

## Darwin Initiative Main Annual Report

To be completed with reference to the “Writing a Darwin/IWT Report” Information Note:  
(<https://www.darwininitiative.org.uk/resources-for-projects/reporting-forms-change-request-forms-and-terms-and-conditions/>).

It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

**Submission Deadline: 30<sup>th</sup> April 2021**

### Darwin Project Information

Project reference	25-026
Project title	Securing healthy baobab populations through efficient fruit harvesting and use
Country/ies	Madagascar
Lead organisation	Madagasikara Voakajy
Partner institution(s)	<ul style="list-style-type: none"> <li>- Label CBD Consulting (LCBD)</li> <li>- Fauna &amp; Flora International (FFI)</li> <li>- Direction Régionale de l'Environnement et du Développement Durable Menabe (DREDD Menabe)</li> </ul>
Darwin grant value	£207,203
Start/end dates of project	1 <sup>st</sup> July 2018 – 31 <sup>st</sup> March 2022
Reporting period (e.g. Apr 2020 – Mar 2021) and number (e.g. Annual Report 1, 2, 3)	April 2020 – March 2021 Annual Report 3
Project Leader name	Julie Hanta Razafimanahaka
Project website/blog/social media	<a href="http://www.madagasikara-voakajy.org">www.madagasikara-voakajy.org</a>
Report author(s) and date	Julie Hanta Razafimanahaka, Fetra Rakotondrazanany, Rovasoa Razanamazava, Anja Nirina Rakotomanga, Malala Randevoson, Saroy Rasoloson, Patrick Lelei, Kiran Mohannan, Alexandra Davey; 30 <sup>th</sup> April 2020

### 1. Project summary

This project is looking to address three main challenges:

- The decline of the Granddier's baobab (*Adansonia grandidieri*) in western Madagascar,
- The malnutrition at the areas where the Granddier's baobab occur, and
- The risks of unequitable and unsustainable harvesting of the Granddier's baobab fruits due to increasing demand on the national and international markets.

The Granddier's baobab is an emblematic species for Madagascar. However, it is listed as Endangered on the IUCN Red List. The species suffers from poor regeneration: in 2015, only 2.6% of the 700 trees surveyed were juveniles (circumference at breast height <1m). In addition, its habitats are being converted into agricultural fields that the baobab trees become isolated from potential pollinators. This will increase risks of extinction.

The Grandidier's baobab is endemic to western Madagascar, most abundant in the Menabe Region. The area is very dry, yet 49% of income is derived from agriculture. In 2006 the daily income here was \$0.3 per person and the hungry months last for 4-6 months each year. In communities surrounding the baobab forest, children are underweight and the number of diseases and deaths peak during these months. Despite the recognition of baobab powder as a "New Food" by the European Commission in 2008 and a "Novel Food" by the Food and Drug Administration (FDA) in 2009, it is not used locally to address malnutrition issues. People eat baobab fruits only during the peak fruit season as the community lack the knowledge in processing and storage of fruit in powder form.

Since 2009, demands for Grandidier's baobab fruits at the national and international levels are increasing. An interview in 2015 indicated that 98% of the households in villages surrounding baobab populations are collecting fruits, 47% are selling all or part of the fruits they collect. The species (seeds, fruits, oil and live plants) has been listed in CITES Appendix II in 2016. Until January 2019, there were no regulations in baobab harvesting. Since January 2019, the Government emitted a ban of forest product harvesting throughout Madagascar, including the Grandidier's baobab fruits.

A conservation strategy has been developed for the Grandidier's baobab in Menabe Region in 2011 and updated in 2017. Contributors (including local community representatives, local and regional authorities, NGOs, businesses, scientists) recognized that if well managed, baobab fruit harvesting and trade can effectively contribute to reducing poverty and conserving biodiversity in the Region. This project contributes to implement actions defined in this conservation strategy. We work at three localities where we have already developed management plans to protect baobabs with the communities (Fig. 1). We expect the lessons learned from this project to be applicable and replicated throughout the Menabe Region and the Grandidier's baobab range.

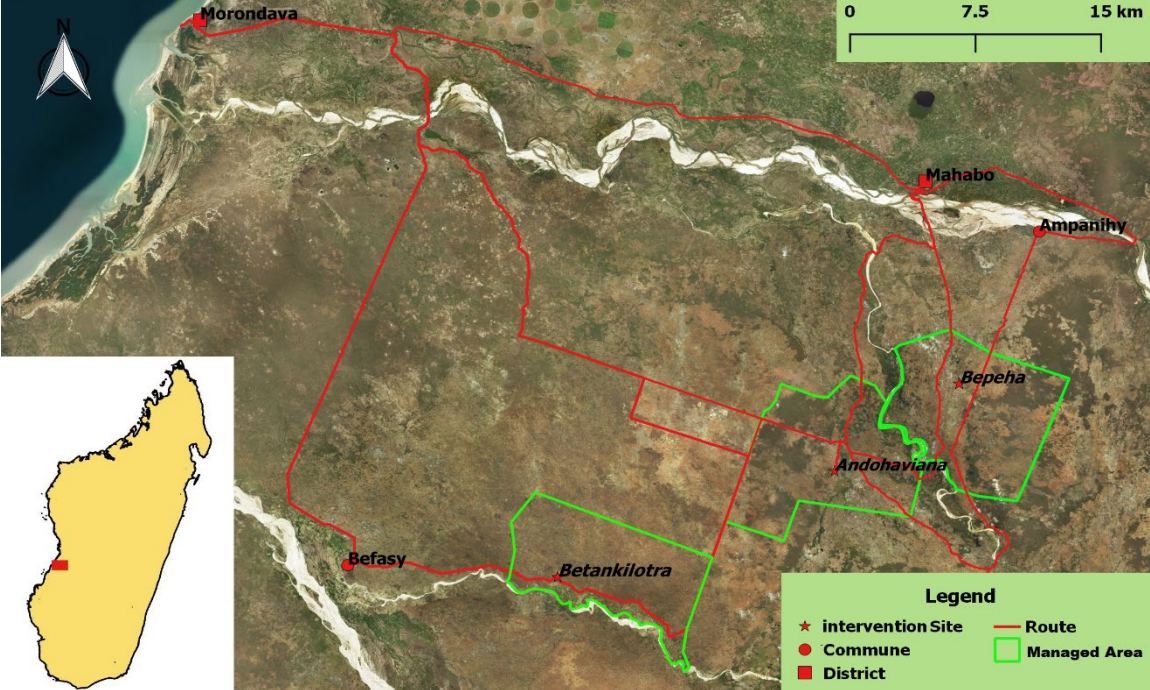


Fig. 1: Location of the project area and the villages

**2. Project partnerships**

The initial project partners continued to be involved over the second year of the project: MV, LCB, FFI and DREDD Menabe. A new Director was nominated for DREDD Menabe in September 2020. In November 2020, MV and LCB team members presented the project to him. He was in the field during the community contract officialization in 22<sup>nd</sup> - 24<sup>th</sup> December 2020 and met with the community members.

Due to the Covid-19 pandemic, all our project team meetings were held virtually (06 in total – Annex 4). FFI team members were not able to go to the field. MV and LCBD run joint fieldworks in November 2020 and February – March 2021.

In addition to the initial partners, we started to establish relationship with other businesses during the reporting period. A meeting to identify who is who in the baobab trade was held on 30<sup>th</sup> December and was attended by representatives of three businesses: Ferme Aina, Renala Naturals and Phileol (Annex 5).

On 02<sup>nd</sup> March 2021, the new British Ambassador in Madagascar, Mr David Ashley visited our office in Antananarivo. It was an opportunity for us to introduce the project to him, highlighting the achievements and the challenges. He tasted the baobab jam produced by the women from Betankilotra (<https://www.facebook.com/madagasikaravoakajy>).

### **3. Project progress**

#### **3.1 Progress in carrying out project Activities**

Output 1: Three existing community groups empowered to reinforce and manage baobab resources by strengthening current co-management frameworks.

The management plan for the three community-managed areas were developed in Y1 and Y2. In May 2020, we posted maps representing the plans at the entrance of each village and at key entry points into the community-managed areas (Annex 6). In June 2020, trainings sessions for the elected leaders of the community-based organizations were organized in each village. This training focused on their respective responsibilities, the elaboration of a work plan and law enforcement. By the end of the training, an annual work plan was developed (Annex 7). Prior to the signing of the contract, the new Director of DREDD Menabe recommended an assessment of the ability, understanding and willingness of each community organization in the management tasks. This assessment was carried out through community meetings held on 17<sup>th</sup>- 24<sup>th</sup> November 2020 in the villages. As the results of the assessments were positive, the officialization ceremonies and contract signing of management contracts were held on 22<sup>nd</sup>, 23<sup>rd</sup> and 24<sup>th</sup> December 2020 respectively for Andoviana, Bepeha and Betankilotra (Annex 8).

On 25<sup>th</sup> – 31<sup>st</sup> March 2021, we evaluated communities' achievements compared to the workplan defined after the training session. The main activities to be evaluated were tree planting and patrol. Each community planted Grandidier's baobab as planned but were not able to grow seeds of other forest species. About patrol activity, each community already established the patrol teams (Annex 9) but did not start the actual patrols yet due to insecurity issues. Such evaluation and mentoring visit will be carried out every three months to reinforce communities' engagement.

Baobab planting was another key activity towards this output that was carried out during the reporting period. In May 2020, we assessed the survival of the seedlings planted in previous years. Due to the drought and fire, none of the seedlings survived in Betankilotra, 60 (out of 200) in Bepeha, and 40 (out of 200) in Andohaviana. Since June 2020, we established a nursery with a capacity of 500 seedlings in each village, and one with a capacity of 2,000 seedlings in Ambalorao, a nursery managed by the DREDD Menabe in Morondava. Our objective is to have at least 300 seedlings ready to be planted for the 2021 season by December 2020. By this deadline, we had respectively, 260, 240 and 200 seedlings at the nursery in Andohaviana, Bepeha and Betankilotra and 1700 in Ambalorao. In February and March 2021, we planted all the seedlings from the local nursery at the village planting areas and added some from Ambalorao. In total, we planted respectively 500, 400 and 360 seedlings of Grandidier's baobab in Andohaviana, Bepeha and Betankilotra. Other seedlings produced in Ambalorao were planted by DREDD and other partners within Menabe Region (Annex 10).

Output 2: Wild baobab species in Andohaviana, Bepeha and Betankilotra are protected and sustainably harvested by local communities, and there are enough fruits left to permit regeneration in the wild, particularly for *Adansonia grandidieri*

During previous years, assessment of fruit availability was carried out jointly by MV and community members. In 2020, we developed a handout to enable community members to run the assessment independently, provided training on its use in August, and piloted it in the field in September (Annex 11). As a result, we found that estimates for Andohaviana and Bepeha were similar to that of MV team (difference of respectively 4 and 1%). In Betainkilotra, community's results were three times higher than that of MV team. This difference might be caused by the very low level of literacy in this village. We plan to revisit the handouts and methods in August – September 2021 to improve our results.

Based on interviews carried out in January 2021, all households collected and consumed baobabs during between September and December 2020 (n = 112). However, only 22% (n = 25) reported to have sold baobabs during that period. The ban on baobab fruit harvesting was lifted only in January 2021. It was not possible to define a harvesting quota for the 2020-21 season. We are currently working with the Madagascar CITES scientific and management authorities to set up the quota for the Grandidier's baobab harvesting and exports. Based on the literature, baobabs tolerate fruit harvesting up to 95% (Zuidema & Boot 2002, Emanuel et al. 2005, Venter & Witkowski 2013). No similar studies have been carried out for the Malagasy baobabs. We suggested a harvesting level of 60 – 80% (Annex 12).

In February 2020, we recorded 52 wild seedlings of *A. grandidieri* under the no-take zone. Of them, only three survived until March 2021. Although there were fruits left under the sampled trees, no new seedlings were recorded during this season.

Output 3: At least 85 vulnerable members (children < 10yo, pregnant women and elderly > 60yo) of approximately 70 households within the three target communities have improved nutrition during the hungry months (June – October) as a result of improved storage and consumption of *A. grandidieri*, *A.za* and *A. rubrostipa*

Normally, people should have stored baobab powder from the 2019 harvesting season to be consumed in June – October 2020. None of the households interviewed in January 2021 reported to have done this. 17 families who did store fruits ended up selling their stock in case of emergencies before the hungry months. During the 2020 harvesting season, people were encouraged to store fruits and powder for the 2021 hungry season. A refresher training attended by 55 community members (34 women and 21 men) was organized in November 2020. However, all interviewees in Andohaviana and Betainkilotra reported not to have stocks of fruits or powder in January 2021. Eight households in Bepeha reported to have stocks of powder but were looking to sell them in the market rather than consuming them. The decision not to store the fruits or powder for later consumption are driven by the need for cash now, and the fear of bandit attacks during which they might lose all the stocks. With the current context, we are unlikely to achieve this output as storing fruits or powder is not a habit.

Output 4: At least 80 women and 70 men receive a fair price for the sale of sustainably harvested *A. grandidieri*, *A. za* and *A. rubrostipa* fruit products, resulting in increased income of at least 70 households.

During the reporting year, we revisited the calculation of the fair price for the Grandidier's baobab powder and seeds considering the context in 2020 (Annex 13). We sought feedback from businesses on this price in December 2020 but did not obtain clear responses as they wanted the ban on harvesting and trade of baobab to be first lifted before discussing prices. LCBD agreed to the fair price calculation and raised the point that the fair price calculated would not be viable in the local/national market at the moment. In fact, baobab powder is currently sold at 20,000 Ariary per kilo in the local/national market and fair price calculated is 54,016 Ariary per kilo (farm gate). To apply this fair price, we should target the businesses targeting niche export markets. The project's challenge is therefore to enable the CITES authorities to define the export quotas. We therefore calculated a viable farm gate price of 30,100 Ariary per Kg of powder, which is more than double the farm gate price received in other villages processing powder currently. We will continue working with private companies to come up with a plan to work toward offering fair price for producers in the future.

This year, we also started to work on the business model and governance structure of the community enterprises. With project partners (FFI and LCBD) we brainstormed the key aspect of the baobab business including identifying key markets to target, different cost involved in the business and evaluating the social and biodiversity impacts on the baobab business. Annexed

the business canvas drafted. Topic of governance was a key part of the discussion. The baobab business will be set up as a community-owned enterprise nested within the existing village forest management committee (VOI). Chair of VOI will be the head of each village enterprise. At this current pilot phase, each village enterprise will be registered as association as per the national legal law, and as project scale in future, each village enterprise/association will be organised under a single cooperative. This will ensure coordination between villages, and easier for companies to engage in a single contract with cooperative, instead of multiple separate contracts with individual village enterprise. A dedicated focal point will be identified from among community members to manage each village enterprise and 6 women per village trained in ensuring quality of processing of baobab fruit. As the next step, community will be consulted, and their feedback will be included in designing and finalising the governance structure of the enterprise (Annex 14).

### 3.2 Progress towards project Outputs

**Output 1:** Three existing community groups empowered to reinforce and manage baobab resources by strengthening current co-management frameworks

As expected, the three community-based organizations now have a ten-year contract to manage the natural resources within their territories, valid until December 2030. Initial evaluation in March 2021 highlighted the need for continued mentoring to increase community leaders' confidence in taking their responsibilities. Each community-based organization have its own annual workplan according to their duty in managing the resources sustainably and it help stakeholders evaluate their achievements. The total area devoted to reforestation in each territory is respectively 960, 1757 and 531 ha in Andohaviana, Bepeha and Betainkilotra. Seedling survival after planting remains low due to the drought and fire that happened annually since the project started (Table 1-3). This year, we plan to improve the nursery in the villages to ensure we have stronger seedlings by the 2022 planting season. We will increase the patrol efforts to reduce risks of fire.

**Table 1:** Monitoring of seedlings survival in the reforestation area in Andohaviana since 2019

Andohaviana	2019	2020	2021
2019	100	60	40
2020	-	100	0
2021	-	-	500

**Table 2:** Monitoring of seedlings survival in the reforestation area in Bepeha since 2019

Bepeha	2019	2020	2021
2019	100	40	50
2020	-	100	10
2021	-	-	400

**Table 2:** Monitoring of seedlings survival in the reforestation area in Betainkilotra since 2019

Betankilotra	2019	2020	2021
2019	100	18	0
2020	-	100	0
2021	-	-	360

**Output 2:** Wild baobab species in Andohaviana, Bepeha and Betankilotra are protected and sustainably harvested by local communities, and there are enough fruits left to permit regeneration in the wild, particularly for *Adansonia grandidieri*



The baobab management plan for each community has been established after consecutive discussion with the communities. Men can better remember the content of the plan compared to women. We expect to carry out reminders during each fieldwork and map displayed at each village help a lot to this remembering. During Y3, we were not able to set up quotas and could not measure they were respected. At the no-take plots, we recorded 52 seedlings in February 2020 but only three survived by March 2021 due to the drought in 2020. This indicates that the Grandidier's baobab seedlings require human assistance to survive in the wild. We therefore suggest to taking out the second part of this output and put more effort in planting more trees and looking after them.

**Output 3:** At least 85 vulnerable members (children < 10yo, pregnant women and elderly > 60yo) of approximately 70 households within the three target communities have improved nutrition during the hungry months (June – October) as a result of improved storage and consumption of *A. grandidieri*, *A. za* and *A. rubrostipa*

This output has not been achieved during the reporting period is and unlikely to be achieved by the end of the project as the defining factors are out of our control (see Section 3.1). However, we should continue talking about the benefits of consuming baobab powder with the community members, men and women, children, youths and adults to ensure they continue consuming the fruits when they are available.

**Output 4:** At least 80 women and 70 men receive a fair price for the sale of sustainably harvested *A. grandidieri*, *A. za* and *A. rubrostipa* fruit products, resulting in increased income of at least 70 households

This year, we were not able to offer fair price for the community members yet, as although the note lifting the ban was adopted in January 2021 (Annex 14), it was not available to partners until March 2021. By this period, community members have already sold the fruits they had on the local market.

### 3.3 Progress towards the project Outcome

The project's expected outcome is to establish a sustainable use and management of baobab fruits that would derive increased income and improved nutrition at three communities in western Madagascar, contributing to eventual increased regeneration of *Adansonia grandidieri* in the wild. We achieved one of the five key indicators as the three communities currently have a ten-year contract to manage the natural resources within their territories, including baobabs. Three indicators on increasing number of saplings in the wild, defining and enforcing harvesting quotas, and increasing income from baobab harvesting and trade are ongoing and are likely to be achieved by the end of the funding. We are unlikely to achieve our goal to reach a weekly consumption of *A. grandidieri* fruits by households during the hungry months as people. Due to insecurity and urgent need for income, people are not yet inclined to store baobab fruits or powder. To ensure the situation can be improved, we will continue to talk about the benefits of consuming the baobab fruits and powder with the community members.

### 3.4 Monitoring of assumptions

We designed this project with 19 assumptions at the outcome and output levels. At the end of the third year, 17 still hold true and two are no longer valid (#5 and #19).

Assumption	Comments
1. <i>A. grandidieri</i> populations are long lived and saplings take a minimum of three years to grow and produce fruits. It is therefore unlikely that this project will see changes in the populations, but we expect to see better age structure within those populations (i.e. more saplings of 1-3yo)	This assumption still holds true.

<p>2. Security conditions at the three villages can be difficult at times but are known and accounted for in the work planning and risk assessments. The staff will ensure that activities at the very least do not worsen the situation for communities and only deploy staff when it is considered safe to do so</p>	<p>The project area remained safe in 2020. However, bandit attacks were reported again since December 2020. This assumption still holds true.</p>
<p>3. Potential political turbulence around the presidential elections in November – December 2018 is not expected to have long-term impacts on the security conditions at the three villages and enable the project team to work safely and the community members to take baobab fruits to market. All non-essential activities around the time of elections will be limited in the work plan. As the elections take place in the initiation phase of the project, it will not hugely affect the outcome. Other project activities will be flexible in location to ensure that the work is not constrained by access to the village</p>	<p>Currently, there are contestations against the government. This assumption therefore still holds true.</p>
<p>4. Culturally sensitive questions (e.g., data on income and diet) will be considered appropriate to the community and will not affect response. If there are issues in initial pilots, we will alter the questions and use another proxy for these indicators</p>	<p>This assumption still holds true.</p>
<p>5. Analysis carried out by LCBBD showed that oils from the three baobab species are similar in properties. However, it is easier to extract oil from <i>A. grandidieri</i>. Although the three clients already identified by LCBBD are willing to use the two non-threatened species, this project does not have the scope to influence the wider corporate sector</p>	<p>This assumption still holds true but is no longer relevant to the project since we are going to focus the community enterprises on powder production.</p>
<p>6. Community organisations will continue to operate efficiently as part of training and mentoring activities that promotes fairness across social groups and genders</p>	<p>This assumption still holds true.</p>
<p>7. Matched-funded work to prevent felling and burning of forest will remain in the management plans (as per current agreements) without extra investment</p>	<p>This assumption still holds true.</p>
<p>8. People traditionally harvest <i>Grandidier's</i> baobab for their own consumption, and the <i>A. grandidieri</i> population is locally good, therefore it is logical to reinforce this behaviour within sustainable limits, rather than try and switch onto another species</p>	<p>This assumption still holds true.</p>
<p>9. Regeneration is not dependent on germination alone; to a lesser extent is impacted by grazing and burning (which are both addressed by a matched-funded project, increasing chances of regeneration success for all three baobab species) but is not significantly limited by an unknown factor (i.e. fruit availability is the major</p>	<p>This assumption still holds true.</p>

limiting factor in seedling germination). From the analysis of the survey result from No-take zone, we know that the drought is the most important threat to new seedling naturally germinated in the field and the dry period is very long (from the beginning of May – mid-December)	
10. Both women and men collect fruits from the wild	This assumption still holds true.
11. <i>A. za</i> and <i>A. rubrostipa</i> are less threatened and have larger populations, therefore trade in these species is more appropriate. People's nutrition won't be affected by the trade as they will sell different species to the one that they traditionally consume ( <i>A. grandidieri</i> )	This assumption still holds true. However, the population sizes of <i>A. za</i> and <i>A. rubrostipa</i> are lower at the targeted villages and fruit availability is lower for these species in Y2. In Y3, we record a significant raise of fruit production especially for <i>A. za</i> . We oriented community to use this species in the trade because this is less threatened than <i>A. grandidieri</i> . We will continue to monitor all three species to inform replication of the project at other sites in the future.
12. The project end date will be too soon to monitor seedling survival. The baobab planting initiative will be included in the government ongoing reforestation programme. Therefore, DREEF will continue to monitor survival rates and provide assistance to the communities to replace dead individuals and/or increase the number of trees planted after the project period	This assumption still holds true.
13. The three target villages are estimated to include a total of 230 households with 266 men and 287 women in total. At least 75% of these households have a vulnerable member	Unfortunately, the number of households in the target villages decreased to only 150 by the end of the reporting year. Because of the drought, most families in Betainkilotra could not start farming. They therefore moved to other areas by the end of the year. In addition, insecurity prevailed again since December 2020. Some families from the three villages therefore decided to move to the nearest town. People movements are very dynamic lately within this area.
14. Fruit availability is likely to fluctuate according to annual rainfall patterns, affecting regeneration and supply. This is somewhat outside of our control but will be mitigated by processing and storing more powder, for longer, in years with good crops, whilst respecting quotas	This assumption still holds true.
15. Consumption of baobab powder acts as an effective proxy for improved nutrition (compared to those that don't eat baobab) due to high concentrations of vitamin B, vitamin C, protein, and dietary fibre (pectin)	This assumption still holds true.



16. Currently, communities are used to eating Grandidier's baobab fruits during the fruiting season. Non consumed fruits are generally wasted. They are eager to learn how to store them for longer	This assumption still holds true.
17. Due to the distribution of the three species around target villages, it is necessary to support consumption of all three species	This assumption still holds true.
18. Due to the prevailing insecurity in the region, people are reluctant to provide information on income. Standard wealth indicators (materials used for building the house, belongings, etc.) are not working either. Our interviews will therefore focus specifically on what people achieved with the income they got from selling baobab fruits.	This assumption still holds true.
19. Trade with businesses will focus on the seed oil in the first instance. Baobab powder is also likely to be traded but this will need to be done carefully to ensure it does not interfere with food security.	This assumption is no longer valid. Our results suggest that we can and should encourage the trade of baobab powder and seeds (see Section 3.1 – Activity 3.2). Oil production is difficult for the community members and unviable as a business at the current volume of fruit sustainably harvested.

### 3.5 Impact: achievement of positive impact on biodiversity and poverty alleviation

This project is expected to result in establishing secure and healthy baobab populations sustainably used and managed by local communities through a supporting national framework, benefiting people and biodiversity. This project is already highlighted as a model in the Menabe Region. In July 2020, the community in Andohaviana managed to stop a clearing in their forest thanks to a timely report to the DREDD, a rapid response by the DREDD team, a warning sentence by the Court in Morondava and a continued policing by the community. Currently, we are considering replicating the project at other villages with Madagascar National Parks and USAID Mikajy. By doing so, we expect the project to contribute preserving biodiversity in Menabe Region while increasing people's income through the baobab sustainable trade. In addition, we now help the Malagasy authorities to define quotas for the baobab fruits and derived products under the CITES guidelines.

## 4. Contribution to the Global Goals for Sustainable Development (SDGs)

SDG	Project contribution in 2020-21
<u>SDG 2</u> : Zero Hunger	We continued to raise people's awareness on nutritional benefits of consuming baobab fruits, especially for vulnerable people. In Bepeha, eight households made and stored powder of three species of baobabs for sale and consumption purposes.
<u>SDG 5</u> : Gender Equality	When we started working in these villages, only men attended the meetings. Currently, both men and women attend the meetings and speak aloud. In Y3, women are more involved into the activities than men because it is concerning food and consumption especially fruit transformation into powder or jam that is more women-oriented tasks. In responding questions from household survey also, women are more and more involved than men.

<b>SDG 8: Decent work and Economic growth</b>	We started making the baobab fruit harvesting and trade a beneficial activity for the participating households in Y1. In Y2, we have defined the fair price for the baobab fruits, powder and seeds. We are ready to discuss these with the enterprises once the ban is lifted.
<b>SDG 15: Life on Land</b>	We contribute to achieving this goal by incentivizing sustainable management of baobab resources and its habitat. We are seeking to increase the population size of an Endangered species. Ultimately, we expect the species to be downlisted on the IUCN Red List Criteria in the future.

## 5. Project support to the Conventions, Treaties or Agreements

The project aims to support the implementation of three Conventions in Madagascar: CBD, CITES and ABS.

<b>Convention</b>	<b>Project contribution</b>
CBD	This project aimed to contribute to implementing Madagascar's NBSAP, especially Objective 1 (In 2025, policy makers and 65% of the Malagasy people are aware of the values of biodiversity and the measures they can take to protect and use it sustainably) and 12 (By 2025, the extinction of endangered species is reduced, and their conservation status improved). In the past 12 months, we interacted often with both the CBD and CITES focal points to remove the ban on baobab harvesting. Currently, we are also discussing the definition of the export quota.
ABS	Since the harvesting and trade were still prohibited, we only had informal meeting with the ABS focal point during the reporting period, when we updated her on the project progress and the status of the ban.
CITES	The initial NDF document was submitted to and discussed with the MEDD team in August 2020. Changes were made in March 2021 following the lift of the ban. This document is currently under revision by both the scientific and management authorities of the CITES.

## 6. Project support to poverty alleviation

Since the ban on baobab fruit harvesting was lifted only in January 2021 (after the Grandidier's baobab fruiting season), we were not able to set up the fair and equitable trade of the fruits and powder for this reporting year. We therefore were not able to reach our direct impact on poverty alleviation to increase households' income. However, we noticed an increase of the baobab powder price in the local markets from 10-15,000Ariary per kg in 2019 to 20,000Ariary per kg in 2020. This increase will contribute to reducing producers' poverty.

This year, we contributed to empowering the communities to manage their natural resources through the management contracts that will be valid until December 2030. This contract will enable the communities to plan how to manage their resources and stop outsiders from using their resources. Mentoring will be required for its implementation.

## 7. Consideration of gender equality issues

From the design, this project is expected to involve more women than men, especially in the fruit processing and trade components. This year, we continued to organize project activities at the time and places that favour women participation. As a result, we always had similar representation of men and women during the meetings. During the household interviews, we had more women respondents (56%) than men. However, when discussing about the leadership of the community enterprises, women were less represented, mainly because of the low literacy level. We are currently reviewing the governance structure of the community enterprises to ensure women are fairly represented in decision-making.

## 8. Monitoring and evaluation

This year was particularly challenging for our monitoring and evaluation as there were many barriers to the project progress: the ban, the changes in the Ministry of Environment which delayed the community management contract process, Covid-19 restrictions. Therefore, we focused more on monitoring how to address these issues.

## 9. Lessons learnt

### What worked well, and what didn't work well:

Our field team shared the challenges above and how we are progressing with addressing them regularly with the communities. As a result, although we did not reach the expected goal of offering a fair price, the communities continue to trust on us and take their responsibilities. This good communication is our guarantee for the project to continue and succeed on its final year.

### If you had to do it again, what would you do differently?

If we had to do this project again, we would consider promoting at least two value chains at a time. In fact, people now see baobabs as an important source of income, but since it is the only one, they are more inclined to sell the baobabs instead of consuming them. If there was an alternative, there would be more chances for people to store and eat baobab powder during the hungry months.

In addition, we would have included other development intervention in the project, such as improving the water, sanitation, or education infrastructures. Such interventions would increase people's satisfaction and therefore engagement into the project, but also help reduce impacts of the delays and unexpected challenges as we faced during this project.

### What recommendations would you make to others doing similar projects?

In addition to the two points above, we would recommend assessing well the resource availability and the market before or at the beginning of a similar project.

### Building this learning into the project and future plans

In this final year of the project, we are going to focus our efforts in setting up the baobab enterprises and build local communities' capacity in enterprise management while working with the DREDD, MEDD and CITES authorities to define the harvesting and export quotas for the Grandidier's baobab fruits, powder and oil. We have been in contact with other enterprises and will continue to involve them in future project developments. In the future, we will work with specialists on other value chains (such as beekeeping) to improve our impacts in the villages. In addition, we are looking to replicate the model at other communities within the Menabe Region, especially around the Kirindy-Mitea National Park.

## 10. Actions taken in response to previous reviews (if applicable)

Five key comments were received from the second annual report. These are addressed below.

Review	Actions taken
1. Project team to urgently engage with the Ministries of Environment and Trade to advocate lifting the ban on processing baobab fruits	Several meetings, phone calls and email exchanges were held with the Ministry of Environment staff to discuss the lifting of the ban on processing baobab fruits. In January 2021, an official letter to lift the ban was signed by the Ministry of Environment (Annex 14)
2. Fast-track approvals of Community-based natural resources management contracts	We managed to complete the contract process in December 2020. The process was not as fast as expected.

3. Monitor 1 and 2 and if necessary, revisit logframe targets and add additional detail on timings	A request to change the project timeline and budget has been submitted in December 2020 and approved in February 2021. We now have until March 2022 to reach the project objectives.
4. Improve skill bases around nursery practice and silviculture practice of baobab management	We installed one nursery at each village from April 2020 to have stronger seedlings during planting period. Each nursery was held by local people that we train to take care of seedlings daily. We will improve these nurseries during this final year of the project.
5. Ensure Darwin Initiative logos are prominently displayed in dissemination materials and on the website	Each material exchanged throughout this project period have Darwin Initiative logo on it (Management plan, Signs, manual for fruit production estimates, reports)

## 11. Other comments on progress not covered elsewhere

### 1. *Insecurity issues*

In January 2021, bandit attack in Andohaviana resulted in the death of the President of the VOI. This loss affected the communities and the project team. We are currently restructuring the leadership for this community-based organization.

### 2. *Risks of beetle invasion*

In 2019, a beetle living in the baobab trees was reported to cause the death of the baobabs in Anjajavy, northwestern Madagascar. In March 2021, the same beetle was reported by our team working in northern Madagascar and caused the death of three baobab trees. We observed that these trees were attacked after the area has been burnt. We therefore need to survey the presence of this insect in Menabe Region as it might cause a rapid depletion of the baobab population. In May 2021, we plan to produce a leaflet showing the insect that we should share with the communities and the authorities in Menabe Region.

## 12. Sustainability and legacy

Our exit strategy included five key activities:

1. The adoption of a 5-year business plan,
2. Continued communication of baobab fruit harvesting rules and sustainable forest management using signs, posters and radio programs,
3. Regular training for community leaders and the enforcement committees to ensure transparent management of the forest resources and related incomes,
4. Transformation of the baobab collection points into a community enterprise, and
5. Continued engagement of LCBD and its partners to advise the community-owned and managed enterprises and promote their products to interested businesses.

This strategy is still valid and will be implemented during this final year of the project. In addition, we have started discussing with USAID-Mikajy (<https://tinyurl.com/y7a62wsb>) on the possibility of providing additional funding to support the existing communities and extend the project into other communities around the Kirindy-Mitea National Park.

## 13. Darwin identity

In August 2020, a radio intervention was held in a Morondava based radio station to inform about the Darwin Initiative project and MV intervention in the Menabe area. The intervention was in collaboration with DREDD team and entering in the participation of MV in the topics of

environmental activities throughout Menabe region. In addition, articles on the baobabs were posted on our Facebook page with links to the Darwin Initiative social media.

#### **14. Impact of COVID-19 on project delivery**

Due to COVID-19, we observed major delays in the project progress. For example, throughout period of confinement, all activities linked to baobab enterprise were interrupted: powder processing training sessions, setting up of production unit before harvesting season, etc. In response to the health-related crisis and its impact on the project, we reorganized our working methods. For example, LABEL CBD delegated part of the activities such as the communication of the fair price to MV team based in Morondava. As Madagascar is now facing its second wave of Covid-19, more delays can be expected in training communities. However, thanks to our team based in Morondava, we should be able to reduce the delays.

In order to counter the risks for health and safety of the project staff, we instead introduced teleworking and supported of virtual meetings. In the field, we applied the hygiene and distancing measures. Project staff who feel unwell or has been unwell for a week before the fieldwork cannot go to the field.

We think that we must increase awareness in consuming baobab powder among the communities. Thanks to its remarkable nutritional properties, it will help them to boost their immunity and reduce the risk of contamination or at least, reduce complications and deaths.

#### **15. Safeguarding**

Please tick this box if any safeguarding or human rights violations have occurred during this financial year.

If you have ticked the box, please ensure these are reported to [ODA.safeguarding@defra.gov.uk](mailto:ODA.safeguarding@defra.gov.uk) as indicated in the T&Cs.

## 16. Project expenditure

**Table 1: Project expenditure during the reporting period (1 April 2020 – 31 March 2021)**

Project spend (indicative) since last annual report	2020/21 Grant (£)	2020/21 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
Monitoring & Evaluation (M&E)				
Others (see below)				
<b>TOTAL</b>				

Expenses on Overhead Costs were reduced due to the limited time FFI staff members were involved in the project. In fact, as the project did not progress as expected, i.e.. did not reach the stage to establish the community enterprises, and due to the Covid-19 restrictions, not all staff members were involved as planned in the project during the reporting period.



## Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2020-2021

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
<p><b>Impact</b></p> <p><i>Secure and healthy baobab populations, sustainably used and managed by local communities through a supporting national framework, benefiting people and biodiversity</i></p>		<p>The signature of management contract including management plan was signed and officialised by stakeholders giving real support for the community managers.</p>	
<p><b>Outcome:</b></p> <p>Sustainable use and management of baobab fruits derive increased income and improved nutrition at three communities in western Madagascar, contributing to eventual increased regeneration of <i>Adansonia grandidieri</i> in the wild.</p>	<p>1.1 By end of 2020, the number of <i>A. grandidieri</i> saplings recorded in the wild increase by 5-15% compared to 2017 survey.</p> <p>1.2 By 2019, each of the three targeted communities receive a ten years contract to manage the baobab populations in their territory.</p> <p>1.3 By 2019, harvesting quotas for the three baobab species are defined and enforced for the three community-managed forests; a maximum of 10 infractions per year are reported by the local enforcement committees in total.</p> <p>1.4 At least 70% of households involved in baobab harvesting interviewed report increased income from the new trade of <i>A. za</i> and <i>A. rubrostipa</i> fruits by 2020.</p> <p>1.5 In 2020, at least 30% of households interviewed report weekly consumption of <i>A. grandidieri</i> fruits during sampled weeks in the June to October hungry months</p>	<p>1.1 In 2017, no saplings were recorded in the wild. In January 2021, we recorded no wild new saplings and 3 of 52 saplings recorder in 2019-20 still survived.</p> <p>1.2 Management plans and contracts are signed by all stakeholders. Each community has had their contract renewed for 10 years.</p> <p>1.3 One infraction was reported by the community in Andohaviana in 2020</p> <p>1.4 Due to the ban of wild forest product harvesting, people are not reporting income from baobab</p>	<p>1.1 Monitoring of the wild and planted seedlings</p> <p>1.2 None</p> <p>1.3 Agree on quota with the scientific and management authorities, and train communities in enforcing the management rules</p> <p>1.4 Establish the community enterprises. Linked with Output 4</p> <p>1.5 Continue raising awareness on the benefits from consuming baobabs, monitor children' nutrition status and report results to communities.</p>

		<p>harvesting. Based on fruit availability assessment in 2020 season, trade of A. za might be interesting for generating income and we oriented community members to this opportunity.</p> <p>1.5 In January and February 2020, only six of about 40 women who attended a meeting at the three villages reported having made baobab powder for daily consumption. Other preferred to store the fruits instead of the powder. Many reported they would make the powder only if a company was going to buy them.</p>	
<p><b>Output 1.</b> Three existing community groups empowered to reinforce and manage baobab resources by strengthening current co-management frameworks.</p>	<p>1.1 By October 2018, all three communities pass a management evaluation by DREEF.</p> <p>1.2 By June 2019, all community management contracts are renewed for 10 years and endorsed by both community elected representatives and DREEF.</p> <p>1.3 By 2021, community enforcement teams report that their confidence in enforcing fair decisions on their own initiative is on average 'good'</p>	<p>1.1 Evaluations were completed in Y1 and all three communities are eligible to obtain a ten-years management contract.</p> <p>1.2 All community management contracts are signed by all stakeholders (DREDD, Communes and Community elected Leader) in December 2020. Each community have her management contract renewed for 10 years.</p> <p>1.3 Enforcement did not start yet</p> <p>1.4 From 2019 and 2020 plantation sessions only 60 and 40 seedlings survived respectively at Bepeha and Andoviana. As we installed nursery in each village, we planted 340, 460 and 360 seedlings respectively at Bepeha, Andoviana and Betankilotra plantation area in February 2021. At March 2021, the survival rate of planted seedling is more than 90%.</p>	

	1.4 By 2020, at least 150 Grandidier's baobab trees are planted in the reforestation area of each site.	
Activity 1.1 Update monitoring plan with DREEF for 3 years for three VOI	Completed in 2018-19	None
Activity 1.2. Nine field visits and meetings to evaluate community achievements against the existing management contract	Completed in 2019-20	None
Activity 1.3 Six participatory mapping at the community level to update each site's management plan	Completed in 2019-20	None
Activity 1.4 Write-up new co-management plans (n = 3) and submit to relevant authorities	Completed in 2019-20	None
Activity 1.5 Three capacity building sessions (one per year) for community-organization leaders and members on natural resource management	Capacity building session in June 2020. Dynamization meeting for community prior to signing in November 2020 and Survey meeting session in March 2021 with DREDD team	Next evaluation and training meetings planned in June, September and December 2021
Activity 1.6 Sign and officialise community management contracts	Completed in December 2020	None
Activity 1.7 Establish, train and mentor enforcement committee members (n = 8 per village, including at least 3 women)	Training of enforcement committee members in June 2020 with DREDD team. 12 Patrollers established at each community and functioning to ensure periodic survey of each territory and report infraction to mentor enforcement committee from March 2021.	Equip patrollers and train with patrol reporting tools to facilitate and day by day update and easy sharing of patrol activities in May 2021
Activity 1.8 Design, produce and share materials to inform on new co-management plan regulations (e.g. signs, posters)	Signs set on the limit of each community area. Maps containing management plan placed at each main village for daily remembering	Replacing damaged or old sign when it occurs
Activity 1.9: Baobab population monitoring to inform management effectiveness	Monitoring completed for 2019-20	Monitoring to carry out for 2021-22 period
Activity 1.10: Plant 150 Grandidier's baobab	1160 new seedlings of <i>A. grandidieri</i> planted in February 2021.	Monitor seedlings survival and growth in June, September and December 2021 Replace dead seedlings in February 2022

		Improve existing (Andohaviana and Betainkilotra) and set up new (Bepeha) nurseries at the villages to include baobabs and other sympatric species.
<b>Output 2.</b> Wild baobab species in Andohaviana, Bepeha and Betankilotra are protected and sustainably harvested by local communities, and there are enough fruit left to permit regeneration in the wild, particularly for <i>A. grandidieri</i> (EN).	<p>2.1 By 2019, three co-management plans (which includes activities to manage baobab habitat and fruit harvest) agreed and endorsed</p> <p>2.2 By 2020, 160 households involved in trade of baobabs fruit report harvesting <i>A. za</i> and <i>A. rubrostipa</i> in addition to <i>A. grandidieri</i>.</p> <p>2.3 From 2019, the quantity of fruits harvested from the wild do not exceed the defined quotas for each species</p> <p>2.4 In 2020 the number of naturally regenerating <i>A. grandidieri</i> seedlings recorded within monitoring plots at 3 sites, represent 5-15% of the 2017 population baseline.</p>	<p>2.1 Three co-management plans including activities to manage baobab habitat and fruit have been agreed and signed by all stakeholders.</p> <p>2.2 All 112 people interviewed harvested <i>A. grandidieri</i>, 91% also harvested <i>A. za</i> and 44% harvested <i>A. rubrostipa</i>.</p> <p>2.3 Not possible to monitor due to the baobab fruit harvesting ban</p> <p>2.4 3 from 52 seedlings observed under baobab trees from 2019-20 season where fruit collection was not allowed survived until March 2021.No new seedling is observed for 2020-21 fruiting season under these monitoring plots.</p>
Activity 2.1. Annual survey of baobab populations, fruits available and left in the wild for the three species in Andohaviana, Bepeha and Betankilotra forest	Survey completed in September 2020 for population status and fruit availability. Survey results completed in Annex 11.	Survey to be conducted in September 2021
Activity 2.2. Household interviews of at least 230 households on baobab harvesting activities	112 households interviewed in January 2021	Continue household surveys in October 2021
Activity 2.3. Define, recommend and agree quota with community and three businesses for baobab fruit harvesting based on existing data for <i>A. grandidieri</i> and data collected in Y1, and for <i>A. za</i> and <i>A. rubrostipa</i> populations in Y2 following data collection	No quota agreed in 2020-21	Define quota with CITES authorities and with communities
<b>Output 3.</b> At least 85 vulnerable members; (children <10yo, pregnant women and elderly >60yo) of approximately 70 households will benefit within the three target communities have improved nutrition during the hungry months (June - October) as a result of improved storage and consumption of <i>A. grandidieri</i> , <i>A. za</i> and <i>A. rubrostipa</i>	<p>3.1 By August 2019, 230 of women in the three target communities can describe at least one benefit of consuming baobab fruit.</p> <p>3.2 By August 2019, at least 150 women can describe how to make baobab powder and store them</p> <p>3.3 By 2020, 70 households within target communities with 85 vulnerable people consume</p>	<p>3.1 87 (78%) of the 112 people (49 women and 38 men) interviewed in January 2021 were able to describe at least one benefit from consuming baobab fruit.</p> <p>3.2 29 % (n = 32) of the people (19 women and 13 men) interviewed could describe correctly how to make the baobab powder and store them</p> <p>3.3 None of people interviewed reported to have consumed baobab powder during June – October 2020. Only a few people reported having baobab powder stocks but they are willing to sell it than eat them even at the local market.</p>

	baobab powder at least once a week during June – October.	
Activity 3.1. Awareness campaign on the benefits from consuming baobab fruits and how to store and process them using monthly radio programs, posters, videos, international awareness days and 12 meetings attended by 230 women	03 meetings attended by 34 women organized in 2020-21	Continue awareness at the village level Radio programs planned from September 2021 Posters to be shared at the schools and public offices from August 2021 Videos to be recorded and broadcasted by October 2021
Activity 3.2. Establish three working baobab processing units for use by enterprise members	We have identified the company who will establish the baobab processing unit in Andohaviana.	Establish the baobab processing unit in Andohaviana and Bepeha. Improve the one in Betainkilotra.
Activity 3.3. Train 150 women and 100 men in the use of fruit processing units	Not started	Carry out in 2020-21
Activity 3.4. 230 semi-structured interviews on knowledge of baobab benefits and consumption during the hungry months (June – October)	Completed in January 2020	Re-design the survey method to include direct observation of baobab stock for each household
<b>Output 4.</b> At least 80 women and 70 men receive a fair price for the sale of sustainably harvested <i>A. grandidieri</i> , <i>A. za</i> and <i>A. rubrostipa</i> fruit products, resulting in increased income of at least 70 households.	<p>4.1 By 2019, three community enterprises are established to collect, process and sell baobab fruit products are established.</p> <p>4.2 By 2020, fair prices for <i>A. grandidieri</i>, <i>A. za</i> and <i>A. rubrostipa</i> fruit derived products are agreed with community members</p> <p>4.3 By 2020, 70 households including 70 men and 80 women involved in the enterprises see their income from baobabs increasing by at least 25%</p> <p>4.4 By the end of the project, each enterprise would have three already established clients and five potential buyers</p>	<p>4.1 Responsible for community enterprise at community level has established in January 2021.</p> <p>4.2 Fair price for value added products from different species has been calculated and communicated with communities in January 2021.</p> <p>4.3 No interview on impacts of baobab trade on the households in 2020-21</p> <p>4.4 No established client yet for the community enterprise. Five potential buyers already identified.</p>
Activity 4.1. Set up bank accounts to establish 3 community enterprises that collectively sells baobab seeds at fair prices to potential companies	Not started	Rescheduled for 2021-22

Activity 4.2. Assess fair price for <i>A. grandidieri</i> , <i>A. za</i> and <i>A. rubrostipa</i> fruits based on detailed costing studies, including rewarding national minimum wage for fruit collectors	Completed (Annex 14)	Discuss price with communities and buyers
Activity 4.3. Establish a robust governance structure and an equitable benefit sharing mechanism for the enterprise, using ABS frameworks.	Designing of governance structure and consultation in progress.	Finalisation rescheduled for 2020-21
Activity 4.4. Recruit three baobab collection focal points for the enterprise and identify a locality where he/she will be based at the nearest market from the village	Not started	Rescheduled for 2020-21
Activity 4.5. Inform community members of the quality requirements of baobab fruits accepted by the focal point	Communication of the quality and exigences of fruit to be accepted by the "community enterprise" done on February 2021	To be continued and updated according the evolution of commercialisation activities
Activity 4.6. Develop a business plan for this enterprise to process and sell baobab fruit products	A business model developed (Annex 15)	Develop the business plan based on this model.
Activity 4.7. Three training sessions for community in enterprise and financial management, and quality control (one per year)	No activity in 2019-20	Planning to be revised. Training needs to be repeated and mentoring is required
Activity 4.8. Setting up the supply chain for raw materials (seeds) and processed powder to the markets.	Not started	Rescheduled for 2020-21
Activity 4.9. Signing agreements with partner companies that provide support in market access	Scheduled for 2020-21	To be conducted after ban removal
Activity 4.10. Interviews with 230 community members to assess impacts of baobab fruit sale on household wellbeing	Scheduled for 2020-21	Now postponed to 2021-22



## Annex 2: Project's full current logframe as presented in the application form (unless changes have been agreed)

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<b>Impact:</b> Secure and healthy baobab populations, sustainably used and managed by local communities through a supporting national framework, benefiting people and biodiversity.			
<b>Outcome:</b> Sustainable use and management of baobab fruits derive increased income and improved nutrition at three communities in western Madagascar, contributing to eventual increased regeneration of <i>Adansonia grandidieri</i> in the wild.	1.1 By end of 2020, the number of <i>A. grandidieri</i> saplings recorded in the wild increase by 5-15% compared to 2017 survey. 1.2 By 2019, each of the three targeted communities receive a ten years contract to manage the baobab populations in their territory; 1.3 By 2019, harvesting quotas for the three baobab species are defined and enforced for the three community-managed forests; a maximum of 10 infractions per year are reported by the local enforcement committees in total. 1.4 At least 70% of households involved in baobab harvesting interviewed report increased income from the new trade of <i>A. za</i> and <i>A. rubrostipa</i> fruits by 2020. 1.5 In 2020, at least 30% of households interviewed report weekly consumption of <i>A. grandidieri</i> fruits during sampled weeks in the June to October hungry months	1.1 Annual survey data from 2017 to 2021 1.2 Copies of the new contracts between the government (represented by DREEF) and the community-based organizations 1.3 Copies of management plans for each area and enforcement records held by communities and DREEF 1.4 Interviews records with 90 women and men who sell baobab fruits 1.5 Data from 160 random household interviews	<ul style="list-style-type: none"> <li><i>A. grandidieri</i> populations are long lived and saplings take a minimum of 3 years to grow to produce fruit. It is therefore unlikely that this project will see changes in populations, but we can expect to see better age structure within those populations (i.e. more saplings &gt;1yo &lt;3yo)</li> <li>Security conditions at the three villages can be difficult at times but are known and accounted for in the work planning and risk assessments. The staff will ensure that activities at the very least do not worsen the situation for communities and only deploy staff when it is considered safe to do so.</li> <li>Potential political turbulence around the presidential elections in November-December 2018 is not expected to have long-term impacts on the security conditions at the three villages and enable the project team to work safely and community members to take baobab fruits to the market. All non-essential activities around the time of the elections will be limited in the work plan. As the elections take place in the initiation phase of the project, it won't hugely affect the final</li> </ul>

			<p>outcomes. Other project activities will be flexible in location to ensure that the work is not constrained by access to the village.</p> <ul style="list-style-type: none"> <li>• Culturally sensitive questions (e.g. data on income and diet) will be considered appropriate to the community and won't affect response. If there are issues in initial pilots, we will alter the questions and use another proxy for these indicators.</li> <li>• Analysis carried out by LCBD showed that oil from the three baobab species are similar in their properties. However, it is easier to extract oil from <i>A. grandidieri</i>. Although the three clients already identified by LCBD are willing to use the two non-threatened species, this project does not have the scope to influence the wider corporate sector.</li> </ul>
<p><b>Outputs:</b></p> <p>1 Three existing community groups empowered to reinforce and manage baobab resources by strengthening current co-management frameworks.</p>	<p>1.1 By October 2018, all three communities pass a management evaluation by DREEF.</p> <p>1.2 By June 2019, all community management contracts are renewed for 10 years and endorsed by both community elected representatives and DREEF.</p> <p>1.3 By 2021, community enforcement teams report that their confidence in enforcing fair</p>	<p>1.1 Evaluation reports from DREEF Menabe.</p> <p>1.2 Copies of endorsed contracts</p> <p>1.3 Key informant interview responses</p> <p>1.4 Records of planted Grandidier's baobab</p>	<ul style="list-style-type: none"> <li>• Community organisations will continue to operate efficiently as part of training and mentoring activities that promotes fairness across social groups and genders.</li> <li>• Matched-funded work to prevent felling and burning of forest will remain in the management plans (as per current agreements) without extra investment</li> <li>• People traditionally harvest Grandidier's baobab for their own</li> </ul>

	<p>decisions on their own initiative is on average 'good'</p> <p>1.4 By 2020, at least 150 Grandidier's baobab trees are planted in the reforestation area of each site.</p>		<p>consumption, and the <i>A. grandidieri</i> population is locally good, therefore it is logical to reinforce this behaviour within sustainable limits, rather than try and switch onto another species.</p>
<p>2 Wild baobab species in Andohaviana, Bepeha and Betankilotra are protected and sustainably harvested by local communities, and there are enough fruit left to permit regeneration in the wild, particularly for <i>A. grandidieri</i> (EN).</p>	<p>2.1 By 2019, three co-management plans (which includes activities to manage baobab habitat and fruit harvest) agreed and endorsed</p> <p>2.2 By 2020, 160 households involved in trade of baobabs fruit report harvesting <i>A. za</i> and <i>A. rubrostipa</i> in addition to <i>A. grandidieri</i>.</p> <p>2.3 From 2019, the quantity of fruits harvested from the wild do not exceed the defined quotas for each species</p> <p>2.4 In 2020 the number of naturally regenerating <i>A. grandidieri</i> seedlings recorded within monitoring plots at 3 sites, represent 5-15% of the 2017 population baseline.</p>	<p>2.1 Management plan, baobab fruit harvest quotas and site/zoning maps</p> <p>2.2 Semi-structured interview data from at least 90 women and 80 men</p> <p>2.3 Annual survey data and community monitoring data.</p> <p>2.4 Annual survey data.</p>	<ul style="list-style-type: none"> <li>• Regeneration is not dependent on germination alone; to a lesser extent is impacted by grazing and burning (which are both addressed by a matched-funded project, increasing chances of regeneration success for all three baobab species) but is not significantly limited by an unknown factor (i.e. fruit availability is the major limiting factor in seedling germination). Monitoring of no take plot lead us to see that the germination is not a major concern for the natural regeneration but the survivance of germinated seedling is very hard because of drought because of the fact that baobab population within these sites are in a savanna or shrub.</li> <li>• Both women and men collect fruits from the wild.</li> <li>• <i>A. za</i> and <i>A. rubrostipa</i> are less threatened and have larger populations, therefore trade in these species is more appropriate. People's nutrition won't be affected by the trade as they will sell different species to the one that they traditionally consume (<i>A. grandidieri</i>).</li> </ul>

			<ul style="list-style-type: none"> <li>• The project end date will be too soon to monitor seedling survival. The baobab planting initiative will be included in the government ongoing reforestation programme. Therefore, DREEF will continue to monitor survival rates and provide assistance to the communities to replace dead individuals and/or increase the number of trees planted after the project period</li> </ul>
<p><b>3</b> At least 85 vulnerable members; (children &lt;10yo, pregnant women and elderly &gt;60yo) of approximately 70 households will benefit within the three target communities have improved nutrition during the hungry months (June - October) as a result of improved storage and consumption of <i>A. grandidieri</i>, <i>A. za</i> and <i>A. rubrostipa</i>.</p>	<p>3.1 By August 2019, 230 of women in the three target communities can describe at least one benefit of consuming baobab fruit.</p> <p>3.2 By August 2019, at least 150 women can describe how to make baobab powder and store them</p> <p>3.3 By 2020, 70 households within target communities with 85 vulnerable people consume baobab powder at least once a week during June – October.</p>	<p>3.1 Semi-structured interview data</p> <p>3.2 Household surveys</p> <p>3.3 Semi-structured interview data</p>	<ul style="list-style-type: none"> <li>• The three target villages are estimated to include a total of 230 households with 266 men and 287 women in total. At least 75% of these households have a vulnerable member.</li> <li>• Fruit availability is likely to fluctuate according to annual rainfall patterns, affecting regeneration and supply. This is somewhat outside of our control but will be mitigated by processing and storing more powder, for longer, in years with good crops, whilst respecting quotas</li> <li>• Consumption of baobab powder acts as an effective proxy for improved nutrition (compared to those that don't eat baobab) due to high concentrations of vitamin B, vitamin C, protein, and dietary fibre (pectin).</li> <li>• Currently, communities are used to eating Grandidier's baobab fruits during the fruiting season.</li> </ul>

			<p>Non consumed fruits are generally wasted. They are eager to learn how to store them for longer</p> <ul style="list-style-type: none"> <li>• Due to the distribution of the three species around target villages, it is necessary to support consumption of all three species</li> </ul>
<p>4 At least 80 women and 70 men, receive a fair price for the sale of sustainably harvested <i>A. grandidieri</i>, <i>A. za</i> and <i>A. rubrostipa</i> fruit products, resulting in increased income of at least 70 households</p>	<p>4.1 By 2019, three community enterprises are established to collect, process and sell baobab fruit products are established.</p> <p>4.2 By 2020, fair prices for <i>A. grandidieri</i>, <i>A. za</i> and <i>A. rubrostipa</i> fruit derived products are agreed with community members</p> <p>4.3 By 2020, 70 households including 70 men and 80 women involved in the enterprises see their income from baobabs increasing by at least 25%</p> <p>4.4 By the end of the project, each enterprise would have three already established clients and five potential buyers</p>	<p>4.1 Copies of the community enterprise registration</p> <p>4.2 Fair price evaluation report and minutes of meetings</p> <p>4.3 Semi-structured interview data</p> <p>4.4 Signed agreements and email communications</p>	<ul style="list-style-type: none"> <li>• Due to the prevailing insecurity in the region, people are reluctant to provide information on income. Standard wealth indicators (materials used for building the house, belongings, etc.) are not working either. Our interviews will therefore focus specifically on what people achieved with the income they got from selling baobab fruits.</li> <li>• Trade with businesses will focus on the seed oil in the first instance. Baobab powder is also likely to be traded but this will need to be done carefully to ensure it does not interfere with food security.</li> </ul>
<p><b>Activities</b> (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)</p> <p>1.1 Update monitoring plan with DREEF for 3 years for three VOI</p> <p>1.2. Nine field visits and meetings to evaluate community achievements against the existing management contract</p> <p>1.3 Six participatory mapping at the community level to update each site's management plan</p> <p>1.4 Write-up new co-management plans (n = 3) and submit to relevant authorities</p> <p>1.5 Three capacity building sessions (one per year) for community-organization leaders and members on natural resource management</p> <p>1.6 Sign and officialise community management contracts</p> <p>1.7 Establish, train and mentor enforcement committee members (n = 8 per village, including at least 3 women)</p> <p>1.8 Design, produce and share materials to inform on new co-management plan regulations (e.g. signs, posters)</p> <p>1.9 Baobab population monitoring to inform management effectiveness</p> <p>1.10 Plant 150 Grandidier's baobab</p>			

- 2.1 Annual survey of baobab populations, fruits available and left in the wild for the three species in Andohaviana, Bepeha and Betankilotra forest
- 2.2 Household interviews of at least 230 households on baobab harvesting activities
- 2.3 Define, recommend and agree quota with community and three businesses for baobab fruit harvesting based on existing data for *A.grandidieri* and data collected in Y1, and for *A. za* and *A. rubrostipa* populations in Y2 following data collection
- 3.1 Awareness campaign on the benefits from consuming baobab fruits and how to store and process them using monthly radio programs, posters, videos, international awareness days and 12 meetings attended by 230 women
- 3.2 Establish three working baobab oil processing units for use by enterprise members
- 3.3. Train 150 women and 100 men in the use of fruit processing units
- 3.4 230 semi-structured interviews on knowledge of baobab benefits and consumption during the hungry months (June – October)
- 4.1 Set up bank accounts to establish 3 community enterprises that collectively sells baobab seeds at fair prices to potential companies
- 4.2 Assess fair price for *A. grandidieri*, *A. za* and *A. rubrostipa* fruits based on detailed costing studies, including rewarding national minimum wage for fruit collectors
- 4.3 Establish a robust governance structure and an equitable benefit sharing mechanism for the enterprise, using ABS frameworks.
- 4.4 Recruit three baobab collection focal points for the enterprise and identify a locality where he/she will be based at the nearest market from the village
- 4.5 Inform community members of the quality requirements of baobab fruits accepted by the focal point
- 4.6 Develop a business plan for this enterprise to process and sell baobab fruit products
- 4.7 Three training sessions for community in enterprise and financial management, and quality control (one per year)
- 4.8 Setting up the supply chain for raw materials (seeds) and processed powder to the markets.
- 4.9 Signing agreements with partner companies that provide support in market access.
- 4.10 Interviews with 230 community members to assess impacts of baobab fruit sale on household wellbeing



## Annex 3: Standard Measures

**Table 1 Project Standard Output Measures**

Code No.	Description	Gender of people	Nationality / Language	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
<b>TRAINING MEASURES</b>								
2	Three students from the University of Mahajanga obtained their Masters qualification while working with the project	1F and 2M	Malagasy	-	3	-	3	-
3	Two students from the University of Morondava obtained their License degree while working with the project	2M	Malagasy	-	2	-	3	-
4A	Four undergraduate students received training	4M	Malagasy	4	-	-	4	08
4B	12 training weeks provided							
6A	One student who graduated from the University of Tanà in December 2018 received training on formulating NDF	F	Malagasy	1	-	-	1	3
6B	08 training weeks provided	NA	NA	8			8	24
<b>RESEARCH MEASURES</b>								
9	Three management plans established	NA	Malagasy & French	-	03	-	03	03
10	One field guide for the identification of the baobab species	NA	Malagasy	-	-	-	-	01

Code No.	Description	Gender of people	Nationality / Language	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
	One field manual for assessing baobab fruit availability	NA	Malagasy	-	-	01	-	01
<b>DISSEMINATION MEASURES</b>								
14B	The project results were presented at the Baobab International Congress in December 2019 through a presentation and a poster	NA	NA	-	01	-	01	01
<b>PHYSICAL MEASURES</b>								
20	One laptop of £355 handed to host country	NA	NA	01			01	02
22	06 permanent field plots established	NA	NA	06			06	06
<b>FINANCIAL MEASURES</b>								
23	Value of resources raised from other sources (i.e., in addition to Darwin funding) for project work							

**Table 2 Publications**

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)

## Annex 4 Onwards – supplementary material (optional but encouraged as evidence of project achievement)

Annex 4: List of project team meetings

Annex 5: Notes from the meeting with baobab businesses on 30<sup>th</sup> December 2020

Annex 6: Photos and maps of the signs placed in the villages

Annex 7: 2020-21 work plans of each community-based organization

Annex 8: Photos from the ritualization ceremony and copies of the community-based organizations' contracts

Annex 9: List of the patrollers for each community-based organization

Annex 10: Photos of the nurseries and tree planting activities

Annex 11: Copy of the baobab fruit monitoring handout shared with the community members

Annex 12: Grandidier's baobab non-detriment finding working document (to be kept confidential as it has not been approved by the Madagascar CITES authorities yet)

Annex 13: Baobab fair price calculation as revised in 2020

Annex 14: Draft of the community enterprise business model, to be discussed at all levels

Annex 15: Copy of the text lifting the ban

### Checklist for submission

	Check
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> putting the project number in the Subject line.	Yes
<b>Is your report more than 10MB?</b> If so, please discuss with <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> about the best way to deliver the report, putting the project number in the Subject line.	No
<b>Have you included means of verification?</b> You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Yes
<b>Do you have hard copies of material you need to submit with the report?</b> If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	No
Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	