the project team can convene a group made of government institutions, financial institutions, private sector representatives and other actors of the sustainable financing ecosystem. Social enterprises established under Output 3.1.1 will be invited to join the group and be connected to potential investors and financial institutions. The project will explore partnerships with financial institutions, to increase access for social enterprises to credit, and assess the feasibility of innovative financing schemes including, for instance, flexible payment terms linked to cash flow. Moreover, the project will explore opportunities of partnering with the growing number of equity funds for adaptation-oriented businesses (e.g. Climate Resilience Fund, CRAFT, Adaptation Accelerator Program, etc.), who could be invited to take part in the proposed group. However, this will be only possible for businesses at an advanced stage that have already reached a level of development compatible with equity fund needs and with a scale-up potential (minimum ticket of 0.5 to 1 million dollar, above 10% expected rate of return, as examples of conditions of entry). For such mechanism, however, the impact of scaling-up the business in coastal communities should be carefully assessed. This may be the case for projects of transformation of existing businesses (as detailed above). In particular, the expected

consequences of a specific business expansion on the environment and other businesses will be investigated.

160. At small-scale producer level, for stimulating the development of the small-scale producers? community, the project can provide financial support to producers? associations linked to the social enterprise developed (seed grants of up to 3,000 USD, to be determined) in order to secure access to greater amounts and increase impact of businesses development. In order to support such producers? organizations, the association should be not-for-profit and registered to be able to use the seed grants as a sustainable revolving fund of micro-loans to the producer and small entrepreneur members based on the successful repayment rates of the VSLA model to support the ecosystem-based business and thus ensure sound investment in positive businesses. The seed granting to the producer associations will be phased and conditional to demonstrated transparency, financial management and accountability to its members. The social enterprise that rely on the producers should assist in the setting up of the associations of producers. The regional platform would possibly also provide some assistance to the development of the organization to speed-up the process.

161. The revolving fund to mobilize small capital for investment and development of new producers? capacities is an important element of development and sustainability of the producers. The revolving fund will be managed as many other examples of local savings groups (VSLA) through collective governance for the selection criteria, interest rate, loan period, etc. Local savings groups have successfully managed to develop adapted micro-loans and ensure very good repayment, so the fund should be inspired by such functioning. However, the project will require documents to monitor the money flows and report use of the capital. The capital provided to the association can also be used in case of a natural disaster or market collapse and therefore increase the resilience and adaptation capacity of the producers that will rely on social businesses markets for their livelihood.

162. Where appropriate the local saving groups model can be used to support small-scale producers with small loans. Past experiences of local saving groups show high level of repayment and sound management by the community. Also, such community funds are by nature inclusive and with low management costs. However, it will not be feasible for the project to support existing saving groups because of the lack of formal recognition and long-term insurance that the group will only fund sustainable practices and climate-smart businesses. As producer associations and VOI are registered (the decree of Law GELOSE 96/025 ? ?d?crets d application Comit? Local de Base (VOI) 96/027 et 028?, they enable for more official recognition of the role played by savings groups (attached to them) and ensure to maintain financing rules for incubated business.

163. The project can also, where appropriate, aim at developing financing clusters of savings groups. A sound example is in Somalia, where there are cluster level associations that are formed by 10 women saving groups, which can enable them to access good finance leverage, thanks to the capital of the women saving groups. Cluster associations can also fundraise and use grants as collateral for several tens of thousands of dollars. This example could inspire the development of such financing mechanisms through value chains social enterprises in the project. This would be a missing link between the financing capacity from national banks to local saving groups. But these clusters may take a long time to be created so the financing of social enterprises should not rely on such clusters but the project can explore their development for further use by following projects.

Proposed list of activities:

•Activity 3.1.3.1. Engineering and support for the development of specific value chain financing mechanisms
•Activity 3.1.3.2. Convene and operate a finance actor group to support mature social enterprises through innovative financing mechanisms
•Activity 3.1.3.3. Grant seeding to 20 local producers? associations - 50% of association members are women

**Component 4: Awareness raising and knowledge management for upscaling**

**Business-as-usual scenario:**

164. In order for local natural resources management to be effective, government institutions and communities alike must have a sufficient understanding of climate change, its projected impacts, their role in ecosystem degradation and its impacts on their well-being, as well as potential solutions such as EbA. At the community level, this knowledge can empower changes in attitudes and behaviours towards more the sustainable use and conservation of ecosystems, while at the institutional level it serves to establish strategic priorities and mainstream adaptation concerns. Training, outreach, as well as effective knowledge management systems which include participatory natural resources mapping processes[92]91, can help build ownership and empower the communities to track the status of their environment and livelihoods. However, all of these are woefully lacking in coastal areas of Madagascar, and communities continue to lack the tools required to develop adequate sustainable management plans, as well as to implement them.

**Adaptation scenario:**

165. The sustainability of the project interventions relies on fostering longer-term changes in the attitudes and behaviors of the target communities through improved awareness and understanding of the importance of ecosystems for human livelihoods and well-being, and of the negative impacts of unsustainable resource use on climate resilience. This improved awareness will be catalyzed through a strong communication strategy focused on increasing access to information and awareness-raising campaigns. Furthermore, the project will ensure that an effective knowledge sharing mechanism as well as an upscaling strategy are in place to ensure that lessons learnt from the project can contribute to scaling up its successes.

**Outcome 4.1: Strengthened awareness and knowledge of EbA approaches to support upscaling of project results across Madagascar?s coastal zones**

*Output 4.1.1 A project communication strategy developed and implemented, including awareness raising strategy on climate change and EbA aimed at local stakeholders*

166. Local engagement in the ecosystem restoration and rehabilitation activities will be supported by awareness-raising activities, including the establishment of ?climate schools?. Climate schools in essence can provide as a first step workshops for local educators, where teachers are trained to implement

environmental/climate education into their basic curricula. Second, school visits can be hosted to sites of implementation of nature-based solutions to give pupils a chance to see learn first-hand about the value of ecosystem-based adaptation. Building on the successful efforts by the LDCF-funded PAZC 1 project in engaging and communicating with local stakeholders on climate issues, this project will integrate EbA approaches into existing communication toolkits for different sets of stakeholders (e.g., coastal communities; local, regional, and national media outlets; decision-makers; etc.). Furthermore, it will scale up awareness-raising days to inform coastal communities of climate change, enable them to recognize climate impacts, build understanding of the importance of coastal ecosystems for climate resilience, and raise awareness of adaptation options and EbA approaches. Environmental education and raising awareness of climate change will be promoted in schools, academia and with youth groups at regional, and local levels.

Proposed list of activities:

? Activity 4.1.2.1. Develop project level communications strategy

? Activity 4.1.2.2. Two (02) awareness and communication campaigns per year, per region, to inform local communities (with a focus on women associations) about the challenges of climate change and the actions to be implemented to adapt to it.

*Output 4.1.2 A coastal EbA upscaling strategy and knowledge sharing mechanism developed*

167. To support the replication of CRGIZCs/Platforms as a coordination platform for adaptation mainstreaming in coastal areas across Madagascar, an upscaling strategy will be developed through a consultative process. The upscaling strategy will present mechanisms to share lessons and good practices between CRGIZCs/Platforms, and the experiences and lessons learnt from the CRGIZCs/Platforms in the four pilot regions will be disseminated to other selected coastal regions through awareness-raising events and exchange visits (including between regions during the Atsimo Atsinanana PRD development, amongst others), targeting decision-makers and planners.

Proposed list of activities:

? Activity 4.1.2.1. Upscaling strategy developed for CRGIZCs/Platforms

? Activity 4.1.2.2. Biannual knowledge/experience exchange events between CRGIZCs/Platforms

? Activity 4.1.2.3. Biannual coordination and knowledge exchange meetings with relevant national counterparts, such as the National Committee on Climate Change

168. Finally, the project will develop and implement a participatory M&E and learning framework, whereby a greater participation of community members/direct project beneficiaries will be sought through, for example, focus group discussions; videos; stories; games; and field visits, to ensure a greater understanding of the project, its interventions, and ultimately contribute to higher participation rates and long-term sustainability of interventions. This will also ensure that project results are properly monitored

throughout implementation through the establishment of an M&E framework and the implementation of regular monitoring activities and evaluations. The findings and recommendations from these evaluations and regular monitoring will feed into the learning framework, as the project will put in place a mechanism to ensure adaptive management throughout implementation, building on lessons learnt and best practices. The project experiences and lessons learnt will also inform the development of the coastal EbA upscaling strategy under Output 4.1.2. More on M&E is presented in Section 6.

169. Table 9 lists the communes identified by the stakeholders during the PPG phase workshops in each of the target regions, based on expressed needs aligned with proposed project interventions. During the inception phase of the project, five communes per target region will be selected out of this list through a consultative process with key stakeholders (e.g. DREDDs), resulting in a total of 20 target communities for the project duration. At an inception workshop, organized in each region, all pre-selected communes listed in Table for that specific region will be invited and informed about the project and project activities. Directly after the workshop, each commune is invited to submit a simple proposal for restoration and livelihood activities in their community. The project team will then select the 5 best proposals, based on selection criteria that are clearly communicated at the inception workshop. Selection criteria are based on the potential to contribute to component 2 and component 3 targets. The criteria will hence include the restoration potential (in number of ha) for ecosystems targeted under component 2, and the adaptation potential (e.g., protection from sea level rise related impacts such as flooding and destruction during tropical storm events). They will also include the management structures proposed and long-term financing potential for the sustainable management of the ecosystems. Looking at component 3 targets, further criteria will include the potential to initiate, expand, or strengthen livelihood supporting ecosystem-based value chains in the communes, especially for women, youth and other vulnerable groups. The final set of criteria will include feasibility (cost-effectiveness and accessibility) and the potential for scaling up or replication in other communes. The non-selected communes will be offered the chance to take part in learning exchanges with the selected communes.

**Table 9 Overview of all recommended interventions in the project regions, with specification of potential hectares or number of beneficiaries**

| **Region**/Communes | Potential ecosystem restoration | | | | Potential hato be restored | Potential livelihood support | | | | | Total population[93]92 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mangrove | Catchment | Forest | Coastal vegetation | | Marine fisheries | Mangrove | Forest shrubs/bamboo | Ecotourism | Agricultural value chains for income diversification | | | |
| **Boeny region** | | | | | | Fish Algae | Crab Silk Honey | | | Small livestock Kitchen gardens | Men | Women | Total |
| Mahajanga I* | x | | | | TBD | x | x | | | x | 40,833 | 46,827 | 87,660 |
| Bekobay (Mahajanga II) | x | | | | TBD | x | x | | | x | 4,587 | 4,776 | 9,363 |
| Boanamary | x | | | | TBD | x | x | | | x | 3,111 | 3,116 | 6,227 |
| Marovoay Banlieue | x | x | | | TBD | x | x | | | x | 6,488 | 6,452 | 12,940 |
| Ankaraobato (Ankaboka) | x | x | | | TBD | x | | | | | 5,224 | 5,499 | 10,723 |
| Katsepy | x | | | | TBD | x | x | | | x | 4,606 | 4,836 | 9,442 |
| Mariarano | x | | | | TBD | x | x | | | x | 5,186 | 5,297 | 10,483 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Matsakabanja | x | | | | TBD | x | | | | | 11,323 | 11733 | 23,056 |
| Atongomena Bevary | x | | | | TBD | x | | | | | 5,746 | 6,168 | 11,914 |
| Andranoboka | x | | | | TBD | x | | | | | 2,387 | 2,459 | 4,846 |
| Soalala | x | | | | TBD | x | x | | | x | 6,979 | 7,349 | 14,328 |
| Mahajamba (Usine) | x | | | | TBD | x | x | | | x | 11,589 | 11,959 | 23,548 |
| **Menabe region** | | | | | | Fish Algae | Crab Silk Honey | | | Small livestock Kitchen gardens | | | |
| Andranopasy | x | | | | 750 | x | x | | x | x | 7,165 | 7,190 | 14,355 |
| Soaserana | x | x | x | | 890 | x | x | | x | x | 4,180 | 4,437 | 8,617 |
| Belo-sur Mer | x | x | x | | 1,050 | x | x | | x | x | 5,881 | 6,000 | 11,881 |
| Bemanonga | x | | x | | 750 | x | x | | x | x | 16,055 | 16,413 | 32,468 |
| Morondava* | x | | x | | 550 | x | x | | x | x | 25570 | 27,940 | 53,510 |
| Marofandilia | | | | | 620 | x | x | | x | x | 6,706 | 6,409 | 13,115 |
| Beroboka Avaratra | | x | x | | 620 | x | x | | x | x | 5,465 | 5,328 | 10,793 |
| Tsimafana | | x | x | | 720 | x | x | | x | x | 4,109 | 4,116 | 8,225 |
| Antsakomalinika | | | | | 450 | x | x | | x | x | 4,589 | 4,482 | 9,071 |
| Belo sur Tsiribihina* | | | | | 1,250 | x | x | | x | x | 12,837 | 13,497 | 26,334 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aboalimena | | x | | | 570 | x | x | | x | x | 2,543 | 2,496 | 5,039 |
| **Diana region** | | | | | | Fish Sea cucumber Algae | Honey | | | Small livestock Kitchen gardens | | | |
| Andranovondronina | x | | x | | TBD | x | | | x | x | 1,548 | 1,388 | 2,936 |
| Antsohimbondrona | x | x | | | TBD | x | x | | x | x | 4,511 | 4,657 | 9,168 |
| Maherivaratra | x | | | | TBD | x | | | x | x | 3,023 | 3,091 | 6,114 |
| Mahalina | | | x | | TBD | x | | | x | | 1,119 | 1,081 | 2,200 |
| Anorantsangana | x | | | | TBD | x | | | x | | 5,107 | 5,120 | 10,227 |
| Antafiambotry | x | | | | TBD | x | | | x | | 3,308 | 3,306 | 6,614 |
| Mahavanona | x | | x | | TBD | x | | | x | | 7,355 | 6,908 | 14,263 |
| Ambolobozobe | x | | | | TBD | x | | | x | | 1,647 | 1,681 | 3,328 |
| Bobasakoa | x | | | | TBD | x | | | x | | 1,725 | 1,718 | 3,443 |
| Ambatozavavy | x | | x | | TBD | x | | | x | x | 1885 | 1,864 | 3,749 |
| Dzamandzar | x | | x | | TBD | x | | | x | x | 18,715 | 20,513 | 39,228 |
| Bemanondrobe | x | | x | | TBD | x | | | x | x | 2092 | 2,106 | 4,198 |
| Hell Ville | x | | x | | TBD | x | | | x | x | 23,323 | 26,928 | 50,251 |
| Befotaka | x | | x | | TBD | x | | | x | x | 2,517 | 2,489 | 5,006 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ampangorina | x | | x | | TBD | x | | | x | x | 2,895 | 2,939 | 5,834 |
| Bemanevi ky Ouest | x | | | | TBD | x | | | x | | 2,898 | 2,943 | 5,841 |
| Beramanja | x | | x | | TBD | x | | | x | | 13,585 | 13,897 | 27,482 |
| **Atsimo Atsinanana region** | | | | | | Fish Langoustines | | Bamboo; Mahampy; Farafatry; Franc (Rabo and raphia) | | Cashew ,bananas , cinnamon, cloves, freshwater fish | | | |
| River basins | | | | | | | | | | | | | |
| Menanivo Manampatrana Manambato Masianaka | | x | | | TBD | | | x | | x | | | |
| Forests | | | | | | | | | | | | | |
| Nap Analazaha Reserve Manombo Zadoa Lokato | | | x | | 1,500 ha 5,080ha Not available Not available | | | | x | x | | | |
| Beaches and estuaries | | | | | | | | | | | | | |
| Ankarana Miraihina | | | x | x | TBD | | | | | | 6,797 | 7,167 | 13,964 |
| Mahabo Mananivo | | | x | x | TBD | x | | | | | 4,092 | 4,646 | 8,738 |
| Farafangana | | | | x | TBD | x | | x | x | | 16,008 | 18,668 | 34,676 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Amporoforo | | | | x | TBD | | | x | x | | 6,014 | 6,235 | 12,249 |
| Manambotra Atsimo | | | | x | TBD | | | x | x | | 2,989 | 3,269 | 6,258 |
| Masianaka | | | x | x | TBD | x | | | | | 10,588 | 11,490 | 22,078 |
| Manambondro | | | | x | TBD | | | | | | 2,597 | 2,613 | 5,210 |
| Sandravinany | | | | x | TBD | x | | | | | 2,186 | 2,208 | 4,394 |
| Vangaindrano | | | | x | TBD | x | | | | | 18,187 | 20,350 | 38,537 |
| **AVERAGE PER COMMUNE** | | | | | | | | | | | **7,548** | **8,042** | **15,590** |

Based on the total population of the potential communes of intervention, we used the average number of individuals per commune of 15,590 people to estimate the total number of direct beneficiaries with project interventions in 20 communes from more resilient physical and natural assets to be approximate 30% of the population, or 93,540 people (see Appendix F for more details on core indicator calculations). We also assumed direct beneficiaries in this case would be split equally between men and women.

**Intervention logic and key assumptions**

170. The proposed Theory of Change (ToC) of the project highlights the relationships between activities, outputs, outcomes, and the main impact that the project seeks to contribute to.

171. The proposed ToC diagram in Figure 9 shows the strategy adopted by the project to address the underlying problem. To reach a solution to this problem, several barriers need to be addressed. Those barriers that the project will directly address are:

Barrier 1: Limited institutional capacity at regional level for coordination of adaptation actions

Barrier 2: Limited capacity at local level for adaptation planning

Barrier 3: Limited capacity for local management of natural resources

Barrier 4: Limited capacity to engage in the green and blue-economy for EbA-based businesses

Barrier 5: Limited knowledge about climate risks and EbA for scaling the adoption of adaptation

| **Barriers** | **Tackling strategy** | **Corresponding outputs** |
|---|---|---|
| Barrier 1: Limited institutional capacity at regional level for coordination of adaptation actions | In order to tackle this barrier, the project strategy plans to implement a systemic and cross-sectoral approach for adaptation planning and implementation in coastal areas through:<br><br>- the support for the reformulation and/or operationalization of three CRGIZC/Platforms;<br>- the support of the four CRGIZC/Platforms in their day-to-day coordination mandate.<br>In addition, coordination and planning of adaptation actions will be strengthened through the updating and implementation of Sch?mas d?am?nagement communaux (SACs) and Regional Development Plans (PRD) in the four regions of implementation of the project ? 20 each. | Output 1.1.1<br><br>Output 1.1.2<br><br>Output 1.2.1 |
| Barrier 2: Limited capacity at local level for adaptation planning | Capacities to respond to the challenges of climate change will be built at local level through i) the development of a guide aimed at driving the participatory development of Communal Land Use Plans (SAC) and Communal Development Plans (PCD); ii) the participatory revision of these strategic documents in twenty communes to effectively integrate climate change concerns and EbA approaches. Regional workshops and trainings to popularize the guide, and then to guide the development of plans, will target at least 20 people per region (4 regions), while the participatory planning processes will engage a greater number of community members (approximately 100 per region). | Output 1.2.2<br><br>Output 1.2.3 |

| | | |
|---|---|---|
| Barrier 3: Limited capacity for local management of natural resources | As sustainable natural resources management practices are widely recognized as being a low cost and effective way to secure ecosystem services that are critical for adaptation, the project will support Locally Managed Marine Area (LMMA). An LMMA is a natural resource management instrument administered by local community and targeting the sustainable use of marine resources.<br><br>Moreover, the approach to restoration of ecosystems will focus on a local, participatory approach that will strengthen capacities of local actors to both restore and sustainably manage in the longer term these same ecosystems. Here, 2,000ha of rural landscape, as well as 3,000ha of mangroves and coastal forests are proposed to be made more resilience to climate variability and change, which will promote a High Intensity Labour approach, rather than rely on volunteers, to ensure fair and equitable work opportunities for project beneficiaries. Trainings and awareness raising will be provided to community members, as well as private landowners. Monitoring and management plans, including support for negotiations of access rights to the natural resources, will be developed. | Output 2.1.1<br><br>Output 2.2.1<br><br>Output 2.2.2<br><br>Output 2.2.3 |
| Barrier 4: Limited capacity to engage in the blue-economy for EbA-based businesses | The project will both provide alternative climate-resilient livelihoods as well as provisioning capacity building and technical material to make more sustainable and better value traditional livelihoods and related value chains (most importantly fishing and agriculture). More precisely, four regional business incubators will be created and will provide incubation and financial services tailored to local entrepreneurs whose businesses provide adaptation services and/or are climate resilient. Two annual rounds of incubation and support in regions will be provided, which over 6 months will host meetings with social enterprises proponents in order to clarify the business ideas they have or propose to them specific value chains to explore and develop. Importantly, the trainers will bear in mind the potential businesses selected as part of value chain development actions (regional scoping studies). They may present some examples of businesses with expected investment and revenues, required skills and training, risks, etc. The objective of the incubation will be to accelerate the development of ecosystem-based value chains social enterprises. | Output 3.1.1<br><br>Output 3.1.2<br><br>Output 3.1.3 |
| Barrier 5: Limited knowledge about climate risks and EbA for scaling the adoption of adaptation | In the face of the limited knowledge about climate risks and EbA, the project will develop and implement a communication strategy aimed at raising awareness on climate change and EbA at local stakeholders level. It will be complemented by the development and implementation of a coastal EbA upscaling strategy and knowledge sharing mechanism which present mechanisms to share lessons and good practices between CRGIZCs/Platforms, and the experiences and lessons learnt from the CRGIZCs/Platforms in the four pilot regions will be disseminated to other selected coastal regions through awareness-raising events and exchange visits targeting decision-makers and planners. | Output 4.1.1<br><br>Output 4.1.2 |

172. The project **aims to enhance resilience of local livelihoods and ecosystems in coastal zones of Madagascar to the adverse impacts of climate change**. It does this through a range of activities, which are supporting outputs. Underlying the ToC are several assumptions, which must be fulfilled in order for the project to successfully achieve its objective. These are:

A1: National and local authorities promote EbA initiatives

A2: Institutional support for sustainable ecosystem management

A3: National and local authorities support EbA with their internal resources

A4: Communities will be aware of the EbA benefits and support interventions and adopt ecosystem management activities for adaptation during or after the term of the project

A5: Adverse socio-economic circumstances (e.g. time poverty of women) are mitigated to ensure equitable opportunities for different groups, including women, to engage in viable ecosystem-based businesses

A6: Business initiatives and climate-resilient value chains developed respond to local, national and global markets needs

173. The project also contributes to outcomes. These are enabled by several impact drivers, including but not limited to:

D1: National and local authorities support the dissemination of EbA information

D2: Buy-in of planning experts into the EbA concept

D3: Local community willingness to improve their livelihoods

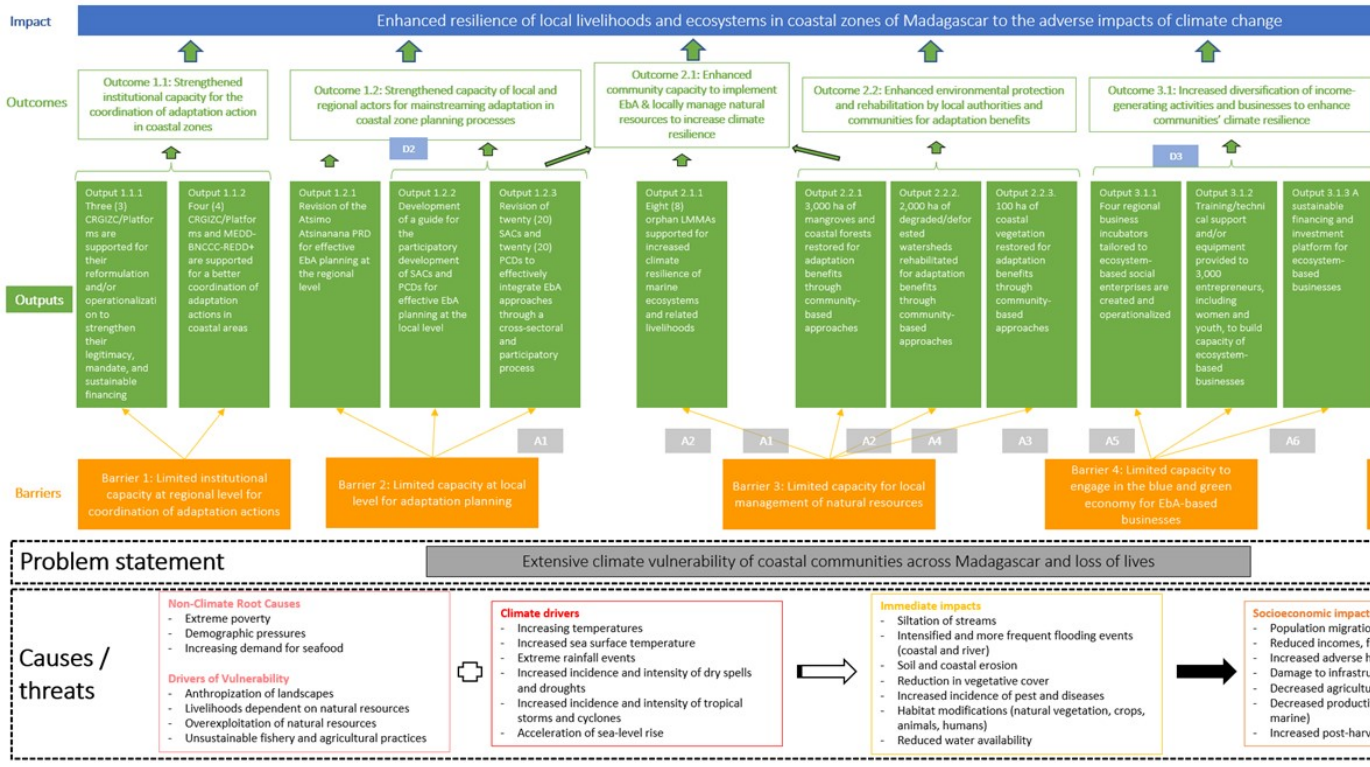



Figure 9: Project Theory of Change (ToC)

2) alignment with GEF focal area and/or Impact Program strategies;

174. The project is well aligned with the GEF Programming Strategy on Adaptation to Climate Change for the LDCF and SCCF 2018-2022. In particular, it will support *Objective 1: Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation* through its support for improved and climate resilient livelihoods/value chains (including increasing engagement of the private sector); its engagement with the private sector to support innovation in the management of marine resources to increase the resilience of coastal ecosystems and enable them to continue to provide adaptations services; and the consideration for climate security in its land-use planning activities, whereby conflict and migration challenges are thoughtfully addressed. The proposed project also supports the LDCF *Objective 2: Mainstream Climate Change Adaptation and Resilience for Systemic Impact*, in particular through its Component 1 where adaptation considerations will be mainstreamed into ICZM and local planning. Similarly, climate change mainstreaming will take place through the integration of EbA into SACs, PDCs, and the Atsimo Atsinanana PRD (Component 1).

3) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing;

175. The project proposes a community-based EbA approach, which has been shown to be a financially effective way of providing multiple social and environmental benefits[94]93, [95]94. For instance, mangrove restoration is estimated to be 2-5 times cheaper than hard infrastructure for wave heights up to half a meter and, within its wave height limits, becomes more cost effective at greater

depths[96]95. It will ensure close coordination with other initiatives on the ground to ensure an efficient use of financial resources, and scale up impact. Details of the additional cost reasoning for the LDCF resources, and baseline contributions, are described below:

| Project title | Donor/s | Period | Budget ($) | Indicative cofinancing amount | Project description | Additionnal cost reasonning |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| Programme de protection et utilisation durable des ressources naturelles (PAGE 2 ou Programme d?Appui ? la gestion de l?environnement) | EUROPEAN UNION<br>GIZ | 2020-2024 | 21.056.700 ? | US$ 222,222 | This project is being executed by the MEDD.<br><br>PAGE 2 makes a direct contribution to reducing deforestation and improving the socio-economic situation of people living on the outskirts of protected areas. In the Boeny and DIANA regions, the program is committed to improving the sustainable use of natural resources on the outskirts of protected areas.<br><br>Regions: **Boeny, Diana** | Component 2, which aims to increase the income of 5,800 households through the contribution of value chains, the program will contribute to achieving outcome 3.1 of the LDCF-PAZC2 project;<br><br>Through component 3, which aims to improve the business environment for 75% of value chain actors, and support sustainable and climate resilient valorization of natural resources at the communal level, the program will contribute to the achievement of LDCF-PAZC2 project outcome 3.1. |

| | | | | | | |
|---|---|---|---|---|---|---|
| Restauration foresti?re et lutte contre les feux de brousse | Financement propre (RPI) | Until 2030 | Annual budget defined by Annual Finance Law | US$ 901,360 | This project is being executed by the Minist?re de l?Environnement et du D?veloppement Durable (MEDD). This is a national program for the regreening of Madagascar, with the aim of intensive reforestation at an annual rate of 40,000 ha. To achieve this, the MEDD intends to reforest and restore 75,000 ha per year in accordance with the national reforestation and forest restoration plan.<br><br>Regions: National | Through its targets of planting 75,000 ha/year; restore 4,000,000 ha by 2030; and a focus on conservation of natural forests and firefighting, the program will contribute to achieving results 2.1 and 2.2 of the LDCF-PAZC2 project. Indeed, wildfires is a significant risk to the achievement of the project?s outcomes, and as such support from this programme will provide considerable mitigation value. |

| | | | | | | |
|---|---|---|---|---|---|---|
| Projet de r?silience climatique par a pr?servation de la biodiversit? | Facilit? d?Appui ? la Transition (FAT), Fonds Africain de D?veloppement (FAD) Gouvernement de Madagascar | Until 2028 | US$ 29,608,000 | US$ 914,000 | This project is being executed by the MEDD.<br><br>The overall aim of the Climate Resilience through Biodiversity Conservation Project is to strengthen systems for the protection, conservation and sustainable use of natural capital and ecosystems in order to increase the country's resilience to climate change. Component 1, Enhancing protected areas and supporting governance : infrastructure development, ecological monitoring, institutional and regulatory capacity building Sub-component 1.1, Development of infrastructure for sustainable conservation of protected areas Subcomponent 1.2, Ecological monitoring of biodiversity and adaptation to climate change Subcomponent 1.3, Capacity building Component 2, Promoting ecotourism and | Through component 2, which aims to promote ecotourism and strengthen the resilience of local populations, the program will contribute to achieving outcomes 2.1 and 3.1 of the LDCF-PAZC2 project. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | strengthening local resilience<br>Subcomponent 2.1, Support for social resilience and socio-economic development<br>Subcomponent 2.2, Strengthening the promotion of ecotourism in parks<br>Sub-component 2.3, Promotion of agricultural value chains<br>Component 3, Project Management<br><br>Regions: **Diana, Boeny** | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Projet de r?silience climatique par a pr?servation de la biodiversit? PRCPB II | Facilit? d?Appui ? la Transition (FAT), Fonds Africain de D?veloppement (FAD) Gouvernement de Madagascar | 2024-2029 | US$ 29,608,000 | US$ 2,214,390 | This project is being executed by the MEDD.<br><br>The overall aim of the Climate Resilience through Biodiversity Conservation Project is to strengthen systems for the protection, conservation and sustainable use of natural capital and ecosystems in order to increase the country's resilience to climate change. Component 1, Enhancing protected areas and supporting governance : infrastructure development, ecological monitoring, institutional and regulatory capacity building Sub-component 1.1, Development of infrastructure for sustainable conservation of protected areas Subcomponent 1.2, Ecological monitoring of biodiversity and adaptation to climate change Subcomponent 1.3, Capacity building Component 2, Promoting ecotourism and | Through component 2, which aims to promote ecotourism and strengthen the resilience of local populations, the program will contribute to achieving outcomes 2.1 and 3.1 of the LDCF-PAZC2 project. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | strengthening local resilience<br>Subcomponent 2.1, Support for social resilience and socio-economic development<br>Subcomponent 2.2, Strengthening the promotion of ecotourism in parks<br>Sub-component 2.3, Promotion of agricultural value chains<br>Component 3, Project Management<br><br>Regions: **Diana, Boeny** | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Programme National de transitions vers la cuisson propre: projet de cuisson propre et reforestation (CCRP) | OPEC FUND UNIDO | 2022-2030 | US$ 35,000,000 | US$ 931,961 | This project is being executed by the MEDD.<br><br>The funding will enable 200,000 Madagascan households to cook using less polluting sources. It will also help replant 1,500 hectares of forest. The national program for the transition to clean cooking should help to change the cooking habits of Madagascan households. The project aims to encourage the use of different, less polluting cooking methods. Launched by the Malagasy government, the Clean Cooking Transition Program aims to promote more environmentally-friendly cooking through the use of ecological coal, biogas, ethanol and liquefied petroleum gas (LPG). The aim of this program is to improve living and health conditions for the population by stimulating the development and adoption of clean or improved cooking | The programme will support the LDCF project achievement of outcomes as follows: Through component 2, which aims to reforest and/or restore 5450 ha and save 50,000 ha of forest, the program will contribute to achieving project LDCF-PAZC2 outcome 2.2.<br><br>Through component 3, which aims to create 20,000 jobs in the production of ecological fuels, the program will contribute to the achievement of LDCF-PAZC2 project result 3.1. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | methods, and by promoting forest restoration or replanting.<br>* Component 1: Development of improved cooking and clean cooking<br>* Component 2: Sustainable reforestation program<br>* Component 3 : Empowerment of women through education and stimulation of economic opportunities and entrepreneurship<br>* Component 4: Project Management and Monitoring & Evaluation<br><br>Regions: **Diana, Atsimo Atsinanana** | |

| **Project title** | **Donor/s** | **Perio d** | **Budget ($)** | **Indicative cofinancin g amount** | **Project description** | **Additionnal cost reasonning** |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| PROGRAMME DE LUTTE ANTI-EROSIVE (PLAE 5) | BMZ through KfW | 2019-2024 | ?13.250.000 | US$ 6,066,667 | This project is being executed by the MINAE and MEDD.<br><br>Phase V of the PLAE contributes to sustainable land management in the intervention zones. It is part of the AFR100 / Restoration of Landscapes and Forests (RPF) initiative and aims, among other things, at the sustainable production of wood (especially energy wood). The project thus contributes to reducing pressure on natural forests, improving the economic situation of beneficiaries (farmers, stockbreeders and communes) and mitigating the effects of climate change.<br><br>Regions: **Boeny, Diana** and Betsiboka | Through its efforts working on SLM and restoration of landscapes, the programme will directly support Outcome 2.2 of this LDCF project. |

| | | | | | | |
|---|---|---|---|---|---|---|
| PROJET D'AGRICULTURE DURABLE PAR UNE APPROCHE PAYSAGE (PADAP) | IDA/AFD/FEM | 2017-2024 | US$ 103.6 million | US$ 11,351,401 (only financing from IDA/AFD) | This project is being executed by the MINAE, MEDD and MEAH<br><br>The overall objective of the Projet d'agriculture durable par une approche paysage (PADAP) is to increase agricultural productivity through sustainable natural resource management in 5 selected landscapes in 4 regions of Madagascar.<br><br>The objectives are: (1) to increase access to irrigation services and sustainable farming techniques and practices; (2) to strengthen integrated natural resource management by local stakeholders in the targeted landscapes.<br><br>Regions: Sava, Analanjirofo, Sofia and **Boeny** | The tools and data produced at a landscape level through the PADAP will be useful to achieve better local management of natural resources (Outcome 2.1 of this LDCF project). In addition, capacity-building support from PADAP will contribute to better management of natural resources (Outcome 2.1), as well as to the implementation and wider adoption of sustainable land management practices and support restoration (Outcome 2.2). Support for private sector partnerships under Component 3 of PADAP will also contribute to the achievement of Outcome 3.1 of the LDCF project. |

| | | | | | | |
|---|---|---|---|---|---|---|
| ADAPTATION DES CHAINES DE VALEURS AGRICOLES AUX CHANGEMENTS CLIMATIQUES (PRADA) | (BMZ)<br><br>/KFW/ Union Europeen | 2017-2024 | ? 23.3M | US$ 1,111,111 | This project is being executed by the MINAE.<br><br>(1) Promoting a production chain goes hand in hand with appropriate adaptation to climate change. This process enables the agricultural sectors concerned to develop over the long term.<br><br>(2) The project supports the introduction of insurance against climate risks.<br><br>(3) The project also aims to improve structural framework conditions. These include the development of a quality agricultural policy, the organization of players and cooperation between them. Access to farming resources is simplified, and production techniques are adapted to the | Through its Component 1, which supports the provision of agro-meteorological information, the PRADA will support the increased resilience of rural populations, and therefore Outcomes 2.1 and 2.2 of the LDCF-PACZ2 project. Moreover, the development of value chains such as honey, pepper, cloves, vanilla, and coffee in the Atsimo Atsinanana region will contribute to enhanced market access for beneficiaries of the LDCF project interventions, and therefore also contribute to the effectiveness of the project interventions and achievement of Outcomes 2.2 and 3.1. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | needs of the farmers.<br><br>Regions: **Atsimo Atsinanana**, Anosy, Androy | |

| | | | | | | |
|---|---|---|---|---|---|---|
| PROGRAMME POUR LA RESILIENCE DU SYST?ME ALIMENTAIRE A MADAGASCAR -<br><br>PRSAM | IDA/BM | 2022-2030 | US$ 68 900 000 | US$ 1,873 ,922 | This project is being executed by the MINAE.<br><br>The development objective of the project is to increase the resilience of food systems and food insecurity preparedness in Madagascar.<br><br>The objectives of the project are (1) to rebuild resilient production capacity.<br><br>(2) manage natural resources sustainably<br><br>(3) improve connectivity and market access for smallholders<br><br>Regions: Analanjirofo, Atsinanana, **Boeny**, Anakamanga, Itasy, Vakinankaratr a, **Diana**, Vatovavy, Fitovinany, **Atsimo Atsinanana**, Anosy, Betsiboka, Sava | The programme intervenes in three of the LDCF project regions, and therefore has the potential to make significant contributions to the achievement of its outcomes, through the following: a) the program will support the adoption of sustainable land management practices, thereby reducing pressures on ecosystems downstream, reducing migration to protected areas, restore and reforest over 150,000ha, and therefore support Outcome 2.2. Moreover, provision of weather services will benefit all local communities, and in particular be helpful in supporting the local management of marine |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | areas (Outcome 2.1). |

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFIS ? PROGRAMME DE DEVELOPPEMENT DES FILIERES AGRICOLES | IFAD and other cofinanciers | 2017-2029 | US$ 250 000 000 | US$ 503, 420 | This project is being executed by the MINAE<br><br>The overall objective of DEFIS is to sustainably improve the incomes and food and nutritional security of vulnerable rural populations in the areas of intervention. the transformation of family farming through the large-scale adoption of efficient and resilient production systems and the integration of AFEs into remunerative value chains.<br><br>Component 1. Improving the productivity and resilience of production systems and livestock production systems<br><br>Component 2. Development of inclusive value chains<br><br>Component 3. Institutional support and | Both DEFIS and the LDCF project will work in the Atsimo Atsinanana region.<br><br>The DEFIS Programme will contribute co-finance towards outcome 3.1 (Component 3) of the LDCF project, through its intervention in providing training for the development of sustainable business plans of EbA-linked businesses and enhancing linkages between producer organizations and other market actors and developing inclusive ecosystem-based value chains, such as honey value chain in Atsimo Atsinanana. LDCF will apply the DEFIS methodologies to support producers groups, particularly women, and |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | program coordination<br><br>Regions: Amoron?i mania, Haute Matriatra, Ihorombe, Androy, Anosy, Atsimo andrefana, **Atsimo Atsinanana**, Vatovavy Fitovinany | the established market linkages in the climate-resilient value chains supported by the LDCF project in Atsimo Atsinana (rambo, raphia and freshwater fish) and the other three regions. |

4) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF);

176. The project intends to benefit coastal communities of four regions (Boeny, Menabe, Atsimo Atsinanana, and Diana) of Madagascar, and enhance the resilience of communities and ecosystems in areas where the most vulnerable population and economic activities are located. It is anticipated that the project will directly impact over 97,000 people.

177. The project is anticipated to create a significant paradigm shift for extremely vulnerable coastal communities of Madagascar by supporting a comprehensive EbA approach in coastal zones, and ultimately lead to climate-resilient development. The EbA approach will contribute to the restoration of various degraded ecosystems which will then be able to provide essential adaptation benefits and services and support the diversification of incomes. These interventions will further enhance the health and livelihoods of local communities, by increasing food security and safety, despite the negative projected climate change impacts. This will be sustained by ensuring EbA is well integrated in local planning, and transferring natural resources management to local communities. It will then be possible to replicate this model beyond the project intervention sites, to all coastal regions of the country, which will be supported by the capacity-building and communication activities at the regional level.

178. The proposed EbA approach will yield environmental co-benefits, including a reduction in soil erosion (which is associated with a reduction in agricultural yields and contamination of downstream marine and freshwater ecosystems) through reduced deforestation. Restored mangrove ecosystems will provide the habitats for various species, and provide food, fiber, and fuel to local communities who will be supported in their sustainable management.

179. Vulnerable communities and groups, including women, will gain numerous benefits, both social and economic, from the interventions. For instance, women currently are responsible for transporting fresh fish by foot to markets over long distances. The support for transformation and value addition of fish, as well as storage, closer to the harvesting sites would enable women to gain considerable time and supplement incomes. Moreover, it would reduce potential post-harvest losses associated with increased temperatures. Similarly, the support for income generating activities close to homesteads, such as beekeeping, have been shown to be very effective in empowering women. The project will therefore ensure to build on the experience of other successful interventions to ensure women are primary beneficiaries of those interventions, as traditional gender roles may sometimes be a barrier to their successful uptake.

5) innovativeness, sustainability and potential for scaling up. ?

Innovativeness

180. Innovation will take several forms under this project. First, it will focus on transferring the management of natural resources to local coastal communities through LMMAs, through innovative mechanisms which actively involve multiple actors, including proposed partnerships with the private sector in the sustainable management of coastal ecosystems, and could support the integration of customary rules with laws governing the use of natural resources ("reconciling the legal and the legitimate") through the ?dina? (traditional community regulation to manage natural resources in an efficient way) which the Malagasy state has adopted as a governance tool legally recognized through the 1996 GELOSE legislation, and is also approved as part of the Code des Aires Prot?g?es [97]96. This approach will tackle some of the challenges identified in previous projects, including for instance focusing on broader participation/greater inclusivity. By engaging more actively with different stakeholders, including private sector, the project will seek to ensure that ownership can be built of the management of natural resources, that local fishers and farmers have greater influence on the value chains, increased power to negotiate prices, and that they are empowered to enforce local laws. Another key area of innovation is the focus on supporting innovative blue and green businesses through regional incubators and entrepreneurship support, with an emphasis on delivering adaptation benefits for ecosystems and coastal livelihoods. Moreover, by focusing on financial sustainability of project interventions, the project hopes to find innovative ways to ensure reduced dependence on external donors, and empower local communities to build sustainable enterprises that employ more people and bring simultaneously adaptation benefits locally. Finally, innovation comes as the project focuses on the financial sustainability of the project interventions and seeks to investigate and pilot a number of ways in which this can take place in the very specific context of Madagascar?s coastal zones.

Sustainability

181. The project will ensure the sustainability of interventions through several means, including first and foremost its community-based and participatory EbA approach. The project will ensure the specific needs of stakeholders are being addressed, and that there is significant buy-in through extensive stakeholder engagement from the inception of the project onwards. The project will also ensure gender-specific needs of stakeholders are emphasized.

*Planning and implementation of EbA*

182. At the institutional level, the project will provide support for BNCC-REDD+ and ICZM regional committees/platforms on mainstreaming and implementation of EbA, and on developing partnerships and financial sustainability plans. Under activity 1.1.1.3, regional ICZM Committee/Platform action plans and sustainable financing strategies will be developed considering a combination of self-financing options and public and private funding mechanisms scoped during the PPG phase. Access to long-term financing from the public and the private sectors and CR-GIZC will be supported during the project implementation.

183. The capacity of the national climate change office (BNCC-REDD+) to fully fulfil its mandate to coordinate climate change adaptation in Madagascar will also be strengthened through training and exchange opportunities. Appropriate legislative instruments will be put in place to further institutionalize the Regional ICZM Committees, and to strengthen their mandate and core funding. The respective roles and responsibilities of the Regional ICZM Committees and BNCC-REDD+ in coordinating adaptation in coastal areas will be clarified, and collaboration between them strengthened.

184. At local scale, the project will work on increasing the capacity of local authorities to plan and implement EbA, including through supporting the integration of climate change considerations into Municipal Planning Schemes (SAC) and the incorporation of EbA into communal development plans (PCD), which is anticipated to create a long-term shift in the way local ecosystems are managed (e.g. mangroves). The SAC has a 15-year execution period, and the PCD is renewable every 5 years. The SAC and PCD are strategic development documents that hold official national and international recognition. The formulation of these documents follows a participatory and inclusive approach, engaging all relevant stakeholders in the commune. Development actions are harmonized according to the plans and actions outlined in these documents. SAC and PCD therefore serve as reference documents for both public and private investments. Following the PCD, various activities become available as sustainable funding sources for communes, including water management and support the generation of commune?s income, enabling it to finance public investment. The detailed activities specified in the PCD, fisheries management plans, and protected areas will form the basis for short, medium, and long-term action investment plans. Communes with validated PCDs may also receive taxes or rebates to finance their activities. As described in output 1.2.3 the project will support the identification and prioritization of cost-effective EbA options in the SACs and investment plans in the PCDs to sustain the financing of those adaptation actions beyond the contributions of this LDCF project.

*Natural resource management*

185. Furthermore, the project?s approach to support the transfer of natural resources management from centralized authorities to local communities, including through the development and enforcement of Locally Managed Marine Areas and fisheries management plans should further help ensure the long-term sustainability of natural resource use. This will clarify control over land and natural environment while ensuring community ownership and compliance, and thus contribute to a sustained strengthening of the communities? resilience to climate impacts.

186. Consultations showed that these may become non-functional due to lack of sustained resources. The sustainable financing options for Locally Managed Marine Areas (LMMAs) involve various strategies. The project supports LMMA communities in renewing and enhancing their management frameworks, exploring mechanisms such as concession fees, visitor fees, user fees, partnerships with conservation organizations, educational programs, community involvement, carbon markets, international funding, local product sales, and crowdfunding. The project will accompany the LMMA management committee in drawing up or updating the management and financing plan, and build the fundraising capacity of LMMA management structures, attracting donors supporting on-the-ground activities, and approaching financing with a holistic perspective, including storytelling, reporting, communication, and organizational structuring for lasting financial sustainability.

*Resilience in livelihoods*

187. In addition, the project will support the development of new revenue streams for local communities, potentially providing long-term financial stability and thus improving the prospects for more sustainable use of natural resources in the long-term. In this respect the project will support the establishment of climate-resilient ecosystem-based cooperative businesses managed by skilled, trained and equipped entrepreneurs that will be connected through the incubation program with potential investors and financial institutions.

*Rehabilitation of coastal ecosystems*

188. In this context, interventions implemented to reduce de vulnerability of coastal zones through the rehabilitation of coastal ecosystems will be supported by enabling factors : institutional engagement, sustainable management plans and community ownership and awareness about the ecological value of healthy ecosystems.

*Communication, awareness raising and knowledge sharing*

189. The sustainability of the project interventions relies on fostering longer-term changes in the attitudes and behaviors of the target communities through improved awareness and understanding of the importance of ecosystems for human livelihoods and well-being, and of the negative impacts of unsustainable resource use on climate resilience. This improved awareness will be catalyzed through a strong communication strategy focused on increasing access to information and awareness-raising campaigns. Furthermore, the project will ensure that an effective knowledge sharing mechanism as well as an upscaling strategy are in place to ensure that lessons learnt from the project can contribute to scaling up its successes.

Potential for scaling up

190. It is planned that the project will target 20 communes out of 49 pre-identified communes in 4 regions representing an average of 311,800 people out of a total population of 3,542,141[98][97]. The upscaling strategy to other communes in the 4 regions will be supported by an active engagement process and knowledge sharing activities though the regional level CRGIGZ/Platforms and regional incubators as the project will work towards adaptation mainstreaming in the management of coastal zones of Madagascar. Under Output 4.1.3, the project will support the replication of CRGIZCs/Platforms as a coordination platform for adaptation mainstreaming in coastal areas across Madagascar by developing an upscaling strategy through a consultative process. The potential for scaling up project outcomes will also come from a strong knowledge sharing mechanism (Output 4.1.2). Indeed, the upscaling strategy to the rest of the country will entail leveraging the experience from the project in different areas of the country which will provide a broad range of lessons which will allow for replication in varying local contexts. To catalyze this learning and good practices, mechanisms will be put in place, and the experiences and lessons learnt from the Regional ICZM Committees in the four pilot regions will be disseminated to other selected coastal regions through awareness-raising events and exchange visits, targeting decision-makers and planners. Moreover, under Outputs 1.2.3 and 2.1.1, the project will mainstream EbA into local planning strategies, which ultimately will be expected to yield long-term systematic adoption and implementation across coastal communes of EbA approaches.

---

[1] World Bank. 2013. Madagascar Country Environmental Analysis (CEA). Taking stock and moving forward. 139 p.

[2] Ferrario, F., Beck, M.W., Storlazzi, C.D., Micheli, F., Shepard, C.C. and Airoldi, L., 2014. The effectiveness of coral reefs for coastal hazard risk reduction and adaptation. Nature communications, 5(1), pp.1-9.

[3] Minist?re des transports, du tourisme et de la m?t?orologie, Banque Mondiale, La Cellule de Pr?vention et Gestion des Urgences (CPGU, and Regional Integrated Multi-Hazard Early Warning System (RIMES), 2019. Les tendances climatiques et futurs changements climatiques ? Madagascar.

[4] Fontanier, C., Mamo, B., Toucanne, S., Bayon, G., Schmidt, S., Deflandre, B., Dennielou, B., Jouet, G., Garnier, E., Sakai, S. and Lamas, R.M., 2018. Are deep-sea ecosystems surrounding Madagascar threatened by land-use or climate change? Deep Sea Research Part I : Oceanographic Research Papers, 131, pp.93-100.

[5] MEDD, 2021. Plan National d?Adaptation au Changement Climatique Madagascar.

[6] World Bank Climate Change Knowledge Portal, 2023. Current climate - Trends and variability [online]. Available from: https://climateknowledgeportal.worldbank.org/ [Accessed 20 Apr 2023].

[7] Minist?re des transports, du tourisme et de la m?t?orologie, Banque Mondiale, La Cellule de Pr?vention et Gestion des Urgences (CPGU, and Regional Integrated Multi-Hazard Early Warning System (RIMES), 2019. Les tendances climatiques et futurs changements climatiques ? Madagascar.

[8] MEDD, 2021. Plan National d?Adaptation au Changement Climatique Madagascar.

[9] World Bank Climate Change Knowledge Portal, 2023. Current climate - Trends and variability [online]. Available from: https://climateknowledgeportal.worldbank.org/ [Accessed 20 Apr 2023].

[10] World Bank Climate Change Knowledge Portal, 2023. Current climate - Trends and variability [online]. Available from: https://climateknowledgeportal.worldbank.org/ [Accessed 20 Apr 2023].

[11] MEDD, 2021. Plan National d?Adaptation au Changement Climatique Madagascar.

[12] Minist?re des transports, du tourisme et de la m?t?orologie, Banque Mondiale, La Cellule de Pr?vention et Gestion des Urgences (CPGU, and Regional Integrated Multi-Hazard Early Warning System (RIMES), 2019. Les tendances climatiques et futurs changements climatiques ? Madagascar.

[13] MEDD, 2021. Plan National d?Adaptation au Changement Climatique Madagascar.

[14] World Bank Climate Change Knowledge Portal, 2023. Madagascar - Sea-level rise [online]. Available from: https://climateknowledgeportal.worldbank.org/ [Accessed 21 Apr 2023].

[15] World Bank Climate Change Knowledge Portal, 2023. Madagascar - Projections [online]. Available from: https://climateknowledgeportal.worldbank.org/ [Accessed 21 Apr 2023].

[16] World Bank Climate Change Knowledge Portal, 2023. Madagascar - Projections [online]. Available from: https://climateknowledgeportal.worldbank.org/ [Accessed 21 Apr 2023].

[17] DataBank, 2023. Glossary - Heat index >35?C [online]. Available from: https://databank.worldbank.org/metadataglossary/environment-social-and-governance-(esg)-data/series/EN.CLC.HEAT.XD [Accessed 21 Apr 2023].

[18] World Bank Climate Change Knowledge Portal, 2023. Madagascar - Projections [online]. Available from: https://climateknowledgeportal.worldbank.org/ [Accessed 21 Apr 2023].

[19] Otto et al., 2022. Climate change increased rainfall associated with tropical cyclones hitting highly vulnerable communities in Madagascar, Mozambique & Malawi,

[20] Weiskopf, et al. 2021. Climate change risks and adaptation options for MadagascarEcol Soc;26(4):36

[21] GIZ, 2021. Climate Risk Profile: Madagascar.

[22] World Bank Climate Change Knowledge Portal, 2023. Madagascar - Projections [online]. Available from: https://climateknowledgeportal.worldbank.org/ [Accessed 21 Apr 2023

[23] GIZ, 2021. Climate Risk Profile: Madagascar.

[24] World Bank Climate Change Knowledge Portal, 2023. Madagascar - Extremes [online]. Available from: https://climateknowledgeportal.worldbank.org/ [Accessed 21 Apr 2023].

[25] World Bank Climate Change Knowledge Portal, 2023. Madagascar - Extremes [online]. Available from: https://climateknowledgeportal.worldbank.org/ [Accessed 21 Apr 2023].

[26] Otto, 2022. Climate change increased rainfall associated with tropical cyclones hitting highly vulnerable communities in Madagascar, Mozambique & Malawi.

[27] Bacmeister, J. T., Reed, K. A., Hannay, C., Lawrence, P., Bates, S., Truesdale, J. E., ... & Levy, M. (2018). Projected changes in tropical cyclone activity under future warming scenarios using a high-resolution climate model. Climatic Change, 146(3-4), 547-560.

[28] Otto, 2022. Climate change increased rainfall associated with tropical cyclones hitting highly vulnerable communities in Madagascar, Mozambique & Malawi.

[29] World Bank Climate Change Knowledge Portal, 2023. Madagascar - Sea-level rise [online]. Available from: https://climateknowledgeportal.worldbank.org/ [Accessed 21 Apr 2023].

[30] P. Ramarojaona et G. Moynot, (2011). Pr?sentation des ?tudes et analyses de la vuln?rabilit? et adaptation dans le cadre du projet ACCLIMATE. Atelier national ? Madagascar, pr?sentation faite le 20 janvier 2011.

[31] Minist?re des transports, du tourisme et de la m?t?orologie, Banque Mondiale, La Cellule de Pr?vention et Gestion des Urgences (CPGU, and Regional Integrated Multi-Hazard Early Warning System (RIMES), 2019. Les tendances climatiques et futurs changements climatiques ? Madagascar.

[32] GIZ, 2021. Climate Risk Profile : Madagascar.

[33] https://www.wwf.mg/en/our_work/priority_places/mtb_landscape/

[34] Southern Madagascar: Government and UN sound the alarm on famine risk, urge action - Madagascar | ReliefWeb

[35] Madagascar Famine is First Caused Entirely by Climate Change | Time

[36] https://www.3blmedia.com/news/how-fishermen-madagascar-are-pulling-together-combat-climate-change

[37] Cripps, G and Gardner, CJ (2016) Human migration and marine protected areas: Insights from Vezo fishers in Madagascar. Geoforum. doi:10.1016/j.geoforum.2016.05.010

[38] Cripps, G and Gardner, CJ (2016) Human migration and marine protected areas: Insights from Vezo fishers in Madagascar. Geoforum. doi:10.1016/j.geoforum.2016.05.010

[39] Carver, Edward, 2021. Slash-and-burn farming eats away at a Madagascar haven for endangered lemurs, frogs.

[40] Characteristic Features and Contributory Factors in Fatal Ciguatera Fish Poisoning?Implications for Prevention and Public Education - PMC (nih.gov)

[41] Jones, T.; Glass, L.; Gandhi, S.; Ravaoarinorotsihoarana, L.; Carro, A.; Benson, L.; Ratsimba, H.; Giri, C

[42] idem

[43] Scales, I.R., Friess, D.A., Glass, L. and Ravaoarinorotsihoarana, L., 2018. Rural livelihoods and mangrove degradation in south-west Madagascar: lime production as an emerging threat. Oryx, 52(4), pp.641-645.

[44] IPCC, 2022. Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. (p463 and 464)

[45] IPCC, 2022. Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.

[46] PAZC. 2016. MODELISATION CLIMATIQUE DES QUATRE REGIONS : ATSINANANA, BOENY, MENABE ET VATOVAVY FITOVINANY.

[47] World Bank. 2013. Madagascar Country Environmental Analysis (CEA). Taking stock and moving forward. 139 p.

[48] Suzzi-Simmons, A., 2023. Status of deforestation of Madagascar. Global Ecology and Conservation, 42, p.e02389.

[49] Vieilledent, G. et al., 2020. ?It?s not just poverty: unregulated global market and bad governance explain unceasing deforestation in Western Madagascar?, bioRxiv, p. 2020.07.30.229104. doi: 10.1101/2020.07.30.229104.

[50] World Bank. 2013. Madagascar Country Environmental Analysis (CEA). Taking stock and moving forward. 139 p.

[51] https://www.globalforestwatch.org/dashboards/country/MDG/

[52] https://la1ere.francetvinfo.fr/reunion/madagascar-des-feux-forets-hors-de-controle-1328788.html

[53] GIZ, 2021. Climate Risk Profile : Madagascar.

[54] Bruggemann, J. H., Rodier, M., Guillaume, M. M. M., Andr?fou?t, S., Arfi, R., Cinner, J. E., ? McClanahan, T. R. (2012). Wicked social-ecological problems forcing unprecedented change on the latitudinal margins of coral reefs: The case of southwest Madagascar. Ecology and Society, 17, 47.

[55] CEPF, 2022. Ecosystem Profile of the Madagascar and Indian Ocean Biodiversity Hotspot, 365 p.

[56] Gardner, Charlie J. and Gough, Charlotte and Levrel, Adrian and Singleton, Rebecca and Rocliffe,

Steve and Vincke, Xavier and Harris, Alasdair (2017) Small-scale fisheries, food security, and

the SSF Guidelines: value chain challenges in two community-managed fisheries in western Madagascar.

In: Jentoft, S. and Chuenpagdee, R. and Barragan-Palladines, M.J. and Franz, N., eds.

[57] For example, in the Exclusive Economic Zone through the Accords de P?che with the EU, which are being renegotiated in 2021.

[58] White, E.R., Baker-M?dard, M., Vakhitova, V., Farquhar, S. and Ramaharitra, T.T., 2021. Distant water industrial fishing in developing countries: A case study of Madagascar. bioRxiv.

[59] https://publicpartnershipdata.azureedge.net/gef/GEFDocuments/b5b2de63-df7c-e811-8124-3863bb2e1360/PIR/ProjectImplementationReportPIR_9692-P159562-P153370-2022-PIR-WB-Madagascar.pdf

[60] ProjectImplementationReportPIR_GEF-IW-4940-WIOSAP-PIR 2022.docx (live.com)

[61] giz2020_fr_page_madagascar.pdf

[62] https://publicpartnershipdata.azureedge.net/gef/GEFDocuments/68dde65d-df7c-e811-8124-3863bb2e1360/MTR/MidtermReviewMTR_Boeny%20Madagascar%20MTR%20Final%20Report.pdf

[63] Minist?re de l?Environnement et du D?veloppement Durable (MEDD) : Plan National d?Adaptation au Changement Climatique (PNA) Madagascar. Antananarivo, Madagascar. Novembre 2019.

[64] Mars 2010 :  DECRET N?2010-137 du 23 mars 2010 : r?glementation de la gestion int?gr?e des zones c?ti?res et marines de Madagascar (PNGIZC pour la mise en ?uvre de SNGIZC). Article 24.

[65] Mid-Term Review (MTR) of LDCF project ?Adapting coastal zone management to climate change considering ecosystem and livelihoods in Madagascar? (PAZC project), 2019.

[66] R?publique de Madagascar. 2016. GUIDE D?ELABORATION DE PLAN COMMUNAL DE DEVELOPPEMENT (PCD) QUI PREND EN COMPTE LA DIMENSION CULTURELLE

[67] Overall 20 communes will be supported in their PCD and SAC development under the project. During the inception phase of the project, five communes per target region will be selected out of this list through a consultative process with key stakeholders (e.g. DREDDs), resulting in a total of 20 target communities for the project duration

[68] Overall 8 LMMAs will be targeted by the project. The exact number of LMMA targeted in each region will be determined during inception.  See Output 2.1.1 below for further details on the LMMA selection process.

[69] GIZ. 2020. Programme d?Appui ? la Gestion de l?Environnement (PAGE) ? Madagascar Nos meilleures pratiques. https://www.giz.de/en/downloads/giz2020_fr_page_madagascar.pdf

[70]Rakotomahazo, C., Ravaoarinorotsihoarana, L.A., Randrianandrasaziky, D., Glass, L., Gough, C., Todinanahary, G.G.B. and Gardner, C.J., 2019. Participatory planning of a community-based payments for ecosystem services initiative in Madagascar's mangroves. Ocean & Coastal Management, 175, pp.43-52.

[71] Rakotomahazo, C., Ravaoarinorotsihoarana, L.A., Randrianandrasaziky, D., Glass, L., Gough, C., Todinanahary, G.G.B. and Gardner, C.J., 2019. Participatory planning of a community-based payments for ecosystem services initiative in Madagascar's mangroves. Ocean & Coastal Management, 175, pp.43-52.

[72] Good practices have been compiled in the PAZC I Good Practices Report published in 2023, and lessons learnt are summarized in Table 7 of this report.

[73] Jones, T.; Glass, L.; Gandhi, S.; Ravaoarinorotsihoarana, L.; Carro, A.; Benson, L.; Ratsimba, H.; Giri, C.;

Randriamanatena, D. ; Cripps, G. Madagascar?s Mangroves : Quantifying Nation-Wide and Ecosystem

Specific Dynamics, and Detailed Contemporary Mapping of Distinct Ecosystems. Remote Sens. 2016, 8, 106.

[74] Harding, Simon (2019). Chapter 6 : Madagascar. In World Seas : An Environmental Evaluation. Volume II : The Indian Ocean to the Pacific. pp. 121-144.

[75] Gough, C.L., Dewar, K.M., Godley, B.J., Zafindranosy, E. and Broderick, A.C., 2020. Evidence of overfishing in small-scale fisheries in Madagascar. Frontiers in Marine Science, 7, p.317.

[76] Bamford, A.J., Razafindrajao, F., Young, R.P. and Hilton, G.M., 2017. Profound and pervasive degradation of Madagascar?s freshwater wetlands and links with biodiversity. PLoS One, 12(8), p.e0182673.

[77] Harding, Simon (2019). Chapter 6 : Madagascar. In World Seas : An Environmental Evaluation. Volume II : The Indian Ocean to the Pacific. pp. 121-144.

[78] https://blueseeds.org/en/guide-financing-mechanisms-marine-protected-areas/ (last consulted 8/6/2023)

[79] PAZC1. 2022. Rapport de Bonnes Pratiques

[80] B?li?res, J.F., Lan?on, F., 2020. Etude diagnostic relative au potentiel de croissance de la chapine de valeur lait et produits d?riv?s, CASEF, MAEP, 97p.

[81] https://sahanala.net/ last consulted 23 March 2023

[82] Bend, but never break: weaving a climate-proof future (unep.org)

[83] https://seepnetwork.org/Thematic-Areas-Savings-Groups (last consulted 23 March 2023)

[84] https://blueventures.org/fr/new-research-sea-cucumber-farming-helps-seagrass-meadows-flourish/ (last consulted 6/8/2023)

[85] https://www.reseau-far.com/madagascar-incubation-des-jeunes-en-agribusiness/ (last consulted 06/12/23)

[86] https://agribusinessdata.com/business-incubation-communities-bic-africa-acceleration-programme-2022/ (last consulted 06/12/23)

[87] https://www.eeas.europa.eu/delegations/madagascar/incuboost_en?s=106 (last consulted 06.12.23)

[88] https://blogs.worldbank.org/psd/social-entrepreneurship-begins-home-how-one-incubator-generating-social-change-madagascar-while (last consulted 06/12/23)

[89] https://tafomihaavo.org/mg/ (last consulted 06/17/23)

[90] https://association-fanamby.org/ (last consulted 06/17/23)

[91] https://www.tany-ifandovana.org/ (last consulted 06/17/23)

[92] Khair, N.K.M., Lee, K.E. and Mokhtar, M., 2021. Community-based monitoring for environmental sustainability : A review of characteristics and the synthesis of criteria. Journal of Environmental Management, 289, p.112491.

[93] Census data was obtained here, as reported in December 2020: resultat_globaux_rgph3_tome_02.pdf (unfpa.org)

[94] Reid, Hannah. "Ecosystem-and community-based adaptation: learning from community-based natural resource management." Climate and development 8.1 (2016): 4-9.

[95] Buckwell, Andrew, et al. "Social benefit cost analysis of ecosystem-based climate change adaptations: a community-level case study in Tanna Island, Vanuatu." Climate and Development (2019): 1-16.

[96] Narayan, S., Beck, M.W., Reguero, B.G., Losada, I.J., van Wesenbeeck, B., Pontee, N., Sanchirico, J.N., et al. 2016. ?The Effectiveness, Costs and Coastal Protection Benefits of Natural and Nature-Based Defences.? PLOS One 11(5): e0154735. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4852949/.

[97] Andriamalala, G. and Gardner, C.J., 2010. L'utilisation du dina comme outil de gouvernance des ressources naturelles: le?ons tir?s de Velondriake, sud-ouest de Madagascar. Tropical conservation science, 3(4), pp.447-472.

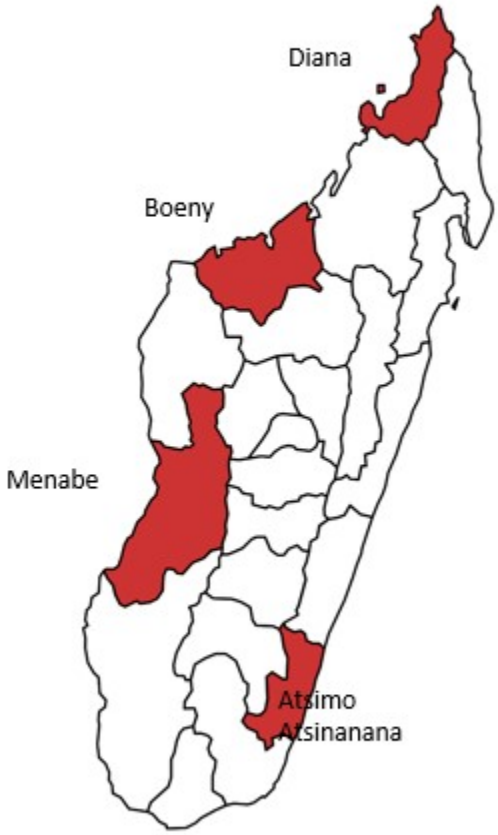
[98] resultat_globaux_rgph3_tome_02.pdf (unfpa.org)

**1b. Project Map and Coordinates**

**Please provide geo-referenced information and map where the project interventions will take place.**

The map with the project areas of intervention and geocoordinates is provided in Annex E of the CEO ER.

Geocoordinates:
Diana - 12°16′12″S 49°16′48″E
Boeny - 15°43′12″S 46°19′12″E
Menabe - 20°18′00″S 44°16′48″E
Atsimo Atsinanana - 22.819°S 47.83°E




**1c. Child Project?**

**If this is a child project under a program, describe how the components contribute to the overall program impact.**

No

**2. Stakeholders**

**Select the stakeholders that have participated in consultations during the project identification phase:**

**Civil Society Organizations** Yes

**Indigenous Peoples and Local Communities** Yes

**Private Sector Entities** Yes

**If none of the above, please explain why:**

**Please provide the Stakeholder Engagement Plan or equivalent assessment.**

191. The Stakeholder Engagement Plan (SEP) was developed with the objective of consolidating the social management of the project, complying with the policies and norms of GEF participation, as well as with UNEP?s Social and Environmental Standards (SES) for Stakeholder Participation. This plan recognizes the importance of effective participation for the different stakeholders as a way to improve the transparency, accountability, integrity, effectiveness and sustainability of the project. In addition, such participation will, on the one hand, promote national, regional and local interests to forge stronger relationships, particularly with civil society, local communities and the private sector; on the other hand, respect for human rights, gender equality and environmental sustainability is ensured during project implementation activities.

192. The Stakeholder Engagement Plan has been designed starting from the Stakeholders consultations and the context analysis done by the PPG team during the field visits in the four regions where the project will be implemented. All the information and the feedback from Stakeholders have been collected and integrated in the project design phase. This Stakeholder Engagement Plan is designed to be an operational tool that will define principles and protocols for effective engagement of a variety of stakeholders throughout the project in Madagascar. This will help the project to:

1. Enhance national and local authorities? ownership of/accountability for, project outcomes.

2. Address social and economic needs of affected people.

3. Build partnerships between stakeholders.

4. Make use of skills, experiences and knowledge of communities, local groups, and businesses.

193. The project?s stakeholders will be categorized in two groups namely: direct and indirect beneficiaries. The stakeholder engagement envisioned will be holistic, aiming to achieve identification of affected, interested, and concerned stakeholders; provision of timely and accessible information; relevant and contextually sensitive consultation; wide participation by all relevant stakeholders. The project, throughout its lifetime, will maintain dialogue between government ministries, directorates and agencies, local communities, private sector actors, national and in-country international NGOs and development partners. The SEP provided above also includes a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement.

194. The full Stakeholder Engagement Plan is available in Appendix 13 of the Project Document. The tables below summarize the list of stakeholders to be consulted and methods of engagement required as well as the roles.
The specific CSOs, CBOs that will be engaged in each region are not defined in the SEP as their selection depends on the outcome of the selection of communes to be targeted in each region (5 communes per region), the selection of the restoration sites and the selection of the LMMAs, which will be informed by the inception phase and the baseline study to be carried out in the first months of implementation.

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement

1. The tables below summarize the list of stakeholders to be consulted and methods of engagement required as well as the roles.

List of stakeholders to be consulted and methods of engagement required.(Stakeholder Engagement Plan)

| **Stakeholder Group** | **Why included (interests)** | **Participation methods** | | **Timeline** | **Cost est.** |
|---|---|---|---|---|---|
| | | **Method** | **Responsibility** | | |
| ***Fishermen (including fishermen associations and federations)*** | Access to resources and involvement in project activities | Individuals and groups consultation during project inception phase and along project implementation. Disclosure of assessment and management plans. Collection of feedback. | PMU | Inception phase + based on M&E plan + beginning of every project year | Included in project management costs |
| ***Traders*** | Access to resources | Sharing Information with individuals and groups during project inception phase. Collection of feedback based on the M&E plan. | PMU | Inception phase + based on the M&E plan | Included in project management costs |
| ***Farmers (including producer associations)*** | Access to resources and involvement in project activities | Individuals and groups consultation during project inception phase and along project implementation. Disclosure of assessment and management plans. Collection of feedback. | PMU | Inception phase + based on M&E plan + beginning of every project year | Included in project management costs |

| | | | | | |
|---|---|---|---|---|---|
| ***Women/women groups and cooperatives*** | Access to resources and involvement in project activities. | Individuals and groups consultation during project inception phase and during project implementation. Disclosure of assessment and management plans. Collection of feedback. | PMU | Inception phase + based on M&E plan + regular meetings to collect feedback | Included in project management costs |
| ***Youths/Youths groups and cooperatives*** | Access to resources and involvement in project activities | Individuals and groups consultation during project inception phase and during project implementation. Disclosure of assessment and management plans. Collection of feedback. | PMU | Inception phase + based on M&E plan + regular meetings to collect feedback | Included in project management costs |
| ***Men/head of Household*** | Decision making on resources use and involvement in project activities | Individuals and groups consultation during project inception phase and during project implementation. Disclosure of assessment and management plans. Collection of feedback. | PMU | Inception phase + based on M&E plan + regular meetings to collect feedback | Included in project management costs |

| | | | | | |
|---|---|---|---|---|---|
| ***Migrants/Displaced peoples*** | Access to resources and involvement in project activities | Individuals and groups consultation during project inception phase and during project implementation. Disclosure of assessment and management plans. Collection of feedback. | PMU | Inception phase + based on M&E plan | Included in project management costs |
| ***Government agencies*** | Influence on policies, decision making processes, possible role on conflict prevention and resolution, involvement in project activities | Individuals and groups consultation during project inception phase and during project implementation. Disclosure of assessment and management plans. Collection of feedback. | PMU | Inception phase + based on M&E plan + regular meetings to collect feedback | Included in project management costs |
| ***Regional authorities*** | Influence on policies, decision making processes, possible role on conflict prevention and resolution, involvement in project activities | Individuals and groups consultation during project inception phase and during project implementation. Disclosure of assessment and management plans. Collection of feedback. | PMU | Inception phase + based on M&E plan + regular meetings to collect feedback | Included in project management costs |

| | | | | | |
|---|---|---|---|---|---|
| ***Local authorities*** | Influence on policies, decision making processes, possible role on conflict prevention and resolution, involvement in project activities | Individuals and groups consultation during project inception phase and during project implementation. Disclosure of assessment and management plans. Collection of feedback. | PMU | Inception phase + based on M&E plan + regular meetings to collect feedback | Included in project management costs |
| ***Contractors and subcontractors*** | Involvement in project activities | Sharing Information with individuals and groups during project inception phase. | PMU | Inception phase | Included in project management costs |
| ***Private sector*** | Involvement in the market and in the project activities. involvement in co-financing the project | Individuals and groups consultation during project inception phase and during project implementation. Disclosure of assessment and management plans. Collection of feedback. | PMU | Inception phase + based on M&E plan + regular meetings to collect feedback | Included in project management costs |
| ***Consumers of goods*** | Involvement in the market and in the project activities | Individuals and groups consultation during project inception phase and during project implementation. Disclosure of assessment and management plans. Collection of feedback. | PMU | Inception phase + based on M&E plan + beginning of every project year | Included in project management costs |

| | | | | | |
|---|---|---|---|---|---|
| ***Donors agencies*** | Support to policy makers, investment on project activities, Advocacy | Consultation during project inception phase and during project implementation. Disclosure of assessment and management plans. Collection of feedback. | PMU | Inception phase + based on M&E plan + beginning of every project year | Included in project management costs |
| ***UNEP*** | Facilitate the project implementation, support policy makers, support stakeholder engagement | Consultation during project inception phase and during project implementation. Disclosure of assessment and management plans. Collection of feedback. | PMU | Inception phase + based on M&E plan + regular meetings to collect feedback | Included in project management costs |
| ***Universities and Research Institutions*** | Support to policy makers, data driven advocacy, Involvement in project activities | Consultation during project inception phase and during project implementation. Disclosure of assessment and management plans. Collection of feedback. | PMU | Inception phase + based on M&E plan + regular meetings to collect feedback | Included in project management costs |
| ***NGOs, CSOs and CBOs (including mainly development and conservation associations existing at the commune level and the VOI Vondron?Olona Ifotony - Local community associations).*** | Support to policy makers, support to advocacy, support to and involvement in project activities | Consultation during project inception phase and during project implementation. Disclosure of assessment and management plans. Collection of feedback. | PMU | Inception phase + based on M&E plan + regular meetings to collect feedback | Included in project management costs |

Roles and Responsibilities regarding the Stakeholder Engagement Process (Stakeholder Engagement Plan):

| Position / Function | Roles and Responsibilities | Budget |
|---|---|---|
| Project Manager | The Project Manager, (in collaboration with the Project Management Unit) will have responsibility for the day-to-day implementation of the project. He/she will ensure that stakeholders are engaged according to plan. He/she will oversee the implementation of project activities and be accountable that stakeholder engagement is inclusive and according to plan.<br>He/she will involve the regional committees and the Implementing Partners for facilitating the stakeholders consultations and engagement processes planned during the implementation of project activities. | See budget in ProDoc |
| Project Steering Committee | The Project Steering Committee will provide strategic oversight to the project, providing guidance and assisting in the decision-making process. The project steering committee will ensure that the interests of all stakeholders are considered. | See budget in ProDoc |
| Gender and Safeguards Specialist | Gender and Safeguards Specialist will be responsible to ensure local stakeholders are engaged in the project, with particular emphasis on participation of minorities, women and youths.<br>He/she will work directly with the regional committees and the Implementing Partners that will facilitate the stakeholders consultations and engagement processes planned during the implementation of project activities. | See budget in ProDoc |

196. The Project Steering Committee will review, adapt as necessary and finalize this stakeholder engagement plan at the onset of the project. The Project Manager will have overall responsibility for ensuring the implementation of the stakeholder engagement plan throughout the span of the project.

197. Given that multistakeholder engagement, coordination amongst stakeholders, and knowledge sharing are all pivotal components of this project, the project team will include a Gender and Safeguards Specialist who will be in charge of managing the stakeholder engagement process, in coordination with the PMU and with the regional committees and the Implementing Partners. This person will help to execute the stakeholder engagement plan and will work in close collaboration with MEDD as the Chair of the Project Steering Committee and lead government agency for the project. The Gender and Safeguards Specialist will be responsible for supporting regular updates and information sharing with stakeholders via various communications mediums designed for each particular stakeholder group (e.g. email updates, webinars, community meetings, etc.). The Gender and Safeguards Specialist will also ensure that women and other potentially vulnerable or marginalised groups are provided with the support needed to effectively participate in the stakeholder engagement process.MEDD will be responsible for facilitating regular stakeholder engagement meetings ? primarily via an annual stakeholder workshop ? with the support of the implementing agency. MEDD will be responsible for coordinating and communicating with other government ministries and departments using official communication and information dissemination channels, supported by the Gender and Safeguards Specialist.

**Select what role civil society will play in the project:**

**Consulted only;**

**Member of Advisory Body; Contractor;** Yes

**Co-financier;**

**Member of project steering committee or equivalent decision-making body;**

**Executor or co-executor;**

**Other (Please explain)**

**3. Gender Equality and Women's Empowerment**

**Provide the gender analysis or equivalent socio-economic assesment.**

198. During the consultations in the regions of Boeny, Menabe, Diana and Atsimo-Atsinanana the following points were raised and have been taken into account to understand the context of the project

areas and to develop the Gender Action Plan that is adapted to the context and to develop the project activities in a gender sensitive way :

- Difficulties in integrating fisheries-related savings mechanisms in communities
- Low literacy rate of women
- Women out of wedlock have many difficulties
- Women are involved in small-scale fish and shrimp fishing, which is illegal.
- Women work in the informal sector.
- Girls and women are in prostitution, which causes stigma and marginalised women in their communities.
- Need money to pay for health care.
- They do not feel helped by development projects.
- They ask for support for Income Generating Activities, such as sewing.
- They ask for fishing equipment.
- They ask for weather instruments and GPS for the fishing done by their husbands.
- There is some knowledge of forest restoration, coastal restoration.
- They need means of processing fish (salt, smoke houses).
- Logging is banned, so communities cannot make dugout canoes. Women ask for fibre dugouts.
- Need large fridges to store fish, for selling fish. Fresh fish are more valuable - to lift them out of poverty
- Support for fish processing (and marketing) in remote areas

199. Considering the points highlighted above, the following are the impacts (positive and negative) and risks in the project areas differentiated by gender:

Women:

- **Women out of wedlock** have many difficulties and can have a low access to project activities
- Women involved in small-scale fish and shrimp fishing, identified as **illegal**, and women working in the **informal sector** can be attracted by project activities and can move from informal to formal economy
- Girls and women involved in **prostitution**, and victims of discrimination and marginalization due to **stigma**, can have a low capacity to access to project activities
- Women that do not feel helped by **development projects** can refuse to participate to project activities

Men:

- Men can have access to project activities more easily than women, considering **men?s role in fisheries**
- The involvement of men in project activities can be easier that the involvement of women considering **women are frequently involved in the informal sector.**
- Men can be involved in activities that are aimed to facilitate the access to women and girls to project activities, to build a **long terms approach to gender equality in the project area**.

200. Based on stakeholder consultation, the gender differentiated needs and opportunities to address gender gaps are the following:

Women:

? Considering that women in the project areas are involved mainly in post-processing and selling fish and have low access to education and resources management:

  - o Facilitate the integration of fisheries-related **savings mechanisms** in communities.
  - o **Facilitate access to mechanism that can fill the gaps in terms of literacy rate** (such as NGOs support to individuals or groups with low literacy rate), to strengthen women role in the economic sectors.
  - o Facilitate the access to support for **Income Generating Activities**.
  - o Facilitate access to **means of processing fish** (salt, smoke houses).
  - o Facilitate access to **large fridges to store fish**, for selling fish.
  - o Facilitate access fish **processing (and marketing)** in remote areas.
  - o Facilitate access to transport.

? Considering that women in the project areas have low access to incomes and resources management:

  - o Facilitate the **access to resources**, also to pay for health care.

? Considering women are already involved in activities related to ecosystems conservation and restoration:

  - o Involve them in forest restoration and coastal restoration.

Men

? Considering that men are directly involved in fishing:

  - o Facilitate the access to **fishing equipment**.
  - o Facilitate the access to **weather instruments and GPS** for fishing.
  - o Facilitate the production of **fiber dugouts**.

Table 10 below summarizes the Gender Action Plan. The full Gender Analysis and Action Plan is available in Appendix 14 to the Project Document.

| Gender related Activity | Indicator | Target | Baseline | Budget | Timeline | Responsibility |
|---|---|---|---|---|---|---|
| **Component 1 Climate-resilient governance and planning in coastal zones of Madagascar** | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Outcome 1.1 Strengthened institutional capacity for the coordination of adaptation action in coastal zones** | | | | | | |
| Ensure women?s involvement in the development of the Regional ICZM Committee/Platform action plans | % of women involved in meetings focused on the development of the Regional ICZM Committee/Platform action plans | 40% | 0 | The cost has been included as part of the project?s total activities budget<br><br>Gender and safeguards officer 3,600 USD | From Year 1 to Year 4 | Gender and Safeguards Specialist, Project Manager |
| During trainings, identify gaps and obstacles for a woman in accessing adaptation options | % of women and men (direct project beneficiaries) aware of gaps and obstacle in accessing to the adaptation options proposed by the project. | 100% | To be assessed during the baseline study | | From Year 1 to Year 4 | Gender and Safeguards Specialist, Project Manager |
| Ensure trainings women participation to capacity-building programme provided to BNCCC-REDD+ for coordination of climate change adaptation actions in coastal areas | % of women taking part in the trainings | 40% | 0 | | From Year 1 to Year 4 | Gender and Safeguards Specialist, Project Manager |
| **Outcome 1.2: Strengthened capacity of local and regional actors for mainstreaming adaptation in coastal zone planning processes** | | | | | | |
| | | | | The cost has been included as part of the project?s total activities budget<br><br>Gender and safeguards officer 3,600 USD | | |
| Ensure women?s involvement in the definition and the delivery of PRD for effective EbA planning at the regional level | % of women involved in consultations meetings focused on the definition and the delivery of PRD for effective EbA planning at the regional level | 40% | 0 | | From Year 1 to Year 4 | Gender and Safeguards Specialist, Project Manager |
| Ensure women participation in SAC and PCD revision processes | % of women involved in SAC and PCD revision processes | 40% | 0 | | Year 1 and Year 2 | Gender and Safeguards Specialist, Project Manager, M&E |
| | | | | | | |
| **Component 2: Ecosystem-based adaptation in response to climate risks** | | | | | | |
| **Outcome 2.1 Enhanced community capacity to implement EbA approaches and locally manage natural resources to increase climate resilience** | | | | | | |
| Ensure women participation in the LMMA management committee | % of women taking part in the LMMA management committee | 50% | 0 | The cost has been included as part of the | From Year 1 to Year 4 | Gender and Safeguards Specialist, Project Manager |

| | | | | | | |
|---|---|---|---|---|---|---|
| Ensure women participation in the consultative process for the selection of the 8 targeted orphan LMMAs, and in the identification of precise needs for each of the selected eight orphan LMMAs | % of women taking part in the consultative process for the selection of the 8 targeted orphan LMMAs, and in the identification of precise needs for each of the selected eight orphan LMMAs | 50% | To be assessed at project inception phase | project?s total activities budget<br><br>Gender and safeguards officer 3,600 USD | From Year 1 to Year 4 | Gender and Safeguards Specialist, Project Manager |
| **Outcome 2.2 Enhanced environmental protection and rehabilitation by local authorities and communities for adaptation benefits** | | | | | | |
| Ensure women are involved in the development of plan for implementation of restoration activities, identifying roles and responsibilities, material needs. | % of women taking part in the development of plan for implementation of restoration activities, identifying roles and responsibilities, material needs. | 50% | 0 | The cost has been included as part of the project?s total activities budget<br><br>Gender and safeguards officer 3,600 USD | From Year 1 to Year 4 | Gender and Safeguards Specialist, Project Manager |
| Support to processes already in place and managed by women?s informal groups/cooperatives to fill gaps in terms of infrastructures, transports, and distribution of products, related to restoration processes | Number of women?s informal groups supported | To be identified at project inception phase | 0 | | From Year 1 to Year 4 | Gender and Safeguards Specialist, Project Manager |
| Facilitates women?s involvement in restoration activities and trainings related to the restoration processes | % of women involved in restoration activities and trainings related to the restoration processes | 50% | 0 | | From Year 1 to Year 4 | Gender and Safeguards Specialist, Project Manager |
| **Component 3: Blue and Green Economy Approach for Resilient Ecosystem-based Livelihoods in Coastal** | | | | | | |
| **Outcome 3.1: Increased diversification of income-generating activities and businesses to enhance communities? climate resilience** | | | | | | |
| Ensure women involvement as staff members of the social enterprises | % of women involved as members of the social enterprises | 30% | To be assessed at project inception phase | The cost has been included as part of the project?s total activities budget | From Year 1 to Year 4 | Gender and Safeguards Specialist, Project Manager, PMU |
| Ensure that women have access to training and support material, business | % of women with access to training and support material, business | 50% | To be assessed at project inception phase | | From Year 1 to Year 4 | Gender and Safeguards Specialist, Project Manager |

| | | | | | | |
|---|---|---|---|---|---|---|
| assistance for social enterprises | assistance for social enterprises | | | Gender and safeguards officer 3,600 USD | | |
| Ensure women are receiving grant seeding as members of local producers? associations | % of women that are receiving grant seeding for local producer associations | 50% | 0 | | From Year 1 to Year 4 | Gender and Safeguards Specialist, Project Manager |
| Collection and analysis of the practical needs and strategic interests of women and men entrepreneurs as part of the market and entrepreneurship studies to be carried under outcome 3.1 | Number of analyses including gender considerations | To be identified at project inception phase | 0 | | From Year 1 to Year 4 | Gender and Safeguards Specialist, Project Manager |
| Facilitate financial mentoring and coaching for women | % of women taking part in the mentoring and coaching processes | 50% | 0 | | From Year 1 to Year 4 | Gender and Safeguards Specialist, Project Manager |
| **Component 4: Awareness raising and knowledge management for upscaling** | | | | | | |
| **Outcome 4.1: Strengthened awareness and knowledge of EbA approaches to support upscaling of project results across Madagascar?s coastal zones** | | | | | | |
| Ensure lessons learned on women involvement in project activities are part of the Knowledge Management process | % of lessons learned including women in the knowledge management process | 50% | 0 | The cost has been included as part of the project?s total activities budget<br><br>Gender and safeguards officer 3,600 USD | From Year 1 to Year 4 | Gender and Safeguards Specialist, Project Manager |
| Implement a gender-responsive project?s M&E framework | % of women involved as key informants in reporting the progress made in reaching GEF core indicators, project results and the Gender Action Plan<br><br>% of women involved in collection of feedback and M&E process | 50%<br><br>50% | 0<br><br>0<br><br>0 | | From Year 1 to Year 4 | Gender and Safeguards Specialist, Project Manager, M&E |
| Ensure the awareness raising strategy on climate change and EBA aimed at local stakeholders mainstreams gender. | Number of communication related to awareness raising strategy on climate change and EBA aimed at local stakeholders that | To be identified at project inception phase | 0 | | From Year 1 to Year 4 | Gender and Safeguards Specialist, Project Manager, M&E |

| | | | | | | |
|---|---|---|---|---|---|---|
| | includes the gender component. | | | | | |

**Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?**

Yes

**Closing gender gaps in access to and control over natural resources;** Yes

**Improving women's participation and decision making** Yes

**Generating socio-economic benefits or services or women** Yes

**Does the project?s results framework or logical framework include gender-sensitive indicators?**

Yes

**4. Private sector engagement**

**Elaborate on the private sector's engagement in the project, if any.**

201. There is a well-defined intention of engaging the private sector throughout the project. Through the regional incubation platforms set up by the project, stakeholders from the private sector will be invited to take part in the project both as investors and as entrepreneurs active in economic activities related to Ecosystem-based Adaptation (EbA).

202. In the first Component, the private sector, in particular those with a stake in fisheries, and relevant professional associations in each selected commune will be solicited to take part in the cross-sectoral participatory process of development of the SACs and PCDs, and will be considered key stakeholders when defining the composition of the reformulated CRGIZC/Platforms. Moreover, by actively including the private sector in planning processes, the intention will also be to attract private sources financing for EbA activities. The project will also work towards the identification of strategies for the long-term innovative financing of the EbA actions integrated in the SACs, including in some cases in alignment with Component 2 and 3 interventions, where private sector financing will be considered central.

203. In the second Component, private sector actors within the LMMA that generate income from marine resources (including fishermen groups, processing groups and traders) will also participate in capacity-building activities related to Locally Managed Marine Areas. In fact, the private sector will be a direct beneficiary of support for engaging in the finance mechanisms for management of the LMMA. A limited number of mechanisms may be relevant for such financing, including concession fees and specific arrangements for businesses developed as part of the project under Component 3 These interventions will be closely coordinated with Component 3, which will further assist the target communities in establishing ecosystem-based businesses and negotiating collaborations with the private sector for the development of specific value chains. Additionally other sources of private sector financing that will be explored included contributions from large scale companies such as Copefrito, who provides

contributions for each kg of octopus collected, or visitors fees in areas that are attractive for eco-tourism, such as Diana.

204. The third Component focuses entirely on supporting producers and MSMEs for the development of sustainable businesses that are climate-resilient and/or can deliver adaptation services. The incubation programme proposed in component 3 will select 40-50 climate-resilient ecosystem-based social enterprises for incubation within the selected value chains. Out of these, it is expected that approximately 20 social enterprises will be established legally as social enterprises and their business model launched. Social enterprises established under Output 3.1.1 will be connected to financial institutions and potential investors. The project will explore opportunities of partnering with the growing number of equity funds for adaptation-oriented businesses (e.g. Climate Resilience Fund, CRAFT, Adaptation Accelerator Program, etc.), who could be invited to take part in the proposed finance actor group as detailed earlier in the Component 3 description.

**5. Risks to Achieving Project Objectives**

**Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):**

205. As indicated in the SRIF (Appendix 15 of the Project Document), the project is rated as Moderate in terms of Social and Environmental Impacts. The risks have been identified during PPG and confirmed through the stakeholder consultations process. The table below presents the main Operational, Technical and Social and Environmental risks and the related mitigation measures identified. An Environmental and Social Management Plan is provided in Appendix 16 of the Project Document.

| Risks | Rating High (H), Medium (M), Low (L) | Risk Mitigation Measures |
|---|---|---|
| **Operational Risks** | | |
| Lack of buy-in and support from policy makers and local actors for project activities, especially the ones related to planning processes for climate change adaptation in the coastal zones. | Medium | The project will actively engage high and medium level policymakers throughout the process of development/amendment/revision. Membership of the coordination mechanisms will indeed consider integrating these key stakeholders to mitigate this risk.<br>The CRGIZC mandate, role and responsibility in project coordination contributes to minimize this risk, facilitating the coordination and information communication flow between national level- regional and communal level.<br>The Stakeholder Engagement Plan, developed during PPG, will support the process of involvement of local communities in project activities.<br>The risk is addressed through the following outputs: 1.1.1, 1.1.2, 1.2.2, 1.2.3 |
| Lack of coordination between key ministries, main stakeholders, and various adaptation to climate change initiatives. | Medium | The project will ensure close coordination with all relevant ministries and institutions to improve the broad-based ownership of the project including data sharing.<br>The CRGIZC mandate, role and responsibility in project coordination contributes to minimize this risk, facilitating the |

| Risks | Rating High (H), Medium (M), Low (L) | Risk Mitigation Measures |
|---|---|---|
| | | coordination and information communication flow between national level- regional and communal level.<br>Regular communication and project updates will be provided and quarterly reports will be shared with national and local authorities to ensure institutional support for the project.<br>Moreover, the project will work through Component 1 on strengthening coordination mechanisms for adaptation to climate change.<br>The risk is addressed through the following outputs: 1.1.1, 1.1.2, 4.1.1, 4.1.2 |
| Political changes and high turnover of government staff. | Medium | Frequent staff changes could be a risk to the sustainability of the capacity-building outcomes. The project management unit (PMU) will incorporate a sustainable mechanism to strengthen political buy-in and technical stability and coordinate with relevant ministries to address this issue. A Training of Trainers approach will be used in relevant contexts to ensure that the capacity-building activity results are sustainable and can be scaled out.<br>The risk is addressed through the following outputs: 1.1.1, 1.1.2<br>High turnover of senior government staff, in particular at MEDD, can also result in loss of institutional memory and in challenges with project-related approvals due to limited understanding of the project and its background. To mitigate this, the Project Team will ensure full briefing of any new senior staff, with support from UNEP as needed.<br><br>Finally, periods of political change have in the past resulted in instability and challenges with transparent decision-making. Following the example of the PAZC-1 project, major procurement processes will be avoided during election periods. |
| Lack of security in the project areas, impeding the planned interventions. This can translate into (i) movement restrictions for staff and executing partners, (ii) staff, implementing partner, or service provider injuries, and (iii) damages to infrastructure and equipment, impacting the project delivery plan. | Low | The projects will be undertaken in areas with a low security risk. Nonetheless, security-related issues may be faced (e.g. during PAZC-1 implementation, security concerns resulted in challenges with access to some project sites in Menabe region). The Project Team will also develop a security plan and related procedures and keep a close watch on the situation to predict lack of security, especially for movement in remote areas, and prevent impacts on project implementation. Compliance with UN procedures for safety and security planning is key. Particular focus will be placed on road safety (road cuts, traffic accidents), and movement along the coastal areas.<br>The risk is addressed through the development and the implementation of the security plan. |
| Lack of political will and inadequate allocation/availability of funds. | Low | Lack of long-term commitment from donors on project activities may influence the sustainability and the progress towards achieving the goals of the project. |

| Risks | Rating High (H), Medium (M), Low (L) | Risk Mitigation Measures |
|---|---|---|
| | | A mitigating strategy could be integrating the project (including monitoring and evaluation after the project closure) into the government program to secure co-financing and ensure its sustainability. The risk is addressed through the following outputs: 1.1.1, 1.1.2<br>Based on PAZC-1 experience, partnerships with non-governmental actors will also be sought to help ensure the long-term maintenance and sustainability of project interventions. |
| Ineffective communication and flow of information between the Executing Agency (EA), PMU and partners. | Low | The flow of information and communication between the Executing agency and PMU will be strengthened by regular and continuous communication, as well as ensuring through the institutional arrangements that the EA is hosting the PMU, and clarifying reporting requirements.<br>The CRGIZC mandate, role and responsibility in project coordination contributes to minimize this risk, facilitating the information communication flow between stakeholders.<br>The risk is addressed through the following outputs: 4.1.1, 4.1.2 |
| The project activities could be impacted by extreme events (cyclones, floods, drought) that could delay project activities and damage project investments (i.e. seedlings, reforested area, assets delivered to social enterprises..) | Low | The risk is addressed through a contingency plan that will be developed and implemented at project inception phase, to ensure a risk mitigation plan is in place. For example, based on experiences of PAZC-1 with major cyclone damage to project infrastructure (ecotourism facilities and beekeeping operations), storm-resilient construction standards will be employed and measures put in place to protect project investments. |
| Risk of competition and conflicting market interests, considering Germany supports to the project?s aim to establish a sustainable financing and investment platform for ecosystem-based businesses bringing together government, financial and MSME representatives. | Low | This point was well taken, and careful consideration was given to how to design a mechanism that would reduce such risks. Output 3.1.3 of the final project design presents an innovative avenue, integrated into the broader approach to Component 3 overall. It focuses on both the needs of small- scale producers, and those of more mature climate-resilient social enterprises.<br>This risk will be managed also through the Stakeholder Engagement Plan, where the engagement and coordination with private sector is included. |
| **Technical Risks** | | |
| Lack of capacities of local communities, especially women, in terms of developing business can impede the achievement of sustainable results of the project. | Medium | PMU will ensure the beneficiaries will have access to means for business development, especially for women through the implementation of the Gender Action Plan developed during PPG.<br>The risk will be addressed through the Gender Action Plan |

| Risks | Rating High (H), Medium (M), Low (L) | Risk Mitigation Measures |
|---|---|---|
| Lack of interest of financial institutions to provide financial support targeting ecosystem-based Income Generating Activities. | Medium | The project will target intermediary financial institutions in the stakeholder engagement process. They will be involved in awareness-raising activities presenting the importance of these mechanisms to support the objective of the project and the potential to benefit from this scheme for their business.<br>The risk is addressed through the following outputs: 3.1.3, 4.1.1, 4.1.2 |
| Language barrier/low education among local communities impedes communication in the project or conducting training workshops, and ultimately technology adoption. | Low | Communication, trainings, and knowledge products targeting local communities will be conducted in the local language by local specialists. Communication materials will be delivered with understandable and easy access. PMU staff will visit the project sites regularly and maintain close communication with local communities in order to facilitate and bridge the communication between the central level of the project and its field site locations.<br>The risk is addressed:<br>? through the following outputs: 4.1.1, 4.1.2<br>? through the Stakeholder Engagement Plan |
| **Social Risks** | | |
| Project results are not well disseminated to project beneficiaries. | Medium | The project result will be disseminated nationally and locally through various communication means (such as posters, flyers, documentary films, social media, websites, etc.), including achievement and lesson-learned to ensure the replication in other areas.<br>The EA will be involved in the monitoring and evaluation phase to have a better understanding of the results and to increase the ownership of the project output and outcomes.<br>The risk is addressed through the following outputs: 4.1.1, 4.1.2 |
| Limited participation of women in project activities and/or limited access to its benefits for women, leads to limited impact of the project. | Medium | During PPG consultations the potential partial economic benefits while excluding marginalized or vulnerable groups, including women in poverty, have been taken into consideration. Women groups and associations have been consulted and their point of view and suggestions have been taken into consideration during project design, especially for developing the Gender Analysis and the Gender Action Plan. The knowledge of the situation of marginalized and vulnerable groups has been integrated into project design. The Gender Action Plan will be implemented, progress of targets monitored and reported on a quarterly basis. Based on PAZC-1 experiences and MTR findings, the participation of women in the project and specifically its livelihood diversification activities (as well as decision-making) will be actively encouraged.<br>The risk will be addressed through the Gender Action Plan |
| The projects may exacerbate or create conflicts among | Low | The selection of site locations has considered the social and environmental safeguards and has been done in consultations |

| Risks | Rating High (H), Medium (M), Low (L) | Risk Mitigation Measures |
|---|---|---|
| social and cultural groups in the communities, with negative impacts on the social context and especially on the most vulnerable groups and individuals. | | with stakeholders. The engagement of local NGOs and CSOs will ensure the project will involve equally all the interested communities. Should other sites need to be selected during implementation, the same approach will be applied.<br>The risk will be addressed through the Stakeholder Engagement Plan |
| The project may include working conditions that do not meet national labour laws or international commitments (e.g. ILO conventions). | Low | The project is targeting areas and economic activities that are partially involved in the informal sector, where the working conditions could be not fully in line with labour laws and international commitments. The PMU will ensure that the working conditions of beneficiaries involved in project activities will be in line with national labour laws and international commitments.<br>The risk will be addressed through the compliance with social standards, especially the ones related to Human Rights, for all the stakeholders involved in the project activities |
| The project may lead to activities where the use of forced labor and child labor is sometimes a practice. | Low | The project will not use any forced or child labor.<br><br>However, the project is targeting areas and economic activities that are partially involved in the informal sector, where the working conditions (including forced or child labour) could be not fully in line with labour laws and international commitments. The PMU will ensure that the working conditions of beneficiaries involved in project activities will be in line with national labour laws and international commitments.<br>Social safeguards measures will be considered in the business plan of social enterprises supported by the project.<br>The risk will be addressed through the compliance with social standards, especially the ones related to Human Rights, for all the stakeholders involved in the project activities |
| The project may lead to involuntary restrictions on land/water use that deny a community the use of resources to which they have traditional or recognizable use rights. | Low | The project intends to restore degraded mangrove ecosystems, which have been overexploited by local communities. While individuals are already technically legally prohibited from cutting down mangrove wood, they still rely on the ecosystems for food, fuel, and timber. The project will ensure that communities continue to benefit from the ecosystem services provided by mangrove ecosystems, by replanting mangrove forests, and ensuring communities are transferred the management of the ecosystem. Alternatives for timber and fuel will be explored in local planning, so that mangrove forests are sustainably exploited for food (e.g. mangrove crab), and cutting down of the forests for fuel and timber is limited.<br><br>The risk will be addressed through the following outputs: 1.2.2 |
| The project may lead to adverse impacts to sites, structures or objects with | Low | The project does not intent to rely on or profit from cultural heritage. Ecotourism activities are proposed, relying rather on the natural heritage of the sites. At project inception phase |

| Risks | Rating High (H), Medium (M), Low (L) | Risk Mitigation Measures |
|---|---|---|
| historical, cultural, artistic, traditional or religious values or to intangible forms of cultural heritage (e.g. Knowledge, innovations, practices), to utilization of Cultural Heritage for commercial or other purposes (e.g. use of objects, practices, traditional knowledge, tourism) and to alterations to landscapes and natural features with cultural significance. | | further analysis will be carried out, as soon as the project sites will be identified.<br><br>The risk will be addressed through the following outputs: 3.1.2 |
| **COVID-19 Risks** | | |
| Restrictions on mobility impact the recruitment of personnel and delay administrative documents and permits from the government as a result of office closure. | Low | ? The project will also plan from the onset for possible delays in obtaining administrative documents and permits from the government, will limit activities that may require such documentation, and coordinate closely with the EA to facilitate the processes.<br>? Similarly, it will consider possible supply chain issues affecting access to materials and equipment and will plan accordingly.<br>? Locally acquired equipment with the availability of parts will be considered and budgeted for.<br>? Procurement of materials/equipment will be planned well in advance of the proposed implementation of related activities.<br>The risk will be addressed through the following outputs: 1.1.1, 1.1.2, 1.2.3 |
| COVID-19 can affect Government priorities and can have an impact on engagement of national resources and efforts in achieving project objectives<br><br>? | Low | The project is focusing on a balanced involvement of all the stakeholders, especially at the local level. This involvement will ensure sustainability of activities also in the short term and will ensure adaptability and flexibility in case the government needs to focus on other priorities at national level.<br><br>The risk will be addressed through the following outputs: 1.1.1, 1.1.2, 1.2.3 |
| Project delays due to movement and assembly restrictions, delay to procure and transport the equipment, materials and other inputs to the sites, challenges with market access and outbreaks at the project sites | Low | ? Re-align the work plan and budget to identify activities that can be undertaken remotely.<br><br>? Where physical meetings are preferred, the project will ensure to minimize risk by hosting meetings and workshops outdoors (if feasible), in smaller groups (while still engaging the same total number of beneficiaries), and with strict social distancing and hygiene measures. If |

| Risks | Rating High (H), Medium (M), Low (L) | Risk Mitigation Measures |
|---|---|---|
| threatening the deployment of the project team. | | necessary, the project will adopt approaches to engaging with stakeholders without the explicit requirement for physical meetings (virtual consultations, surveys, social media, web-based communication platforms, etc.). Virtual activities (awareness raising, capacity building, and training workshops) may suffer from issues such as limited internet access or lack of facilities, where engagement of some beneficiaries may be difficult, and as such alternative options will be prioritized if available.<br><br>? Project staff will conduct field works in accordance with local sanitary protocols, and ensure they will be strictly implemented by all participants during the activities to limit exposure and transmission potential.<br><br>The risk will be addressed through the following outputs: 1.1.1, 1.1.2 |
| **Environmental risks** | | |
| The project may lead to conversion or degradation of habitats (including modified habitat, natural habitat and critical natural habitat), or losses and threats to biodiversity and/or ecosystems and ecosystem services. | Low | Biodiversity and habitat degradation are not anticipated, on the contrary, the project aims to restore degraded ecosystems in coastal areas. It does not rely on grey infrastructure to achieve this objective, and therefore has extremely limited potential to cause unexpected detrimental impacts to natural habitats. The siting and design of restoration and reforestation efforts will be carefully considered to avoid any impediments to natural habitats and will ensure only native species are used. Similarly, fisheries activities are anticipated to use only endemic species, following the national and regional regulations for sourcing of the fingerlings, thereby eliminating the risk of releasing invasive species into the wild.<br><br>The risk will be addressed through the following outputs: 3.1.2 |
| The project may lead to conversion or degradation of habitats that are identified by authoritative sources for their high conservation and biodiversity value. | Low | It is not anticipated that the project would yield negative impacts on habitats with high conservation and biodiversity value. However, because the interventions proposed would take place in such areas, including restoring ecosystems that provide high regulatory services related to coastal defense (e.g. mangroves), there is a minimal risk for unintended modifications. The project design has lowered that risk by working diligently in identifying sites and interventions which are unlikely to yield negative impacts, and where interventions are most likely to succeed.<br><br>The risk will be addressed through the following outputs: 3.1.2 |
| The project may lead to reduced quality or quantity | Low | The project will do aquaculture in cages. Aquaculture can increase the nutrient buildup in water, reducing its quality. |

| Risks | Rating High (H), Medium (M), Low (L) | Risk Mitigation Measures |
|---|---|---|
| of ground water or water in rivers, ponds, lakes, other wetlands. | | However, the project will not have very high density aquaculture and species will be carefully selected to minimize their environmental impact. Therefore negative impacts on water quality should not be significant. For fisheries and aquaculture/mariculture value chains (e.g., sea cucumbers, seaweed, and shrimp), attention will be on creating opportunities for local entrepreneurs and businesses to render the value chain more environmentally sustainable.<br><br>Environmental safeguards measures will be considered in the business plan of social enterprises supported by the project.<br><br>The risk will be addressed through the following outputs: 3.1.2 |
| The project may lead to the application of pesticides or fertilizers that may have a negative effect on the environment (including non-target species) or human health. | Low | There may be a need for limited use of pesticides in the project?s plantation interventions. Integrated Pest Management approaches will be followed.<br><br>The risk will be addressed through the following outputs: 3.1.2 |
| The project can lead to generation of waste (both hazardous and non-hazardous). | Low | It is not anticipated that the project activities will result in significant amounts of waste. However, since the project proposes to support several value chains, including transformation and commercialization, some amounts of waste of various nature will be generated in the process. The PMU will ensure that a waste management plan will be implemented during project implementation.<br>Environmental safeguards measures ? including a waste management plan - will be considered in the business plan of social enterprises supported by the project.<br>The risk will be addressed through the following outputs: 3.1.2 |

**6. Institutional Arrangement and Coordination**

**Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.**

206. The project will be implemented over a four-year period (see Appendix 3 of the Project Document for the Project Workplan and Timetable). The process of hiring project staff will begin shortly after the signing of the Project Cooperation Agreement (PCA) between UNEP and MEDD, and the internalization of the project. During the inception phase of the project, the following steps will be undertaken: (i) organization of the inception workshop to inform existing and new stakeholders about the project and to identify or confirm the roles of each stakeholder during the implementation phase; (ii) continued consultation with national and local stakeholders (see Section 5) to finalize and validate the selection of sites for specific project

interventions; and (iii) the launch of the baseline study at the selected sites to measure the baseline values of the indicators selected for the project Results Framework (see Appendix 2 of the Project Document).

207. UNEP will be the Implementing Agency for the project. It will oversee the project and provide the technical assistance required to achieve its objective, and to ensure consistency with GEF and UNEP policies and procedures. This supervision will be the responsibility of the Task Manager (TM), who will be appointed by UNEP. The TM will formally participate in the following: (i) Project Steering Committee (PSC) meetings; (ii) mid-term review and final evaluation; (iii) the clearance of Half Yearly Progress Reports and Project Implementation Reviews (PIRs), expenditure reports, and budget revisions; and (iv) the technical review of project outputs.

208. The project management structure is presented in Appendix 7 of the Project Document. This structure will comprise: (i) the PSC; (ii) the Executing Agency (EA), which will house the Project Management Unit (PMU) consisting of the Project Manager (PM); Monitoring and Evaluation Specialist; Gender and Safeguards Specialist; and Administrative and Financial Assistant. The project will adopt the principle of flexibility in terms of the mobilization of capacities and skills to support its implementation. It will rely on MEDD and MPEB, and their relevant decentralized services (such as DREDDs), where their mandate, skills and experience are aligned with the project's support needs, as well as on services beyond those of the government, including implementing partners (mainly NGOs such a Blue Ventures, WWF, etc.) where justified by their comparative advantages for carrying out the various activities, on a case-by-case basis.

209. The PSC will include national representatives from MEDD, MPEB, MINAE, and CPGU. Members of NGOs with key roles in project execution and relevant civil society organizations representing targeted local communities, will also be invited to participate in the PSC, in order to provide grassroots inputs and to offer more opportunities for participation, which will contribute to ensuring local ownership and guidance for the project. The composition and mandate of the PSC will be formalized at the project inception phase. PSC Terms of Reference are included in Appendix 8 of the Project Document. MEDD will chair the PSC. The PSC will meet twice a year, and additional ad hoc meetings will be held, if necessary, to discuss key project performance indicators and to provide guidance on project direction.

210. As in previous GEF, GCF and Adaptation Fund projects implemented by UNEP in Madagascar MEDD will be the Executing Agency (EA) for the project. A legal agreement will be signed between UNEP and MEDD to regulate the flow of GEF funds from UNEP to MEDD and to determine the obligations of the parties. The Project Management Unit (PMU) will be recruited and managed by the executing entity MEDD. A full-time dedicated project manager (PM) will be hired by MEDD to lead the PMU and execute the day-to-day management of the project. He/she will operate in a transparent and efficient manner, in line with approved budgets and work plans. In addition, the PM will report monthly to the TM on progress and challenges encountered on the ground in carrying out project activities. In particular, the PM will: ***(i)*** lead the day-to-day planning and implementation of the project in close collaboration with MEDD, DREDDs and CR-GIZC; ***(ii)*** provide on-the-ground information for UNEP progress reports; ***(iii)*** engage with stakeholders; ***(iv***) organise the PSC meetings; ***(v)*** provide managerial support to the project, including measures to address potential external and internal project implementation issues; ***(vi)*** manage the project budget and resource allocation; and ***(vii)*** participate in training activities, report writing and facilitation of consultant activities related to his/her area of expertise. In addition, the PM will meet with the co-finance and partner projects twice a year, or more often if necessary. The focus will be on sharing lessons learned and preventing duplication of activities.

211. The PM will also be supported by a Monitoring & Evaluation and Knowledge Management Officer, whose tasks will include: (i) launching and overseeing the baseline study, (ii) establishing a performance monitoring framework to set bi-annual and mid-term targets for the project to meet the targets, outcomes and objectives defined in the project document by the end of the implementation phase; (iii) measuring project and GEF Climate Change Adaptation Results Framework indicators at least twice per year to assess the project's progress in achieving its targets; and (iv) reporting to the PMU and PSC on project performance, based on planned project outputs and outcomes, as well as the project indicators. As part of his/her responsibilities, the Monitoring & Evaluation and Knowledge Management Officer will oversee and monitor the application of gender disaggregated indicators, together with the Gender and Safeguards Specialist which

will also be part of the PMU. The Gender and Safeguards Specialist will be responsible for developing (or revising), implementing and monitoring the ESS plans, including the ESM Plan, the Gender Action Plan (GAP), the project Grievance Mechanism, and the Stakeholder Engagement Plan. In addition, an Administrative and Financial Assistant will be recruited on a full-time basis to support the PMU. The Administrative and Financial Assistant will assist project staff in procuring equipment, logistics, and administration, manage the project's accounts and prepare expenditure reports to UNEP standards. The procurement of services, goods and works for the project will be done in accordance with MEDD procurement regulations.

212. At the regional level, the mature CR-GIZC of Boeny and Menabe will perform project implementation coordination and monitoring functions to strengthen their mandate and capacity. In the new target regions of Diana and Atsimo-Atsinanana where the CR-GIZC needs to be strengthened or established respectively, regional technical coordinators will support project implementation coordination and monitoring functions whilst supporting the CR-GIZC to progressively take over these functions.

213. Consultants will be hired for specific tasks requiring specific expertise and which cannot be undertaken by PMU staff. International technical assistance will be provided for specialized tasks only where existing national capacities are insufficient. Appropriate international expertise will be sourced with the support of UNEP?s network for procurement of consulting services, in collaboration with the PM. The project staff and key consultant ToRs are presented in Appendix 8 of the Project Document. MEDD will support the work of project staff and consultants by providing office space and other logistical support in the areas of intervention of the project during the implementation phase.

214. The selection of implementing partners (mainly NGOs such a Blue Ventures, WWF, etc.) where justified by their comparative advantages for carrying out the various activities, on a case-by-case basis, will be based on a comparative selection and due diligence process. Cooperation agreements for the implementation of selected activities will be established between the EA and the implementing partner. The scope of work of implementing partners is outlined in Appendix 8.6 of the Project Document.

215. The initiatives to coordinate with during the project implementation are listed in Table 11 below .

Table 11: Initiative to coordinate with

| Project title | Donor | Period | Budget ($) | Project description | Key areas for cooperation and coordination |
|---|---|---|---|---|---|
| Blue Action Fund (BAF): GCF Ecosystem Based Adaptation Programme in the Western Indian Ocean | GCF | 2020-2028 | EUR 55M, of which 11.8M in Madagascar | The Programme approach is to use the structure, specific know-how and execution capacities of the BAF in order to fund NGOs with suitable and promising sub-projects, with targeted key achievements of implemented sub-projects being: a) Vulnerable coastal populations will be able to reduce or avoid negative impacts of climate change through a stabilized provision of ecosystem services; b) Important marine and coastal ecosystems will be protected and sustainably managed to ensure adaptation relevant ecosystem services for vulnerable coastal communities; and c) Enhanced knowledge, expertise and capacity of relevant national agencies in using Ecosystem-based Adaptation (EbA) approaches for a climate-resilient coastal zone management. | The following GCF outputs can be considered as inputs for the LDCF project:<br>GCF-C1.I. Improved management of marine, coastal and freshwater protected areas and Locally Managed Marine Areas and Management of Coastal Ecosystems (coral reefs, mangroves and seagrass) -> LDCF O2.1<br>GCF-C1.II. Measures to reduce physical damage to coastal and marine ecosystems -> LDCF O3.1<br>GCF-C1.III. Measures to reduce pressure and land-based stressors on coastal marine ecosystems -> LDCF O3.1<br>GCF-C2. Funding window for rehabilitation of degraded coastal ecosystems relevant for EbA -> LDCF O3.1<br>GCF-C3. Support for knowledge exchange and capacity building regarding appropriate and feasible EbA approaches -> LDCF O4.1 |

| | | | | | |
|---|---|---|---|---|---|
| Varuna, a regional ambition for biodiversity | AFD | 2022-2026 | EUR 10M | The Varuna programme aims to contribute to the preservation of biodiversity in the south-west Indian Ocean region for the benefit of the inhabitants. For this purpose, the project is structured around three components: 1. Structuring networks of regional actors to encourage coordinated efforts to preserve biodiversity; 2. Support the integration of ecological transition issues among economic actors; 3. Encouraging the contribution of research to science and society dialogues on biodiversity. | Coordination opportunities could be created with the LDCF project around:<br>- Structuring a network of marine protected area managers linked to the LMMAs supported under the coutcome 2.1<br>- Financing of private sector initiatives through call for projects that allow investment in economically viable nature-based solutions that will be created, developed and incubated under the outcome 3.1<br>- Development of an awareness raising campaign around biodiversity and ecosystems services that are critical for climate change adaptation will directly feed into the outcome 4.1 of the LDCF project |

| | | | | | |
|---|---|---|---|---|---|
| Integrated Landscape Management for a zero-deforestation coffee and rice value chains in the Central South and Eastern coast of Madagascar | GEF | 2023-2028 | | The main objective of the project is to promote sustainable food systems that are deforestation-free and support the conservation of biodiversity and the provision of ecosystem services, with a focus on rice and coffee in landscapes of the Central-South and Eastern coast of Madagascar. In order to achieve this goal, the project is organized around four components: 1. Development of integrated landscape management systems; 2. Promotion and implementation of sustainable food production practices and responsible value chains; Conservation and restoration of natural habitats; 4. Project Coordination, Collaboration, Communication and M&E | The project will be implemented in four regions including Atsimo-Atsinanana. Among the planned outputs, the following can be considered as input in the LDCF project:<br>- Outcome 2.1: Coffee and rice value chains improved in terms of efficiency, sustainability and marketing in the priority intervention areas of the four target landscapes -> LDCF O3.1<br>- Outcome 3.1: Natural forests conserved, restored and sustainably managed in/around protected areas of the four target landscapes -> LDCF O2.2 |

| | | | | | |
|---|---|---|---|---|---|
| Madagascar Agriculture Rural Growth and Land Management Project (CASEF) | World Bank/ IDA | 2019-2024 | $US52M | The proposed development objective is to improve rural land tenure security and access to markets of targeted farming households ins elected agricultural value chains in the Project Areas, and to provide immediate and effective response to an Eligible Crisis or Emergency. This additional financing to the initial CASEF project will target the issuance of 2 million additional land certificates through systematic registration by June 2022 and will support 309 additional Communal Land Offices, bringing the total under the project from 191 to 500. With a total target of delivering 2.5 million certificates, CASEF will support the largest land intervention to date in Madagascar. This project will also aim at tackling the existing gender gap in women?s land rights, by registering rights under women?s names (either alone or jointly) on 1.1 million parcels. The project areas under the component ?Support to land policy and land rights registration? will expand from the initial seven regions to nine additional regions: Diana, Sava, Boeny, Betsiboka, Sofia, Alaotra Mangoro, Bongolava, Haute Matsiatra, and Amoron?i Mania. The additional financing | The changes in land tenure enabled through this project will contribute to supporting the objectives of the proposed LDCF project, in particular as the project will seek to support the integration of EbA into land-use planning, including the development of Communal Development Plans and Municipal Planning Schemes (SACs) (Output 1.2). In addition, the improved information of value chains will be capitalized by the proposed LDCF project for the selection of targeted value chains, and the design of interventions (Output 3.1). |

| | | | | | |
|---|---|---|---|---|---|
| | | | | will furthermore support the production of basic agricultural statistics. An important focus will be on improving information on value chains. A data warehouse will be designed and developed to support the integration and harmonization of agricultural data. | |

| | | | | | |
|---|---|---|---|---|---|
| Resilience of Indian Ocean Coastal Areas (RECOS) Project | FFEM / AFD | 2020-2025 | 10,770,000 | The RECOS project is implemented by the Indian Ocean Commission. The overall objective of the project is to strengthen the resilience of coastal populations and the ecosystems in which they live in the face of the harmful effects of climate change and in particular of extreme weather phenomena which affect the coastal areas of IOC Member States (Madagascar, Mauritius, Seychelles, Comoros, and Maldives).<br><br>The specific objectives of the project are: a) Strengthen regional and national governance of coastal and marine ecosystems; b) Develop a framework for cooperation and a base of scientific knowledge on these ecosystems; c) Implement innovative and varied projects for the restoration and sustainable exploitation of coastal and marine ecosystems. This last objective is the one on which the bulk of the budget will be allocated. The project is structured in the form of 4 components: 1) Strengthening the management of marine and coastal ecosystems at regional and national scales; 2) Regional scientific cooperation on coastal ecosystems - Scientific support and capitalization; 3) Implementation of activities for the | Both RECOS and the LDCF project will work in the Menabe region, although there will be no direct geographical overlap as the RECOS project is primarily working in Morondava.<br><br>The proposed LDCF project will be able to capitalize on the national and regional level (Menabe) framework for cooperation on coastal and marine ecosystems of the RECOS Project.<br><br>The LDCF project will also build on the scientific knowledge base on coastal ecosystems and lessons learned in the implementation of pilot projects for nature-based solutions and integrated management of coastal ecosystems generated by the RECOS project in the Menabe region.<br><br>The LDCF will also coordinate with RECOS project the awareness on sustainable management of coastal ecosystem for a coherent approach within the Menabe region and consider the good practices capitalized by the project in Menabe as well as the other target regions where applicable. |

| | | | | | |
|---|---|---|---|---|---|
| | | | | restoration and sustainable management of coastal ecosystems: pilot projects for nature-based solutions and integrated management of coastal areas; 4) Communication, awareness, capitalization and promotion of good practices. | |

| | | | | | |
|---|---|---|---|---|---|
| Sustainable Landscapes in Eastern Madagascar | GCF ? Accredited entitiy: Conservation International Foundation and EIB | 2018-2028 | 69,800,000 | The Project goal is to implement sustainable landscape measures to enhance resiliency of smallholders, reduce GHG emissions and channel private finance into climate-smart investments in agriculture and renewable energy that transform livelihoods, and will be implemented in the landscapes of the Ambositra Vondrozo Forest Corridor (COFAV).<br><br>The Project aims to demonstrate a replicable model for addressing smallholder vulnerability that mobilizes both the public and private sector. The project?s following components are particularly well aligned with the proposed LDCF project: Outcome 1. Strengthened adaptive capacity and reduced exposure to climate risks (and in particular Output 1.6. Critical ecosystems providing essential ecosystem services to smallholder farmers communities in current and future climate conditions are identified, assessed and managed (protected or restored) as ecosystem-based adaptation measures); Outcome 2. Strengthened awareness of climate threats and risk-reduction processes (Output 2.1. Capacity of government employees, local conservation and | The GCF project does not target coastal areas but the interventions of the project in the COFAV corridor will have impacts on downstream in the watershed and the coastal areas of Atsimo-Atsinanana. It is expected that the GCF project will contribute to reducing sedimentation flows and erosion and regulating water flows thereby improving ecosystem services in the coastal plains and supporting the LDCF project coastal forest restoration intervention and ecosystem-based value chains. Therefore close coordination with this project will be ensured during the preparation of the Regional Development Plan (PRD) and the revision of the SACs and PCDs.<br><br>The LDCF project will also be able to capitalize on the project?s output 3.5 on integrating lessons learned and best practices regarding climate-smart landscapes into relevant documents and structures, to facilitate LDCF outcomes 1.1 and outcomes 1.2 on the integration of best practices around climate-smart landscapes and adaptation in the PRD, SACs and ICZM committees of Atsimo Atsinanana and the other project regions. |

| | | | | | |
|---|---|---|---|---|---|
| | | | | development NGOs, farmer groups and local communities to implement mitigation and adaptation measures to achieve Climate-Smart Landscapes is strengthened; and, Output 2.2. Knowledge of the CAZ and COFAV population (including school children) about climate change issues and responses proposed by the project is improved); and Outcome 3. Strengthened institutional and regulatory systems for climate-responsive planning and development (Output 3.1. Strategies and actions identified in national climate change policies are integrated into decentralized planning at regional and local levels; Output 3.2. Intervention capacity on climate change issues of decentralized technical services is strengthened; Output 3.3. The monitoring and evaluation system for Climate-Smart Landscapes is operational and informs adaptive management; Output 3.5. Lessons learned and best practices regarding Climate-Smart Landscapes are integrated into relevant documents and relevant structures (environment, agriculture, land-use | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | planning, Communes, Regions etc.)). | |

| | | | | | |
|---|---|---|---|---|---|
| Ecosystem-based Adaptation in the Indian Ocean ? EBA IO | GCF ? Accredited Entity :Agence Fran?aise de Developpement | 2021-2030 | 49,200,000 ($19M of the total budget are allocated to Madagascar) | The executing entity of the programme is Conservation International.<br><br>The goal is to reduce the vulnerability of island populations by securing the critical ecosystem services they need to be resilient to climate change. The Programme will use tried-and-tested tools and methodologies that CEPF has developed over the last 20 years for strengthening and engaging civil society actors in ecosystem conservation. CEPF?s current model, which prioritizes biodiversity conservation, will be modified to direct investments to geographic and thematic areas of highest priority for EbA.<br><br>The Programme will work through CSOs, help to build their capacity and help them develop partnerships with the private and public sector . It will do this by providing specific funding for EbA through the Critical Ecosystem<br><br>Partnership Fund (CEPF). CEPF?s current model, which prioritises biodiversity conservation, will be<br><br>modified to direct investments to geographic and thematic areas of highest priority for | LDCF can benefit from the GCF EBA IO?s long-term vision for civil society engagement for output 1.2 as it can build on good practices for participatory and cross-sectoral review/updating of development strategies.<br><br>Once the GCF Programme defines the geographic and thematic areas of highest priority for the Critical Ecosystem Partnership Fund (CEPF) opportunities will be explored to support access to the fund by CSOs and local communities engaged in EbA intervention sin the LDCF coastal areas as part of the sustainable financing and upscaling strategy.<br><br>As LDCF project Outcome 4.1 seeks to strengthen awareness and knowledge of EbA approaches and to support upscaling of project results across Madagascar?s coastal zones, there is ample opportunity to build on the knowledge products of the GCF project around EbA approaches. |

| | | | | | |
|---|---|---|---|---|---|
| | | | | EbA . The Programme includes a component to achieve long-term sustainability and encourage replication of best EbA practice. The Programme has three components: Component 1: Developing strategic plans for EbA in the small island biodiversity hotspot that are well aligned with national climate change strategies; Component 2: Supporting EbA activities through grants to CSOs; Component 3: Ensuring long-term sustainability and replicating success through knowledge products and tools for EbA. | |

**7. Consistency with National Priorities**

Describe the consistency of the project with national strategies and plans or reports and assesments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

216. Madagascar ratified in 1998 the United Nations Framework Convention on Climate Change. As the convention emphasized the need for the development and implementation of National Action Programme for Climate Change Adaptation, Madagascar published a first NAPA in 2006 with the objective to address urgent and priority adaptation measures targeting five priority sectors: agriculture and livestock, public health, water resources, coastal zones and forestry. Following the adoption of the Cancun Adaptation Framework in 2011, implementing the Bali Conference Action Plan and more recently having ratified the Paris Agreement, Madagascar published in 2015 its first Nationally Determined Contribution (NDC) presenting in its adaptation section, the country vulnerabilities and related priority actions by 2030. Among the twenty-two priority actions identified, this LDCF project will feed into the following:

| Timeframe | NDC priority actions | LDCF output contributions |
|---|---|---|
| Before 2020 | Intensive awareness and sensitisation campaigns on the adverse effects of climate change and the effects of environmental degradation | Output 4.1.1 |
| | Restoring natural forests and enhancing habitat connectivity | Output 2.2.1; Output 2.2.2 |
| | Development of climate-smart agriculture pilot initiatives | Output 3.1.1; Output 3.1.2 |
| Between 2020 and 2030 | Strengthening natural protections and reducing the vulnerability of coastal, marine and marine and coastal areas affected by coastal erosion and recession (Menabe, Boeny, South-West and East, etc.) | All outputs of the project |
| | Restoration of natural habitats (forests and mangroves: 45,000 ha, lakes and rivers<br><br>etc.) | Output 2.2.1; Output 2.2.2 |

217. In the perspective to set up a national strategic framework aimed at establishing mid- and long-term priority actions for adaptation in the country, Madagascar developed a National Adaptation Plan (NAP). The document is structured around the following six axes which, for some of them, this project will directly contribute to:

| NAP Strategic axes | Sub-axes | LDCF output contributions |
|---|---|---|
| Re-greening Madagascar | Planting of 75,000 ha/year | Output 2.2.2 |
| | Restore 4 million ha by 2030 | Output 2.2.1 |
| | Conservation of natural forests | Not directly addressed by the project |
| | Fight against fires | Not directly addressed by the project |
| Green and Blue economy | Development of sustainable value chains | Output 3.1.1 |
| | Creation of green and blue jobs | Output 3.1.2 |
| | Integration of the private sector | Output 3.1.2 |
| Climate change and energy transition | Strengthening resilience to the effects of climate change | All outputs of the project |
| | Acquiring energy sovereignty | Not directly addressed by the project |

| | | |
|---|---|---|
| Information, education and communication | Implementing information campaigns for all | Output 4.1.1 |
| | Implementing educational communications | Output 4.1.1 |
| Green diplomacy | Strengthening Madagascar's position in the concert of nations | Not directly addressed by the project |
| | Development of green leadership in the spheres of decision-making and multi-level actions | Not directly addressed by the project |
| Improved governance | Make decentralised governance of our natural resources effective and efficient | Output 1.1.2; output 2.1.1; output 2.1.2; output 2.1.3 |
| | Fight against corruption and trafficking in endangered species | Not directly addressed by the project |

218. In 2008, Madagascar also published its National Policy to Fight against Climate Change (PNLCCC). The document is structured around five strategic axes of which many of this LDCF project outputs are contributing to, as showed in the following table:

| **PNLCCC Strategic axes** | **Sub-axes** | **LDCF output contributions** |
|---|---|---|
| Axis 1: Strengthening actions for adaptation to climate change taking into account the real needs of the country | Capacity building at all levels in the field of climate change adaptation.<br><br>Promotion and prioritisation of adaptation actions that meet the real needs of the country and are consistent with national and sectoral orientations.<br><br>Capitalisation of the various adaptation actions carried out at the level of all sectors.<br><br>Promotion of synergy and complementarity of adaptation actions carried out by all actors;<br><br>Strong coordination of actions to be carried out for better synergy and complementarity.<br><br>Support for the implementation of the National Adaptation Programme of Action on Climate Change (NAPA) | Output 1.1.1; Output 3.2.1<br><br>All outputs of the project<br><br>Output 4.1.3<br><br>Inherent to the project design<br><br>Inherent to the project design<br><br>See the precedent paragraph on NAP |
| Axis 2: Implementation of mitigation actions for the benefit of the country's development country | Implementation of various national, regional and sectoral strategies to contribute to the mitigation of greenhouse gas emissions.<br><br>Promotion of projects under the Clean Development Mechanism and the voluntary carbon market.<br><br>Formulation and implementation of the NAMA (National Appropriate Mitigation Actions).<br><br>Formulation and implementation of the REDD strategy (Reducing Emissions from Deforestation and Forest Degradation). | Not directly addressed by the project |
| Axis 3: Integration of climate change at all levels | Accountability of different parties at all levels in the fight against climate change | Output 1.1.1 |
| | Strengthening the integration of climate change issues in the different sectors | Output 1.1.2 |
| | Amplifying Information, Education and Communication on Climate Change | Output 4.1.1 |
| Axis 4: Development of sustainable financing instruments | Mobilisation of existing financial resources. | Output 3.1.1 |
| | Creation of a permanent national fund to combat climate change | Not directly addressed by the project |

| | | |
|---|---|---|
| Axis 5: Promotion of research, development and technology transfer and adaptive management | Capacity building of existing institutions to develop climate change related research.<br><br>Support for the dissemination of research results that reduce the country's vulnerability to the adverse effects of climate change.<br><br>Development of research programmes that integrate climate risk and impact assessment.<br><br>Establishment of a federating mechanism for climate change that brings together all researchers from different fields.<br><br>Support for the development and transfer of climate change technology. | Output 4.1.1; Output 4.1.2; Output 4.1.3 |

219. The National Action Plan for Coastal Areas (PAN-GICZ) is the implementation document of the National Strategy for Coastal Area Development in Madagascar. This document has been updated for the period 2019-2023, and it constitutes the reference framework for the implementation of the ICZM policy document at national level for the corresponding period of five years. The components, strategic objectives framing the Action Plan and the related contributions of this LDCF project though its outputs are presented in the table below.

| **Strategic component** | **Specific objective** | **LDCF output contributions** |
|---|---|---|
| Strategic Component 1: Improving and strengthening coastal and marine governance | Specific Objective 1.1 Improve the governance context of coastal and marine areas to promote sustainable development | Output 1.1.1; Output 1.1.2; Output 2.1.1; Output 2.1.3 |
| | Specific Objective 1.2- Promote the monitoring and evaluation system for ICZM actions | Output 4.1.2 |
| | Specific Objective 1.3- Promote public and stakeholder awareness of the ICZM process | Output 1.1.2; Output 2.1.1 |
| | Specific objective.1.4- Develop financing instruments and mechanisms | Output 3.1.1 |
| Strategic Component 2: Improving the economic and social environment of coastal communities | Specific Objective 2.1 - Strengthen the implementation of social and economic activities promoting the sustainable development of marine coastal areas | Output 3.1.1; Output 3.1.2 |
| | Specific Objective 2.2- Promote the blue economy in sustainable development actions in coastal and marine areas | Output 3.1.1; Output 3.1.2 |
| | Specific Objective.2.3- Contribute to the opening-up of coastal areas | Not directly addressed by the project |
| Strategic Component 3: Ensure the protection and conservation of natural | Specific Objective 3.1- Improve climate change measures in coastal and marine areas | All project outputs |
| | Specific Objective 3.2- Promote synergy of the programmes/ action plans of the various institutions/ organisations/ projects involved in the protection and conservation of natural resources and ecosystems in the coastal and marine areas | Output 1.1.2; inherent to the project design |

| | | |
|---|---|---|
| resources and ecosystems in coastal and marine areas | Specific Objective 3.3- Contribute to the reduction of marine pollution and degradation of marine and coastal resources | Output 2.2.1; Output 2.2.2; Output 2.1.3; Output 4.1.1 |

220. Moreover, this project will build linkages with the initiatives of other UN agencies though UNCT engagement and directly contribute to the 4th strategic priority (SP4) of the new UNSDCF on sustainable, resilient and inclusive management of the environment.

**8. Knowledge Management**

**Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.**

221. The project will ensure the lessons learned through the project are effectively disseminated through a range of appropriately targeted knowledge products (e.g. for producer organizations, local government officials, private sector, etc.), and that learning is enhanced at all stages of project implementation. The M&E activities of the project (e.g. independent mid-term evaluation) will contribute to the identification of good practices and lessons-learned, as well as the adaptive management of the project. Of importance, the project will develop significant contributions to the generation of new knowledge (Outcome 2 and 3, in particular) through participatory planning processes and implementation, supported by extensive capacity-building activities and trainings. This will ensure that knowledge is not only generated during and after project implementation, but that it continues to be used as part of adaptation decision-making processes at the local level.

222. Moreover, the CRGIZCs/ upscaling strategy will develop mechanisms to share lessons and good practices between CRGIZCs/Platforms, and the experiences and lessons learnt from the CRGIZCs/Platforms in the four pilot regions will be disseminated to other selected coastal regions through awareness-raising events and exchange visits (including between regions during the Atsimo Atsinanana PRD development, amongst others), targeting decision-makers and planners.

Table 12 Overview of knowledge management Activities timeline and indicative budget

| **Outcome 4.1: Strengthened awareness and knowledge of EbA approaches to support upscaling of project results across Madagascar?s coastal zones Activities** | **Expected timeline** | **Indicative budget (USD)** |
|---|---|---|
| Develop project level communications strategy<br>Upscaling strategy developed for CRGIZCs/Platforms | As a first step in the first 6 months of implementation (PY1), the project will develop a communications strategy, which will be closely linked to its upscaling strategy for CRGIZCs/Platforms and focus on sharing knowledge and lessons learnt. | 50,255 |

| | | |
|---|---|---|
| Biannual knowledge/experience exchange events between CRGIZCs/Platforms | These events will take place twice a year from PY1-PY4. | 51,858 |
| Biannual coordination and knowledge exchange meetings with relevant national counterparts, such as the National Committee on Climate Change | These events will take place twice a year from PY1-PY4. | 51,858 |
| Develop and disseminate knowledge products, organize awareness-raising and outreach events, and undertake other knowledge management and communication activities. | Following the development of the communication strategy and throughout project implementation. | 142,324 |
| Participation of MEDD-BNCC REDD+ in three international knowledge exchange events on climate change adaptation in coastal areas | PY2, PY3 and PY4 | 30,000 |

**9. Monitoring and Evaluation**

**Describe the budgeted M and E plan**

223. The project will follow UNEP standard monitoring, reporting and evaluation processes and procedures. Substantive and financial project reporting requirements are summarized in Appendix 5 of the Project Document. Reporting requirements and templates are an integral part of the UNEP legal instrument to be signed by the executing agency and UNEP.

224. The project M&E plan is consistent with the GEF Monitoring and Evaluation policy. The Project Results Framework presented in Appendix 2 of the Project Document includes SMART indicators for each expected outcome as well as mid-term and end-of-project targets. These indicators along with the targets in Appendix 12 will be the main tools for assessing project implementation progress and whether project results are being achieved. The means of verification and the costs associated with obtaining the information to track the indicators are summarized in Appendix 2 of the Project Document. Other M&E related costs are also presented in the Costed M&E Plan (Appendix 4 of the Project Document) and are fully integrated in the overall project budget.
The M&E plan will be reviewed and revised as necessary during the project inception workshop to ensure project stakeholders understand their roles and responsibilities vis-?-vis project monitoring and evaluation. Indicators and their means of verification may also be fine-tuned at the inception workshop. Day-to-day project monitoring is the responsibility of the project management team but other project partners will have responsibilities to collect specific information to track the indicators. It is the responsibility of the Project Manager to inform UNEP of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely fashion.

225. The project Steering Committee will receive periodic reports on progress and will make recommendations to UNEP concerning the need to revise any aspects of the Results Framework or the M&E plan. Project oversight to ensure that the project meets UNEP and GEF policies and procedures is the responsibility to the Task Manager in UNEP-GEF. The Task Manager will also review the quality of draft project outputs, provide feedback to the project partners, and establish peer review procedures to ensure adequate quality of scientific and technical outputs and publications.

226. At the time of project approval 50% percent of baseline data is available. Baseline data gaps will be addressed during the first year of project implementation. The main aspects for which additional information are needed are:

? Baseline study at the selected sites to measure the baseline values of the indicators selected for the project Results Framework

? Baseline study to identify and map intervention sites for the ecosystem restoration activities including: degraded mangroves, degraded land and forest areas upstream from wetlands, estuaries and coastal ecosystems, and the pathways that lead to nutrient loading and siltation downstream: identify suitable native and climate resilient species for reforestation and current soil conservation practices already adopted by land users; identify what native grass and shrub species are best suited for stabilizing the beach areas.

? Regional scoping studies to select the final ecosystem-based value chains, producer associations and entrepreneurs for social enterprises based on the adaptation rationale.

227. Project supervision will take an adaptive management approach. The Task Manager will develop a project supervision plan at the inception of the project which will be communicated to the project partners during the inception workshop. The emphasis of the Task Manager supervision will be on outcome monitoring but without neglecting project financial management and implementation monitoring. Progress vis-?-vis delivering the agreed project global environmental benefits will be assessed with the Steering Committee at agreed intervals. Project risks and assumptions will be regularly monitored both by project partners and UNEP. Risk assessment and rating is an integral part of the Project Implementation Review (PIR). The quality of project monitoring and evaluation will also be reviewed and rated as part of the PIR. Key financial parameters will be monitored quarterly to ensure cost-effective use of financial resources.

228. In line with the GEF Evaluation requirements and UNEP?s Evaluation Policy, GEF Full-Sized Projects and any project with a duration of 4 years or more will be subject to an independent Mid-Term Evaluation or management-led Mid-Term Review at mid-point. All GEF funded projects are subject to a performance assessment when they reach operational completion. This performance assessment will be either an independent Terminal Evaluation or a management-led Terminal Review. In case a Review is required, the UNEP Evaluation Office will provide tools, templates, and guidelines to support the Review consultant. For all Terminal Reviews, the UNEP Evaluation Office will perform a quality assessment of the Terminal Review report and validate the Review?s performance ratings. This quality assessment will be attached as an Appendix to the Terminal Review report, validated performance ratings will be captured in the main report.

229. However, if an independent Terminal Evaluation (TE) of the project is required, the Evaluation Office will be responsible for the entire evaluation process and will liaise with the Task Manager and the project implementing partners at key points during the evaluation. The TE will provide an independent assessment of project performance (in terms of relevance, effectiveness and efficiency), and determine the likelihood of impact and sustainability. It will have two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote learning, feedback, and knowledge sharing through results and lessons learned among UNEP staff and implementing partners. The direct costs of the evaluation (or the management-led review) will be charged against the project evaluation budget. The TE will typically be initiated after the project?s operational completion If a follow-on phase of the project is envisaged, the timing of the evaluation will be discussed with the Evaluation Office in relation to the submission of the follow-on proposal. The draft TE report will be sent by the Evaluation Office to project stakeholders for comment. Formal comments on the report will be shared by the Evaluation Office in an open and transparent manner. The project performance will be assessed against standard evaluation criteria using a six-point rating scheme. The final determination of project ratings will be made by the Evaluation Office when the report is finalized.

The evaluation report will be publicly disclosed and will be followed by a recommendation compliance process. The evaluation recommendations will be entered into a Recommendations Implementation Plan template by the Evaluation Office. Formal submission of the completed Recommendations Implementation Plan by the Project Manager is required within one month of its delivery to the project team. The Evaluation Office will monitor compliance with this plan every six months for a total period of 12 months from the finalisation of the Recommendations Implementation Plan. The compliance performance against the recommendations is then reported to senior management on a six-monthly basis and to member States in the Biennial Evaluation Synthesis Report. The standard terms of reference for the terminal evaluation are included in Appendix 6 of the Project Document. These will be adjusted to the special needs of the project.

230. The LDCF tracking tools are attached as Appendix 12 of the Project Document. These will be updated at mid-term and at the end of the project and will be made available to the GEF Secretariat along with the project PIR report. As mentioned above the mid-term and terminal evaluation will verify the information of the tracking tool.

**Table 13 Costed M&E plan**

| Type of M&E activity | Responsible Parties | Budget US$ (Excluding project team staff time) | Time frame |
|---|---|---|---|
| Inception workshop and report | PM<br>M&E and Knowledge Management Officer<br>UNEP TM | Indicative cost: US$10,456 | Within the first two months of project implementation. Will be undertaken at the national and sub-national scales. |
| Baseline study | PM<br>M&E and Knowledge Management Officer<br>UNEP TM | Indicative cost: US$45,000 | At project inception. |
| Measurement of means of verification of project results | UNEP TM<br>M&E and Knowledge Management Officer<br>PM | To be finalized during Inception Workshop. Indicative costs: US$40,000 for Results verification at project mid-term and<br>Results verification at project completion | Start, mid and end of project (during evaluation cycle) and annually when required. |
| Measurement of means of verification for project progress on output and implementation | UNEP TM<br>PM<br>M&E and Knowledge Management Officer | To be determined as part of the AWP?s preparation. | Annually prior to PIR and to the definition of annual work plans. |
| Annual project report (APR) | PM<br>M&E and Knowledge Management Officer<br>UNEP TM<br>UNEP FMO (Fund Management Officer) | None | Annually |

| Type of M&E activity | Responsible Parties | Budget US$ (Excluding project team staff time) | Time frame |
|---|---|---|---|
| PIR | PM<br>M&E and Knowledge Management Officer<br>UNEP TM<br>UNEP FMO (Fund Management Officer) | None | Annually |
| Periodic status/ progress reports | PM<br>M&E and Knowledge Management Officer<br>UNEP TM | None | Quarterly |
| Midterm Review (MTR) | UNEP TM/UNEP Evaluation Office | Indicative cost: US$40,000 | At the mid-point of project implementation. |
| Terminal Evaluation (TE) | UNEP Evaluation Office | Indicative cost: US$55,000 | At least three months before the end of project implementation. |
| Project terminal report | PM<br>M&E and Knowledge Management Officer<br>UNEP FMO<br>UNEP TM | None | Upon completion of the terminal evaluation. |
| UNEP Visits to pilot intervention sites in four coastal regions | UNEP TM | For GEF supported projects, paid from UNEP?s IA fees and operational budget. | Two annual supervision missions by UNEP. |
| **TOTAL indicative COST excluding project team staff time and UNEP staff and travel expenses** | | **Estimated Cost: US$ 262,456 inclusive of M&E specialist staff time @ 72,000 USD** | |

**10. Benefits**

**Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?**

230. The project will first focus on creating an enabling environment for the coordination and implementation of adaptation action in four coastal regions of Madagascar (Boeny, Menabe, Diana and Atsimo Atsinanana), which will increase coherence across interventions, and lead to more impactful investments in adaptation action. These investments in adaptation are expected to yield more resilient livelihoods and ecosystems, which will directly contribute to more reliable sources of income; food security; and have overall positive health impacts. It is anticipated that the project will directly impact approximately 95,040 people and indirectly impact another 300,000 individuals.

231. The project estimates to be able to increase income of 400 individuals (at least 1/3 of the 1,200 entrepreneurs supported) by about 10% through targeted value chain activities and/or financing and investing platforms within the project period. Moreover, through the support provided to support adaptation planning at local and regional levels (41 development strategies and plans to be supported, directly and indirectly benefiting well over 300,000 people); capacity-building for eight LMMAs; the implementation of EbA and ecosystem restoration over 5,100ha of mangroves, coastal forests, degraded watersheds, and coastal vegetation; the development of value chains for both local and global markets; and working directly with an objective of securing sustainable financing for adaptation action; the project will generate long-term socio-economic benefits project beneficiaries. Indeed, the project will serve to secure valuable ecosystem services which not only increase reliance of coastal communities to the adverse impacts of climate change, but can also generate positive economic benefits.

232. The project is anticipated to create impact for extremely vulnerable coastal communities of Madagascar by supporting a comprehensive EbA approach in coastal zones, and ultimately lead to climate-resilient development. The EbA approach will contribute to the restoration of various degraded ecosystems which will then be able to provide essential adaptation benefits and services and support the diversification of incomes. These interventions will further enhance the health and livelihoods of local communities, by increasing food security and safety, despite the negative projected climate change impacts. This will be sustained by ensuring EbA is well integrated in local planning, and transferring natural resources management to local communities. It will then be possible to replicate this model beyond the project intervention sites, to all coastal regions of the country, which will be supported by the capacity-building and communication activities at the regional level.

233. The proposed EbA approach will yield environmental benefits, including a reduction in soil erosion (which is associated with a reduction in agricultural yields and contamination of downstream marine and freshwater ecosystems) through reduced deforestation. Reduced soil erosion from the watersheds will also avoid excessive sedimentation in marine and freshwater bodies, preventing important losses in benthic biodiversity. Restored mangrove ecosystems will provide the habitats and breeding sites for various species, and provide food, fiber, and fuel to local communities who will be supported in their sustainable management.

234. Vulnerable communities and groups, including women, will gain numerous benefits, both social and economic, from the interventions. For instance, women currently are responsible for transporting fresh fish by foot to markets over long distances. The support for transformation and value addition of fish, as well as storage, closer to the harvesting sites would enable women to gain considerable time and supplement incomes. Moreover, it would reduce potential post-harvest losses associated with increased temperatures. Similarly, the support for income generating activities close to homesteads, such as beekeeping, have been shown to be very effective in empowering women. The project will therefore ensure to build on the experience of other successful interventions to ensure women are primary beneficiaries of those interventions, as traditional gender roles may sometimes be a barrier to their successful uptake.

235. According to the Word Bank , the impact of the COVID-19 pandemic resulted in: a) a recession in 2020 comparable to that of the 2009 political crisis and the reversal of close to a decade of progress in poverty reduction; and b) 1.38 million people being pushed into extreme poverty due to job losses in key manufacturing and service sectors, as well as the sudden loss of income for informal workers affected by lockdowns in major cities. This increases the vulnerability of populations to shocks, including climate shocks. Therefore, there is an urgent need to support economic resilience, health, and recovery efforts in Madagascar, while simultaneously addressing climate change adaptation priorities. As such, this project will contribute to green recovery and building back better by supporting climate-resilient cooperative enterprises which diversify livelihoods and increase household income, while simultaneously providing environmental and adaptation benefits. In particular, the project will work towards improving the financial inclusion of those smaller businesses, in line with the country?s priorities as outlined in the Madagascar's latest country development vision, the Plan Emergence Madagascar, which features a strong focus on private sector development, entrepreneurship, and improving competitiveness in global value chains and in line with the recommendations of the IFC 2022 Madagascar Country Private Sector Diagnostic (CPSD) report[1] .

[1] Creating Markets in Madagascar: Country Private Sector Diagnostic (ifc.org)

**11. Environmental and Social Safeguard (ESS) Risks**

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

**Overall Project/Program Risk Classification***

| PIF | CEO Endorsement/Approval | MTR | TE |
|---|---|---|---|
| Medium/Moderate | Medium/Moderate | | |

**Measures to address identified risks and impacts**

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

**Description of the recommended mitigation measures:**

| Impacts | Safeguard standard triggered ? Moderate risk | Risks | Rating High (H), Medium (M), Low (L) | Risk Mitigation Measures |
|---|---|---|---|---|
| 2, 4, 6, 7, 1.4, 2.4 | Standard 2 | Lack of buy-in and support from policy makers and local actors for project activities, especially the ones related to planning processes for climate change adaptation in the coastal zones. | Medium | The project will actively engage high and medium level policymakers throughout the process of development/amendment/revision. Membership of the coordination mechanisms will indeed consider integrating these key stakeholders to mitigate this risk. The CRGIZC mandate, role and responsibility in project coordination contributes to minimize this risk, facilitating the coordination and information communication flow between |

| Impacts | Safeguard standard triggered ? Moderate risk | Risks | Rating High (H), Medium (M), Low (L) | Risk Mitigation Measures |
|---|---|---|---|---|
| | | | | national level- regional and communal level.<br>The Stakeholder Engagement Plan, developed during PPG, will support the process of involvement of local communities in project activities.<br>The risk is addressed through the following outputs: 1.1.1, 1.1.2, 1.2.2, 1.2.3 |
| 8.3, 8.5 | | Lack of security in the project areas, impeding the planned interventions. This can translate into (i) movement restrictions for staff and executing partners, (ii) staff, implementing partner, or service provider injuries, and (iii) damages to infrastructure and equipment, impacting the project delivery plan. | Low | The projects will be undertaken in areas with a low security risk. Nonetheless, security-related issues may be faced (e.g. during PAZC-1 implementation, security concerns resulted in challenges with access to some project sites in Menabe region). The Project Team will also develop a security plan and related procedures and keep a close watch on the situation to predict lack of security, especially for movement in remote areas, and prevent impacts on project implementation. Compliance with UN procedures for safety and security planning is key. Particular focus will be placed on road safety (road cuts, traffic accidents), and movement along the coastal areas.<br>The risk is addressed through the development and the implementation of the security plan. |
| 2.1, 2.2, 2.3 | Standard 2 | The project activities could be impacted by extreme events (cyclones, floods, drought) that could delay project activities and damage project investments (i.e. seedlings, reforested area, assets delivered to social enterprises..) | Medium | The risk is addressed through a contingency plan that will be developed and implemented at project inception phase, to ensure a risk mitigation plan is in place. For example, based on experiences of PAZC-1 with major cyclone damage to project infrastructure (ecotourism facilities and beekeeping operations), storm-resilient construction standards will be employed and measures put in place to protect project investments. |
| 1, 2, 3, 7, 8, 1.4, 2.1 | Standard 2 | Project results are not well disseminated to | Medium | The project result will be disseminated nationally and locally through various communication means (such as posters, |

| Impacts | Safeguard standard triggered ? Moderate risk | Risks | Rating High (H), Medium (M), Low (L) | Risk Mitigation Measures |
|---|---|---|---|---|
| | | project beneficiaries. | | flyers, documentary films, social media, websites, etc.), including achievement and lesson-learned to ensure the replication in other areas.<br>The EA will be involved in the monitoring and evaluation phase to have a better understanding of the results and to increase the ownership of the project output and outcomes.<br>The risk is addressed through the following outputs: 4.1.1, 4.1.2 |
| 1, 3, 4, 9, 10, 8.6 | Standard 2 and Standard 8 | Limited participation of women in project activities and/or limited access to its benefits for women, leads to limited impact of the project. | Medium | During PPG consultations the potential partial economic benefits while excluding marginalized or vulnerable groups, including women in poverty, have been taken into consideration. Women groups and associations have been consulted and their point of view and suggestions have been taken into consideration during project design, especially for developing the Gender Analysis and the Gender Action Plan. The knowledge of the situation of marginalized and vulnerable groups has been integrated into project design. The Gender Action Plan will be implemented, progress of targets monitored and reported on a quarterly basis. Based on PAZC-1 experiences and MTR findings, the participation of women in the project and specifically its livelihood diversification activities (as well as decision-making) will be actively encouraged.<br>The risk will be addressed through the Gender Action Plan |
| 1, 8.3, 8.5, 8.6 | | The projects may exacerbate or create conflicts among social and cultural groups in the communities, with negative impacts on the social context and especially on the most vulnerable groups and individuals. | Low | The selection of site locations has considered the social and environmental safeguards and has been done in consultations with stakeholders. The engagement of local NGOs and CSOs will ensure the project will involve equally all the interested communities. Should other sites need to be selected during implementation, the same approach will be applied.<br>The risk will be addressed through the Stakeholder Engagement Plan |

| Impacts | Safeguard standard triggered ? Moderate risk | Risks | Rating High (H), Medium (M), Low (L) | Risk Mitigation Measures |
|---|---|---|---|---|
| 8.1, 8.2 | Standard 8 | The project may include working conditions that do not meet national labour laws or international commitments (e.g. ILO conventions). | Medium | The project is targeting areas and economic activities that are partially involved in the informal sector, where the working conditions could be not fully in line with labour laws and international commitments.<br><br>The PMU will ensure that the working conditions of beneficiaries involved in project activities will be in line with national labour laws and international commitments.<br>The risk will be addressed through the compliance with social standards, especially the ones related to Human Rights, for all the stakeholders involved in the project activities |
| 8.1, 8.2 | Standard 8 | The project may lead to activities where the use of forced labor and child labor is sometimes a practice. | Medium | The project will not use any forced or child labor.<br><br>However, the project is targeting areas and economic activities that are partially involved in the informal sector, where the working conditions (including forced or child labour) could be not fully in line with labour laws and international commitments.<br>The PMU will ensure that the working conditions of beneficiaries involved in project activities will be in line with national labour laws and international commitments.<br>Social safeguards measures will be considered in the business plan of social enterprises supported by the project.<br>The risk will be addressed through the compliance with social standards, especially the ones related to Human Rights, for all the stakeholders involved in the project activities |

| Impacts | Safeguard standard triggered ? Moderate risk | Risks | Rating High (H), Medium (M), Low (L) | Risk Mitigation Measures |
|---|---|---|---|---|
| 1.3, 1.5 | | The project may lead to involuntary restrictions on land/water use that deny a community the use of resources to which they have traditional or recognizable use rights. | Low | The project intends to restore degraded mangrove ecosystems, which have been overexploited by local communities. While individuals are already technically legally prohibited from cutting down mangrove wood, they still rely on the ecosystems for food, fuel, and timber. The project will ensure that communities continue to benefit from the ecosystem services provided by mangrove ecosystems, by replanting mangrove forests, and ensuring communities are transferred the management of the ecosystem. Alternatives for timber and fuel will be explored in local planning, so that mangrove forests are sustainably exploited for food (e.g. mangrove crab), and cutting down of the forests for fuel and timber is limited.<br><br>The risk will be addressed through the following outputs: 1.2.2 |
| 5.1, 5.2, 5.3 | | The project may lead to adverse impacts to sites, structures or objects with historical, cultural, artistic, traditional or religious values or to intangible forms of cultural heritage (e.g. Knowledge, innovations, practices), to utilization of Cultural Heritage for commercial or other purposes (e.g. use of objects, practices, traditional knowledge, tourism) and to alterations to landscapes and natural features | Low | The project does not intent to rely on or profit from cultural heritage. Ecotourism activities are proposed, relying rather on the natural heritage of the sites. At project inception phase further analysis will be carried out, as soon as the project sites will be identified.<br><br>The risk will be addressed through the following outputs: 3.1.2 |

| Impacts | Safeguard standard triggered ? Moderate risk | Risks | Rating High (H), Medium (M), Low (L) | Risk Mitigation Measures |
|---|---|---|---|---|
| | | with cultural significance. | | |
| 1.3, 1.6 | | The project may lead to conversion or degradation of habitats (including modified habitat, natural habitat and critical natural habitat), or losses and threats to biodiversity and/ or ecosystems and ecosystem services. | Low | Biodiversity and habitat degradation are not anticipated, on the contrary, the project aims to restore degraded ecosystems in coastal areas. It does not rely on grey infrastructure to achieve this objective, and therefore has extremely limited potential to cause unexpected detrimental impacts to natural habitats. The siting and design of restoration and reforestation efforts will be carefully considered to avoid any impediments to natural habitats and will ensure only native species are used. Similarly, fisheries activities are anticipated to use only endemic species, following the national and regional regulations for sourcing of the fingerlings, thereby eliminating the risk of releasing invasive species into the wild.<br><br>The risk will be addressed through the following outputs: 3.1.2 |
| 1.3, 1.6 | | The project may lead to conversion or degradation of habitats that are identified by authoritative sources for their high conservation and biodiversity value. | Low | It is not anticipated that the project would yield negative impacts on habitats with high conservation and biodiversity value. However, because the interventions proposed would take place in such areas, including restoring ecosystems that provide high regulatory services related to coastal defense (e.g. mangroves), there is a minimal risk for unintended modifications. The project design has lowered that risk by working diligently in identifying sites and interventions which are unlikely to yield negative impacts, and where interventions are most likely to succeed.<br><br>The risk will be addressed through the following outputs: 3.1.2 |
| 1.3, 1.6 | | The project may lead to reduced quality or quantity of ground water or | Low | The project will do aquaculture in cages. Aquaculture can increase the nutrient buildup in water, reducing its quality. However, the project will not have very |

| Impacts | Safeguard standard triggered ? Moderate risk | Risks | Rating High (H), Medium (M), Low (L) | Risk Mitigation Measures |
|---|---|---|---|---|
| | | water in rivers, ponds, lakes, other wetlands. | | high density aquaculture and species will be carefully selected to minimize their environmental impact. Therefore negative impacts on water quality should not be significant. For fisheries and aquaculture/mariculture value chains (e.g., sea cucumbers, seaweed, and shrimp), attention will be on creating opportunities for local entrepreneurs and businesses to render the value chain more environmentally sustainable.<br><br>Environmental safeguards measures will be considered in the business plan of social enterprises supported by the project.<br><br>The risk will be addressed through the following outputs: 3.1.2 |
| 3.3 | | The project may lead to the application of pesticides or fertilizers that may have a negative effect on the environment (including non-target species) or human health. | Low | There may be a need for limited use of pesticides in the project?s plantation interventions. Integrated Pest Management approaches will be followed.<br><br>The risk will be addressed through the following outputs: 3.1.2 |
| 3.1, 3.2 | | The project can lead to generation of waste (both hazardous and non-hazardous). | Low | It is not anticipated that the project activities will result in significant amounts of waste. However, since the project proposes to support several value chains, including transformation and commercialization, some amounts of waste of various nature will be generated in the process. The PMU will ensure that a waste management plan will be implemented during project implementation.<br>Environmental safeguards measures ? including a waste management plan - will be considered in the business plan of social enterprises supported by the project. |

| Impacts | Safeguard standard triggered ? Moderate risk | Risks | Rating High (H), Medium (M), Low (L) | Risk Mitigation Measures |
|---|---|---|---|---|
| | | | | The risk will be addressed through the following outputs: 3.1.2 |

**Supporting Documents**

Upload available ESS supporting documents.

| Title | Module | Submitted |
|---|---|---|
| **Appendix 15 Safeguard Risk Identification Form (SRIF)** | **CEO Endorsement ESS** | |
| **Safeguard Risk Identification Form (SRIF) Madagascar** | **Project PIF ESS** | |

**ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).**

| **Project objective: To enhance resilience of local livelihoods and ecosystems in coastal zones of Madagascar to the adverse impacts of climate change.**<br><br>**Project objective indicator:** # direct project beneficiaries disaggregated by gender (individual people)<br>**Target:** 95,940 direct beneficiaries, of which half are women[1]<br>*The project is expected to bring benefits to a total of 147,041 direct and indirect beneficiaries.* | | | | |
|---|---|---|---|---|
| **PROJECT OUTCOME** | **OUTCOME INDICATORS** | **BASELINE** | **TARGETS** | **MEANS OF VERIFICATION** |
| **Component 1** | **Climate-resilient governance and planning in coastal zones of Madagascar** | | | |
| **Outcome 1.1**<br>Strengthened institutional capacity for the coordination of adaptation action in coastal zones<br><br>***Output 1.1.1***<br>*Participatory development of capacity needs assessments; terms of reference and statutes; and actions plans for three (3) CRGIZC/Platforms to strengthen their legitimacy, mandate, and sustainable financing*<br><br>***Output 1.1.2*** *Training and workshop series for four (4) CRGIZC/Platforms and MEDD-BNCC-REDD+ for a better coordination of adaptation actions in coastal areas* | **Indicator 1.1:**<br>Degree to which the capacity of targeted institutions is strengthened for the coordination of adaptation action in coastal zones<br><br>*(out of a maximum of 4: Low capacity = 1; Basic Capacity = 2; Moderate Capacity = 3; Strong Capacity = 4) ? gender disaggregated* | At this time capacity is considered low (Baseline score of 1). | **Midterm target:**<br>Increase of 1 in the capacity score of each key institution<br>**End of project target:**<br>Increase of at least 2 points on a scale of 1 to 4. | Verified through a capacity assessment scoring methodology to be developed<br>Project reports<br>Survey of project beneficiaries |

| | | | | |
|---|---|---|---|---|
| **Outcome 1.2:** Strengthened capacity of local and regional actors for mainstreaming adaptation in coastal zone planning processes<br><br>***Output 1.2.1*** *Revision of the Atsimo Atsinanana PRD (1) for effective EbA planning at the regional level*<br><br>***Output 1.2.2*** *Development of a guide for the participatory development of SACs and PCDs for effective EbA planning at the local level*<br><br>***Output 1.2.3*** *Revision of twenty (20) SACs and twenty (20) PCDs to effectively integrate EbA approaches through a cross-sectoral and participatory process* | **Indicator 1.2:** Degree to which the capacity of local and regional actors is strengthened for the mainstreaming adaptation in coastal zone planning processes (disaggregated by institutional type)<br><br>*(out of a maximum of 4: Low capacity = 1; Basic Capacity = 2; Moderate Capacity = 3; Strong Capacity = 4) ? gender disaggregated* | At this time capacity is considered low (Baseline score of 1). | **Midterm target:** Increase of 1 in the capacity score of each key institution<br>**End of project target:** Increase of at least 2 points on a scale of 1 to 4. | Verified through a capacity assessment scoring methodology to be developed<br>Project reports<br>Survey of project beneficiaries<br>Evidence of adaptation mainstreaming in key plans |
| **Component 2** | **Ecosystem-based adaptation in response to climate risks** | | | |
| **Outcome 2.1** Enhanced community capacity to implement EbA approaches and locally manage natural resources to increase climate resilience<br><br>***Output 2.1.1*** *Eight (8) orphan LMMAs reactivated and upgraded for increased climate resilience of marine ecosystems and related livelihoods* | **Indicator 2.1:** Number of direct beneficiaries (gender disaggregated) that report feeling more secure about their access to and use of marine and coastal resources because of inclusive and gender sensitive local management of natural resources | 0 | **End of project Target:** 5,000 individuals of which 2,500 women | List of beneficiaries<br>Surveys using a sentiment scoring methodology |

| | | | | |
|---|---|---|---|---|
| **Outcome 2.2** Enhanced environmental protection and rehabilitation by local authorities and communities for adaptation benefits<br><br>***Output 2.2.1*** *3,000 ha of mangroves and coastal forests restored for adaptation benefits through community-based approaches*<br><br>***Output 2.2.2.*** *2,000 ha of degraded/deforested watersheds rehabilitated for adaptation benefits through community-based approaches*<br>***Output 2.2.3.*** *100 ha of coastal vegetation restored for adaptation benefits through community-based approaches* | **Indicator 2.2:** Number of hectares of coastal and marine areas made more resilient to climate variability and change | 0 | **<u>End of project Target:</u>** 5,100 ha, of which 3,000 ha of mangroves and coastal forests; 2,000 ha of degraded/deforested watersheds; and 100 ha of coastal vegetation | Project reports<br>Field observations<br>GIS mapping |
| **Component 3** | **Blue and Green Economy Approach for Resilient Ecosystem-based Livelihoods in Coastal Areas** | | | |

| | | | | |
|---|---|---|---|---|
| **Outcome 3.1:** Increased diversification of income-generating activities and businesses to enhance communities? climate resilience<br><br>***Output 3.1.1*** *Four regional business incubators tailored to ecosystem-based social enterprises are created and operationalized*<br><br>***Output 3.1.2*** *Training/technical support and/or equipment provided to 1,200 individuals from 20 incubated businesses, including women and youth, to build capacity of ecosystem-based businesses*<br><br>***Output 3.1.3*** *A sustainable financing and investment platform for ecosystem-based businesses developed* | **Indicator 3.1.a:** Number of direct beneficiaries (disaggregated by gender) who report at least 10% income gains as a result of targeted value chain activities and/or financing and investing platforms<br><br>**Indicator 3.1.b:** Number of people (disaggregated by gender) that shift to ecosystem-based sustainable /resilient income generating activities | Along the fisheries value chain incomes are highly variable and access to financing is very limited. | **End of project Target 3.1.a:** 400 individuals, of which 200 women<br><br>**End of project Target 3.1.b:** 1000 individuals, of which 500 women | Project reports<br><br>Survey of Component 3 project beneficiaries |
| **Component 4: Awareness raising and knowledge management for upscaling** | | | | |
| **Outcome 4.1:** Strengthened awareness and knowledge of EbA approaches to support upscaling of project results across Madagascar?s coastal zones<br><br>***Output 4.1.1*** *A project communication strategy developed and implemented, including awareness raising strategy on climate change and EbA aimed at local stakeholders*<br><br>***Output 4.1.2*** *A coastal EbA upscaling strategy and knowledge sharing mechanism developed* | **Indicator 4.1:** Degree to which project beneficiaries report confidence in understanding of the EbA concept (data to be disaggregated at institutional level and community level, as well as gender disaggregated, in a representative sample of direct project beneficiaries) | While PPG consultations revealed awareness of climate change and its impacts, there is limited awareness of EbA and how to effectively implement adaptation solutions in coastal areas. | **End of project Target:** Increase of at least 2 on a 5-point Likert scale, where the Likert scale is (1 = very unconfident, 2 = fairly unconfident, 3 = neutral, 4 = fairly confident, and 5 = very confident) | Project reports<br>Survey data of project beneficiaries |

[1] The target was estimated based on the average number of potential beneficiaries per commune of 4,602 people to estimate the total number of beneficiaries with project interventions in 20 communes to be: 92,040 people.

## ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

| STAP Comments at PIF Stage | UNEP Actions Undertaken/Responses at PPG Phase |
|---|---|

| | |
|---|---|
| **Minor.**<br><br>STAP acknowledges the project ?Upscaling Ecosystem-based Adaptation for Madagascar?s Coastal Zones.? STAP suggests that the project consider clearly differentiating the climate futures that would emerge under the different RCP scenarios and how those futures, if sufficiently differentiated, would impact the performance of planned interventions. This should aid the project in selecting interventions likely to yield robust results across a range of plausible futures. STAP?s decision tree tool for adaptation rationale can be a good resource for guiding this process as well as STAP?s multiple plausible futures brief.<br><br>STAP appreciates the systems view of climate change impacts present in the problem statement, and suggests the project consider extending this to the non-climate drivers of vulnerability in the context. Some of these non-climate drivers are often interrelated (i.e. population growth and the expansion of swidden farming) and should be considered in connection with one another in the context of a changing climate to gauge the likely future challenges they will create.<br><br>STAP strongly suggests the project undertake a comprehensive stakeholder engagement process that focuses on the ultimate beneficiaries of the project. The project currently rests on some assumptions about these beneficiaries that are not substantiated by any engagement to this point or any reference to project or other literature. For example, the PIF assumes that the limited uptake of interventions has to do with limited information and knowledge, when a growing literature demonstrates that limited uptake is often a product of a disconnect between immediate needs and long-term adaptation benefits. The project should work to validate its assumptions about the beneficiary populations, carefully stratifying the population by identities relevant to who conducts different livelihoods activities and why (which will include gender, but might also include age, etc.) as it engages them to ensure it captures a wide range of vulnerabilities and opportunities that it can address with its interventions.<br><br>Finally, STAP recommends the project more clearly and concretely define what ?climate-proofing? an intervention means in this context. Madagascar is likely to deal with a tropical | The consultant team established a dialogue with STAP early on in the process, and held a virtual consultation with the STAP Secretariat and STAP Panel member on Adaptation to obtain further guidance on project development and resources which may be relevant to consult.<br><br>As a result of these consultations, the following elements were incorporated into the project design:<br><br>- Comprehensive stakeholder engagement throughout the PPG process<br><br>- Acknowledgement of the need to balance immediate needs and long-term adaptation benefits throughout the approach, hence focusing heavily on Component 3 of the project as an enabler to the longer term behavioural changes necessary to make ecosystem-based adaptation successful.<br><br>- Climate proofing, as stated by STAP, is a real concern. During the PPG phase, further damage to coastal infrastructure was experienced on the East Coast of Madagascar, highlighting the high risks the country faces when it comes to climate hazards. However, in the context of this project, climate proofing takes a slightly different meaning. It entails focusing on mainstreaming climate change across planning processes, raising awareness of the risks, and reducing reliance on single income sources. |

| | |
|---|---|
| cyclone and other disruptions during implementation, so this is not a hypothetical concern but a practical need for the project. | |
| **Germany Comments** | **UNEP Actions Undertaken/Responses at PPG Phase** |
| Germany acknowledges the intent to embed this proposal into the multiple projects, which share a focus on improving the livelihoods of coastal communities of Madagascar through ecosystem-based approaches and resilience building. While Germany recognizes the value that the proposal adds to the landscape of individual projects and its complementarity to existing projects, it stresses the importance of establishing a knowledge sharing mechanism that allows for learning to be exchanged across all interventions, including the ongoing NAP process in Madagascar to strengthen the institutional capacity and policy and legislative framework for EbA in coastal zones. | This is well noted, and the PPG phase also highlighted this important gap which exists in terms of knowledge exchange. As such, it has built into the design further opportunities for a) supporting coordination mechanisms for adaptation such as the CRGIZC/Platform; and b) ensure that there is funding dedicated to having knowledge exchange visits take place between regions and nationally. Effective knowledge management is part of the scaling up strategy of the project, and will be further defined during project implementation under Component 4 of the project. |
| Germany would like to stress that land tenure issues are a decisive factor for local land use plans to be an effective tool for addressing environmental degradation. As the proposal points out, land conflicts, in particular those triggered by climate migration, and the widely used practice of slash and burn agriculture encroaching into the project intervention areas, may be a severe risk to the project. Regarding land tenure rights and land conflicts, the proposal is fully reliant on the progress of the World Bank project ?Madagascar Agriculture Rural Growth and Land Management (CASEF)?, which aims to tackle the existing gender gap in women?s land rights by massive certification of land. While CASEF will contribute significantly to a systematic registration of land, it is doubtful that all land tenure conflicts will be solved by 2022 in the four projects areas. Hence, conflicts and disputes regarding state domain and untitled private property could considerably slow the project?s progress. Germany strongly encourages that the project clarifies how to address land tenure rights and land use conflicts. | The project will explore through the participatory planning processes ways to mitigate such risks. In the participatory revision process of PCDs, areas of intervention may be identified in the different communes which may benefit from addressing unsustainable agricultural practices, and are proposed to be subsequently tackled under Component 2 of the project. Moreover, restoration initiatives will ensure that an equitable negotiation process for access rights to the natural resources takes place, and that the outcomes are made explicit through management plans. For example, this could entail setting aside some areas where there is explicit joint exploitation between locals and vulnerable groups such as migrants.<br><br>The ESAP in Appendix 16 further describes mitigation measures related to land rights and land tenure conflicts, as well as the project-specific Grievance Redress Mechanism which will be established to provide an accessible, rapid, fair, culturally appropriate and effective grievance redress process and appropriate dispute resolution mechanism for the people allegedly affected by project activities, directly or indirectly. |

| | |
|---|---|
| The identification of sources of long-term financing for the operation of the Regional Integrated Coastal Zone Management (ICZM) Committees and Locally Managed Marine Areas (LMMAs) from the public and the private sector will be key to ensuring their existence as a coordination platform for adaptation mainstreaming in coastal areas across Madagascar. Germany acknowledges the mentioning of potential innovative financing instruments in the proposal (e.g., partnering with equity funds that are supporting adaptation-oriented MSMEs) and encourages the exploration and inclusion of other new and existing financing experiences in the final proposal. | During the PPG phase, a number of financing opportunities were identified, which will be explored further during project implementation on a case-by-case basis, as local conditions are key determinants to the feasibility of the different options. These financing options could include sources such as schemes involving pro-biodiversity production, where a transition toward more sustainable production practices can support EbA activities; Ecotourism activity mechanism where diversification of revenues can support EbA interventions; Community entrepreneurship support where businesses can contribute to reducing pressures on ecosystems; Microlending aggregation/private debt mechanism for better access to finance where when aligned with community entrepreneurship can bring benefits for EbA action; and Risk mitigation mechanism (e.g. nature-based insurance schemes), which could provide immediate funding for post-storm restoration of coastal ecosystems, for example. To ensure sustainable financing is feasible, the project will ensure that a prioritization of adaptation actions in the SACs is done through: (i) economic cost-benefit analysis of the adaptation options; and (ii) identification of co-benefits between the adaptation actions and development objectives. |
| Germany supports the project?s aim to establish a sustainable financing and investment platform for ecosystem-based businesses bringing together government, financial and MSME representatives. We would like to stress however the challenges with regard to competition and conflicting market interests that this may involve and would like to see these risks better addressed in the final proposal. | This point was well taken, and careful consideration was given to how to design a mechanism that would reduce such risks. Output 3.1.3 of the final project design presents an innovative avenue, integrated into the broader approach to Component 3 overall. It focuses on both the needs of small- scale producers, and those of more mature climate-resilient social enterprises. |

| | |
|---|---|
| Germany supports the concept of Locally Managed Marine Areas (LMMAs) and acknowledges that the proposed project will build on the existing experience in their implementation. We would like to stress the importance of integrating the lessons learned in the final project design, in particular on how to integrate the private sector in the process. | Extensive consultations were conducted during the PPG, and the focus on LMMAs was modified to focus on support for their operationalization. Lessons learnt were considered, including those from Blue Venture?s experience with LMMAs. As such, the project has been designed to actively engage multiple stakeholders in LMMAs, in particular the private sector, to ensure some of the challenges identified in previous projects, to ensure that ownership can be built of the management of natural resources, that local fishers have greater influence on the management of fisheries, increased power to negotiate prices, and that they are empowered to enforce local laws.<br><br>In terms of private sector engagement, a few examples were identified during consultations, including contributions from Copefrito for example to the LMMA management association for each kg of octopus collected, as a contribution to sound conservation of marine resources. Other mechanisms may include: visitors fees (exclusively in areas that are attractive for tourism, such as Diana); or carbon credit for mangrove restoration (however, this mechanism is not available for now in Madagascar; and it seems quite unrealistic at the scale of a LMMA since it requires very high capacity to develop project design document and monitoring of carbon).<br><br>In supporting orphan LMMAs, the project will therefore conduct baseline studies to assess each of the local contexts, conduct extensive stakeholder mapping and subsequent engagement including of the private sector, and support community surveillance efforts to ensure local environmental laws are effectively enforced. |
| Germany would like to ask for some formal improvements: Improve the readability of Problem tree (figure 7) and the Theory of change (figure 8) and add missing figures on the number of beneficiaries and communes of the PAZC and LDCF Project (page 27). | Given the number of inter-relationships between boxes, it is difficult to further improve readability of the Problem tree in particular. This being said, a number of improvements have been made in Figure 1 Problem and solution tree, including clarifying some of the relationships and entry points for the solutions, clarifying some labelling, etc. In addition, , the Theory of Change (Figure 9) has been revised and improved, with extensive reformatting and additional in-text descriptions to accompany the diagram.<br><br>Number of beneficiaries has been detailed in a table by potential commune of intervention, and assumptions clarified. The numbers are presented in Table 9 of the CEO Endorsement document. |

## ANNEX C: Status of Utilization of Project Preparation Grant (PPG). (Provide detailed funding amount of the PPG activities financing status in the table below:

| PPG Grant Approved at PIF: | | | |
|---|---|---|---|
| ***Project Preparation Activities Implemented*** | ***GETF/LDCF/SCCF Amount ($)*** | | |
| | ***Budgeted Amount*** | ***Amount Spent To date*** | ***Amount Committed*** |
| National inception and validation workshops (2) | 16,000 | 11,699 | 259 |
| Regional consultation workshops (4) and community consultations | 21,203 | 25,245 | 0 |
| Consultancy services to develop project options, including technical studies, basic costing, financial plan, etc. | 115,850 | 57,925 | 57,925 |
| Consultancy services for the Gender and Environmental and Social Safeguards analysis | 31,500 | 15,750 | 15,750 |
| Travel costs for local and international experts for consultations and discussions with interested parties and stakeholders | 15,447 | 7,723.5 | 7,723.50 |
| **Total** | **200,000** | **118,342.50** | **81,657.50** |

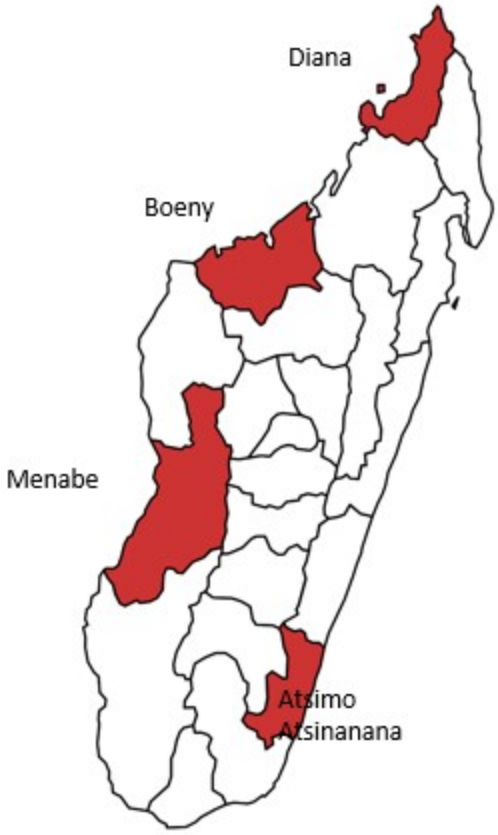
## ANNEX D: Project Map(s) and Coordinates

**Please attach the geographical location of the project area, if possible.**

Geocoordinates:
Diana - 12°16′12″S 49°16′48″E
Boeny - 15°43′12″S 46°19′12″E
Menabe - 20°18′00″S 44°16′48″E
Atsimo Atsinanana - 22.819°S 47.83°E

**Legend**

Project regions




Plelase refer to the Annnex E in the CEO ER document.

**GEO LOCATION INFORMATION**

**The Location Name, Latitude and Longitude are required fields insofar as an Agency chooses to enter a project location under the set format. The Geo Name ID is required in instances where the location is not exact, such as in the case of a city, as opposed to the exact site of a physical infrastructure. These IDs are available on the GeoNames? geographical database containing millions of placenames and allowing to freely record new ones. The Location & Activity Description fields are optional. Project longitude and latitude must follow the Decimal Degrees WGS84 format and Agencies are encouraged to use at least four decimal points for greater accuracy. Users may add as many locations as appropriate. Web mapping applications such as OpenStreetMap or GeoNames use this format. Consider using a conversion tool as needed, such as:https://coordinates-converter.com Please see the Geocoding User Guide by clicking here.**

| Location Name | Latitude | Longitude | Geo Name ID | Location & Activity Description |
|---|---|---|---|---|
| Diana | -12.27000000 | 49.28000000 | | |
| Boeny | -15.72000000 | 46.32000000 | | |
| Menabe | -20.30027778 | 44.28000000 | | |
| Atsimo Atsinanana | -23.2000000 | 47.40000000 | | |

## ANNEX E: Project Budget Table

**Please attach a project budget table.**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project title:** | | | **Upscaling Ecosystem-based Adaptation for Madagascar's Coastal Zones** | | | | | | | | | | |
| **Project number:** | | | **GEF ID: 10939** | | | | | | | | | | |
| **Project executing partner:** | | | **Ministry of Environment and Sustainable Development (MEDD)** | | | | | | | | | | |
| **Project implementation period:** | | | | | | | | | | | | | |
| **From:** | **2024** | | | | | | | | **Expenditure by project component/activity** | | | | |
| **To:** | **2027** | | **Component 1** | | **Component 2** | | **Component 3** | **Component 4** | **Sub-total** | **PMC** | **M** | | |
| **UNEP Budget Line** | | | | | | | | | | | | | |
| | **Category** | **Detailed description** | **Outcome 1.1** | **Outcome 1.2** | **Outcome 2.1** | **Outcome 2.2** | **Outcome 3.1** | **Outcome 4.1** | | **PM** | **M** | | |
| | **1100** | **Project personnel** | | | | | | | | | | | |
| 1 | 1101 | Project Manager at USD24,000 per year, Total USD96,000 | | | | | | | - | 96,000 | | | |
| 2 | 1102 | Finance Officer at USD18,000 per year, Total USD72,000 | | | | | | | - | 72,000 | | | |
| 3 | 1103 | Monitoring and Evaluation and Knowledge Management Officer at USD18,000 per year, Total USD72,000 | | | | | | | - | | 7 | | |
| 4 | 1104 | Gender and Safeguards Specialist at USD18,000 per year, Total USD72,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 72,000 | | | | |
| 5 | 1105 | Regional technical coordinator Atsimo Atsinanana at USD14,400 per year, Total USD57,600 | 11,520 | 11,520 | | | | 11,611 | 34,651 | 22,949 | | | |
| 6 | 1106 | Regional tehcnical coordinator Diana at USD14,400 per year, Total USD57,600 | 11,520 | 11,520 | | | | 11,611 | 34,651 | 22,949 | | | |
| | **1199** | **Sub-total** | **35,040** | **35,040** | **12,000** | **12,000** | **12,000** | **35,222** | **141,302** | **213,898** | **7** | | |
| | **1200** | **Consultants** | | | | | | | - | | | | |
| 7 | 1201 | National consultant climate change and ICZM governance 118 days @USD300/day | 35,400 | | | | | | 35,400 | | | | |
| 8 | 1202 | International ESS expert to support ESMP updating and implementation | | | | | 22,500 | | 22,500 | | | | |
| 9 | 1215 | National communications consultant for 115 days over 4 years @USD300/day | | | | | | 34,500 | 34,500 | | | | |
| 10 | 1216 | International consultant upscaling strategy for 30 days @620/day | | | | | | 18,600 | 18,600 | | | | |
| | **1299** | **Sub-total** | **35,400** | - | - | - | **22,500** | **53,100** | **111,000** | - | | | |
| | 1600 | **TRAVEL** | | | | | | | - | | | | |
| | | **Travel on official business** | | | | | | | - | | | | |
| 11 | 1601 | Travel for National consultant climate change and ICZM governance to 3 regions 3 times each (9 trips@ $666/trip) | 6,000 | | | | | | 6,000 | | | | |
| 12 | 1602 | Travel for National consultant communications (32 trips at $800/trip) | | | | | | 25,600 | 25,600 | | | | |
| 13 | 1603 | Travel for International consultant upscaling strategy (One trip at $5000/trip) | | | | | | 5,000 | 5,000 | | | | |
| 14 | 1604 | Travel for participants of CRGIZC/Platforms to national knowledge exchange events (4 participants per workshop at $800/person for 8 workshops ) | | | | | | 25,600 | 25,600 | | | | |
| 15 | 1605 | Travel for participants of CRGIZC/Platforms to national cooridnation events with national climate change actors (4 participants per workshop at $800/person for 8 workshops ) | | | | | | 25,600 | 25,600 | | | | |
| 16 | 1606 | Travel for participants of BNCC-REDD+ to 3 international knowledge exchange events | 30,000 | | | | | | 30,000 | | | | |
| 17 | 1607 | Travel for BNCC-REDD+ for participation in project activities, institutional support and oversight in the 4 target regions | 6,400 | 3,840 | 1,920 | 5,760 | 3,840 | 3,840 | 25,600 | | | | |
| 18 | 1608 | Travel for PMU to project sites | 8,533 | 8,533 | 4,268 | 12,800 | 8,533 | 8,533 | 51,200 | | | | |
| | **1699** | **Sub-total** | **50,933** | **12,373** | **6,188** | **18,560** | **12,373** | **94,173** | **194,600** | - | | | |
| | **SUB-CONTRACT COMPONENT** | | | | | | | | - | | | | |
| | **2100** | **Sub-contracts (MOUs/LOAs for cooperating agencies)** | | | | | | | - | | | | |
| 19 | 2101 | Lump sum contract with NGO to develop and deliver training modules/workshops on climate change adaptation in each of the four regions | 100,000 | | | | | | 100,000 | | | | |
| 20 | 2102 | Lump sum contract with NGO to conduct a regional level climate vulnerability assessment followed by the participatory development of the Atsimo Atsinanana PRD @USD80,000 | | 80,000 | | | | | 80,000 | | | | |
| 21 | 2103 | Lump sum contract with consultancy firm/NGO to develop the guidelines for SAC and PCD @USD60,000 | | 60,000 | | | | | 60,000 | | | | |
| 22 | 2104 | Lump sum contract with consultancy firm/NGO to revise/update 20 SACs and 20 PCDs @USD6,500 per document | | 260,000 | | | | | 260,000 | | | | |
| 23 | 2105 | Lump sum contract with consultancy firm/NGO to support 8 orphan LMMAs @USD85,000 per LMMA | | | 680,000 | | | | 680,000 | | | | |
| 24 | 2106 | Lump sum contract with consultancy firm/NGO to undertake restoration of 3,000ha of mangroves and coastal forests in four regions @USD1,200,200 | | | | 1,200,200 | | | 1,200,200 | | | | |
| 25 | 2107 | Lump sum contract with consultancy firm/NGO to undertake restoration of 2,000ha of degraded land/watershed @USD1,000,000 | | | | 1,000,000 | | | 1,000,000 | | | | |
| 26 | 2108 | Lump sum contract with consultancy firm/NGO to undertake restoration of 100ha of coastal vegetation in the Atsimo Atsinanana region @USD100,000 | | | | 100,000 | | | 100,000 | | | | |
| 27 | 2109 | Lump sum contract with consultancy firm/NGO to develop, operationalize, and operate 4 regional business incubators @USD194,000 per region in four regions | | | | | 776,000 | | 776,000 | | | | |
| 28 | 2110 | Lump sum contract with consultancy firm/NGO to provide business incubation services @USD200,000 per region in four regions | | | | | 800,000 | | 800,000 | | | | |
| 29 | 2111 | Lump sum contract with consultancy firm/NGO to support the development of financial services @USD194,000 per region in four regions | | | | | 800,000 | | 800,000 | | | | |
| 30 | 2112 | Lump sum contract with PFGIZC Menabe @USD30,000 for coordination of activities | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 30,000 | | | | |
| 31 | 2113 | Lump sum contract with CRGIZC Boeny @USD30,000 for coordination of activities | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 30,000 | | | | |
| | **2199** | **Sub-total** | **110,000** | **410,000** | **690,000** | **2,310,200** | **2,386,000** | **10,000** | **5,916,200** | - | | | |
| | **2300** | **Sub-contracts (for commercial purposes)** | | | | | | | - | | | | |
| 32 | 2301 | Lump sum contract with consultancy firm to develop knowledge products and support event organization | | | | | | 20,000 | 20,000 | | | | |
| | **2399** | **Sub-total** | - | - | - | - | - | **20,000** | **20,000** | - | | | |

**ANNEX F: (For NGI only) Termsheet**

Instructions. Please submit an finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

N/A

**ANNEX G: (For NGI only) Reflows**

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat or the Trustee) in the Document Section of the CEO endorsement. The Agencys is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

N/A

**ANNEX H: (For NGI only) Agency Capacity to generate reflows**

Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies? capacity and eligibility to administer NGI resources as established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).

N/A