VALIDATION REPORT

VOA AINA: Agroforestry and Mangrove Restoration in Easter Madagascar

Project Title:	VOA AINA: Agroforestry And Mangrove Restoration In Eastern Madagascar
Location:	State: Madagascar Province: Antsiranana (Sambava) and Fianarantsoa (Manakara)
Project scale	☒ Macroscale ☐ Microscale
Version of this validation report:	6.0
Project Coordinator/ Client	Client: ClimateLab Contact: info@climatelab.be
Project Participants:	1. ClimateLab: info@climatelab.be 2. Graine De Vie: grainedevie@live.be
Validator:	Dwi Kus Pardianto (Lead Validator) and Karina Restu Panggalih (validator) Contact: lvvservices@mutucertification.com
Validation Date of Issue:	19-12-2024
Project Period (crediting period):	30 years
Methodology:	PM001: Agriculture And Forestry Carbon Benefit Assessment Methodology V1.0 (8 November 2023)
Expected Carbon Benefit:	Total carbon benefit: 153,433 tCO_2e Potential PVCs: 107,403 tCO_2e
Expected Ecosystem Benefit:	Accelerate natural vegetation regeneration and provide a biodiversity habitat from planting and protecting the project area.
Expected Livelihood Benefit:	Providing additional income for community member within project area by utilizing benefit from the ecosystem.
Approved by:	Muhamad Syarip Lambaga

Contents

1. INTRODUCTION

1.1 Objective and Scope

The objective of the validation was to validate the project for agroforestry and mangrove restoration in eastern Madagascar, Antsiranana (Sambava) and Fianarantsoa (Manakara), are comply with the validation method and criteria as set out in the reference documents listed in section 1.2 of this report.

The scope of this validation includes an assessment of the following issues:

- The project and its baseline scenarios.
- Activities, stakeholder engagement, and processes of the project.
- Management rights.
- The GHG sources, sinks and/or reservoirs those are applicable to the project intervention.
- The types of PVCs that are applicable to the project.
- Agreements, monitoring and reporting.
- The project crediting period.

1.2 Method and Criteria

The validation team use one or more of the methods to gather information and evidence for planning and execution such as inquiry, document review, confirmation, interviews with relevant personnel and site visit.

The criteria used for this validation as follow:

a. Plan Vivo standard Project Requirements Version 5.0
b. Standard Operating Procedure
c. Payment Ecosystem Services Agreement
d. PM001 Agriculture and Forestry Carbon Benefit Assessment Methodology
e. Plan Vivo Project Document VOA AINA : Agroforestry and Mangrove Restoration in Eastern Madagascar Version 1 (20 February 2023),and Version 2 (13 June 2024)

1.3 Level of Assurance

The level of assurance provide by validation team is reasonable following the requirements of Plan Vivo Guidance for Validation and Verification Bodies and Independent Experts version 5.1, validation criteria, and materiality threshold within the validation scope. Based on the validation findings, a positive evaluation statement reasonably assures that the project GHG assertion are materially correct and is a fair representation of the GHG data and information.

1.4 Summary Description of the Project

The Voa Aina project is lead by two organization, Grand de Vie and Climate Lab, located in Madagascar. The project area at the beginning consist of three province: Antananarivo, Antsiranana, and Fianarantsoa. However, due to the legal permission from state authority, the project area in Antananarivo more specific in Ambohitantely Reserve is cancellation in this project.

The project initial aim is to establish restored ecosystems across ca. 14 ha in the Sava region (Antisiranana) and 323 ha in Fitovinany region (Fianaratsoa). Key project interventions include

ecosystem restoration planting, mangrove rehabilitation and agroforestry application, with a focus on North-eastern Madagascar. The project follows the PM001 Agriculture and Forestry Carbon Benefit Assessment Methodology. Restoration Planting Specifications and Agroforestry Specifications are based on the PU001 Estimation of Baseline and Project GHG Removals by Carbon Pools in Plan Vivo Projects. The project initially works with 1 community in the Sava region and 1 community around the Fitovinany project zone.

The project activities in two provinces as follow:

i. Fianarantsoa province, including Fitovinany region in the eastern part of Madagascar, near the town of Manakara. The formerly forested region is to date highly degraded, to grassy savannah, due to devastating bush fires.
ii. Antsiranana province, including the communes of Ambohitralanana, Sahantaha, Ampohibe, Tanambaon'I Daoud, Fanambana, Ampondra, Vohemar and Ambalambe, but with an initial focus on the village of Andasibe, at the northern coastline, where vanished mangrove areas will be restored.

The species are used for ecosystem restoration in Fianarantsoa (manakara) are Intsia, Acacia, Mantalise, Mandahifu, Kaya, Albisia, Manalisia and Forahofa. Meanwhile, for mangrove restoration in Antsiranana are including *Avicennia marina, Xylocarpus granatum, Rhizophora mucronata, Bruguieria gymnorhiza, Ceriops tagal, Lumnitzera racemosa* and *Sonneratia alba.* However, in the agroforestry project, the project proponent use non-native species e.g Mango (*Mangifera indica*), avocado (*Persea americana*), lemon (*Citrus medica*), medlar (*Mespilus germanica*) and jambolana (*Eugenia cumini*). The reason is these species are popular in the project area and delivering important non-timber forest products/fruits.

The expected carbon benefits from each project intervention over the 30 years crediting period (January 2022 – December 2052) is as follow:

Project Intervention	**Carbon Benefit (t CO_2e/ha)**	**Project Area (ha)**	**Total Carbon Benefit (t CO_2e)**	**Risk Buffer (tCO_2e/ha)**	**Achievement Reserve**	**UC Buffer**	**Potential PVCs (tCO_2e)**
Restoration Planting at Sava Project Area	-1,426	14.1	-20,107	20%	10%	0%	14,075
Woodlot planting	-402	323	129 846	20%	10%	0%	90 892
Orchard	-348	10	-3 480	20%	10%	0%	2 436
TOTAL							**107 403**

This project type is issuing Plan Vivo Certificates.

2. VALIDATION PROCESS

1.5 Validation team, technical reviewers and approver

Role	Name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)	Involvement in			
			Desk/document review	On-site visit	Interviews	Validation findings
Lead validator	Dwi Kus Pardianto	PT Mutuagung Lestari Tbk	X	X	X	X
Validator	Karina Restu Panggalih	PT Mutuagung Lestari Tbk	X	X	X	X
Technical Expert	N/A					
Financial/ Other Expert	N/A					
Trainee	N/A					
Technical reviewer	Dinar Dara Tripuspita Purbasari	PT Mutuagung Lestari Tbk				X
Approver	Muhamad Syarip Lambaga	PT Mutuagung Lestari Tbk				X
Translator	1. Adrienne Irma 2. Aymérillot René MANARINJARA	PT Mutuagung Lestari Tbk	X	X	X	

1.6 Document Review

The document review process was conducted before and during site visit in August to September 2023. The project coordinator submitted project design document (PDD) version 1.0 dated 20 February 2023 using PDD version 1.0 template. The PDD was reviewed against the approved methodology and against PV requirements. Additional background documents related to the project design, baseline and additionality were also made available before and during the validation.

The validation was performed based on the document check and site visit. Refer to section 3 of this report for the validation process in detail and corresponding documents review.

To address the corrective actions and new information request that arose from the validation, the project coordinator revised the PDD version 1 and developed a final version 2.0.

The references used in the course of this validation are summarized in Annex 1.

1.7 Site visits and Interviews

The validation team has carried out site visits and interviews as part gathering evidence activities to assess the information included in the project documentation and to gain additional information regarding the compliance of the project with the relevant criteria applicable for the PV standard.

The interviews were conducted to confirm several identified issues during document review. The main topics of the interviews as follow:

i. Description of the project activity including project boundaries.
ii. Stakeholders are involved in the project.
iii. Feasibility of project including project crediting period.
iv. Management of monitoring activities i.e roles and responsibilities, monitoring plan.
v. Social-economic, environmental, and financial aspect.

The physical site visit was carried out between 29 August and 7 September 2023 including traveling time.

The site visit were conducted by validator team including, among others:

1. Interview with project coordinator based on result of desk review on 31 August 2023 regarding:
   - Project interventions (Management rights and land carbon rights)
   - Stakeholders analysis
   - FPIC, Project participants, IP and Local communities, Agreements.
   - Project coordination and management, Dispute management, Participatory design, Implementation of standard operating procedure used at the project.
   - Carbon Baseline, Livelihood baseline, Expected Livelihood change, Ecosystem baseline, Expected ecosystem change
   - Project activities, carbon benefits, risk management, reversal of Carbon Benefits, leakage, monitoring and reporting, and governance and administration
2. Site visit and Interviews in Sambava (Andasibe/Sava) and Manakara on 1 – 3 September 2023 regarding:
   - Project Location : Visiting the mangrove rehabilitation project zones designed at Sambava and project zone at manakara
   - FPIC, Project participants, IP and Local communities, and Agreements (Interview members (sampling) regarding the FPIC Process and agreement)
   - Project coordination and management, dispute management, participatory design,
   - Implementation of standard operating procedure used at the project: (Interview members (sampling) regarding their knowledge the project and the procedures and dispute management)
   - Expected livelihood change and expected ecosystem change:
     (Interview members (sampling) regarding the expected livelihood and ecosystem change)
3. Validator team continuing review all the information on the next day, 4 September 2023. Moreover on 5 September 2023, validator team conduct closing meeting with project coordinator.

Duration of the on-site inspection: 31 August – 5 September 2023

Name	Role	Organization/ Community	Site location	Date	Audit member
Lali	Project Coordinator	Graine de Vie	Antananarivo	31/08/2023	Dwi & Karina
Sil Lanckriet	Project Coordinator	Climate Lab	Antananarivo	31/08/2023	Dwi & Karina
Amede & Sil Lanckriet	Field coordinator	Graine de Vie	Manakara	01 - 03/09/2023	Dwi
Landry & Fabrice	Field coordinator	Graine de Vie	Andasibe (Sambava)	01-03/09/2023	Karina

Lali & Sil Lanckriet	Project Coordinator	Climate Lab	Antananarivo	04-05/09/2023	Dwi & Karina
Randrianantoina Sylvain	Community Member	Manakara	Manakara	04-05/09/2023	Dwi
Telle Francelle Madeleine	Community Member	Manakara	Manakara	04-05/09/2023	Dwi
Razafindrasa Claudia	Community Member	Manakara	Manakara	04-05/09/2023	Dwi
Rasoanantenaina Lucienne	Community Member	Manakara	Manakara	04-05/09/2023	Dwi
Razafinatrata Dauphine	Community Member	Manakara	Manakara	04-05/09/2023	Dwi
Rasoaninina Leontine	Community Member	Manakara	Manakara	04-05/09/2023	Dwi
Rosoanimina Patricia	Community Member	Manakara	Manakara	04-05/09/2023	Dwi
Ramiandrisoa Jean Claude	Community Member	Manakara	Manakara	04-05/09/2023	Dwi
Ramanantenesoa Julien	Community Member	Manakara	Manakara	04-05/09/2023	Dwi
Helinianian Brigite	Community Member	Manakara	Manakara	04-05/09/2023	Dwi
Rémi Vind	Community Member/ Fisherman	Andasibe	Andasibe	04-05/09/2023	Karina
Rasoland Velonanjanahary	Community Member/ Fisherman	Andasibe	Andasibe	04-05/09/2023	Karina
Nevanona Julien	Community Member/ Fisherman	Andasibe	Andasibe	04-05/09/2023	Karina
Marie Ginette Ramazisoa	Community Member	Andasibe	Andasibe	04-05/09/2023	Karina
Tsahilika Vincent	Community Member/ Fisherman	Andasibe	Andasibe	04-05/09/2023	Karina
Razanamalala Marie	Community Member/ Fisherman	Andasibe	Andasibe	04-05/09/2023	Karina

1.8 Sampling approach

The validation team concentrated the sampling on qualitative information like procedures, training of staff, data collection, database etc. as this is seen as particularly relevant for validation. Due to the project boundaries was changed on the same day of the validation onsite visit. The validation team visited all the project location both in Andasibe and Manakara.

1.9 Resolution of Findings

Material discrepancies identified in the course of the validation are addressed either as CARs, NIRs or FARs.

In the course of the PV validation, total 4 CARs, 1 NIR, and 1 FAR were raised and successfully closed. Based on review of plan vivo's internal review document, validator teams deems that all the CARs and NIRs resolved by the project coordinator.

The CARs issued are regarding the mechanism of complaint and suggestion, FPIC process, updated information in PDD, used of approved methodology, monitoring plan information, grievance mechanisms, agreement between project coordinator and the government related land use in mangrove area. While, for NIR and FAR are regarding FPIC process and stakeholder consultation process. All findings raised during the validation are presented in the table below

Areas of validation findings	No. of NIR	No. of CAR	No. of FAR
GENERAL INFORMATION			
Project Interventions	-	-	-
Management Rights	-	-	-
STAKEHOLDER ENGAGEMENT			
Stakeholder Analysis	-	-	-
Project Coordinator and Project Participant	-	-	-
Participatory Design	-		-
Stakeholder Consultation	-	1	1
Free, Prior and Informed Consent (FPIC)	1	2	-
PROJECT DESIGN			
Baseline Scenario	-	1	-
Carbon Baseline	-	-	-
Livelihood baseline	-	-	-
Ecosystem Baseline	-	-	-
Theory of change	-	-	-
Technical specification	-	-	-
Project activities	-	-	-
Additionality	-	-	-
Carbon Benefits	-	-	-

Areas of validation findings	No. of NIR	No. of CAR	No. of FAR
RISK MANAGEMENT			
Environmental and Social Safeguards	-	-	-
Achievement of Carbon Benefits	-	-	-
Reversal of Carbon Benefits	-	-	-
Leakage	-	-	-
Double Counting	-	-	-
AGREEMENTS			
Land Management Plans	-	-	-
Benefit Sharing Mechanism	-	-	-
Grievance Mechanism	-	-	-
Project Agreements	-	-	-
MONITORING AND REPORTING			
Carbon indicators	-	-	-
Livelihoods indicators	-	-	-
Ecosystem Indicators	-	-	-
Monitoring Plan	-	-	-
Reporting and record recording	-	-	-
GOVERNANCE AND ADMINISTRATION			
Governance Structure and legal compliance	-	-	-
Financial Plan and Management	-	-	-
Others (please specify)	-	-	-
Total	1	4	1

1.10 Forward Action Requests

Project coordinator has stated in the PDD regarding stakeholder consultation will be conducted at least once a year, an annual reunion villageoise is organized per fokotany. The validation team issued a forward action request (FAR) to the next validation/verification body (VVB) to request the project provide program and realization from the annual meeting with fokotany.

1.11 Public Comments

No public comments were received through the PV Platform nor news during the validation activities.

3. VALIDATION FINDINGS

GENERAL INFORMATION

3.1 Project Interventions

The Voa Aina project aims to establish climate resilient (agro)ecosystems and support sustainable livelihood across Northern and Eastern Madagascar. The main intervention types are (i) to rehabilitate destroyed mangroves, and (ii) agroforestry planting. Implementation of the project will boost carbon sequestration, sustainable agricultural productivity, fishery and climate resilience.

The triple interventions lead to:

- Improving biodiversity leading to enhanced ecosystem services and ecosystem restoration;
- Regenerating vanished mangroves and improved marine ecosystem services and fisheries;
- Increasing climate resilience through carbon sequestration in soil and biomass;
- Improving sustainable agricultural productivity through agroforestry and planting fruit trees;
- Engagement of the members of the communities, living in and around the project areas, in project activities, tree planting and through socio-ecological plan vivo credit re-investments.

The project activities take place in two initial geographic clusters:

- Fianarantsoa province, including Fitovinany region in the eastern part of Madagascar, near the town of Manakara. The formerly forested region is to date highly degraded, to grassy savannah, due to devastating bush fires.
- Antsiranana province, including the communes of Ambohitralanana, Sahantaha, Ampohibe, Tanambaon'I Daoud, Fanambana, Ampondra, Vohemar and Ambalambe, but with an initial focus on the village of Andasibe, at the northern coastline, where vanished mangrove areas will be restored.

The Voa Aina project initial aim is to establish restored ecosystems and agroforestry plots across ca. 337 hectares: 14 ha in the Antsiranana area and 323 ha in the Fianarantsoa area. Over time, the project area will be gradually extended to scale-up the project impact.

3.2 Management Rights

3.2.1 Project Boundaries

The project intervention is located in Madagascar particularly at Fianarantsoa province and Antsiranana province. Based on physical site visit to project area, the location are conform with the description on project design document (PDD).

Figure 1. Location map of the project sites: "project 1" or Fitovinany region (blue dot); and "project 2" mangrove areas (yellow dot). The capital Antananarivo is indicated in green.

3.2.2 Land and Carbon Rights

At the project area (Betampona), the land ownership is private (ca. 30 owners) and determined by inherited rights and traditional Antemoro holdings. Land is passed down in families within *tarikas*. Immigrants are typically dependent on them as tenant farmers. The *fokontay* monitors the use of the land and decides how newly arrived people will gain access to the land. The hillsides are not scarce and land ownership is determined differently. One can sometimes gain right to the land simply by planting and working on the land. Interviewees (see further) stated that every hillside that is not cultivated, does not belong to anyone. The land can be used for pasturage or trees can be planted to claim ownership.

The mangrove rehabilitation activities take place in the intertidal zone (which is by definition a communal resource), while agroforestry activities take place on private lands. Community-based management of natural resources was brought about by the 1996 Law on Secure Local Management ("Gestion Locale Sécurisée" - GELOSE) (Law No. 96-025), which provides time-bound transfer of management rights ("transferts de gestion") for natural resources to local communities. Further enhancement for local communities was provided in 2000 under the Forest Management Contracts ("Gestion Contractualisée des Forêts", GCF) decree, which transfers management of the forests to local communities on mutually agreed contractual terms. Regulation N°2010-137 regulating the integrated management of coastal and marine areas of Madagascar ("portant réglementation de la gestion intégrée des zones côtières et marines de Madagascar", GIZC) on integrated management of coastal areas sought to create a more integrated and sustainable development path for coastal zones. The 2015 Law on the code of fishery and aquaculture (No. 2015-053 "portant code de la pêche et de l'acquaculture") addresses the governance role of local communities and bans most conversions of mangroves into aquaculture installation. The Environmental Investment Decree (referred to as "MECIE", Décret N°99-945 of 1999, amended in 2004) together with inter-ministerial order No 4355-97 on the definition and delimitation of sensitive areas (Arrêté No 4355-97) defines mangroves areas and their immediate impact areas as "sensitive zones". Such zones, except for those on titled land, are state property under Forestry Law N° 97-1200.

With respect to rights to potential carbon rights, Decret No. 2013-785, the Delegation of Management (for forests) confirms that ownership rights to carbon rest initially with the state. However, the national REDD+ coordination office (Bureau Nationale de Coordination (BNC)-REDD+) issued a policy document in May 2018 (Strategie Nationale REDD+ Madagascar) which was formalized by Decret No. 2018-500. This text states that, in relation to carbon incomes, project promoters who have generated GHG emission reductions through their active contribution have a legal right to carbon benefits.

Table 1. Land and Carbon Rights

Project Area	**Ownership and user rights status**	**Carbon rights**	**Validation Assessment**
Mangrove intervention (Antsiranana Province)	Area tenured by fokotany (sea as a common resource)	Carbon rights belong to the State (but can be delegated)	The validation team reviewed the Convention with DREDD. It is attached in annex 1/2. And the validation team deems that the land ownership belongs to community. It is also suitable with the Law and regulation as follows : - No. 96-025 which provides time-bound transfer of management rights (“transferts de gestion”) for natural resources to local communities. Validated by annex 1/50/. - Regulation N°2010-137 regulating the integrated management of coastal and marine areas of Madagascar (“portant réglementation de la gestion intégrée des zones côtières et marines de Madagascar”, GIZC) on integrated management of coastal areas sought to create a more integrated and sustainable development path for coastal zones. Validated by annex 1/44/. - The 2015 Law on the code of fishery and aquaculture (No. 2015-053 “portant code de la pêche et de l’acquaculture”) addresses the governance role of local communities and bans most conversions of mangroves into aquaculture installation. Validated by annex 1/49/. - The Environmental Investment Decree (referred to as “MECIE”, Décret N°99-945 of 1999, amended in 2004) together with inter-

			ministerial order No 4355-97 on the definition and delimitation of sensitive areas (Arrêté No 4355-97) defines mangroves areas and their immediate impact areas as "sensitive zones". Such zones, except for those on titled land, are state property under Forestry Law N° 97-1200. It is attached in annex 1/42 and annex 1/43/
Agroforestry intervention (Antsiranana, Fianarantsoa)	Land tenured by individual citizen (private smallholder plot)	Carbon rights belong to the State (but can be delegated)	The validation team reviewed the agroforestry agreement and interview with local community. It is attached in annex 1/12a. And the validation team deems that the land ownership is belonged to individual. It is aligned with the Law and regulation as follows : Law No. 2006-031 (Loi No. 2006-031 de 24 Novembre 2006 fixant régime juridique de la propriété foncière privée non titrée). Law No. 2006-031 (2006) recognizes private property rights to untitled, customarily held land. It allows individuals and groups asserting rights to untitled land to obtain certificates recognizing their rights from the local land administration office (la Collective Décentralisée). The legislation has brought formal and informal tenure systems into alignment and thereby increased tenure security (Leisz 1998; Teyssier et al., 2008. It is attached in annex 1/23/

STAKEHOLDER ENGAGEMENT

3.3 Stakeholder Analysis

The project coordinator has made an accurate identification of the stakeholders and the validation team deems it correct. Regarding the disputes over land there was one problem and the project proponent answered to the inputs of local people in an appropriate way. The meeting between project coordinator and community members can be can be showed in the annex 3 on figure 4 and figure 5. The validation team during the on site visit interviewed the local communities and indigenous people Antemoro in manakara and it was cross checked that the project coordinator´s responses are appropriate.

The validation team considers that the project coordinator has correctly identified the local stakeholder groups and their impacts by the project intervention.

Table 2. Stakeholder Analysis and Evaluation

Stakeholder Group	Stakeholder Type	Impact	Influence	Validation Assessment
Coastal communities in Antsiranana (Andasibe)	Local stakeholder	Moderately positively impacted by project	Medium influence on project	The validation team reviewed the Enquete Menage Andasibe (Quetionnaire Pour Andasibe) in annex 1/26/, Documentation of Communal meetings on risks were held in Andasibe (Sava) and Betampona (Manakara) in July and August 2023 in (annex 1/28/) and Socio-economic baseline Environmental and Social Screening Report in (annex 1/9/). It was also confirmed by the interview with the representatives of the communities that they are agreeing with the project.
Individual participants engaged in agroforestry	Local stakeholder	Moderately positively impacted by project	Medium influence on project	The validation team reviewed the Enquete Menage Andasibe (Quetionnaire Pour Andasibe) in annex 1/26/, Documentation of Communal meetings on risks were held in Andasibe (Sava) and Betampona (Manakara) in July and August 2023 in (annex 1/28/) and Socio-economic baseline Environmental and Social Screening Report in (annex 1/9/). It was also confirmed by the interview with the representatives of the communities that they are agreeing with the project.
Community at Manakara	Local stakeholder	Moderately positively impacted by project	Medium influence on project	The validation team reviewed the Enquete Menage Andasibe (Quetionnaire Pour Andasibe) in annex 1/26/, Documentation of Communal meetings on risks were held in Andasibe (Sava) and Betampona (Manakara) in July and August 2023 in (annex 1/28/) and Socio-economic baseline Environmental and Social Screening Report in (annex 1/9/). It was also confirmed by the interview with the representatives of the communities that they are agreeing with the project.

State of Madagascar	Secondary stakeholder	Low positively impacted by project	Medium influence on project	The validation team reviewed the letter from Bureau National REDD+ dated 22 August 2023 (annex 1/15) regarding the project in three area. However, the project area in Ambohitantly Reserve are excluded in this project by government decision. This happen during the validation activities. It is attached in annex 1/15.

3.4 Project Coordination and Project Participant

The project coordinator in Voa Aina Project consist of two organization i.e Granie De Vie (GDV) and Climate Lab (CL). Both of organization have several experiences on environmental issue. Granie De Vie as local project coordinator will be responsible in managing the project activities on the ground, including administrative bureaucracies and working with the direct beneficiaries of the project who will undertake the activities of the project. These include farmers, associations of farmers, or any parts of the community who can contribute to the project starting from seedling growth to forest management.

In all the project activities, the involvement of other potential stakeholders, such as research institutions are appreciated. Responsibility for project coordination and management are as follows:

- ✓ Stakeholder engagement during project development and implementation
- ✓ Developing technical specifications, land management plans and project agreements with project participants. It was confirmed by the interview with the participants that the project coordinators provides understanding and assists the participant to develop technical specifications, land management plans and project agreements that will be registered in the project .
- ✓ Registration and recording of management plans, project agreements, monitoring results, and sales agreements. It was confirmed by the interview with the project coordinators that they develop the management plans, draft of agreements, and monitoring results documents. Validator have seen several recordings of monitoring results documented at the Graine de Vie office.
- ✓ Managing project finances and dispersal of income to project participants as described by the benefit sharing mechanism. It was confirmed by the interview with the project coordinators and it is shown in the draft of PES Agreement.
- ✓ Providing technical assistance and capacity building required for project participants to implement project interventions. It was confirmed by the interview with the participants in Andasibe that the project coordinators provides understanding and assists the participant to develop the project through several activities such as community participatory design activities, mangrove rehabilitation techniques, making sample plots for monitoring.

The monitoring activities are mainly in charge to GDV personnels. They have several team members distributed to each project location. It was checked through site visit and interview with representative of GDV team member namely Amede (Betampona site) and Fabrice and Landry (Andasibe site). Also, the interview with local communities were conducted and the responds were reflected the explanation of PDD on section 2.3, the project participants type is type 1: as all project participants are resident within the project area and do manage land of project area.

3.5 Participatory Design

The Voa Aina project were conducted by collaboration between project coordinator, Graine De Vie and Climate Lab, and local community both in two provinces. Moreover, in the local government in Sambava and Manakara also involve and support the project. During the site visit to project location, the validation team interview with local communities to ensure that all community members are involved in the project activites. We also check an implementation from letter of commitment to support the project. The responds were reflected the explanation of PDD section 2.4 and letter of commitment.

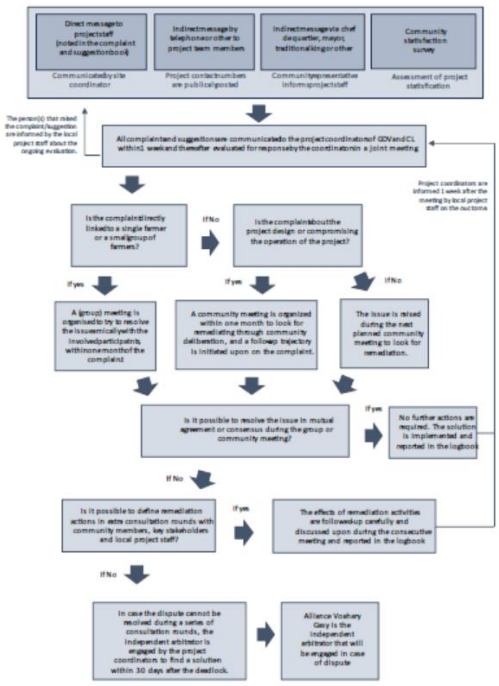
During the very first phase of the project activity, the project (i) performed interviews near the project areas during “random walks” in order to gain in-depth understanding of the socio-environmental dynamics and livelihood challenges in the regions, and (ii) organized several meetings with the communities (réunion villageoise). The basis of the participatory governance design is thus the “réunion villageoise”.

These first *réunions villageoises* included group discussions on the livelihood challenges of the community and thereafter involved the training on the participatory mapping procedure, while also ensuring that the communities have an understanding of climate and carbon benefits. If applicable, monitoring responsibilities are discussed, and it is explained that the project benefits may depend on the success of project interventions/sales of the project. Stakeholder participation is implemented beyond simply informing or consulting the communities, as not only the project design but also the control over the generated benefits is shared on the long term The validation team cross-checked the documents in annex 1/5 Letters and initial FPIC; annex 1/9 Environmental and Social Screening Report; annex 1/10 Environmental and Social Assessment report; Annex 1/12a Project Agreements Mangroves; Annex 1/12b Project agreement agroforestry. It is also confirmed by the interview with the communities in Andasibe, that the project coordinators provides understanding and assists the participant to develop technical specifications, land management plans, community participatory design activities, mangrove rehabilitation techniques, making sample plots for monitoring, project agreements that will be registered in the project. Based on the site visit check and commitment letters (annex 1/52/), the validation team concluded that the project coordinator statement is correct and fair representation.

3.6 Stakeholder Consultation

The project coordinator gave an opportunity to all stakeholders, including men, women, youth, and other important social axes of differentiation to provide feedback on the project intervention prior to the project design. The project coordinator have plan to make local stakeholders meeting once a year and these was acknowledge by the community that have been interviewed by validation team. The grievance mechanisms also provided by project coordinator to gathering any potential negative impact that leads to dispute.

The mechanism of complaint and suggestion from annual meetings are well explained in the PDD. The project coordinator have strengthened and clarified the grievance mechanism by proposing a complaints process flowchart. The flowchart presents a clear and visual representation of the processes to follow in case of a suggestion or complaint. To be clear, this mechanism (flowchart) of complaint and suggestions was drafted together with the team, and discussed with the Manakara (Betampona) and Sava (Andasibe) communities dd. 28/09/2023 and 30/09/2023.



However, these mechanisms are not available at the moment in the office of project coordinator work, nor in project locations where the community places to make sure these mechanisms are well understood by all the parties. Therefore, corrective action request are require for this issue (CAR_1). The resolution of CAR_1 from project coordinator is described in annex 2 of this document that a grievance mechanism poster is publicly posted in the project areas, and which clearly indicates the phone number of the project staff to call in case of direct complaints. Regarding the project response CAR 1 is closed. Based on the flowchart and the submitted evidence by the project coordinator of extra community meetings on this topic, the validation team confirms that the project coordinator statement is correct and fair representation.

3.7 Free, Prior and Informed Consent (FPIC)

Based on stakeholder consultation, the validation team were confirmed that the project coordinator has been conducted communication with all relevant stakeholders within project area. FPIC processes are well explained in the PDD. However, records of FPIC process particularly in the Manakara site project are not available at the moment during the validation process. Thus, the validation team asked the project coordinator to provide this information to ensure the conformance of PDD before the project is registered (CAR_2)

Moreover, consent must be sought before the Project or activity takes place and be reconfirmed periodically. Based on interview with the participants in Andasibe, they said that in a process of initial meeting before the project is running the project coordinators was invited the community including womens, authorities representative, and the womens association. The participants said that they were agree of the project and they are getting so many benefits as they join the project.

During the validation process, the record of consent from the land owner in Manakara and Andasibe are not available at the moment. Moreover, the project coordinator has to take into account the needs from local community in project area particularly in Manakara and also have to can explain the tree species will be planting in the project. (CAR_3). All the CARs (2 and 3) are closed and stated in annex 2 of this document Based on the submitted evidence including consent letters and extra community

meetings on this topic, the validation team confirms that all the correction for CARs number 2 and 3 are closed and stated in annex 2 of this document.

PROJECT DESIGN

Baselines

3.8 Baseline Scenario

The baseline scenario of all project intervention is determined using the AR-TOOL02 v1.0: "Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities" The project follows the steps below:

STEP 0. Preliminary screening based on the starting date of the project activity.

In the document initial project area, Annex 3 of the PDD provided by the project coordinator states that the starting date for the agroforestry and mangrove rehabilitation activities is January 1, 2022. In addition, the validation team assessed the questionnaire document for the preparation of the Environmental and Social Assessment Report by Climate lab in kick off meeting agenda on January 2022 (Annex 1/59/). The document specifies that in the Grievance Mechanism and FPIC section, monitoring is carried out every year starting in 2022. So that in September 2023, the communities in Manakara and Andasibe were able to sign the FPIC document (Annex 1/58/). Hence, we also checked the documentation or reviews of nursery research in Manakara (Annex 1/59b/) and Andasibe (Annex 1/59a/) that were carried out before 2022. After kick off finished Climate lab also registered the project to government The statistical registration of VOA Aina dated 03/05/2022 (Annex 1/32/).

STEP 1. Identification of alternative land use scenarios to the proposed project activity.

Sub-step 1a. Identify credible alternative land use scenarios to the proposed project activity The project participant has identified two project scenarios per each project intervention, and the validation team has checked the following:

For agroforestry intervention:

• Continuation of the pre-project grassland cover. This condition was validated in on-site visit and cross checking by document satellite imagery of Betampona area (annex 1/56/ and annex 1/57/).

• Forestation of the land within the project boundary performed without being registered as a plan vivo certified project activity.

For mangrove rehabilitation:

• Continuation of the pre-project coastline. This condition was validated in on-site visit and cross checking by document satellite imagery of Andasibe area (annex 1/1/).

• Mangrove plantation within the project boundary performed without being registered as a plan vivo certified project activity.

Sub-step 1b. Consistency of credible alternative land use scenarios with enforced mandatory applicable laws and regulations.

Both alternative land use scenarios for agroforestry intervention and mangrove rehabilitation intervention are in compliance with mandatory legislation and regulations taking into account their enforcement in Madagascar. Continuation of the status quo is in agreement with laws and regulations,

while spontaneous tree planting is obviously a land cover type that is allowed by applicable regulations on private lands. The regulation was cross checked with letter of approval document annex 1/15/.

STEP 2. Barrier analysis.

Sub-step 2a. Identification of barriers that would prevent the implementation of at least one alternative land use scenarios.

No financial, technical, institutional nor social barriers would plausibly hamper the continuation of the grassland cover scenario. Continuation of grassland cover requires no investments, technical knowledge nor legal efforts: the project areas are periodically affected by wildfires. Forestation without extra funding that follows from plan vivo certification is not a plausible scenario, given the significant amount of funding required and the lack of governmental or other nurseries in the areas. It was validated by interviewed with project coordinators that the project are still in discussion with the Bureau National de Coordination REDD. Meanwhile, mangrove plantation without extra funding that follows from plan vivo certification is not a plausible scenario, given the significant amount of funding required and the lack of governmental or other mangrove nurseries in the areas. It was validated by financial plan document (annex 1/16/) and validated by Global Data Lab (2023), showing the percentage poorest households (International Wealth Index < 35) is 68.8% at the national level (Annex 1/22/).

Sub-step 2b. Elimination of land use scenarios that are prevented by the identified barriers

We eliminate the scenario of forestation and mangrove rehabilitation without extra plan vivo funding, since it is not a plausible future land cover scenario.

Sub-step 2c. Determination of baseline scenario (if allowed by the barrier analysis)

Forestation without being registered as a plan vivo project is not included in the list of land use scenarios that are not prevented by any barrier. Consequently, only one land use scenario remains (pressure-as-usual scenario), so according to the tool, this scenario is the baseline scenario. The validation team deems correct the identified baseline scenario that reasonably represents what would have occurred in the absence of the project. The same determination, mangrove planting without being registered as a plan vivo project is not included in the list of land use scenarios that are not prevented by any barrier. Consequently, only one land use scenario remains (perpetuation of the status quo), so according to the tool, this scenario is the baseline scenario.

STEP 4. Common practice analysis.

There are no similar previous or ongoing forestation and mangrove rehabilitation activities in or near the project zones, not even remotely similar to this proposed plan vivo project. Consequently, the plan vivo project activity is not the baseline scenario and, hence, it is additional.

During on-site visit the validation team observe that there are no similar previous or ongoing forestation and mangrove rehabilitation activities in or near the project zones, not even remotely similar to this proposed plan vivo project. Consequently, the plan vivo project activity is not the baseline scenario and, hence, it is additional. Also, the validation team check that there is no other PV project, VERRA, GS or UNFCCC registered in the area. This was validated in document annex 1/53/.

The baseline scenario in manakara for restoration project are limitation of carbon sequestration due to less management for fire breaks and seedling planting that will not add vegetation and increasing new ecosystem. Meanwhile, in the Sambava for mangrove rehabilitation project. Without any project intervention, the coastal area will relatively degraded in the absences of mangrove because of

cyclones. The validation team concludes that the baseline scenario is correctly justified for the project intervention and follow appropriate PV methodologies.

3.9 Carbon Baseline

The baseline scenario was calculated refer to approved methodology PM_001 and module PU_001. Based on desk review on PDD, baseline emission calculation, and methodology used by project coordinator in Sambava and Manakara. Module PU001 requires "no change in woody biomass carbon stocks if the conditions in AR-TOOL14 v4.2 section 5 are met".

AR-TOOL14 vs 4.2 states in section 5: "Changes in carbon stocks in trees and shrubs in the baseline may be accounted as zero for those lands for which the project participants can demonstrate, through documentary evidence or through participatory rural appraisal (PRA), that one or more of the following indicators apply:

i. Observed reduction in topsoil depth (e.g. as shown by root exposure, presence of pedestals, exposed sub-soil horizons).
ii. Presence of gully, sheet or rill erosion; or landslides, or other forms of mass movement erosion.
iii. Presence of plant species locally known to be indicators of infertile land.
iv. Land comprises of bare sand dunes, or other bare lands.
v. Land contains contaminated soils, mine spoils, or highly alkaline or saline soils.
vi. Land is subjected to periodic cycles (e.g. slash-and-burn or clearing regrowing cycles) so that the biomass oscillates between a minimum and a maximum value in the baseline.

The baseline emission from two project locations is counted as zero. The carbon baseline of the mangrove project areas consists of coastal intertidal area. The degraded status of the nearby coastal forest testifies to the degraded coastal landscape. The time series of satellite images show a stable coastal landscape over the past decade. The expected carbon baseline scenario is therefore that without renewed efforts, no change in carbon stock is to be expected. Meanwhile, the change in carbon stocks in the tree planting project zones can be expected to be zero or even declining in the baseline scenario, under continued pressure from among others fire. The validation team confirmed that the assertion of project coordinator is correct.

Table 3. Total net-greenhouse gas emissions under the baseline scenario

Year	Baseline emissions (t CO_2e)	Year	Baseline emissions (t CO_2e)	Year	Baseline emissions (t CO_2e)
1	0	11	0	21	0
2	0	12	0	22	0
3	0	13	0	23	0
4	0	14	0	24	0
5	0	15	0	25	0
6	0	16	0	26	0
7	0	17	0	27	0
8	0	18	0	28	0
9	0	19	0	29	0
10	0	20	0	30	0

3.10 Livelihood Baseline (initial status and expected change)

Initial Status

The project coordinator was made survey to 13 respondents in Fianrantsoa (Manakara) and 20 respondents in Antsiranana (Sambava). It was validated by questionnaire filled by the participants involved with the project activities document in annex 1/26/.

In Antsiranana mangrove zones, more than 90% of the respondents cultivate rice, this rice is only used for self-consumption. A quarter of the respondents have no crops to sell. Three quarters of the respondents is actively producing fruits. Most of the interviewed household own animals and only two respondents sell animal products. All but one interviewee is engaged in fishing. It was validated by onsite visits and interviews during validation activities.

In Fianarantsoa ecosystem restoration, people started cultivating and tavy was a big driver of deforestation. Farmers burn the standing vegetation in the plot they intend to cultivate. After burning the plot, the farmer turns over large dry clods of the upper layer of soil, thus burying the nutritious ashes. As the dry season progresses the stalks dry out and become poor in nutrition and largely unpalatable to cattle. At this point, herders pasture their cattle on crop stubble in fallow fields and on streamside vegetation, not in pastures. It was validated by onsite visits and interviews during validation activities.

Expected livelihood change

Based on site visit and interview with local people in the community. They expected the project intervention will give a change for their live, particularly to get more financial income and more positive ecosystem benefits. The expected change in Sambava by mangrove restoration project are coastal protection from wind breaking (cyclone), as nursery ground for aquatic organisms including crustaceans and fishes. It also can be as ecotourism in nearby project area that will give an opportunity for local people open or get job. And, the annual income of fishery associations, including the volumes of fish, shrimps and crabs caught and the cash income.

In Manakara, based on direct interviews with local community in Antemoro tribe and along the way to and near the project area, it is confirmed that the local community burning the planting area to clearance the land. With the project, they expected that the project intervention of agroforestry, communities members can get benefits from planting the tree without clearance the area by burning. Meanwhile, expected livelihood change in the agroforestry areas, the project aims to strengthen the volume of fruits produced per smallholder (mango, avocado, lemon, medlar, plum, orange, jackfruit), while holding up the volume of rice, maize, manioc, vegetables, cacao, coffee and/or vanilla produced by the same smallholders.

According to the cross-checked document, observations and interviews were made during the onsite validation team concluded that the livelihood baseline and expected livelihood change is correctly justified and complete for the project. Therefore, the validation team deems correct the livelihood baseline.

3.11 Ecosystem Baseline (initial and expected change)

The initial ecosystem baseline in project area based on document review and site visit are less biodiversity and people exploited environment without any consideration of degradation and deforestation issue. In generally, the initial ecosystem of Madagascar is mainly characterized by a high

plateau rising sharply from the narrow plain of the eastern coast. By the observation through site visit in the Sambava (Andasibe), the project area is mangrove ecosystem. The baseline condition is the coastal area facing mangrove degrade by the natural cyclone. This situation affected decreasing the biodiversity ecosystem such reducing the population of fish or aquatic ecosystem due to nurseries area ground was damage.

The initial ecosystem in the Manakara (Betampona) is savannah. The baseline condition is, the area are less of diversity particularly lack of vegetation. However, the main issue is the activities slash-and-burn for open the area for cropland. This situation, cause the air pollution with increasing the emission in the atmosphere.

The expected ecosystem changes from project interventions are increasing biodiversity flora and fauna at coastal area in Sambava and savannah in Manakara. Moreover, with project intervention the local communities expected that they will get benefit from protected the environment and it will going for future generations. These expected results of the project are confirmed through discussion with local community in both project area, sambava and manakara. Therefore, the validation team deems correct the ecosystem baseline.

Theory of Change

3.12 Project Logic

The project coordinator has determined the outcomes of project intervention such as:

Carbon benefit from tree planting with establishing new nurseries for providing tree and mangrove seedlings for planting in restoration area. Then, monitor and observe the tree and mangrove to measure the growth.

Livelihood and ecosystem benefit form harvesting fruits from fruit tree which is the community can get free fruit tree seedlings from project coordinator. It also will increase a chance aquatic organism by living near mangrove area that protected by local community.

The project assumption outputs from outcomes are:

Output 1: 337 ha community and smallholder-based land rehabilitating, grasslands planted with endemic/naturalized tree species from local nurseries and where necessary protected from burning by firebreaks.
Activities carried out to realize output are enrichment planting and direct sowing with endemic trees to accelerate ecosystem restoration and the project areas are protected by community members. It was validated by document engaged in ecosystem restoration and engagement with communities in annex 1/12b/, also confirmed by interview with project coordinator.

Output 2: Restoration of 14 ha of vanished mangroves
Activities carried out to realize output are mangrove seedlings are planted (in intertidal zone but behind the barrier reef) and after 2 years, the mangrove health is monitored and regularly maintained with enrichment planting. It was a validated document engaged in ecosystem restoration and engagement with communities in annex 1/12a/, also confirmed by interview with project coordinator.

Output 3: At least 100,000 fruit trees distributed to the communities providing additional income through interspersed planting by smallholder farmers.
Activities carried out to realize output are free distribution and interspersed planting with naturalized fruit trees according to techspec protocol and long-term management and monitoring of the agroforestry plots. It was validated by document responsibilities Grand de vie to the project in annex 1/2c/.

According to the document cross check and interview with stakeholder, the information provided by project coordinator is justified, accurate and fair presentation for the project.

Technical Specification

3.13 Project Activities

The project intervention consists of mangrove rehabilitation and agroforestry (woodlot planting and Orchards). The project intervention of mangrove rehabilitation was conducted in Sava. The main activities is to establishing mangrove nurseries, mangrove planting, and mangrove regarnissage. From all of theme, it can activate community reinvestment by involving fishing association from the post-mangrove planting.

The second intervention is agroforestry in Manakara. The main activities are establishing new nurseries both for woodlot planting and orchads, woodlot planting in project zone, establishing firebreaks, and tree planting. These activities will give positive impact such activate ecosystem co-benefits to improve water catchment source. According to the PDD Annex 7a (technical specification of Mangrove Restoration Planting) and annex 7b (technical specification of agroforestry interventions) cross checked in combination with monitoring parameter list, field observations and Project participant interviews made during the on-site visit. The validation team assure that the project activities are correct and fairly representation

Table 4 Project Activity Summary

Project Intervention	Project Activities	Inputs	Validation Assessment
Restoration planting at Manakara			
Agroforestry (Woodlot Planting)	Establishing new nurseries	Four nurseries have been established near the project zone of Manakara. Every year, 80k seedlings are raised (20k per nursery), of which 40k are planted in the project zone. Main species include *Intsia bijuga, Acacia, Canarium madagascariense, Calophyllum inophyllum*. Note that every year, another 40k trees are distributed for free in the four surrounding villages. These seedlings benefit the four surrounding communities, by providing fruits and covering daily	This validated during site visit and confirmation with the project coordinator. Also, cross-checked with carbon calculation of agroforestry intervention document (annex 1/6a)

		needs (e.g. heating, construction, fences).	
	Establishing firebreaks	The Manakara project initially protects and restores 323 hectare of highly degraded ecosystem areas, to be scaled up towards ~1000 ha later. The project actively creates effective firebreaks to allow ecosystem restoration, in close consultation with the communities of the five villages. The firebreaks have a width of 50m.	This is validated during onsite visits and confirmation with the project coordinator. Also, cross-checked with firebreaks management document (Annex 1/48/)
	Woodlot planting in the project zone	Through tree planting and direct sowing, 1000 trees are planted per hectare. The survival rate for planted seedlings is about 75% after 6 months. The survival rate for direct sowing is about 35% after 6 months. After the first year, one assumes a longer-term mortality rate of 0.5% per year. In any case, the project aims at a final stand density of >600 trees/ha. To achieve the stand density target, "regarnissage"/replenishment planting is performed in the years after planting (when relevant and after survival rate counting). The nursery employees are helping with protecting and observing the project zone. Their role is mainly to engage in engagement with communities.	During site visit, several seedlings has been planted. The survival rate for planted the seedlings has been cross-checked on agroforestry document (annex 1/12a)
	Acacia raising.	The four nurseries involved also provide extra Acacia seedlings, not to plant within the project zone but to distribute for free to the communities. These seedlings can be planted in specifically designated zones, allowing for use after 4 years (cutting, charcoal). Obviously, these Acacias are excluded from the	Based on interview with local communities in Sava and Manakara, they are agreeing that acacia tree is important to be planted. Also, regarding the Enviroment & Social risk of Betampona communities (annex 1/9)

		carbon benefit calculations below. Nevertheless, the distribution additionally reduces general pressure on the woodlands.	
	Activate ecosystem co-benefits.	Woodland establishment is important to improve the natural water cycle supplying water access for all the nearby villages and thus also for agricultural production. The project will provide trainings on sustainable water management practices (e.g. water wells as socioenvironmental reinvestments). Besides, the project will monitor biodiversity in a quantitative way, including key flora species, using the Shannon diversity index.	Based on interviews with communities, the Woodland establishment is important to improve the natural water cycle supplying water access for all the nearby villages. The project activities will monitor and validated in monitoring parameter list (Annex 1/13/).
	Involve the surrounding communities.	The 4 local communities will be involved in each step of the project and are activated in the project as co-designers, daily labourers to collect the seeds, potting, maintaining the nurseries, creating and maintaining firebreaks, and planting trees. Zebu herders and charcoal producers are integrated into the community meetings and trainings to strengthen sustainable grazing and charcoal practices as alternatives on the longer term.	Communities will be involved in this project, has been planned into community meetings and trainings to strengthen knowledge. It is validated by document agroforestry agreement in document (annex 1/12a).
Agroforestry (Orchads)	*Establishing nurseries for naturalized trees*	Nurseries are established with on average 50% of their seedlings being fruit species. The nurseries thus contain approximately 5000 fruit trees per nursery. Grains can be derived from organic waste or from nearby orchards.	This is validated during onsite visits and confirmation with the project coordinator. Also, cross-checked with carbon calculation of agroforestry intervention document (Annex 1/6a/)
	Free seedling distribution	After occasional radio broadcasts and community meetings, interested	This is validated during onsite visits and confirmation with the

		households can pick up 50 up to 150 fruit seedlings to plant at their agricultural fields. Generally, people come from a radius of about 20km from the nursery. These fruit tree seedlings are distributed free of charge and on a voluntary basis, with the aim to support agroforestry practices by smallholder farmers. Tree species that work well with agricultural crops are chosen. The dominant crops are rice, maize and manioc.	communities. Also, cross-checked with agreement agroforestry document (Annex 1/12a/)
	Tree planting.	Planting of trees is done on the individual fields, after an individual plan vivo agreement is made (see Annex 1). All farmers can receive free agroforestry training. The planting density for fruit trees is 700 seedlings per hectare, with an estimated survival rate of 75% after the first six months and a longer-term mortality rate of 0.5% the years thereafter. The activity includes the planting of various non-fruit species (mainly *Intsia bijuga, Canarium madagascariense, Calophyllum inophyllum*); and fruit species such as mango (*Mangifera indica*), avocado (*Persea americana);*occasionally also lemon (*Citrus limon*), medlar (*Mespilus germanica*) and jambolana (*Eugenia cumini*).	This is validated during onsite visits and confirmation with the project coordinator. Also, cross-checked with carbon calculation of agroforestry intervention document (Annex 1/6a/)
	Aftercare	Free training on aftercare management is provided. Weeding is a common aftercare technique, while “regarnissage” is performed the next rainy season (when relevant and after survival rate counting), in order to replace underperforming	Based on interviews with project coordinator, provided free training of aftercare management important. Because the training activities explain how to manage seedling after planting.

		seedlings. Deadwood is generally removed. There is a low risk of fire occurrence in the cropping zones, as these zones are generally close to the village and agriculturally important. Finally, farmers are encouraged to use organic fertilizer and organic pesticides for disease control. Trees can be protected from drought by mulching and irrigation.	It is validated by document environment & social assessment report (Annex 1/9/)
Restoration planting at Sava			
Mangrove rehabilitation	Establishing mangrove nurseries	Mangrove nurseries ("pépinières de mangrove ») are established near the project zones. The nurseries contain a mixture of endemic mangrove species (approximately 10,000 per nursery) including *Avicennia marina, Xylocarpus granatum, Rhizophora mucronata, Bruguieria gymnorhiza, Ceriops tagal, Lumnitzera racemosa* and *Sonneratia alba.*	This is validated during onsite visits and confirmation with the project coordinator. Also, cross-checked with carbon calculation of agroforestry intervention document (Annex 1/6b/)
	Mangrove planting	The mangrove seedlings are planted near the coast but in the intertidal zone, in line with their natural succession. A barrier reef is present, to protect against the actions of the waves. We follow a cycle of approximately 18 months in total: a. The first planting phase starts close to the current coastline, with a planting density of approximately 1000 seedlings/ha (Avicennia). b. During the second cycle, after approximately 6 months, Xylocarpus (ca. 1000 seedlings/ha) and Lumnitzera (1000 seedlings/ha) are planted just seawards of the Avicennia.	Based on interviews with communities, the cycle of mangrove plantings is described in the monitoring list. The validation team validated with monitoring parameter list document (Annex 1/13/).

		c. Rhizophora is planted during a third phase, after another 6 months, at a density of 1000 seedlings/ha. The last planting phase, after about 18 months in total, consists mainly of Sonneratia (at 1000 seedlings/ha). The total amount of seedlings planted thus equals ca. 5000 per ha.	
	Mangrove regarnissage	After 2 years, the mangrove health is monitored and regularly maintained with enrichment planting ("phase of regarnissage"). Regarnissage can be done using seedlings from the nurseries, but also using the direct sowing technique (at a 1x1m grid) if sufficient mangrove mud is present. After a total period of approximately 5 years, a naturalized mangrove ecosystem is restored. The area of restoration extends about 50m seawards (in reference to the former coastline) nearby the fishing village, towards about 100m seawards further from the village. The above-mentioned rehabilitation methodology was successfully tested by Graine De Vie at Cap Est since 2011. To date, this mangrove provides evidence for the efficacy of the methodology.	Validation team validated by Environment & social assessment risk (annex 1/9/) that the communities in mangrove rehabilitation will be monitoring and regularly maintaining mangrove planting and regarding the mangrove rehabilitation agreement (annex 1/12b/) the communities too agreed monitoring and maintaining mangrove planting already.
	Involve fishing associations in post-planting activities.	The mangroves are planted and protected by members of the nearby fishing associations. Female members of the associations have a key role during planting. The role of the associations is not only to engage in ecosystem rehabilitation, but also to guard the mangrove during	Based on interviews with associantions, the plays a very important role. important to be planted. The role of the associations is not only to engage in ecosystem rehabilitation, but also to guard the mangrove during and after establishment. So, the

		and after establishment. This is performed by a “petit comité pour la surveillance » under a rotation system. Besides, a natural mangrove ecosystem provides a habitat for species such as small fish, crabs and shrimps. These are often caught by fishermen, and cleaned and sold by fisherwomen. The project will also support the associations with trainings on sustainable fishery practices and marketing of their products, and on the long-term management, protection and care of the mangrove planting zone.	project coordinator will also support the associations with training and marketing of their products, and on the long-term management, protection and care of the mangrove planting zone. It is validated in mangrove rehabilitation agreement (annex 1/12b/)
	Activate community re-investments.	There are many socio-ecological challenges that could be supported by the plan vivo re-investments at the decision of the communities. Examples are to improve fishing materials, to improve children's access to school, to improve access to local fishing markets, etc.	Plan vivo re-investment was described in financial plan document (annex 1/16/). Allocated for re-investment community is 60% from plan vivo sales.

3.14 Additionality

STEP 2. Barrier analysis.

Sub-step 2a. Identification of barriers that would prevent the implementation of at least one alternative land use scenarios.

No financial, technical, institutional nor social barriers would plausibly hamper the continuation of the grassland cover scenario. Continuation of grassland cover requires no investments, technical knowledge nor legal efforts: the project areas are periodically affected by wildfires. Forestation without extra funding that follows from plan vivo certification is not a plausible scenario, given the significant amount of funding required and the lack of governmental or other nurseries in the areas. It was validated by interviewed with project coordinators that the project are still in discussion with the Bureau National de Coordination REDD. Meanwhile, mangrove plantation without extra funding that follows from plan vivo certification is not a plausible scenario, given the significant amount of funding required and the lack of governmental or other mangrove nurseries in the areas. It was validated by financial plan document (annex 1/16/) and validated by Global Data Lab (2023), showing the percentage poorest households (International Wealth Index < 35) is 68.8% at the national level (Annex 1/22/).

Sub-step 2b. Elimination of land use scenarios that are prevented by the identified barriers

We eliminate the scenario of forestation and mangrove rehabilitation without extra plan vivo funding, since it is not a plausible future land cover scenario.

Sub-step 2c. Determination of baseline scenario (if allowed by the barrier analysis)

Forestation without being registered as a plan vivo project is not included in the list of land use scenarios that are not prevented by any barrier. Consequently, only one land use scenario remains (pressure-as-usual scenario), so according to the tool, this scenario is the baseline scenario. The validation team deems correct the identified baseline scenario that reasonably represents what would have occurred in the absence of the project. The same determination, mangrove planting without being registered as a plan vivo project is not included in the list of land use scenarios that are not prevented by any barrier. Consequently, only one land use scenario remains (perpetuation of the status quo), so according to the tool, this scenario is the baseline scenario.

STEP 4. Common practice analysis.

There are no similar previous or ongoing forestation and mangrove rehabilitation activities in or near the project zones, not even remotely similar to this proposed plan vivo project. Consequently, the plan vivo project activity is not the baseline scenario and, hence, it is additional.

During on-site visit the validation team observe that there are no similar previous or ongoing forestation and mangrove rehabilitation activities in or near the project zones, not even remotely similar to this proposed plan vivo project. Consequently, the plan vivo project activity is not the baseline scenario and, hence, it is additional. Also, the validation team check that there is no other PV project, VERRA, GS or UNFCCC registered in the area. This was validated in document annex 1/53/.

The project has three main barriers: financial, technical and institutional/social aspect. All these barriers are similar for two project intervention. The barriers of limited financial capacity without project intervention have been corroborated by amongst others. The validation team field observations supplemented by Global Data Lab (2023), showing the percentage poorest households (International Wealth Index < 35) is 82.7% in Manakara, 52.3% in Antsiranana and 68.8% at the national level. This is also reflected in food insecurity data: the percentage of underweight children is 26.5% in Fianarantsoa, 19.5% in Antsiranana and 26.2% nationally. The poverty headcount ratio at $2.15 a day (2017 PPP) is 80.7% of the total population.The barriers of limited technical capacity without project intervention have been corroborated by community interviews in Sambava (Andasibe) and Manakara (Betampona). The validation team has observed Graine De Vie nurseries near project sites. Besides, the mean years of education received by the population (aged 20+) is 4.2 years in Fianarantsoa, 5.8 years in Antsiranana and 5.0 years at the national level. The educational attendance of children (aged 6-8) is limited to 55.3% in Fianarantsoa, 74.8% in Antsiranana and 61.8% nationally (Global Data Lab, 2023) (Annex 1/22).The barriers of limited institutional capacity without project intervention have been corroborated by the Conventions with the DREDD and BN REDD+ (annex 1/2).

Table 5 Additionality Assessment Summary

Project Intervention	Main Barriers	Activities to Overcome Barriers	Validation Assessment

Restoration planting at Manakara			
Agroforestry	• Very limited farmer cash income to buy seedlings • Limited credit availabilities • Very few other nurseries or governmental nurseries available	• Free distribution of seedlings • High-quality nurseries established by Voa Aina, producing high-quality seedlings • Smart use of scarce lands (optimal combination of crops, fruits, trees)	Validated by Global Data Lab document (Annex 1/22/)
	• Focus on exotics introduced by French colonizer: Eucalyptus spp. and Pinus spp. • Few trainings on agroforestry; expensive technical consultants	Academic input of environmental scientists; skilled local coordinator team; free technical training for farmers; fruit production becomes possible*.	Validated by Global Data Lab document (Annex 1/22/)
	• "Top-down approach", although room is given for local initiatives • Climate policies (e.g. REDD+) large-scale instead of small-scale Transferring only responsibilities, not rights, to the local communities	• Bottom-up approach with consultation rounds, continued workshops and benefits from agroforestry • Rewarding for implementation results Local communities are not the problem, they are the solution for the environmental issues	The barriers of limited institutional capacity without project intervention have been corroborated by the Conventions with the DREDD and BN REDD+ document (Annex 1/2/)
Restoration planting at Sava			
Mangrove Rehabilitation	• Limited funds • Other priorities Limited community credit availabilities	Start-up capital secured by Graine De Vie; payment	Validated by Global Data Lab document (Annex 1/22/)

		scheme supported by Plan Vivo	
	Mangroves disappeared after 2004. Technical knowledge on mangrove service valorization is still limited. Thus, to strengthen the existing efforts, there is ample opportunity for projects focusing on the development of fishery associations.	Academic input of environmental scientists; skilled local coordinator; training for local communities; focus on (socio-economic) fishery valorization.	Validated by Global Data Lab document (Annex 1/22/) and Registration Grand De Vie (Annex 1/2/)
	• "Top-down approach", although room is given for local initiatives. • Climate policies (e.g. REDD+) rather large-scale instead of community-based. Transferring only responsibilities, not rights, to the local communities	• Bottom-up approach with first consultation round, continued workshops and benefits for fishery communities • Rewarding for implementation results Local communities are not the problem, they are the solution for the environmental issues	The barriers of limited institutional capacity without project intervention have been corroborated by the Conventions with the DREDD and BN REDD+ document (Annex 1/2/)

3.15 Carbon Benefits

Carbon Pools and Emission Sources

The emission source from the project activities is consider to zero due to the project intervention is aims to increasing the carbon sequestration from tree and mangrove planting. The carbon pools sources included in the project activities are from above-ground biomass and below-ground biomass.

Potential Leakage

The potential leakage come from grazing activities. However, these activities based on calculation from approved methodology is considered to account as zero. Therefore, the leakage of this project are zero.

Uncertainty

The uncertainty is following AR-Tool14. It confirmed that the calculation is true and correct.

Table 6 Validated Carbon Benefits Summary in the crediting period

Project Intervention	Baseline Emissions (t CO_2e/ha)	Project Emissions (t CO_2e/ha)	Leakage Emissions (t CO_2e/ha)	Carbon Benefit (t CO_2e/ha)
Mangrove Restoration Planting	0	-1426	0%	1426
Woodland planting	0	-402	0%	-402
Orchard	0	-348	0%	-348

Table 7 Validated Plan Vivo Certificate Potential

Project Intervention	Carbon Benefit (t CO_2e/ha)	Project Area (ha)	Total Carbon Benefit (t CO_2e)	Risk Buffer (t CO_2e/ha)	Potential PVCs (t CO_2e)
Mangrove Restoration Planting	-1426	14.1	-20 107	20%	14 075
Woodland planting	-402	323	129 846	20%	90 892
Orchard	-348	10	3480	20%	2436
TOTAL	**-2176**	**347.1**	**153 433**	**Each 20%**	**107 403**

Risk Management

3.16 Environmental and Social Safeguards

3.16.1 Exclusion List

The project does not include any activities listed in the plan vivo, it has been ensure during desk review and site visit by the validation team.

3.16.2 Environmental and Social Screening

Project proponents have fully described environmental and social screening by filling in questionnaires (Annex 10). The process of filling out the questionnaire is based on the results of interviews and discussions conducted by the project coordinator with the community and/or participants by communal meetings on risks were held in Andasibe (Sava) and Betampona (Manakara). Using the model below, the main risk areas were discussed and mitigation measures were decided in common. In Betampona, 36 people joined the risk sessions on 12 and 13 July; in Andasibe, 31 people joined the risk sessions on 7 and 8 August. It was confirmed by the interview with the communities and/or participants in Sambava that they were involved by the project coordinators in the screening process of environmental and social. Several aspects assessed in the screening process are as follows :

1. Vulnerable Groups: Potential risk mainly related with perpetuation of income-related inequality. Based on the screening process it is shown that there are lower income groups (e.g. groups of farmers with much less cows and/or less than 1 Ha of cropland) identified as vulnerable groups.
2. Gender equality: potential risk mainly related with perpetuation of gender-related inequality
3. Human rights: Potential risks mainly related with individuals not being present during decision-making by community meetings. It is possibly became a risk when women would be underrepresented during decision –making events at community meetings.

4. Community, Health, Safety & Security: Potential risks mainly related with social conflicts with the Dahalo group. It is possibly became a risk when vulnerable individuals would not be present during decision-making by community meetings.
5. Labour and Working Conditions: No risk, as the project will at all times align with national labour laws
6. Resource Efficiency, Pollution, Wastes, Chemicals and GHG emission: No risk, as no pollutants are used, and project GHG emissions are negligible
7. Access Restrictions and Livelihoods: Potential risks mainly related with disputes around the issue of fire
8. Cultural Heritage: No risk, since the project areas do not contain cultural heritage
9. Indigenous people : Potential risks mainly related with involving Antemoro customs and Antemoro participation. Project needs to clarify at PDD stage.
10. Biodiversity and Sustainable Use of Natural Resources : Potential risks mainly related with introducing non-"native", although "naturalized" trees. Potential risk if leakage from displaced wood cutting affects an area with more sensitive biodiversity.
11. Land Tenure conflicts : Potential risks mainly related with the issue of fire, e.g. as a protest against state authority
12. Risk of No Accounting for Climate Change : Risk of cyclones should be monitored throughout project lifetime
13. Other – e.g. Cumulative impacts : Potential risks mainly related with the potential leakage from displaced wood cutting.

Based on the explanation above, the project coordinators have the ability to carry out environmental and social screening based on the level of scale and risk according to conditions in the field and in accordance with the project interventions being implemented. It is attached in annex 1/9 Environmental and Social Screening Report and annex 1/10 Environmental and Social Assessment Report. This was cross checked with the community interviews in Sambava (Andasibe) and Manakara (Betampona), and the evidence of the community risk meetings (Annex1/28) The validations assess that the project coordinator has carried out environmental and social screening appropriately and correctly.

Table 8 Environmental and Social Risks

Risk Area	**Significance (low <7, moderate <13, severe <19, high <26)**	**Validation Assessment**
Vulnerable Groups	Low, potential risks mainly related with perpetuation of income-related inequality	Ethnical Charter (annex 1/33), Annex 9, Section B, Gender equality (Environmental and Social Screening annex 1/9) and (Environmental and Social annex 1/10) Interview with local villagers and project members revealed the same perception of risk significance as figured by the Project Developer. During onsite visit, the validation team interview with fishermen.

		The results of the interview showed that the project had a positive impact, especially on fisheries (shrimp, crabs and other types) because their mangrove ecosystem was maintained. In addition, the community also said that since the mangrove ecosystem was maintained and enhanced, major storms that usually destroy residents' settlements have been minimized because they can be held back by mangrove plants.
Gender Equality	Low, potential risks mainly related with perpetuation of gender-related inequality	Ethnical Charter (annex 1/33), Annex 9, Section B, Gender equality (Environmental and Social Screening annex 1/9) and (Environmental and Social annex 1/10) During the site visit, the validation team carried out the discussion and interview with the local community (as many as 50 people, consisting of men and women). In Manakara, validator interview the men and women (Annex 3, Figure 5). There were not any issues for discrimination nor gender inequality for them in project contributions. From forum discussion during the validation process, many women attend the meeting and they give a positive comments regarding the project activities.
Human Rights	Low, potential risks mainly related with individuals not being present during decision-making by community meetings	Agreement agroforestry (annex 1/12b/), agreement mangrove rehabilitation (annex 1/12a/), Environmental and Social Screening (annex 1/9) and Environmental and Social (annex 1/10) Interview with local villagers and project members revealed the same perception of risk

		significance as figured by the Project Developer.
Community, Health, Safety & Security	Low, potential risks mainly related with social conflicts with the Dahalo group	Financial plan (Annex 1/19/), Environmental and Social Screening (annex 1/11/) and Environmental and Social (annex 1/12/) Interview with local villagers and project members revealed the same perception of risk significance as figured by the Project Developer.
Labour and Working Conditions	Low, as the project will at all times align with national labour laws	Ethnical Charter (annex 1/33/), Annex 9, Section B, Gender equality (Environmental and Social Screening annex 1/11/) and (Environmental and Social annex 1/12/) Interview with local villagers and project members revealed the same perception of risk significance as figured by the Project Developer.
Resource Efficiency, Pollution, Wastes, Chemicals and GHG emissions	Low, as no pollutants are used, and project GHG emissions are negligible	Environmental and Social Screening (annex 1/11/) and Environmental and Social (annex 1/12/) Interview with local villagers and project members revealed the same perception of risk significance as figured by the Project Developer.
Access Restrictions and Livelihoods	Moderate, potential risks mainly related with disputes around the issue of fire	Environmental and Social Screening (annex 1/11/) and Environmental and Social (annex 1/12/) Interview with local villagers and project members revealed the same perception of risk significance as figured by the Project Developer.
Cultural Heritage	Low, since the project areas do not contain cultural heritage	Ethnical Charter (annex 1/33), Annex 9, Section B, Gender equality (Environmental and Social Screening

		annex 1/9) and (Environmental and Social annex 1/10) Interview with local villagers and project members revealed the same perception of risk significance as figured by the Project Developer.
Indigenous Peoples	Low, potential risks mainly related with involving Antemoro customs and Antemoro participation	Environmental and Social Screening (annex 1/9) and Environmental and Social (annex 1/10) During the interview in Andasibe, information was also obtained from the village head that there were no indigenous people in their area. In Manakara, indigenous people, Antemoro, have been visited and their members interviewed (Annex 3, Figure 5). The antemoro during the interview confirmed they were consenting and involved in the project activity. The Chief of Antemoro was attended the forum discussion during the validation and the members of Antemoro were enthusiasm to involved in the project activities by including part of their private area land into project activity.
Biodiversity and Sustainable Use of Natural Resources	Low, potential risks mainly related with introducing non-“native”, although “naturalized” trees	Environmental and Social Screening (annex 1/11/) and Environmental and Social (annex 1/12) and document research (Annex 1/34 and annex 1/35) Interview with local villagers and project members revealed the same perception of risk significance as figured by the Project Developer.
Land Tenure Conflicts	Moderate, potential risks mainly related with the issue of fire, e.g. as a protest against state authority	Environmental and Social Screening (annex 1/9) and Environmental and Social (annex 1/10) Interview with local villagers and project members revealed the same perception of risk

		significance as figured by the Project Developer.
Risk of Not Accounting for Climate Change	Low, potential risks mainly related with cyclones (notably at Manakara)	Statement no register this project in any scheme annex 1/53/ Environmental and Social Screening (annex 1/9) and Environmental and Social (annex 1/10) Interview with local villagers and project members revealed the same perception of risk significance as figured by the Project Developer.
Other – e.g. Cumulative Impacts	Moderate, potential risks mainly related with the potential leakage from displaced wood cutting	Environmental and Social Screening (annex 1/9/) and Environmental and Social (annex 1/10/) Interview with local villagers and project members revealed the same perception of risk significance as figured by the Project Developer.

3.16.3 Environmental and Social Assessment

The scope of the assessment of environmental and social risks and impacts is vulnerable groups, Cultural heritage, Gender equality, Indigenous People.

The method for determining risk for each parameter is based on interviews conducted during communal meeting in Andasibe (Sava) and Betampona (Manakara). Then, if the risk question is considered risky by the participant, a mitigation action is created by the coordinator, if the risk question is not considered risky by the participant but is considered risky by the coordinator, then a mitigation action is created by the coordinator.

3.16.4 Environmental and Social Management Plan

Climate lab design for environment and social risks and impacts and mitigation:

1. Gender equality, the mitigations: Try that women participate >45% in people's assemblies.
2. Vulnerable groups, the mitigations are establishment of VOI in Andasibe and now it is established. It is also quite a common social structure. The allocation of a Community Fund must be part of the agroforestry agreement (minimum 10%). That would be an easy solution.
3. Indigenous people, The project must work closely with the king of the Antemoro. Rites must also be respected, as well as Ancestors and the Dead. For example, for large planting actions, a ceremony with rum should be held.
4. Human rights issues, the mitigation is Clear communication around payment dates when issuing plan vivo credits is quite feasible + Free distribution of additional seedlings (cloves, coffee, cinnamon)
5. Resource efficiency, pollution, wastes, chemicals and GHG emissions issues, the mitigation is GDV given training and workshop.

6. Cultural heritage issues, Community Health, Safety & Security land tenure conflicts issues and Access restrictions and livelihoods & land tenure conflicts issues, the mitigation are developing a consensus between vulnerable groups (fisherman and herders) that can be written in a DINA. The grazing relocation must be done according to the plan communale de Developpement
7. Risk of Not Accounting for Climate Change, the mitigation are Regarnissage after the cyclone, and adding wooden sticks with a small barrier to stop algae during flooding, plant a little earlier. A regarnissage event is also necessary (in case of rain failure or cyclone passage), plant extra woodlands with combustible trees in the vicinity, for charcoal.

Based on the environment and social risks and impacts table in annex 1/10/; ethical carter climate lab with Grand de Vie (annex 1/33/) and statement the project not registered in any VCS (annex 1/53/), the validator assessed the management plan for reducing environmental and social risk aligned with the Plan Vivo standard

3.16.5 Native Species

The project will use a non-native fruit tree species i.e mango (*Mangifera indica*) and avocado (*Persea americana*). The risk assessment was done by the project coordinator and the results was validated by during site visit. The validation team concluded that the non-native fruit tree species does not have any material risk to the environment nor community.

Table 9: Validated Non-Native Species Overview

Project Intervention	Non-Native Species Planted/ Introduced	Validation Assessment
Agroforestry	Mango (Mangifera indica), avocado (Persea americana),	The validation team concluded that the selected species are commonly used in project area. These species are not invasive and have no environmental risk that threat local fruit tree. Based on research document it is confirmed that mango (annex 1/35) and avocado trees (annex 1/34) are non-native species in Madagascar country.

3.17 Achievement of Carbon Benefits

This project will issue PVCs. (fPVCs converting into rPVCs/vPVCs).

Proportion PVCs: 90% (total saleable PVCs after future 20% risk buffer reduction.) The remaining 10% not issued, will be kept in a Conservation Reserve that can be cancelled if the project fails to convert part of the fPVCs or PVCRs to PVCVs. Calculations of Carbon Benefits are validated and reported in detail at Annex 6 Carbon calculation agroforestry and mangrove rehabilitation spreadsheet (Annex 1/6a and annex 1/6b).

This is in accordance with the PV requirements.

3.18 Reversal of Carbon Benefits

Based on review of reversals risk from social, economic, environmental, and administrative. It can be concluded that the project are considered to have low risk since the score from the mitigation that

have been taken is 4 (four). Therefore, the project no need take any further action plan to mitigate the risk arise from project intervention.

The determined value of the overall risk rating is fair and suits to the scenario presented in the context of the project activities implementation.

Table 10 Risk of Reversals

Risk Factor	Mitigation Measures*	Score	Validation assessment
Land tenure and/or rights to climate benefits are disputed	Project agreements agreed and signed by relevant stakeholders Project logic with wide fire breaks (parfeus) Inclusion of different ethnic groups in voting system of "réunion villageoise"	4	Based on assessment through mangrove agreement (annex 1/12a) and agroforestry agreement (annex 1/12b). The determination of risk score is appropriate following the identification of impact and likelihood. The mitigation taken by the project coordinator are fairly presentation and plausible to implemented in the project boundary.
Political or social instability	To work closely with the Office of the Minister of Environment, Ecology and Forests of Madagascar and other relevant authorities at district and fokotany levels. Involve all communities in the project area in all aspects of project implementation to avoid politically driven non-acceptance of the project	2	Based on assessment through convention with DREDD (annex 1/2) and letter of bureau national (annex 1/15). The determination of risk score is appropriate following the identification of impact and likelihood. The mitigation taken by the project coordinator are fairly presentation and plausible to implemented in the project boundary.
Community support for the project is not maintained	The project provides extra trainings on (i) technical (forestry) issues; (ii) commercial (NTFP/fishery	3	The VVB during the on site visit cross checked this with the community interviews in Andasibe and in Betampona. The determination of risk score is appropriate following the identification of impact and

	sales) issues; (iii) methodological issues (Plan Vivo methodology, responsibilities); and iv) a clear understanding from the onset of the proportions of benefit sharing among different stakeholders		likelihood. The mitigation taken by the project coordinator are fairly presentation and plausible to implemented in the project boundary.
Insufficient finance secured to support project activities	Financial plan developed	3	Based on desk review and interview with project coordinator regarding PDD annex 16 Financial plan, that financial from sales plan vivo credit use to secured to support project activities (annex 1/16). The determination of risk score is appropriate following the identification of impact and likelihood. The mitigation taken by the project coordinator are fairly presentation and plausible to implemented in the project boundary.
Alternative land uses become more attractive to the local community	Project agreements agreed and signed by relevant stakeholders; extra Acacia seedlings can be planted in specifically designated zones, allowing for use after 4 years (cutting, charcoal).	2	Based on desk review on the mangrove agreement (annex 1/12a) and agroforestry agreement (annex 1/12b). The determination of risk score is appropriate following the identification of impact and likelihood. The mitigation taken by the project coordinator are fairly presentation and plausible to implemented in the project boundary.
External parties carry out activities that reverse climate benefits	The project agreement prohibits external parties to carry out activities that reverse climate benefits, while the project agreement discusses the	4	Based on review on the mangrove agreement (annex 1/12a) and agroforestry agreement (annex 1/12b). The determination of risk score is appropriate following the identification of impact and likelihood. The mitigation taken by the project coordinator are fairly presentation and plausible to implemented in the project boundary.

Fire	Project logic with wide fire breaks (parfeus) Fire management plan elaborated Fire risk assessment conducted and updated regularly Training sessions and sensibilisation meetings are organised for all communities; community members help in protection	4	The determination of risk score is appropriate following the identification of impact and likelihood. The mitigation taken by the project coordinator are fairly presentation and plausible to implemented in the project boundary. This information was checked during the site visit and interview with the community in Manakara (Betampona).
Pest and disease attacks	Biodiversity will be monitored (see monitoring section).	2	The determination of risk score is appropriate following the identification of impact and likelihood. The mitigation taken by the project coordinator are fairly presentation and plausible to implemented in the project boundary. This information was checked during the site visit and desk review on monitoring plan document (annex 1/13) and Hending et al. (2023) (annex 1/25).
Extreme weather or geological events	Cyclones, inundation, fire and pests are included in the monitoring targets to ensure strict follow-up Regarnissage included in the monitoring scheme and annual reporting and follow-up	4	The determination of risk score is appropriate following the identification of impact and likelihood. The mitigation taken by the project coordinator are fairly presentation and plausible to implemented in the project boundary. This information was checked during the site visit and desk review on monitoring plan (annex 1/13).

Capacity of the project coordinator to support the project is not maintained	Financial plan developed	3	The determination of risk score is appropriate following the identification of impact and likelihood. The mitigation taken by the project coordinator are fairly presentation and plausible to implemented in the project boundary. This information was checked during the site visit and desk review on financial plan (annex 1/16), agroforestry agreement (Annex 1/12a/) and mangrove rehabilitation agreement (Annex 1/12b).
Technical capacity to implement project activities is not maintained	Financial plan developed, nursery manuals developed, technical specifications developed	3	The determination of risk score is appropriate following the identification of impact and likelihood. The mitigation taken by the project coordinator are fairly presentation and plausible to implemented in the project boundary. This information was checked during the site visit and desk review on financial plan (annex 1/16) and technical specification agroforestry document in (annex 1/7b) and technical specification mangrove rehabilitation document in (annex 1/7a).

3.19 Leakage

The project coordinator have been identify the risk of leakage from this project. The risk of leakage is measured using AR-TOOL15-2.0, leakage emission attributable to the displacement of grazing activities under the following conditions is considered insignificant and hence accounted as zero.

Based on field observation and discussion with relevant stakeholders, the validation team conclude that the leakage from grazing is insignificant and accounted as zero.

3.20 Double Counting

Based on desk review on other voluntary carbon scheme website sources e.g Gold Standard (https://registry.goldstandard.org/projects?q=&page=1) and Verra (https://registry.verra.org/), it was not identify any greenhouse gas emission reduction and removal projects, programmes or initiatives that overlap with the project activities. In addition, there is no potential for generating transferable emission reduction or removal credits from carbon pools or emission sources included in the project.

3.21 Key Agreements to validate

The validation team has assessed the management plans, benefit sharing mechanism, grievances and project agreements.

Community management plans: Interviews with local government and communities confirmed their involvement in all stages of the land management plan development. This participatory process began with initial meetings where community members collaborated to draw Plan Vivo maps. These plan vivos are handwritten spatial land management plans, voluntarily produced and owned by the community or community sub-group, which form the basis of an agreement to provide benefit sharing. This voluntary and participatory mapping/planning process addressed the following local socio-ecological needs and priorities:

- Local livelihood needs and opportunities to improve or diversify livelihoods and incomes
- Reduce pressure on the ecosystem by introducing zonal planning (plan vivo mapping)
- Identifying areas where Acacia can be cut cyclically
- Land availability and land tenure
- Food security
- Which (parts of the) nurseries could be reserved to establish charcoal-producing woodlots
- Practical and resource implications for participation of women
- Opportunities to enhance biodiversity through planting native or naturalized species.

The final management plan was cross-checked on PDD Annex 11.

The Local government, local communities interviewed agreed that they were present and included on all land management plan stages. The management plan stages started since initial meetings which the Plan Vivo Maps were drawn by the community members. It was done in a participatory and collaborative manner where members of the community were able to fact check and correct what was sketched by fellow community members and the paper drawings by the project team. The management plan was cross checked on PDD Annex 11.

Benefit sharing mechanism: Stakeholder interviews and reviewed agreement letters provided evidence that the benefit-sharing mechanism from the sales of Plan Vivo certificates were completed through community consultation. Payments are indirectly linked to environmental management performance and are allocated for investments within the associated community area. These shared benefits will be used for social, educational, or environmental activities that directly benefit the local community, aligning with future plans developed by the communities themselves.

The discussions on the benefit sharing mechanism were part of the first “réunions villageoises”. This distribution key ensures that at least 60% of income from the sale of Plan Vivo Certificates (after payment of any charges, taxes or similar fees levied by the host country) will directly benefit project participants and other local stakeholders. The annual disbursements will be reported in the annual reports.

The project participants developed appropriate land management plans. A benefit-sharing mechanism was established through agreement with project participants, outlining specific social or environmental investments. Contracts and direct payments, when applicable, will follow standard

contracting practices, ensuring fair competition for local and regional contractors. All contracts are overseen by project coordinators, who guarantee that at least 60% of the income from certificate sales directly benefits project participants and other local stakeholders. These distributions are transparently reported in annual reports.

The validation team found evidence by stakeholder interviews and agreement letter checked that benefit sharing mechanism from the sales of Plan Vivo Certificates were completed following a community consultation. Payments are indirectly linked to environmental management performance and is allocated for investment in the associated community area. It is agreed that shared benefits will be used for investments in social, educational or environmental activities that benefit the local community, preferably in line with future plans for the designated project areas which are developed by the communities themselves.

The correct land management plans have been developed by the project participants. The benefit sharing mechanism was developed and agreed with project participants on a certain social or environmental investment. Contract and direct payments will be made to tenders if applicable with standard contracting practice, allowing fair competition for contractors from the locality or surrounding region. All contracts are overseen by the project coordinators, who guarantee that at least 60% of the income from the sales of the certificates will directly benefit project participants and other local stakeholders. The distributions are transparently reported in the annual reports.

The percentage allocation of income from the sale of Plan Vivo Certificates to different stakeholders is at least 60% and will directly benefit project participants and other local stakeholders.

Grievance mechanism: A grievance mechanism ensures that complaints and suggestions raised during community meetings or project area visits are reported and resolved fairly, transparently, and promptly. Project coordinators record these in a dedicated "complaints and suggestions logbook," which is regularly updated and scanned for storage on a shared drive. Whenever possible, corrective actions are taken based on the received feedback. Project coordinators are responsible for organizing additional consultation rounds if necessary and implementing these remediation actions.

During all community meetings the complaint and suggestion book is presented and consulted. In case of a complaint, a remediating solution is sought through community deliberation, and a follow-up trajectory is initiated upon on the complaint. The steps that determine this trajectory depend on the remediation process.

The project agreement and grievance flowchart outline further actions in case of disputes.

Any complaints and suggestions that are raised during community meetings or walks around the project areas are recorded by the project coordinator in a “complaints and suggestions logbook”. There is a grievance flowchart. So, the grievances mechanism raised by all stakeholders are reported and resolved in a transparent, fair, and timely manner.

The logbook is regularly updated and scans are stored on the shared drive. Where possible, remediating actions – following complaints and suggestions – are taken. The project coordinators are responsible to organise extra consultation rounds, if required, and to implement remediation actions. We refer to the project agreement and grievance flowchart for actions in case of dispute.

The project agreement process between project participants and the project coordinator adheres to Free, Prior, and Informed Consent (FPIC) principles. Agreements meet minimum requirements, including: extendable to cover the entire crediting period, specifying the minimum amount received

by the project participant as part of the benefit-sharing mechanism and ensuring eligibility based on established targets.

The project agreements process between project participants and the project coordinator follows FPIC principles. The minimum requirement is met in the agreements, specifical: is extendable to cover the entire crediting period, the minimum amount the project participant as part of benefit sharing mechanism is on agreement and eligible and met targets.

Therefore, the validation team has assessed this section reviewing the following this: The management plan on PDD Annex 11, grievance flowchart, and examples of project agreements in Annex 12a and 12b provide examples of project agreements.

MONITORING AND REPORTING

Indicators

3.22 Carbon Indicators

Project Intervention	Carbon Indicator	Validation Assessment
Mangrove rehabilitation	C5: Number of mangrove seedlings planted per hectare during a planting cycle of 2 years	Based on the PDD, monitoring is carried out using Qfield. The guideline for using Qfield mentioned in the document Qfield guideline (annex 1/46/). Every fishery is registered in the app, together with his individual agreement and his field is saved as a shapefile in the app. Every milestone year, a member of the Grand de Vie team or Plan Vivo committees will come and check if the target is reached, it is confirmed at monitoring flow chart (Annex 1/29) and monitoring parameter list (Annex 1/30).
	C6: Survival rate of the mangrove seedlings planted in the mangrove rehabilitation area and DBH growth of trees planted	DBH monitoring based on a representative sample of 10% of the trees in year 5, 7, 9, 12 and 15. The statement mentioned in monitoring plan (Annex 1/29) and monitoring parameter list (Annex 1/30/).
	C7: Number of observations of cyclones, uncontrolled fires, displaced cutting and diseases.	The validation team assessed the registration form of observations condition of indicator C7. it is confirmed at monitoring flow chart (Annex 1/29/) and monitoring parameter list (Annex 1/30/)

Agroforestry	C8: Number of fruit and rent tree seedlings planted in agroforestry plots	Based on the PDD, monitoring is carried out using Qfield. The guideline for using Qfield mentioned in the document Qfield guideline (annex 1/46/). Every farmer is registered in the app, together with his individual agreement and his field is saved as a shapefile in the app. Every milestone year, a member of the Grand de Vie team or Plan Vivo committees will come and check if the target is reached, it is confirmed at monitoring plan (Annex 1/29/) and monitoring parameter list (Annex 1/30/).
	C9: Long-term survival rate and DBH growth of fruit trees planted in agroforestry plots	The validation team assessed the monitoring tools of tree growth including the survival rates. DBH monitoring based on a representative sample of 10% of the trees in year 5, 7, 9, 12 and 15. The statement mentioned in monitoring plan (Annex 1/29/) and monitoring parameter list (Annex 1/30/).

3.23 Livelihood Indicators

Livelihood Indicator	**Validation Assessment**
L1: % of communities having established agroforestry plots with fruit and rent trees	The determination of the plot for planting was captured in shapefiles document. It was validated in annex 1/1/.
L2: % female participation during the annual *réunion villageoise* per project area	Percentage of female participation was validated by document attendance list (annex 1/55/).
L3: Organised trainings on sustainable forest management, fishery and agroforestry	Climate lab and Grain de vie was planned for training management, fishery and agroforestry by document training plan document (annex 1/37/)
L4: Ariary spent on socioenvironmental reinvestments	Re-invesment socioenvironmental was validated by financial plan document (annex 1/16/), agroforestry agreement document (annex 1/12b/) and mangrove agreement document (annex 1/12a/)
L5: Annual cash income of fishery associations	Annual cash income for communities was discusced in participaroty design. It is validated by document participatory design (annex 1/36/)

L6: Volume of fruit produced (mango, avocado, lemon, medlar, plum, orange, jackfruit) by smallholder, as well as the volume of rice, maize, manioc, vegetables, cacao, coffee and vanilla produced by the same smallholder	To calculate of volume fruit produced is using Qfiled. Qfield quidline training was done by climate lab. It is validated in annex 1/46/.

3.24 Ecosystem Indicators

Ecosystem Indicator	Validation assessment
E1: Above Ground Biomass conditions in the ecosystem restoration areas	The method of monitoring vegetation survey uses the Shannon diversity index. This is confirmed in the monitoring parameters list (annex 1/30/) and monitoring flow chart (annex 1/29/)
E2: Plant-species richness in the ecosystem restoration areas	The project coordinator listed species want to be plant in calculation carbon mangrove (annex 1/6a/) and calculation carbon agroforestry (annex 1/6b/). Also, the project coordinator was list non-native species to be plant. The validator was assessed that point listen in section 3.16.5.
E3: Fire occurrence, cyclones and pests in the ecosystem areas and in the direct vicinity of the project area	Firebreaks management was explainend in document annex 1/47/.
E4: Soil organic carbon content in the ecosystem restoration areas	The project coordinator determined carbon content for soil organic in calculation carbon mangrove (annex 1/6a/) and calculation carbon agroforestry (annex 1/6b/).
E5: Faunal recolonization by crabs of the previously degraded mangrove areas as an indicator of ecosystem health	Faunal recolonization is confirmed in the monitoring parameters list (annex 1/30/) and monitoring flow chart (annex 1/29/)

Monitoring

3.25 Monitoring Plan, Process and Sharing results

The monitoring plan made by the project coordinator have been stated in the PDD together with the process and sharing results. Based on the desk review and confirmation from relevant stakeholders, the validation team concludes that the process are correct and comply with PV standards. According to the PDD monitoring plan cross checked, participants interviews, reports combined with field observations made during the on-site visit the validation team conclude that the proposed indicators are correctly justified for the project activity.

Methods to monitor carbon indicators, livelihood indicators and ecosystem indicators are described in section 3.22, 3.23, and 3.24. Frequency of assessment will progress annually; in parallel every 5 years (at minimum) a full-scale (carbon) monitoring round will be organized. The monitoring plan is a shared responsibility of the project team. Climate Lab takes the lead in preparing the annual and 5-yearly Plan Vivo monitoring reports. Graine de Vie and Climate Lab have the resources and capacity to collect the required monitoring data. Regarding annex 13 monitoring plan, first planned verification

schedule for the project in 2027 and validated that the carbon indicators in section 3.22 and livelihood indicators in section 3.23 described in the table will be monitored throughout the crediting period.

Plans for sharing ecosystem and livelihood monitoring results are discussed directly with all local stakeholders involved in the project by setting- up joint workshops. The preferable method to distribute the monitoring results to the people of the village is the annual Plan Vivo meeting together with a poster summarizing the results in a public place. This statement is in accordance with the agreement agroforestry and agreement mangrove rehabilitation. Apart from that is an interview with communities during on-site visit, a statement which was delivered by farmers and fishery about plan sharing ecosystem and livelihood monitoring annex results align with the agreement (Annex 1/12a and Annex 1/12b).

The annual report will include all new areas and participants included in the program and all updated information regarding carbon, livelihood and biodiversity benefits collected through monitoring activities.

The report will also include the financial aspects related to costs and revenues generated, as well as the amounts of PVCs issued and retired, with corresponding benefit sharing with participants. The report will also focus on the results of the monitoring of environmental and social KPIs, as well as the results of the grievance mechanism activated.

Based on the information assessed above, the validation team concluded that the monitoring plan complies to the requirements of the approved methodology.

3.26 Reporting and record keeping

The project coordinator are aware to make annual report as PV standard. The annual report will be submitted in December 2022. Monitoring rounds will be organized (at minimum) in 2027, 2032, 2037, 2042 and 2047 (end of the project). All record for reporting are keeping and stored on a shared project drive with limited access (Google Drive). The project data (technical data, financial data, monitoring data) are updated on the drive at least once per month.

The validation team confirms the correctness of the annual reporting and record keeping for project interventions.

GOVERNANCE AND ADMINISTRATION

3.27 Governance Structure and Legal Compliance

The project's governance structure are consist of direct governance, community participation, conducting extra sessions and workshop, and managing suggestions and complaints. The governance structure comprises two primary parts. The first part includes the direct governance by the project coordinators and local project coordinators. The project is coordinated by Graine de Vie and Climate Lab, each with distinct responsibilities. Climate Lab is responsible for higher-level monitoring activities, including developing project management guidelines, carbon monitoring, and integrated assessment of project activities. Meanwhile, Graine De Vie is manages on-the-ground project activities, including administrative reporting.

The second part of the governance structure involves the participations communities, which include farmers, associations of farmers, fishermen, and other community members contributing to the project, from seedling growth to forest management. Réunion Villageoise, the basis of community

governance is the annual village meeting. During these meetings, participants discuss the progress and any issues related to the project. After the establishment of 'plan vivos', extra reunions, discussion sessions, training sessions, and workshops are organized in collaboration with the local coordinator. These activities are designed to ensure continuous improvement and a more democratic project design. In case of suggestions or complaints, the project has a grievance mechanism in place. Remedial actions are taken based on the feedback received. Local Project Coordinator: Responsible for organizing extra consultation rounds if required due to complaints and ensuring remediation actions are implemented. The project actively involves other potential stakeholders, such as research institutions. Examples include the Centre National de la Recherche Appliquée au Développement Rural (CENRADERU/FOFIFA) and Ghent University. These collaborations provide additional expertise and support to the project.

Input Management from Project Participants by:

Annual Village Meetings (Réunion Villageoise): Serve as the primary forum for collecting input from community members. These meetings allow for the discussion of project progress, challenges, and any necessary adjustments.

Extra Meetings and Workshops: Organized regularly to gather more detailed feedback and provide training. These sessions ensure that all participants have a voice in the decision-making process and are well-informed about project activities.

Grievance Mechanism: A structured process for handling suggestions and complaints ensures that issues are addressed promptly and effectively. This mechanism includes the possibility of organizing additional consultation rounds if necessary.

By implementing these steps, the project ensures that its governance structure and decision-making process are transparent, inclusive, and responsive to the needs and inputs of all participants. This approach not only enhances the effectiveness of the project but also fosters a sense of ownership and accountability among all stakeholders.

The project partners signed an ethical charter not to discriminate based on gender, age, ethnicity, religion or social status when selecting project participants. Based on interview with local community, they are exciting to involved in the project activities. The validation team during site visit, cross-checked this with the community interviews in Sambava (Andasibe) and Manakara (Betampona).

Table 11: Legal and Regulatory Compliance

Policy, Law or Regulation	Relevance	Validation Assessment
Loi No. 2006-031 de 24 Novembre 2006 fixant régime juridique de la propriété foncière privée non titrée	Law No. 2006-031 (2006) recognizes private property rights to untitled, customarily held land. It allows individuals and groups asserting rights to untitled land to obtain certificates recognizing their rights from the local land administration office (la Collective Décentralisée). The legislation has brought formal and informal tenure systems into alignment and thereby	Based on the desk review PDD annex 2f and annex 15, the process and confirmation with the project coordinator together with local community, it can ensure that the project activity is comply with national regulation, particularly for mangrove restoration planting and agroforestry in manakara sites. Meanwhile, for the site in Ambohitantly are excluded

	increased tenure security (Leisz 1998; Teyssier et al., 2008).	following the decision of government. It is validated by (Annex 1/52/)
Loi n° 2015-005 du 26 février 2015: The Protected Areas Code of Madagascar	This law proposes a contract between the Ministry of Environment, Ecology and Forests (MEEF) and the project developers to determine potential financing mechanisms for the protected area and local development.	The law aims to conserve Madagascar's unique biodiversity by regulating the designation of national parks, nature reserves, and other conservation areas, while also promoting sustainable use of natural resources. This is validated by (annex 1/51)
Decret No. 2018-500: Strategie Nationale REDD+ Madagascar	This law states that, in relation to carbon incomes, project promoters who have generated GHG emission reductions through their active contribution have a legal right to carbon benefits.	The decree outlines the framework for implementing REDD+ initiatives in Madagascar, focusing on the conservation and sustainable management of forests to enhance carbon sequestration, protect biodiversity, and improve local livelihoods. It is validated by (annex 1/54/)
Decret 1113 (dd. 12 January 2022): Décret relatif à la régulation de l'accès au marché du carbone forestier	This law regulates access to the forest carbon market for REDD+ projects.	The decree outlines the criteria for eligible forest projects, the rules for certification and validation of carbon credits, and the oversight mechanisms to prevent fraud and ensure environmental integrity. It is validated by (annex 1/45/).

3.28 Financial Plan and Management

The validator team assessed that the financial plan (see Annex 1/16/) provided was transparent, because it had described and recorded the finances obtained from the sale of the Vivo carbon plan. The financial plan has a balance between income and expenditure obtained from sales of the Vivo carbon plan. Regarding the PV Climate Project Requirements document version 5.1, section 5.5.2 that the annual audit financial must be conducted 12-months of the end of each financial year. The responsible accountant to financial audit is B&S Fiduciaire, an approved legal entity by the Professional Institute of Chartered Accountants and Tax Consultants (BBIF) with number 70245578. The annual audit financial has been finished in year 2022 and 2023 by B&S Fiduciaire. It was validated and justified in document (annex 1/39/) and (annex 1/40/).

In addition, regarding the financial plan document (Annex 1/16/) and based on the interview with the project coordinator it is known that financial plan is based on initial future forecasts. Thus, if total revenues are higher due to a higher price per credit or additional vPVCs emerged from the verification process, the delta of additional revenue will be recognized in the 60% to Project Participants and 40% to project developer (Graine de Vie, Climate Lab) to compensate for the economic loss generated by the project.

The validation team concludes that the financial plan is correctly justified for the project intervention

4. VALIDATION OPINION

The validation team has performed the validation of the Voa Aina and has verified that the project is in compliance with the Plan Vivo Standard version 5 without qualifications or limitations.

The validation process was performed on the basis of all issues and criteria of Plan Vivo Standard version 5.0.

The conclusions of this report show that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation. The review of the project design documentation and additional documents related to baseline and monitoring methodology; and the subsequent background investigation, follow-up interviews and review of comments by local stakeholders have provided the validation team with sufficient evidence to validate the fulfilment of the stated criteria.

In detail the conclusions can be summarized as follows:

- The project is in line with all criteria of the Plan Vivo Standard version 5.0.

- The project additionality is sufficiently justified in the PDD version 2.

- The Monitoring Plan is transparent and adequate.

- The analysis of the baseline emission, project emissions and leakage has been carried out in a transparent and conservative manner.

-The project is likely to achieve estimated carbon storage or reductions in greenhouse gas emissions.

Date of the validation report: 19 December 2024

Name and Signature of the lead validator:

Dwi Kus Pardianto

Annexes

Annex 1 – Documents reviewed or referenced

No.	Author	Title and version	Provider
1	CLIMATE LAB	Project area maps and shapefiles of Andasibe area	CLIMATE LAB
2	CLIMATE LAB	Registration Certificates and Partner Agreement; Convention with the DREDD	CLIMATE LAB
3	CLIMATE LAB	Table of Initial Project Participants	CLIMATE LAB
4	CLIMATE LAB	Pictures of Participatory Design phase	CLIMATE LAB
5	CLIMATE LAB	Letters & Initial FPIC	CLIMATE LAB
6a	CLIMATE LAB	Excel files Carbon Calculations mangrove	CLIMATE LAB
6b	CLIMATE LAB	Excel files Carbon Calculations agroforestry	CLIMATE LAB
7a	CLIMATE LAB	tech spec mangrove restoration	CLIMATE LAB
7b	CLIMATE LAB	tech spec agroforestry planting	CLIMATE LAB
8	CLIMATE LAB	ExClimate Labusion List	CLIMATE LAB
9	CLIMATE LAB	Environmental and Social Screening Report	CLIMATE LAB
10	CLIMATE LAB	Environmental and Social Assessment Report	CLIMATE LAB
11	CLIMATE LAB	Example Land Management Plans	CLIMATE LAB
12a	CLIMATE LAB	Project Agreement mangroves	CLIMATE LAB
12b	CLIMATE LAB	Project Agreement agroforestry	CLIMATE LAB

13	CLIMATE LAB	Monitoring Plan	CLIMATE LAB
14	CLIMATE LAB	Project Database	CLIMATE LAB
15	CLIMATE LAB	Letter Bureau National REDD+	CLIMATE LAB
16	CLIMATE LAB	Financial plan	CLIMATE LAB
17	CLIMATE LAB	Practical information note	CLIMATE LAB
18	Christian A. Kull	The book Isle of Fire: The Political Ecology of Landscape Burning in Madagascar, Christian A. Kull	CLIMATE LAB
19	CLIMATE LAB	PDD v1 (version August 2023)	CLIMATE LAB
20	CLIMATE LAB	PDD v2 (version October 2023, with update June 2024)	CLIMATE LAB
21	CLIMATE LAB	Grievance flowchart (section 3.6)	CLIMATE LAB
22	GDL	Global Data Lab, 2023	CLIMATE LAB
23	GoM	Law No. 2006-031, Law No. 96-025, Law No. 97-1200, Regulation N°2010-137, Law No. 2015-053, Arrêté No 4355-97, Decret No. 2013-785, Decret No. 2018-500	CLIMATE LAB
24	BELGIAN NAT'L BANK	Financial statement of Graine De Vie and financial statement of Climate Lab.	CLIMATE LAB
25	Hending et. al	Hending, D., Randrianarison, H., Andriamavosoloarisoa, N.N.M. et al. Forest fragmentation and its associated edge effects reduce tree species diversity, size, and structural diversity in Madagascar's transitional forests. Biodivers Conserv 32, 3329–3353 (2023). https://doi.org/10.1007/s10531-023-02657-0	CLIMATE LAB
26	CLIMATE LAB	Enquete Menage Andasibe (Quetionnaire Pour Andasibe)	CLIMATE LAB
27	Plan Vivo Foundation	PM001 Agriculture and Forestry Carbon Benefit Assessment Methodology, Version 1.0 08 Nov 2023	Plan Vivo Foundation
28	CLIMATE LAB	Documentation of Communal meetings on risks were held in Andasibe (Sava) and Betampona (Manakara) in July and August 2023.	

29	CLIMATE LAB	Monitoring Flow Chart	CLIMATE LAB
30	CLIMATE LAB	Monitoring Parameter List	CLIMATE LAB
31	VANDELA-NOTTE	Agreement between Vandelanotte and Climate Lab	VANDELA-NOTTE
32	CLIMATE LAB	STATUE_VOA AINA (Decree No. 2005/380 about The Statistical Registration of VOA AINA)	CLIMATE LAB
33	CLIMATE LAB	Ethical charter Graind De Vie with Climate Lab	CLIMATE LAB
34	Ayla et al.	Ayala Silva, T., Ledesma, N. (2014). Avocado History, Biodiversity and Production. In: Nandwani, D. (eds) Sustainable Horticultural Systems. Sustainable Development and Biodiversity, vol 2. Springer, Cham. https://doi.org/10.1007/978-3-319-06904-3_8	MUTU
35	Rajan et al.	Rajan, S., Hudedamani, U. (2019). Genetic Resources of Mango: Status, Threats, and Future Prospects. In: Rajasekharan, P., Rao, V. (eds) Conservation and Utilization of Horticultural Genetic Resources. Springer, Singapore. https://doi.org/10.1007/978-981-13-3669-0_7	MUTU
36	CLIMATE LAB	Evidence of participatory design	CLIMATE LAB
37	CLIMATE LAB	Planning of the training program	CLIMATE LAB
38	Vandolentte	Annual audit financial of Climate lab 2022	CLIMATE LAB
39	Vandolentte	Annual audit financial of Climate lab 2023	CLIMATE LAB
40	Bureau national Climate and REDD+	Letter non objection for Plan vivo project in agroforestry and mangrove restoration	CLIMATE LAB
41	Ministry of the environment water and forest	Decree No. 99-954 of December 15, 1999 amended by Decree No. 2004-167 of February 3, 2004 relating to the compatibility of investments with the environment (MECIE)	CLIMATE LAB
42	Ministry of the environment	Decree No. 99-954 of December 15, 1999 relating to the compatibility of investments with the environment	CLIMATE LAB

	water and forest		
43	REPUBLIC OF MADAGASCAR	DECREE N°2010-137 Regulating the integrated management of coastal and marine areas of Madagascar	CLIMATE LAB
44	Ministry of Environment and Sustainable Development	Decree No. 2021-1113 Relating to the regulation of access to the forest carbon market	CLIMATE LAB
45	CLIMATE LAB	QField Guidlines	CLIMATE LAB
46	CLIMATE LAB	Evidence of Qfield trainings	CLIMATE LAB
47	CLIMATE LAB	Firebreak Management in Voa Aina project	CLIMATE LAB
48	REPUBLIC OF MADAGASCAR	LAW No. 2015 – 053 on the Fisheries and Aquaculture Code	CLIMATE LAB
49	REPUBLIC OF MADAGASCAR	Law No. 96-025 relating to local management of renewable natural resources	CLIMATE LAB
50	REPUBLIC OF MADAGASCAR	Law n°2015-005 on the overhaul of the Protected Areas Management Code	CLIMATE LAB
51	REPUBLIC OF MADAGASCAR	Law No. 2006-031 of November 24, 2006 establishing the legal regime of untitled private land ownership	CLIMATE LAB
52	CLIMATE LAB	Statement for Non registration on other VCS Programs	CLIMATE LAB
53	Ministry of the environment water and forest	Decret No. 2018-500 STRATEGY NATIONAL REDD+ MADAGASCAR	CLIMATE LAB
54	Vandelanotte	Agreement between Vandelanotte and Climate lab BV	CLIMATE LAB
55	CLIMATE LAB	Attendance list	CLIMATE LAB
56	CLIMATE LAB	Betampona_projectarea.png	CLIMATE LAB

57	CLIMATE LAB	Schermafbeelding 2024-10-08 om 12.22.08 shapefile	CLIMATE LAB
58	CLIMATE LAB	Boarding Pass of climate lab team	CLIMATE LAB
59a	REPUBLIC OF MADAGASCAR	Laboratory result of soil organic research in Andasibe RESULTAT N° :002/08-02-22/LAB-PEDO/FOFIFA	CLIMATE LAB
59b	REPUBLIC OF MADAGASCAR	Laboratory result of soil organic research in Manakara RESULTAT N°: 001/10-03-22/LAB-PEDO/FOFIFA	CLIMATE LAB
60	CLIMATE LAB	FPIC sign by communities	CLIMATE LAB

Annex 2 – New information requests, corrective action requests and forward action requests

Table 1. NIRs from this validation

NIR ID	NIR1	**Section no.**	Section no. 2.6	**Date:** 05/09/2023
Description of NIR				
FPIC processes are well explained in the PDD. However, records of FPIC process particularly in the Manakara site project are not available at the moment during the validation process. Thus, the validation team asked the project coordinator to provide this information to ensure the conformance of PDD before the project is registered.				
Project participant response				**Date:** 23/10/2023
Project response: We added the confirmation of both mayors that the FPIC sessions were organized and clearly elaborated in the project communities (Andasibe and Betampona/Manakara). The confirmation letters are added to the PDD as Annex 5. Specifically in Manakara (Betampona), 3 community meetings were organized in 2022 to explain about the initial project logic and to discuss on project design improvements. We add attendance lists as examples in Annex 4 to the PDD. Next, 2 extra community sessions were held in July 2023, see some photographs sent via email, to participatively discuss about FPIC and to assess community satisfaction and risks of the project. We add the resulting participative risk assessment and management plan in Annex 10 of the PDD. Already in 2022, some interested smallholder farmers agreed to proceed with the project design and voluntary decided to join the project. We add the resulting records of consent from the land owners in Manakara as Annexes 5 to the PDD. Consequently, initial FPIC focused on the participating landowners. However, on 15 October 2023, one additional community session has been organized for the wider community and other neighbors as well. Photographic evidence of participatory community sessions in Betampona (Manakara) is sent via email.				
Documentation provided by project participant				
Annexes 4, 5, 10 of the PDD; and extra photographic evidence				
VVB assessment				**Date:** 17/06/2024
NIR closed				

Table 2. CARs from this validation

CAR ID	CAR1	**Section no.**	Section no. 3.1.7	**Date:** 05/09/2023
Description of CAR				
The mechanism of complaint and suggestion from annual meetings are well explained in the PDD. However, these mechanisms are not available at the moment in the office of project coordinator work, nor in project locations where the community places to make sure these mechanisms are well understood by all the parties.				
Project participant response				**Date:** 23/10/2023
Project response: We strengthened and clarified the grievance mechanism by proposing a *complaints process flowchart.* The flowchart is now also added in the PDD under §3.17. The flowchart presents a clear and visual representation of the processes to follow in case of a suggestion or complaint. To be clear, this mechanism (flowchart) of complaint and suggestions was drafted together with the team (incl. Mme. Ialy Rakotoarivelo, Mr. Gerard Poncet and Mr. Amédé Andriantsoa), and discussed with the Manakara (Betampona) and Sava (Andasibe) communities dd. 28/09/2023 and 30/09/2023. We also created a grievance mechanism poster that is publicly posted in the project areas and which clearly indicates the phone number of the project staff to call in case of direct complaints. In addition, at Betampona (Manakara), Mr. Amédé Andriantsoa invited all community members to a grievance mechanism information session at the communal house, on September 28 2023. We add the invitation poster via email.				
Documentation provided by project participant				
Flowchart is now also added in the PDD under §3.17				
VVB assessment				**Date:** 17/06/2024
CAR is closed				

CAR ID	CAR2	**Section no.**	Section no. 2.5.1	**Date:** 05/09/2023
Description of CAR				
Consent must be sought before the Project or activity takes place and be reconfirmed periodically. During the validation process, the record of consent from the land owner in Manakara is not available at the moment. Moreover, the project coordinator has to take into account the needs from local community in project area particularly in Manakara and also have to can explain the tree species will be planting in the project.				
Project participant response				**Date:** 23/10/2023

Project response: We added examples of the records of consent from the land owners in Manakara as Annexes 5 to the PDD.

Based on the risk sessions held in July 2023, the Betampona (Manakara) smallholders and project team decided to keep the woodland planting design with *Canarium, Intsia, Acacia* and *Calophyllum*, but also to allow crop/cassava/vegetable production below the trees (intercropping) while adding (on specific request of the community) the following species in the Betampona tree nursery (for free distribution):

- *Albisia lebec*
- *Cafea*
- *Canella*
- *Lemon*
- *Advocado*
- *Mango*
- *Orange*
- *Clove*

Documentation provided by project participant	
PDD Annex 5	
VVB assessment	**Date:** 17/06/2024
CAR closed	

CAR ID	CAR3	**Section no.**	Section no. 1.1	**Date:** 05/09/2023
Description of CAR				
The project coordinator has submitted PDD in a timely manner before the site visit of validation. All the information is generally well explained and described. However, during the validation process, there is a letter of acceptance from the national bureau regarding the project location only for Sambava and Manakara. Meanwhile, Ambohitantely should be excluded due to it being part of a national program. Thus, PDD has to adjusted following the letter of acceptance from the national bureau.				
Project participant response				**Date:** 17/06/2023
Project response: We adjusted the PDD by excluding all references to Ambohitantely. All changes are indicated using *track changes*. We send this PDD version 2.0 to MUTU International via the shared GoogleDrive.				
Documentation provided by project participant				
PDD v2.0				
VVB assessment				**Date:** 30/06/2024
CAR closed				

CAR ID	CAR4	**Section no.**	Section no. 3.1	**Date:** 05/09/2023
Description of CAR				
During the site visit to Manakara, the project coordinator explained about the project area and some trees they have planted. However, the plan and monitoring plan for the planting area are not available at the moment in the project area.				

Project participant response	**Date:** 23/10/2023
Project response: The map of the planting area in Manakara is added to this sheet as PDD Annex 1. In addition, the plan was publicly discussed at the communal office of Betampona, see pictures sent via email. In October 2023, also the monitoring plan has been discussed with Amédé (project field coordinator of Manakara) and the community; in short: *During the first three years, all planted trees are observed (to count the number planted and the survival rate). At the last three milestone checks, diameter at breast height is measured for every project plot at a representative subpopulation of that plot (subpopulation equal to 10% of the total planted trees in the project plot). The subpopulation of 10% of the planted trees is sampled during linear transect walks crossing the project plot and recording every tree encountered (until the 10% target is obtained). Alongside DBH measurements, species, number of trees and health status are recorded as well.* This is also stipulated in the Project Agreement. We also strengthened and clarified the monitoring procedures by proposing a *monitoring flowchart.* The flowchart is attached in the PDD under Annex 13. Photographic evidence of discussion about the monitoring plan in the communal office of Betampona is sent via email.	
Documentation provided by project participant	
PDD Annex 1, PDD Annex 13, monitoring flowchart, photographic evidence from communal office Betampona	
VVB assessment	**Date:** 17/06/2024
CAR closed	

Table 3. FARs from this validation

FAR ID	FAR1	**Section no.**	Section no. 2.5	**Date:** 05/09/2023
Description of FAR				
Project coordinator has stated in the PDD regarding stakeholder consultation will be conducted at least once a year, an annual réunion villageoise is organized per fokotany. The validation team issued a forward action request (FAR) to the next validation/verification body (VVB) to request the project provide program and realization from the annual meeting with fokotany.				
Project participant response				**23/10/2023**
Project response: The project will comply with this Forward Action Request (FAR) and will keep evidence of realizations of annual fokotany meetings for the next VVB audit.				
Documentation provided by project participant				
NA				
DOE assessment				**Date:** 17/06/2024
NA				

Annex 3 – Other additional information: Carbon Calculations spreadsheet, stakeholder meeting list

Fig 1. Project location in Andasibe mangrove project area

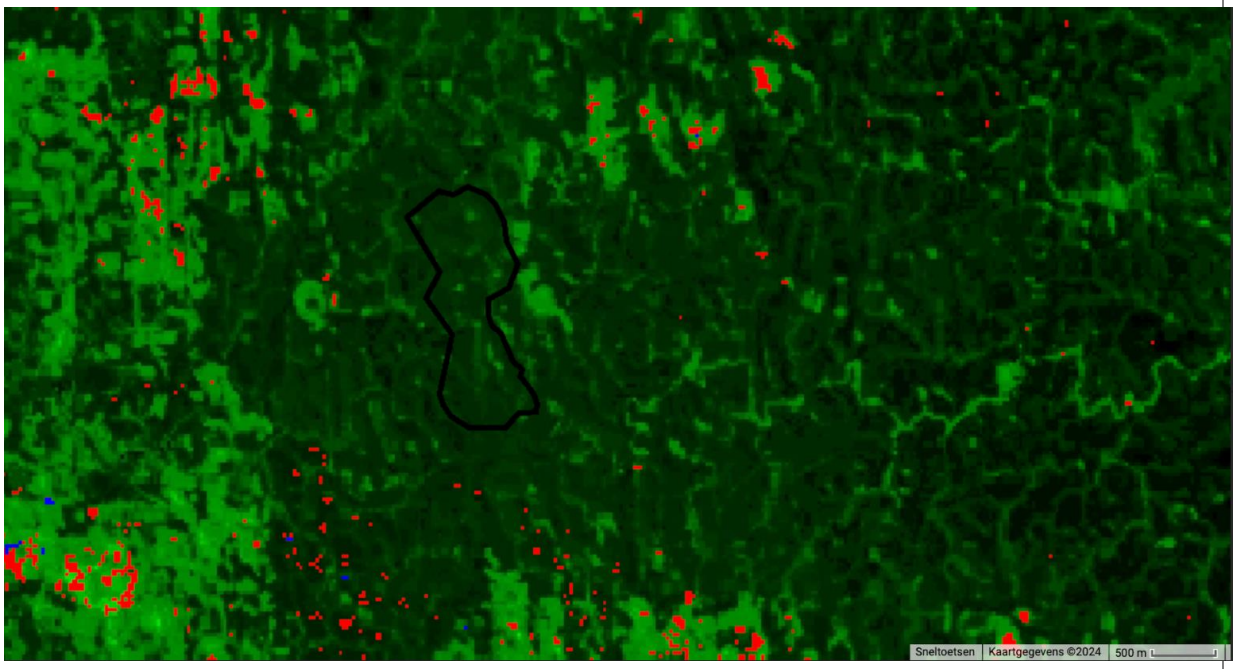
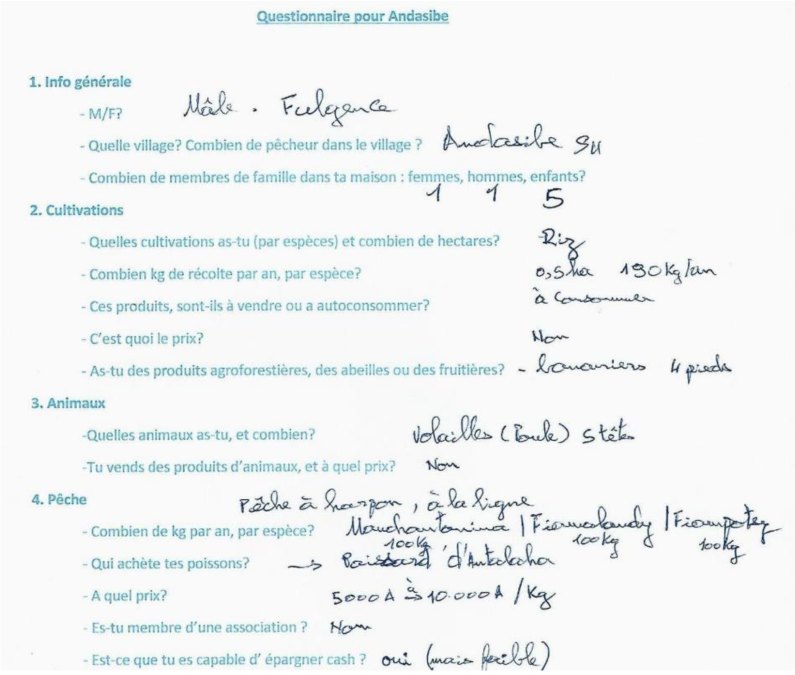


Fig 2. Project location in Manakara Agroforestry project area



Questionnaire pour Andasibe

1. Info générale

- M/F? Mâle . Fulgence
- Quelle village? Combien de pêcheur dans le village ? Andasibe 54
- Combien de membres de famille dans ta maison : femmes, hommes, enfants? 1 1 5

2. Cultivations

- Quelles cultivations as-tu (par espèces) et combien de hectares? Riz
- Combien kg de récolte par an, par espèce? 0,5ha 190Kg/an
- Ces produits, sont-ils à vendre ou a autoconsommer? à Consommer
- C'est quoi le prix? Non
- As-tu des produits agroforestières, des abeilles ou des fruitières? - bananiers 4 pieds

3. Animaux

- Quelles animaux as-tu, et combien? Volailles (Poule) 5 têtes
- Tu vends des produits d'animaux, et à quel prix? Non

4. Pêche

Pêche à harpon, à la ligne

- Combien de kg par an, par espèce? Mauchantonina 100kg | Fiamalandy 100kg | Fiampotey 100kg
- Qui achète tes poissons? → Paissard d'Antalaha
- A quel prix? 5000A à 10.000A /Kg
- Es-tu membre d'une association ? Non
- Est-ce que tu es capable d' épargner cash ? oui (mais faible)

Fig 3. Example of questionnaire

Fig 4. Communal meeting with stakeholders

Fig 5. On site visit validation activities in Manakara

Fig 6. Interviews with Manakara communities

Fig 7. On site visit validation activities in Andasibe