Environmental and Social Impact Assessment

and

Environmental and Social Management Plan

05th July 2024

CEPF Grant 115472

Association Tsimoka

Saving Malagasy threatened trees by implementing adapted conservation strategy

North of Madagascar

Grant Summary

1. **ASSOCIATION TSIMOKA**
2. **Saving Malagasy threatened trees by implementing adapted conservation strategy**
3. **115472**
4. **US$ 94,296.00**
5. **July 2024-August 2026**
6. **Madagascar**
7. **Summary of the project**.

The project will be implemented jointly by Tsimoka (TMK) and Madagasikara Voakajy (MV), two local organizations actives in the north of Madagascar and having experiences on management of threatened species.

Research conducted on the distribution of Madagascar's threatened tree species has indicated that as much as 47% are found in the northern part of Madagascar, in the Sava and Diana regions particularly (Beech et al., 2021). The attachment of community life to the use of these resources and the loss of their habitats constitute the main causes of these threats. Faced with this situation, taking into account their respective missions, two Malagasy associations will mobilize their efforts to save these national heritages. TMK and MV, two organizations operating in the north of Madagascar and having experience in the management of threatened species, intend to take collective action to prevent these species from disappearing.

Since 2012, MV association have been working in Diana and Sava regions to protect and recover two threatened baobab trees (Adansonia perrieri and Adansonia suarezensis). For this purpose, many strategies were implemented and the project has been successful. For the case of TMK, his action is mainly focused on the management of Oronjia, in Diana region. Among the resources to be managed at this site, Delonix velutina, a tree species whose population was experiencing a serious problem because of its local use was saved.

For the both organizations, their action was undertaken with the implication community, local and regional stakeholder.

The positive results linked to the intervention of TMK and MV in the Sava and Diana regions led to this proposal, to bring together the efforts of the two organizations for the conservation of threatened tree species in the north of Madagascar. The approaches carried out by the two organizations will be duplicated and adapted to save other threatened tree species in northern Madagascar.

A total of 12 threatened species of tree (9 CR, 2 EN and 1 VU) from northern Madagascar will benefit from the actions proposed in this project. We have included also 2 LC species because they became very rare in the main intervention site of TMK and MV, they are used locally as alternative to other species in high level of extinction. The list of these species is given in the appendix to this proposal.

Conservation and restoration challenge:

By combining MV and TMK experiences on threatened tree conservation, we challenged to resolve and/or to mitigate the following conservation issue related to each target species:

· Lack of data (data deficient or outdated data) about the biological and ecological regeneration of some target species,

· Lack of management plan for a sustainable use of some target species, a very important tool for the management of species having a form of use or valorization,

· Out-planting efforts of native trees species is largely unsuccessful (<15% establishment according to our previous experience in the baobab project and <40% in dry forest

restoration) without mastery of seedlings propagating techniques, and adequate after care and monitoring plan,
· Threats to natural populations habitats and plantation sites constitute major constraints for species recovery.
The objectives of the project proposed here are to complete the missing data on 13 threatened species in northern Madagascar, develop their respective management plans and enrich the existing populations of each target species at a rate of at least 250 individuals per target.

Our action in this proposed project will be focused on three main activities, they are all inspired by the experiences of TMK and MV on the management of endangered tree species and ecological restoration in northern Madagascar.
- Conduct research on target species in order to have reliable information and data for the identification of conservation strategies, and for the development of management plans for species used by local communities. This research focuses on the ecology, biology, regeneration and distribution of each species. For species used by local communities, research to understand the needs of the communities, the available stocks, as well as the production capacity of each target species will be carried out to evaluate the quota that can be used each year for rational use. The data from the study will be valorised to update the Redlist datasheet for the concerned species.
- Implement emergency actions to safeguard target species, in particular, strategies to strengthen their current populations. It consists of setting up nurseries, train nurserymen/women, built seed storage centers, and initiating the enrichment of target species in their area of occurrence.
- Communicate and share the importance of threatened tree species in northern Madagascar at all levels, research results, as well as approaches to save these species. Awareness raising will be planned in this activity, and a platform which will be responsible for popularizing the conservation of endangered tree species will be created under the initiative of TMK and MV.
Like all conservation projects, in order to be successful and to achieve the objectives set, the participatory approach will be adopted in the implementation of the activities. TMK and MV will be the leaders of the project, but they will work closely with several stakeholders.
- Universities of Antananarivo and University of Antsiranana: a collaboration protocol will be established as part of the project for the intervention of 4 students from these public institutions in research activities.
- Site managers: Fanamby, MNP, SAGE will be involved throughout the implementation of the project because there will be interventions at their site level, in particular, in research activities and enrichment of target species.
- Graine de vie : this local organization will be a partner of the project especially in the popularization processes of target species in reforestation activities at the regional level.
- Decentralized Technical Services and Decentralized Territorial Communities: these regional responsible, representative of the government will support the project by giving advice and directives throughout the implementation of the project.
The recruitment / labour needed during the project will be done as far as possible at community level. Marginalized group (former charcoal maker) and women will be prioritized to benefit from the project. To ensure a good communication of the project, a meeting to inform stakeholders of the project will be organized, and to communicate the progress of the project another meeting will be organized every semester at the regional level. The

results of the research, as well as the species management plans, will be validated by communities and local authorities.

8. **Document Prepared on June 28, 2024**

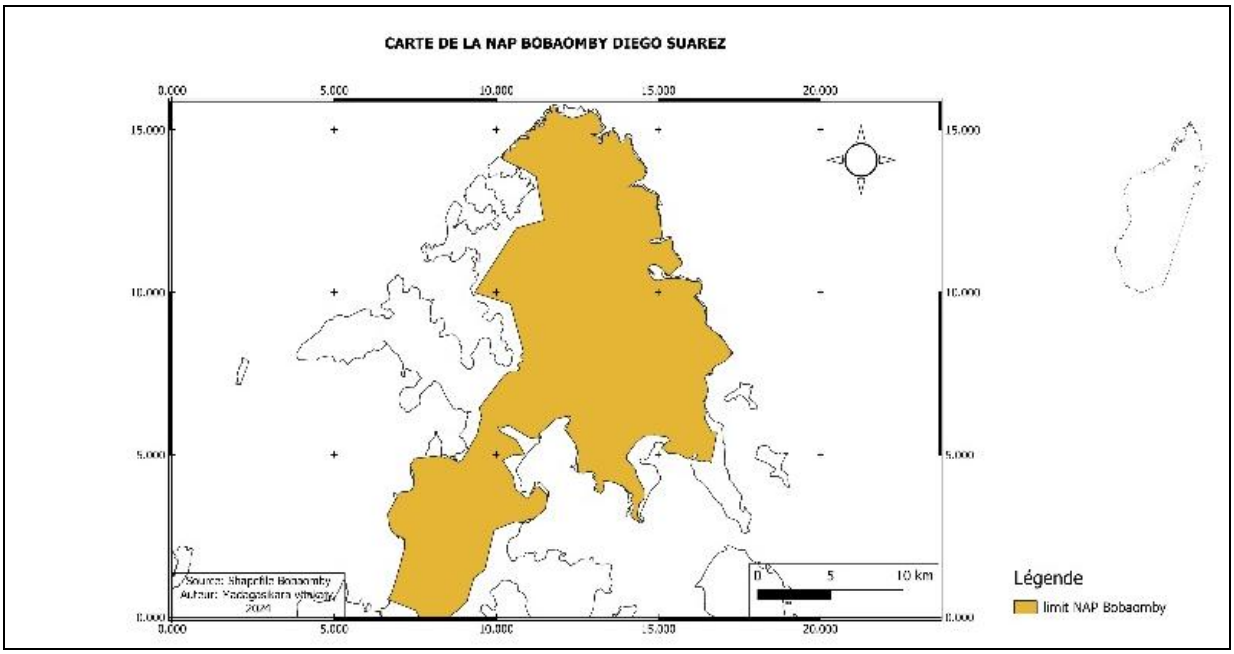
9. . **Legal and regulatory framework**: This section will analyze the legal and institutional framework for the project, within which the environmental and social assessment is carried out, in compliance with Safeguard Policy 1 on Environmental and Social Assessment. The government institution that will issue the collecting permit should be named.

   For instance:
   The law regulating the exploitation of forest products, including seeds of tree seeds, is decree n° 98-782 of August 18 1998.

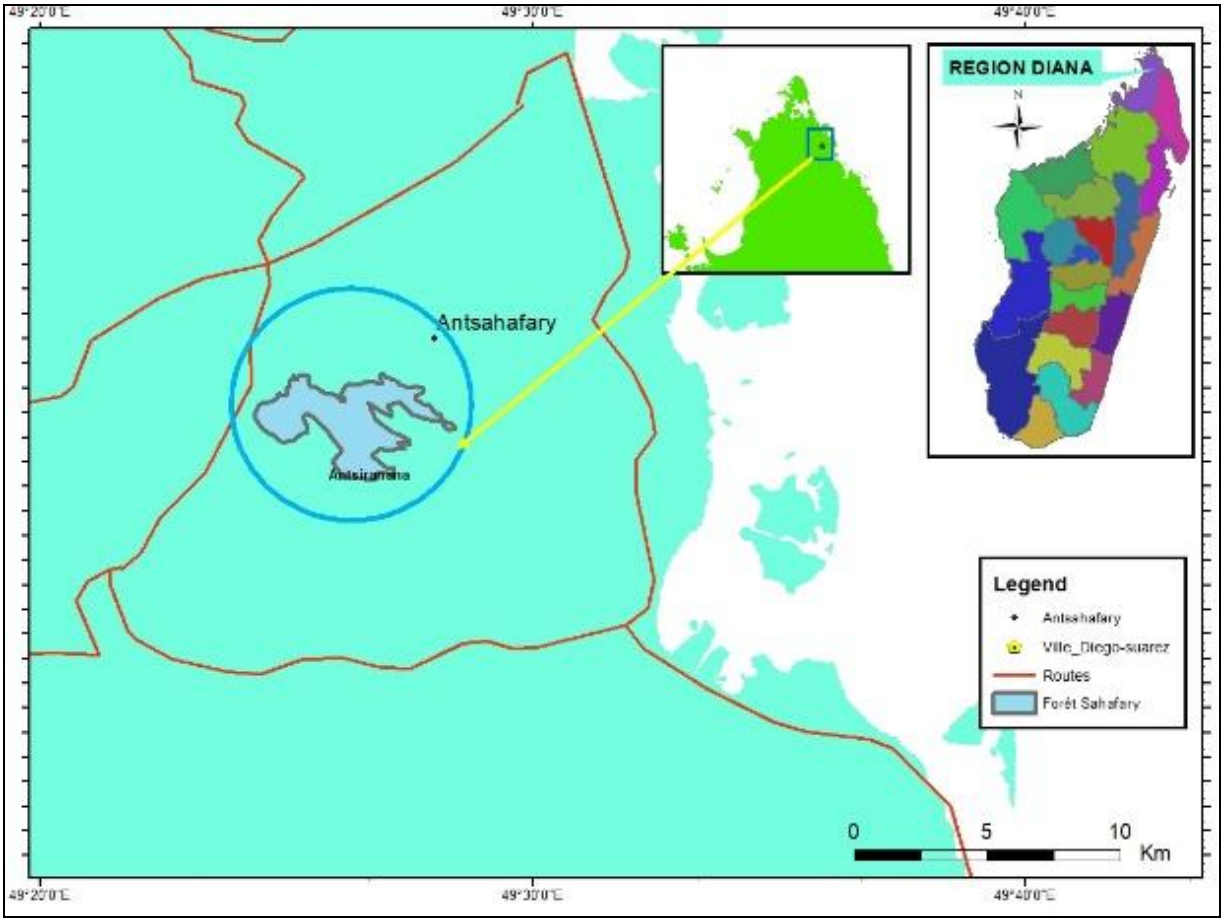
   In order to collect seeds of native trees in protected areas of Madagascar, a permit is needed from the national authorities. The regulation is the same for endangered and non-endangered, as define by the IUCN Redlist, trees. Tsimoka has permits to conduct such work that need to be renewed every six months. Scans of permits from the Ministry of Environment and Sustainable Development will be included in reports to CEPF.

10. **Status of area to be impacted**:.

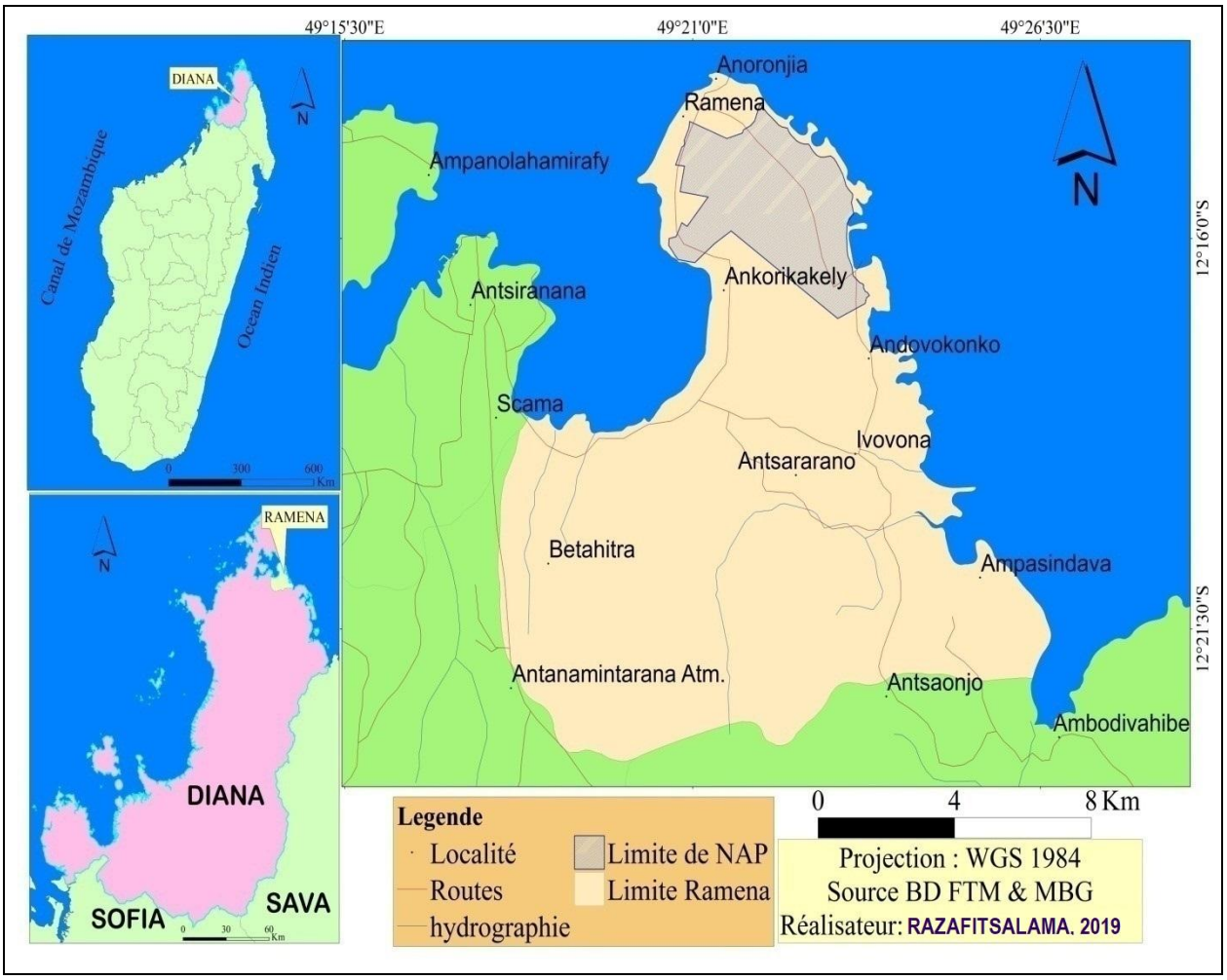
The landscapes surrounding the project sites are mainly populated by Sakalava, who live in relatively low densities in small villages. Despite the proximity of a few large towns such as Diego, the inhabitants of these areas are fairly poor and derive their livelihoods mainly from fishing, small-scale livestock farming, subsistence agriculture and charcoal production.
Farming in this area is difficult because the environment, characterized by a long dry season, strong winds and poor soils, is not conducive to cultivation. Charcoal production is particularly important during the months of April to November, when strong winds regularly prevent fishermen from going out to sea in their small pirogues. As in most rural areas of Madagascar, the state provides only modest services to the inhabitants (a few simple clinics and schools, always poorly equipped and often understaffed, and barely maintained roads). Additional infrastructure (such as communal water sources and markets) is mostly the result of past interventions by various development NGOs.
As is typically the case in rural Madagascar, the behavior of the inhabitants of the project's intervention sites is dictated to some extent by the state through the regulatory activities of the fokontany and commune, supported by the repressive activities of the gendarmes, and to a greater extent by the accepted norms dictated by the family, extended family and village.
At the level of their respective intervention sites, TMK and MV seek to achieve conservation in close collaboration with the local community. The approach is to empower local people in the sustainable use of their natural resources by supporting a well-trained and highly motivated project leader to work with each community.
As most of the project's beneficiary sites are TMK and MV intervention sites, this project will also build on the trust already established between these institutions and local communities, and will be facilitated by existing community management structures and communication channels.



Map 1: localization of Bobaomby complex



Map 2: Localization of Sahafary forest



Map 3: Localization of Oronjia PA

11.<u>Baseline data</u>:

This EIA focuses on the risk that could result to endangered tree species during the phase of collecting seed and vegetal material.
11 threatened tree species are targeted into the list of priority species in reforestation activities in Madagascar: *Stereospermum longiflorum*, *Delonix velutina*, *Adansonia suarezensis*, *Noronhia obcordifolia*, *Senna suarezensis*, *Grewia analamerensis*, *Eugenia calciscopulorum*, *Dombeya milleri*, *Dombeya ambohitrensis*, *Cleidion capuronii*, *Beguea borealis*.

12.<u>Anticipated impacts and risks</u>: The environmental and social risks of the project should be described. This section (very briefly) describes measures that will be taken to address these risks but without saying what the risks are.

Project implementation implies:

- Collecting seeds and vegetal materiel from endangered tree species, with risks:
    - to impact natural regeneration
    - to damage trees to collect seeds
- Setting up nurseries for reproduction of these species prior to reintroduction, with risk:
    - to establish a nursery in close proximity to a forested area that hosts threatened species.

Precautionary measures should be taken to prevent any impact on the wild population of endangered species. Measures should also be taken to ensure safety of staff and employees of the project during the implementation.

13.<u>Mitigation measures</u>:

For collection of seeds from endangered species:

- Care must be taken when collecting seed, so as not to halt the natural regeneration ratio of these species. For that, we follow the protocol for grain collection used by the Millenium Seeed Bank Project at the Royal Botanic Gardens Kew, which is already used in Madagascar, and taking account the status of each species (Threatened, rare, limited distribution). This document is put on annex with the proposal.
- As a rule collect no more than 20% of the available seed on the day of collection. This ensures that the population sampled is not endangered by the planned seed collecting. The only exception to this is if a population is going to be destroyed.
- Ideally collect 10,000-20,000 viable seeds. This enables maximum use of the collection, i.e. so that: (i) a part of the collection can be conserved in the country of origin; (ii) sufficient seed is available for initial germination and viability testing; (iii) viability monitoring can be undertaken at the seed bank for many decades and (iv) a substantial sample can be conserved as a long-term safeguard against loss of the wild population, and as a resource for ecological, genetic and botanical study.
- Collections of between 500 and 5000 seeds are welcomed by the MSB, although distribution opportunities will be limited. Collections of less than 500 species are welcomed from species that are either threatened or of restricted distribution. In these cases there will be limits to the quantities available for germination and viability tests.
- Where a population is very small (less than 10 individuals) the harvest from each plant should be kept separate at collection and processing, and this should be indicated on the field data form. This will ensure that the full genetic diversity of particularly vulnerable plant populations can be successfully released at a later data
- Each mature endangered species tree is labeled or has a unique identifier (ID). All phenological and ecological data for each tree are stored in a database, including information on the seeds collected. Seeds are collected from healthy specimens from large populations, distributed across different types of habitats.
- Fruit or seed collection activities are accompanied by an information sheet (Table below), making it possible to trace the origin of the seeds, the date of collection, the location and the quantity collected. Seeds are stored separately for each tree, to preserve quality and genetic diversity.
- Rational collection is also put in place to ensure the natural regeneration of species and the maintenance of their population in their natural habitat. For a fertile tree, the quantity of seeds collected does not exceed 60% of its total

production, unless the plant and/or its habitat is strongly threatened by fire or logging.

- All precautionary measures are taken not to damage the trees – collection of seeds will mostly happen with seeds fallen on the ground.
- The collection will take place on parcels of public land, with authorization from the protected area management or the local authority.

For the nurseries:

- The nurseries will be set up in degraded land (agriculture land) with no impact on natural ecosystem.
- No pesticides will be used for the nurseries.

14.<u>Actions to ensure health and safety</u>:

This section will describe actions that will be taken to ensure the health and safety of workers.

For safety measures:

Project staff will train seeds collectors: collection of seeds will mostly happen with seeds fallen on the ground. Precautionary measures will be taken to avoid any incidents with people climbing trees. For the project, it is prohibited to climb the trees for seed collection. However, if there is a need to collect seeds that are still on the mother plant, seed collectors will use pole clippers, extendable to the desired height. They will receive the necessary protocols for the use of this equipment.
During the collection of seeds, in order to protect themselves from accidental contact with toxic plants, particularly those which secrete abundant resins or latex, the collectors will be dressed in gloves and must wear safety glasses protection.

15.<u>Monitoring and evaluation</u>: This section will outline the steps the applicant will take to monitor and evaluate the impact of the proposed project. It should identify the monitoring objectives and specify the type of monitoring, with linkages to the impacts assessed and the mitigation measures described. This is meant to provide (a) a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; and (b) monitoring and reporting procedures to: (i) ensure early detection of conditions that necessitate particular mitigation measures; and (ii) furnish information on the progress and results of mitigation.

16.<u>Timeline and resources</u>:

The precautionary measures will be taken all along project, as necessary. No specific financial resources are need for implementation.

17.<u>Permission of the landowner</u>:

Throughout the implementation of the project, the use of land necessary for project activities must have the authorization of the owner or manager.

- Area for seed collection: this activity will take place on the habitats (area of occurrence) of each target species where they grow. These sites can be public, private or protected areas. The seed collection activity must be the subject of an authorization request from the MEDD, and this authorization will serve as support for the request for seed collection at the site of occurrence of each species. Permission or consent from the owner or manager of the land is required before implementing this activity. This permission will be materialized by an authorization signed by these owner/managers.

- Establishment of nurseries: the use of the land for the establishment of nurseries to be used as part of the project must have written authorization signed by the owner/manager.

- Seedling planting site: the use of land for plantation of seedlings as part of the project must also obtain the consent of the owners or managers, evidenced by a signed letter.

18.<u>Participatory preparation</u>:

TMK and MV will be the leaders of the project, but they will work closely with several stakeholders. Both organizations have strong and fruitful relationships with all local stakeholders at the intervention sites, and these relationships will be leveraged to achieve good results for the project. These collaborations are achieved through partnerships with several stakeholders.

- The rural communes of the intervention sites: Most of the rural communes located in the zones of influence of the intervention sites are among the stakeholders in the implementation of the project. The communities in these communes benefit from the ecological services provided by the sites. As part of the project's implementation, the communes around the intervention sites have expressed their willingness to collaborate with the Tsimoka / Madagasikara Voakajy Association, and will be involved in research, species monitoring, seedling production and planting at the sites.
- University of Antananarivo and University of Antsiranana : These two universities will be involved in the project to ensure the technical supervision of the students who will carry out the research work within the framework of the project (official letter attached). Collaboration with these public institutions has been fruitful in previous similar projects. The dynamic partnership established between these institutions and TMK/MV will be valued for the success of the research activities within the framework of the project.
- The fokontany around most of the sites : As part of the project's implementation, several fokontany have expressed their willingness to collaborate with the Tsimoka / Madagasikara Voakajy Association, and will be involved in the project's implementation, particularly in awareness-raising, monitoring, project facilitation and forest enrichment activities.
- Kodina Oronjia : The Kodina, which is a structure in charge of applying the Dina, has been operational since 2012 in the management of the Oronjia PA. The Dina is a set of social regulations put in place by communities to manage the site's natural and cultural resources. This community structure has been actively involved in the management of the site, and has collaborated with the Oronjia PA manager. Given the importance of this collaboration, the Kodina supports this project request to reinforce the interventions. As part of the project's implementation, the Kodina Oronjia has expressed its willingness to collaborate

with the Tsimoka, which will be involved in awareness-raising, monitoring and forest enrichment activities.
- Association Manovosoa : This local organization works closely with Tsimoka in the management of the Oronjia PA. Its members are drawn from the local community and it is involved in implementing conservation activities on the site, including reforestation, ecological monitoring and awareness-raising activities. For this project, members of the Manovosoa Association will participate in the following activities: Ecological monitoring of the species' plantations, Phenological monitoring of the species, Monitoring of tree growth.
- Missouri Botanical Garden : This is an international institution with expertise in botanical research and nature conservation. It will be involved in the supervision of students for the implementation of research activities within the framework of the project.
- SAGE Fampandrosoana Maharitra : This Malagasy institution is responsible for setting up the AP Montagne des Français and for managing the site. It will be involved in the propagation of the site's endangered species (in their own nursery), as well as the tree plantation.
- Madagascar Biodiversity Partnership: This is an international institution, also active in the Montagne des Français PA for the conservation of Lepilemur septentrionalis. It carries out actions to restore and enrich the habitat of this threatened lemur species in northern Madagascar. Threatened species from the site will be used by the latter to enrich the habitat of Lepilemur septentrionalis in the Montagne des Français.
- Madagascar National Park Ankarana : This Malagasy institution manages the AP Ankarana and the Marotaolana sites. It will be involved in the propagation of the site's endangered species (in their own nursery), as well as its planting.
- Association Fanamby : This Malagasy institution manages the Loky Manambato site. It will be involved in research actvitiies, the propagation of the site's endangered species (in their own nursery), as well as its planting.
- Graine de vie : this local organization will be a partner of the project especially in the popularization processes of target species in reforestation activities at the regional level.
- Decentralized Technical Services and Decentralized Territorial Communities: these regional responsible, representative of the government will support the project by giving advice and directives throughout the implementation of the project.
The recruitment / labour needed during the project will be done as far as possible at community level. Marginalized group (former charcoal maker) and women will be prioritized to benefit from the project. To ensure a good communication of the project, a meeting to inform stakeholders of the project will be organized, and to communicate the progress of the project another meeting will be organized every semester at the regional level. The results of the research, as well as the species management plans, will be validated by communities and local authorities.

19.<u>Disclosure</u>:

The impact assessment will be part of the document available on the CEPF web, and will be communicated through presentation to local stakeholders, at same time as presentation of the Grievance mechanism, explicated in the main proposal.