

Darwin Initiative Main and Post Project Annual Report

To be completed with reference to the “Writing a Darwin Report” guidance: (<http://www.darwininitiative.org.uk/resources-for-projects/reporting-forms>). It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

Submission Deadline: 30th April 2020

Darwin Project Information

Project reference	25-026
Project title	Securing healthy baobab populations through efficient fruit harvesting and use
Host country/ies	Madagascar
Lead organisation	Madagasikara Voakajy (MV)
Partner institution(s)	<ul style="list-style-type: none"> - Label CBD Consulting (LCBD) - Fauna & Flora International (FFI) - Direction Régionale de l’Environnement et du Développement Durable Menabe (DREDD Menabe)
Darwin grant value	£207,203
Start/end dates of project	01 st July 2018 – 31 st March 2021
Reporting period (e.g., Apr 2018 – Mar 2019) and number (e.g., Annual Report 1, 2, 3)	Apr. 2019 – Mar. 2020 Annual Report 2
Project Leader name	Julie Hanta Razafimanahaka
Project website/blog/Twitter	www.madagasikara-voakajy.org
Report author(s) and date	Julie Hanta Razafimanahaka, Fetra Rakotondrazanany, Tantely Nirina Rasoloniaina, Anja Nirina Rakotomanga, Patrick Lelei, Kiran Mohannan, Alexandra Davey; 30 th April 2020

1. Project rationale

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, the species 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 will contribute to implement actions defined in this conservation strategy. We will 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.

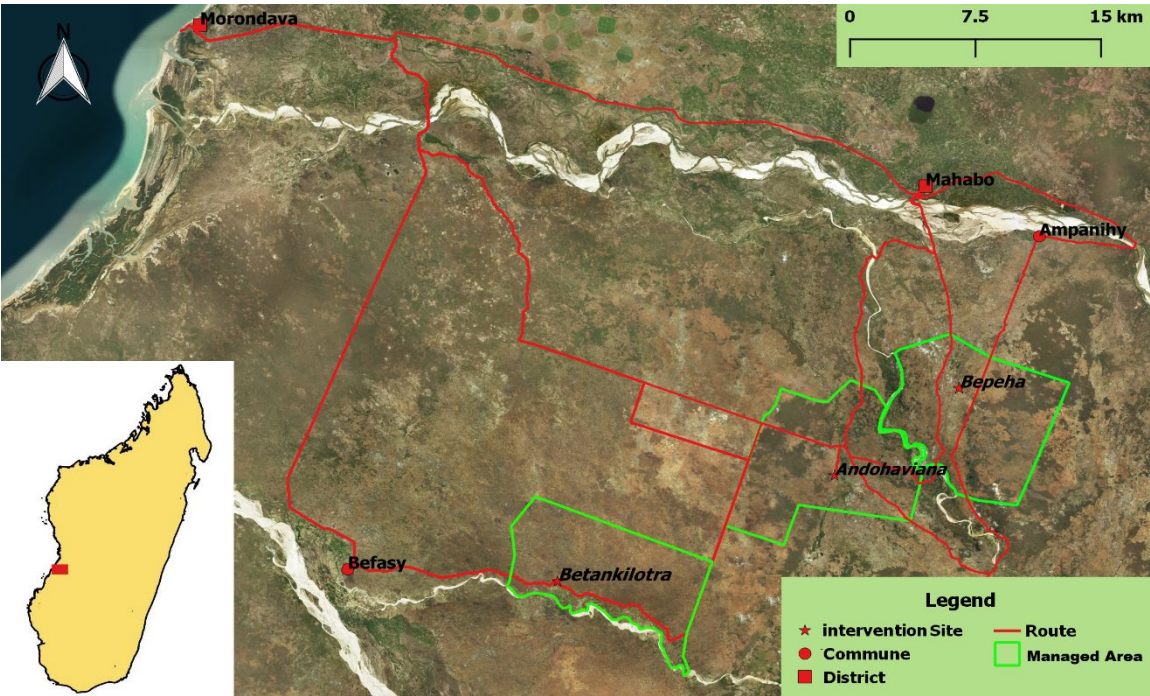


Fig. 1: Location of the project area and the villages

2. Project partnerships

The initial project partners continued to be involved over the second year of the project: MV, LCBD, FFI and DREDD Menabe. Our working relations improved:

- In June 2019, we held a face-to-face project meeting when Kiran Mohanan and Rob Small were in Madagascar. This was an opportunity to discuss the project progress, methods and next steps (Annex 4).

- Since May 2019, the role of project leader at FFI has been taken over by Alicky Davey. In December 2019, she was in Madagascar to meet the project team and the communities. These face-to-face meetings are important in improving communication between the team members (Annex 4). Unfortunately, Alicky's visit in Madagascar has been disturbed by the Cyclone Belna (<https://tinyurl.com/yb9qjch6>) and she could not attend the Baobab Congress as planned.
- In Madagascar, MV has been working more closely with the Groupe des Spécialistes des Baobabs de Madagascar (GSPBM) to organize and hold the first International Baobab Congress in Morondava on 15 -17th December 2019 (<https://gspbm.org/en/about-the-congress/>) and write up the outputs (Annex 5).
- In March 2020, we met with the General Secretary of the Ministry of Environment, Mr Rakotoarisoa Miadantsata landrimanga, to discuss the possibility of lifting the ban for the Grandidier's baobab fruit harvesting in Morondava district. He was open to this suggestion but recommended to wait until all the Ministry staff has been nominated as they were in the process of recruiting (<https://tinyurl.com/y9lqcdgq>).

3. Project progress

3.1 Progress in carrying out project Activities

Activity	Progress
<u>Output 1:</u> Three existing community groups empowered to reinforce and manage baobab resources by strengthening current co-management frameworks	
<u>Activity 1.1:</u> Update monitoring plan with DREEF for 3 years for the three VOI	This activity was completed in Y1
<u>Activity 1.2:</u> Nine field visits and meetings to evaluate community achievements against the existing management contract	This activity was led by DREEF team. In Y1, all the evaluations were completed. In Y2, we reported and discussed the results to the communities in Andohaviana and Betankilotra. The meeting in Andohaviana was completed on 16 th April 2019 meeting as information of evaluation result and renewal of the member of the Community leaders. In Betankilotra, the meeting was held on 01 st June 2019.
<u>Activity 1.3:</u> Six participatory mapping at the community level to update each site's management plan	In Y1, we completed the participatory mapping in Bepeha. In Y2, we completed the mapping in Andohaviana on 17 th April 2019 and in Betankilotra on 2 nd June 2019. The maps were presented to the communities again for confirmation respectively in Andohaviana, Bepeha and Betankilotra on 14 th -17 th October, 18 th -22 nd October and 29 th October – 01 st November 2019 with DREDD Menabe teams (Annex 6). The final maps (Annex 7) were printed as a poster that was going to be posted in each village in March 2020. Unfortunately, due to the Covid-19 pandemic, we had to cancel the related fieldwork and postpone to a later date, probably in May 2020.
<u>Activity 1.4:</u> Write-up new co-management plans (n = 3) and submit to relevant authorities	The management plan for each village has been written in July and August 2019 (Annex 8). They have been approved by the DREDD and are awaiting the final signature of the Mayors expected in May 2020
<u>Activity 1.5:</u> Three capacity building sessions (one per year) for	No specific capacity-building session was conducted during this financial year. Instead, when in the field, our team reminded

community-organization leaders and members on natural resource management	community members of the roles of the community-organization and the responsibility of the leaders.
<u>Activity 1.6:</u> Sign and officialise community management contracts	Cf. Activity 1.4
<u>Activity 1.7:</u> Establish, train and mentor enforcement committee members (n = 8 per village, including at least 3 women)	Composition of the enforcement committee has been discussed with the participants at the meetings in October – November 2019. At all three communities, it was agreed that the community leadership team will ensure the enforcement, as there are not enough people in the villages and it will be difficult to manage the different authorities. Their training is still pending (cf. Activity 1.4).
<u>Activity 1.8:</u> Design, produce and share materials to inform on new co-management plan regulations (e.g. signs, posters)	20 signs have been produced to mark the limits of the territory of each community. In addition, a map has been printed and set up at each village to remind villagers of the management plan.
<u>Activity 1.9:</u> Baobab population monitoring to inform management effectiveness	As planned, the fieldwork to monitor baobab populations at the three localities was completed in September 2019. Continuing our approach since 2015, we visited the 25 monitoring plots at the three localities for Grandidier's baobab. 266 baobab trees located in these plots were still standing but one tree fell in Andohaviana. Six new plots (2 in each locality) containing respectively 72 and 58 <i>A. rubrostipa</i> and <i>A. za</i> were also monitored and all of them still standing (Annex 9).
<u>Activity 1.10:</u> Plant 150 Grandidier's baobab	As of January 2020, only 24, 10 and 18 of the 100 baobabs planted in Andohaviana, Bepeha and Betankilotra respectively survived. Long drought was the main factor considered to have caused this low survival. Other factors include late aftercare for Bepeha and Betankilotra and bad choice of planting area in Bepeha as in April 2019, the planting area was flooded. In February 2020, we planted respectively 100, 100 and 182 seeds of the Grandidier's baobab in a new extension of the planting area in Andohaviana, Bepeha and Betankilotra (Annex 10). Each planting area has been fenced. In addition, one person has been recruited at each village to look after the planting area.
<u>Output 2:</u> 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 <i>Adansonia grandidieri</i>	
<u>Activity 2.1:</u> Annual survey of baobab populations, fruits available and left in the wild for the three species in Andohaviana, Bepeha and Betankilotra forests	While monitoring the baobab populations (Activity 1.9), we counted the number of fruits on each targeted tree. For <i>A. grandidieri</i> , 74.1% of the trees had fruits and the number of fruits per tree was on average 33 ± 3 (SE). This number was slightly lower compared to 2018 and 2017, higher compared to 2015 and slightly higher to 2016. Based on the Grandidier's baobab population size at each site, we estimated the quantity of fruits available at each site to be 2025 in Bepeha, 3810 in Andohaviana and 41200 in Betankilotra. For <i>A. rubrostipa</i> , the average number of fruits per tree was 49 ± 1 (SE), 72.2% of the trees in the plots were fruiting. <i>Adansonia za</i> had

	<p>the lowest number of fruits of trees available (0.9 ± 0.1) with only 18.9% of the trees having fruits. The main threats we recorded is still the fire especially in the plots that are far from villages, especially for <i>A. rubrostipa</i> that is usually aggregated in terms of spatial distribution. Based on population size of each species for each site, we estimated the quantity of fruits available at each site according to the result of survey on sample plots. Respectively in Andohaviana, Bepeha and Betankilotra the quantity of fruit available for <i>A. rubrostipa</i> are 608, 1912 and 1902. For <i>A. za</i> these numbers are 31, 35, and 14 for respectively in Andohaviana, Bepeha and Betankilotra</p> <p>Since the survey was conducted during the peak of the fruiting season and was not repeated at the end, it is not possible to count the number of fruits left in the wild at the monitoring plots. Results of baobab fruit monitoring are summarized in Annex 11.</p>
<p>Activity 2.2: Interviews of at least 230 households on baobab harvesting activities</p>	<p>Interviews were conducted with 122 households from the three villages in November and December 2019. Interviewees included 66 women and 56 men, and they ranged from 15 to 76 years old. Results confirmed that all interviewees used the Grandidier's baobab fruits while respectively 44% and 28% never used <i>A. rubrostipa</i> and <i>A. za</i>.</p> <p>Even though the security context was better since August 2019, some people who left because of insecurity did not return to the villages and the number of households interviewed did not reach 230 as expected when we designed the project.</p>
<p>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 for <i>A. rubrostipa</i> and <i>A. za</i></p>	<p>Due to the ban of forest product harvesting, we did not recommend or discuss any quota for fruits to communities and businesses during the reporting period. Literature review indicate that quota for wild fruit harvesting vary between 22.5 and 98% of the total quantity available¹. Sustainable harvesting quota are defined with reference to the population growth rate. This project will invest in running similar modelling in Year 3.</p>
<p>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 <i>A. grandidieri</i>, <i>A.za</i> and <i>A. rubrostipa</i></p>	
<p>Activity 3.1: Awareness campaign on the benefits from consuming baobab fruits and how to</p>	<p>Following the advisory committee recommendation, three students from the University of Mahajanga carried out the study of the nutritional values of the baobab fruits. Each student focused on one species. They completed their research and obtained their degrees in August 2019. They confirmed the richness of the powder from the</p>

¹ Isaza, Carolina, et al. "Demography of *Oenocarpus bataua* and implications for sustainable harvest of its fruit in western Amazon." *Population ecology* 58.3 (2016): 463-476.

Emanuel, P. L., C. M. Shackleton, and J. S. Baxter. "Modelling the sustainable harvest of *Sclerocarya birrea* subsp. *caffra* fruits in the South African lowveld." *Forest Ecology and Management* 214.1-3 (2005): 91-103.

Holm, Jennifer A., Christopher J. Miller, and Wendell P. Cropper Jr. "Population dynamics of the dioecious Amazonian palm *Mauritia flexuosa*: simulation analysis of sustainable harvesting." *Biotropica* 40.5 (2008): 550-558.

Welford, Lucy, Sarah Venter, and Christian Dohse. "Harvesting from the Tree of Life: responsible commercialization of baobab in South Africa and Malawi." *Ecological Sustainability for Non-timber Forest Products*. Routledge, 2015. 104-116.

<p>store and process them using monthly radio programs, posters, videos, international awareness days and 12 meetings attended by 230 women</p>	<p>three species in mineral content and their potential for use as a food complement (Annex 12).</p> <p>These results were shared with community members during awareness meetings held in December 2019 attended by 82 people in total of which 51 were women. After the information sharing, we reminded the process to make and conserve baobab powder to all who attended, especially women. In December 2019, a leaflet was distributed to participants as a reminder (Annex 13).</p> <p>Due to the ban of forest product harvesting, we did not use the media for the awareness campaign. In January 2020, very few people have processed baobab fruit powder, and was mainly for household consumption and not for sales. In Bepeha three women reported that they store a powder for household consumption during our visit in February 2020. Most of them reported that they can produce more if the Government restrictions are lifted and there are more interested buyers.</p>
<p><u>Activity 3.2:</u> Establish three working baobab oil processing units for use by enterprise members</p>	<p>The options identified in Y1 were reviewed when discussing the community enterprise creation during the FFI's team visit in June 2019. Once the government ban on collection and processing of baobab fruit is lifted, community will be trained in processing of fruits into powder at the village level. Given the volume of fruits is low at this given point, a private oil processing intermediary (Phyleol) was identified to collect the seeds left over after powder processing to cold press them into virgin baobab seed oil. By using such private intermediary, the community still get fair price of the seeds and with cost efficient private processing, final price of oil becomes viable for the buyers. Thus, focus will be to set up three enterprises at village level to process fruit into powder; and by working with more villages in the future, more volumes would be available, making a community owned oil processing viable.</p>
<p><u>Activity 3.3:</u> Train 150 women and 100 men in the use of the fruit processing units</p>	<p>The new Government that came into power in January 2019 imposed a ban on collection, processing and transport of any forest products in Madagascar. This ban is aimed at controlling the over harvesting of forest products, but this project having similar objectives of regulating wild collection by encouraging sustainable use, also suffered. We are keenly following up with Government official to grant permission to continue with the project, as they too agree in principle that the project aligns with their conservation and social development goals. But till we secure this permission, providing training in fruit processing is against the current National regulation, hence we had no choice but to put on hold this activity.</p>
<p><u>Activity 3.4:</u> Run 230 semi-structured interviews on knowledge of baobab benefits and consumption during the hungry months (June – October)</p>	<p>Baseline data were collected during the interviews reported in Activity 2.2. 93% of the interviewees were able to report a benefit from baobab consumption. The most reported fact was about the high content in calcium that is beneficial to health. Despite this knowledge, only 24% of the interviewees reported consuming baobabs during the hungry months.</p>
<p><u>Output 4:</u> 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><u>Activities 4.1:</u> Set up bank accounts to establish 3 community</p>	<p>Due to the ban in January 2019, this activity was not started in Y2.</p>

enterprises that collectively sells baobab seeds at fair prices to potential companies	
<u>Activity 4.2:</u> 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	Fair price study was carried to assess the true cost of production of baobab fruits, seed and powder. This is by calculating the time community member invest in collection of fruits from the forest, cost of equipment used and benchmarking them with local wage as it was higher than the national minimum wage (Annex 14). This fair price calculation will be shared with ethical buyers to discuss and agree on final price and volume they would like to purchase.
<u>Activity 4.3:</u> Establish a robust governance structure and an equitable benefit sharing mechanism for the enterprise, using ABS frameworks	Not started
<u>Activity 4.4:</u> 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
<u>Activity 4.5:</u> Inform community members of the quality requirements of baobab fruits accepted by the focal point	Not started
<u>Activity 4.6:</u> Develop a business plan for this enterprise to process and sell baobab fruit products	During the FFI visit in June 2019, an initial brainstorming exercise using business model canvas was completed to design the basic business model for the baobab enterprise (Annex 15). Target markets, key processes and cost were articulated to ensure the model is robust and scalable. Various partners needed to operationalise this model was also identified. Based on this design, a detailed business plan will be developed in year 3.
<u>Activity 4.7:</u> Three training sessions for community in enterprise and financial management and	No training was provided in this second year of the project

quality control (one per year)	
<u>Activity 4.8:</u> Setting up the supply chain for raw materials (seeds) and processed powder to the markets	Not started
<u>Activity 4.9:</u> Signing agreements with partner companies that provide support in market access	Not started
<u>Activities 4.9:</u> Interviews with 230 community members to assess impacts of baobab fruit sale on household wellbeing	Not started

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

The community management contracts have been prepared and are awaiting signature of the Mayors before handing to the communities (Annex 8). Mayors election in Madagascar happened on 27th November 2019 and official results were announced on 10th January 2020. Since then, the new mayors in Ampanihy and Befasy have not taken their role yet. In addition, the DREDD Menabe have prioritized the government's reforestation initiative until February 2020 that signing the contract have been delayed to March. Unfortunately, the planned fieldwork coincided with the start of the Covid-19 lockdown in Madagascar that the team are now aiming to get the signatories done by May 2020 and the community training to happen thereafter. The preparation of the management contract included reading each paragraph during a community meeting. This will facilitate the training in the future.

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. During Y2, we were not able to set up quotas and could not measure they were respected. Our results to date indicate that natural regeneration have 0% survival rates. It is therefore important to ensure that planted baobabs survive and reach mature age.

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 remains partially achieved. While women and men can remember some benefits from consuming baobab fruits, only a few processes the fruits into powder for storing and future consumption. However, some households store the fruits. Women reported to be more willing to make the powder if there were buyers.

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

In Y1, 89 baobab fruit collectors from the three villages (46 men and 43 women) and one baobab powder producer from Bepeha already reported increased income from selling baobab fruits and powder to SoaLand and FlorIbis, the two companies collaborating with LCBD. These companies were buying the fruits at a higher rate than in the normal market (\$0.71 v.s. \$1.14 per kg). The beneficiaries reported higher income that allowed them to pay for the education of their children, buy food provision for the rainy season and/or acquire new cattle, poultry or bicycle. In Y2, due to the ban, we were not able to assess the impacts of baobab fruit harvesting and trade to local communities.

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. Under no-take zones, seeds of the fruits left in the wild germinate but they do not survive the dry season. We will continue monitoring but are rather pessimistic in the increase of wild seedlings by 5-15%. Instead, the project should invest more in planting and looking after the trees. This should also be one of the focus of any future trade contract. Reaching this outcome is now limited by the ban of harvesting wild forest products in Madagascar, especially considering that baobab products are still found in the market, both at the local and national levels. We will restart the negotiation process with the Ministry of Environment in May 2020 when the Covid-19 crisis in Madagascar will probably be better managed. We expect final positive decision to be taken by August 2020 so that we can start the trainings and monitoring in September 2020.

3.4 Monitoring of assumptions

We designed this project with 19 assumptions at the outcome and output levels. At the end of the second year, they all still held true.

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.
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	Since July 2019, security conditions in the project area have improved. No more bandit attacks have been reported and the community members returned to their villages. However, since security is reported to be linked with political issues, the security is still fragile and could change anytime. This assumption therefore still holds true and security measures are maintained.
3. Potential political turbulence around the presidential elections in November – December 2018 is not expected to have long-term impacts on the security	No other elections are planned until the end of this project. This assumption should therefore be

<p>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 won't hugely affect the final outcome. Other project activities will be flexible in location to ensure that the work is not constrained by access to the village</p>	<p>no longer relevant. However, there are currently many discourses around the Covid-19 crisis that could result in another political turbulence.</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 LCBD showed that oil 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 LCBD 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 Grandidier's 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 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)</p>	<p>This assumption still holds true.</p>
<p>10. Both women and men collect fruits from the wild</p>	<p>This assumption still holds true.</p>
<p>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>)</p>	<p>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. Therefore, they need to include <i>A. grandidieri</i> in the trade. We will continue to monitor all three species to</p>

	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	This assumption is not yet valid. Currently, we estimate the villages include only 150 households at the most. We will collaborate with village leaders to develop a list of the households in each village in Y3.
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. In addition, we have also started measuring people's nutritional status using a MUAC (Mid-Upper Arm Circumference) tape in December 2019.
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 (see Section 3.1 – Activity 3.2)

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. In the first year, we rapidly moved towards this impact since the communities directly benefit from the project from greater income and engaged to securing the baobab populations within their territory. In the second year, we ‘stepped back’ since we were not able to set up the enterprise or get the buyers to the village. Community members understood this is out of the project team’s control and are hoping that we will be able to get it lifted for the next baobab harvesting season. They also continued to engage in developing the management plans, planting baobabs and protecting the adult trees. One of the key indicators of this success was that they left all the fruits below the baobab trees within the no-take zone.

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

SDG	Project contribution in 2019-20
<u>SDG 2</u> : Zero Hunger	We continued to raise people’s awareness on nutritional benefits of consuming baobab fruits, especially for vulnerable people. A few members of the communities started to make and store baobab powder and feed them to children. Others stored fruits.
<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. Although there is no strict rule, the social norm in the villages is that both men and women go and collect the fruits in the wild and women process the fruits into powder. Due to illiteracy, getting women to take leading roles in the community enterprise will be challenging but we will ensure that all women who can write and read will be involved, and those who can’t are not discarded.
<u>SDG 8</u> : Decent work and Economic growth	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.
<u>SDG 15</u> : Life on Land	Only one of 266 Grandidier’s baobab trees in the monitoring plots fell during the reporting period. This indicates that the baobab trees are well protected within the intervention area.

5. Project support to the Conventions, Treaties or Agreements

The project supported the organization and running of the first international congress on the baobabs in Madagascar in December 2019

Convention	Project contribution
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 2019-20, we continued to raise awareness on the nutritional values of the baobabs and how they can be protected. A report has been shared with the CBD focal point in February 2020. With the communities, we have developed the resources management plan to ensure sustainable use. We have also planted baobabs to increase the population size and improve age structure.

ABS	The ABS Focal Point in Madagascar is a member of the Project Advisory Committee. Since Madagascar is just starting to implement ABS, this project makes a good case study to ensuring equitable sharing of benefits from baobab fruits. In June 2019, the team met with the ABS focal point where she recommended that the final user has to submit a project proposal and complete the necessary procedure related to the Nagoya Protocol. In September 2019, Julie (MV) and Anja (LCBD) attended a meeting organized by the ABS focal point with its partners to present the results of the African Workshop on ABS held in September 2019 (https://tinyurl.com/y76567r3) and discuss the steps forward in Madagascar.
CITES	During the International Baobab Congress in December 2019, the project contributed to developing the NDF document for the Grandidier's baobab. A document has been developed with the Scientific Authority and submission to the Ministry of Environment is expected in May 2020.

6. Project support to poverty alleviation

This project directly supports poverty alleviation through the income local community members generate from selling baobab fruits and powder during Y1. In Y2, we were not able to measure income generated from selling the baobab fruits and powder since it can be considered as an illegal activity. However, a trader in Mahabo district confirmed that she received baobab fruits from the targeted communities, especially from Bepeha and Andohaviana. This supports our assumption that people continue to get income from baobab harvesting and processing. The problem is that with the current market price, they might overharvest the baobabs to ensure they get enough money and the none of the income will be invested into securing the baobab populations.

7. Project support to gender equality issues

As planned during the project concept, this project is seeking to involve women as much as possible. Meetings and training sessions were announced at least a week in advance to allow all villagers, especially women, time to prepare. Household interview data were also disaggregated by gender.

8. Monitoring and evaluation

The project team has established a monitoring and evaluation plan in July 2018 that is used by the project leader and the field coordinator to ensure we are achieving our outputs and outcome. The monitoring plan was updated in June 2019 and we also conducted an after-review of the project, with guidance from Rob Small (FFI). As from Y1, we were not able to hold monthly skype meetings but held the meetings when required. We made the best of the direct meetings.

9. Lessons learnt

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

This past year, Kiran Mohanan (FFI Conservation Finance) and Rob Small (FFI Governance & Livelihoods) were in Madagascar to discuss the project with the team, work with the team to develop the fair price calculation and business model, and advise on social approach and governance options. During this visit, Rob Small spent one day with MV's Community & Conservation Programme team to give tips and advice on social approaches. The team still refer to this training when designing fieldwork methods.

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

I would start the project with a full team meeting to get to know each other and better understand who is working with who, and for all team members to understand the process behind each component of the project.

What recommendations would you make to others doing similar projects?

Others doing similar projects should consider involving the CITES and ABS focal points early on the project design if needed by the project. In fact, we did not consult enough that we now feel they are expecting more than what we can deliver during this project.

Building this learning into the project and future plans

Considering our achievements to date but also the recommendations from the mid-term review in January 2020, we are in the process of reviewing our logframe, then will discuss changes with LTSI for until the end of the project.

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

Six main comments were received from the first annual report. These are addressed below.

Review	Actions taken
1. The three baobab planting sites (Activity 1.10) not yet being protected by fencing. Given the risk of damage by grazing (and especially given the targeted feedback from the Darwin Expert Committee RE the importance of protected the planted seedlings), it is odd that the fencing was not put in place. It would be helpful to understand the justification for the decision to plant before fencing.	At the time of the planting in Y1, insecurity was still a big issue in the project areas. Only a few people lived in the villages and it was difficult to get them to do an activity for a few days. In addition, most people lost their cattle that grazing was not an issue for the planted seedlings. Therefore, fencing was not prioritized. During Y2, security has improved, and people started to raise goats and zebus. Fences have been established and reinforced around the planting areas before the second planting season. One person is now monitoring the planted baobabs and the fence weekly.
2. The decisions on the quotas (Activity 2.3) seems premature. It is recommended that the quotas are re-assessed once the data has been collected and adjusted if necessary	Yes, the quotas used in Y1 were premature. We are not in the process of analysing the data referring to methods in the literature in order to define new quotas. Nonetheless, as explained in Section 3.1, harvesting quota could go up to 98% of the fruits available.
3. There is a downward estimate of the number of village households from 230 to 150. An explanation of why this is the case and what the evidence is for this downward revision is requested	As explained in Section 3.1 - Activity 2.2, the lower number of households in the villages are due to the insecurity in the Menabe Region in 2018-19. Some villages and hamlets have been totally burned and destroyed by the bandits. People left their home and did not return. There was a time when even tourists were attacked in the Region (https://tinyurl.com/ybubochn).
4. There is more work that should be done on the assumptions for the Outcome “sustainable use and management of baobab fruits to derive increased income and improved nutrition in three communities ...”. There are many missing	Agree, this is being considered in the revision of the logframe.

assumptions that underpin this Outcome: that the people want to eat the fruit, that the fruit provides the nutrition needed, that the seed/ powder/ jam can be produced cost-effectively, that there is a market willing to pay a viable price, etc.	
5. Despite the quota setting approach described in Activity 2.3, the reviewer has concerns about the design of Output 4 (to encourage fruit processing and sale of powder or jam). An assessment of the risks to baobab sustainability associated with use of fruits by local enterprises would be sensible.	See comments in reviewer comment #2 above.
6. The Darwin project is covered in a blog at https://www.madagasikara-voakajy.org/blog/grandidier-s-baobab-sustainable-management-in-menabe-region?highlight=WyJkYXJ3aW4iXQ . No logos are included on the blog page, although funding through Darwin is recognised. It might be better if the project was listed under the main projects page on the website.	Our website is being updated at the moment.

11. Other comments on progress not covered elsewhere

1. *Impacts of the ban on the baobab trade at the local and national level*

From direct observations, the baobab did not stop people to harvest and trade baobab fruits at the local and national level. Informally, a baobab trader in Mahabo reported she continued to buy baobab fruits from the communities but at a lower cost and quantity. In Morondava, the person who stored the baobab powder for SoaLand and Floribis started a company called BaoMam (<https://www.facebook.com/BAOMAM.Menabe/>). This company was established to respond to the communities' request for the manager to buy the baobabs they brought to Morondava city since Floribis and Soaland did not buy them anymore. In March 2020, BaoMam represented the Menabe Region at the Women's Day celebration in Toliary and the Minister of the Environment visited their boot. Since April 2020, Baomam's products are available at the supermarkets in Antananarivo. Other companies are still trading baobabs (Annex 5) and fruits are still available in the markets. These activities can be qualified as illegal. In 2019, there has been two arrests of baobab fruit trades according to the DREDD. Since we want to operate in full legality, it is unfortunate that the communities and the natural resources are losing benefits. This is one of the arguments we discussed with the General Secretary of the Ministry of Environment when asking to lift the ban.

2. *Uncertainties around the Covid-19 pandemic*

The first cases of Covid-19 in Madagascar were reported on 20th March and the country was in lockdown from 22nd March 2020. For the first two weeks, DREDD team were not allowed to work in the office or go to the field. As a result, our planned fieldwork had to be postponed. Unfortunately, during these two weeks, there were also many environmental infractions reported from all over the country. DREDDs were ordered to go back to work and to prioritize the infractions.

Up to the 30th April 2020, 3228 people have been tested and 128 people were affected (4.0%) while 90 people recovered. Although these results seem promising, uncertainty remains. One of the new cases reported on 27th April was from Fort-Dauphin, a town where no case has been reported since the beginning of the pandemic. As Madagascar is now entering the cold season,

there are risks that prevalence of Covid-19 will increase. In fact, this is the season where people are more sensitive to flu related diseases. If this happens, lockdown and related measures may remain until late September. This will influence the project operations. However, uncertainty remains, and it is difficult to decide the next steps.

3. Increasing project team

Since the start of the project, Fetra run the project day-to-day. When running fieldworks, he was assisted by the students from Morondava and members of the local communities. The students were particularly needed when training communities since they are from the Region and speak the local dialect. As we engaged the students only occasionally, they were sometimes unavailable and Fetra had to find other options. Since March 2020, we secured additional funding with FFI to employ one of the students full-time.

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 but has been disturbed by the government ban over forest product harvesting in January 2019. A new government has been appointed in Madagascar in January 2020. The newly appointed Minister of the Environment, Dr Baomiatotse Vahinala, believes in green and blue economy and is likely to support this project. Once this Covid-19 crisis is over, we will get her involved. The project is now extended until December 2022, which will allow us to time to go through all these steps if the ban is lifted by August 2020. 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

Darwin Initiative funding was promoted when presenting the project at the international baobab congress in December 2019. All students who were supported by the project also included Darwin Initiative in the acknowledgement sections of their these.

14. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2019 – 31 March 2020)

Project spend (indicative) since last annual report	2019/20 Grant ² (£)	2010/20 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)				
TOTAL				

² The 2019/20 budget presented here refers to the change request approved on 28th February 2020
Annual Report Template 2019

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2019-2020

Project summary	Measurable Indicators	Progress and Achievements April 2019 - March 2020	Actions required/planned for next period
<p>Impact</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>In 2019-20, we have done moderate progress to reaching this impact. A management plan for each village's territory has been developed in order to manage baobab populations and their habitats.</p>	
<p>Outcome:</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 2020, we recorded 52 wild saplings and 52 planted seedlings.</p> <p>1.2 Management plans and contracts are ready to be signed off.</p> <p>1.3 Methods for calculating the quota discussed with the scientific and management authorities and literature review conducted</p> <p>1.4 Due to the ban of wild forest product harvesting, people are not reporting income from baobab harvesting. Based on fruit availability assessment to date, trade of <i>A. za</i> might not be appropriate for generating income.</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</p>	<p>1.1 Monitoring of the wild and planted seedlings</p> <p>1.2 Signing of the management contracts by October 2020</p> <p>1.3 Agree on quota with the scientific and management authorities, remove the ban for baobab fruit harvesting and train communities in enforcing the management rules</p> <p>1.4 Advocate to remove the ban on baobab fruit harvesting and re-establish the link with the enterprises.</p> <p>1.5 Continue raising awareness on the benefits from consuming baobabs, monitor children' nutrition status and report results to communities.</p>

		make the powder only if a company was going to buy them.	
Output 1. Three existing community groups empowered to reinforce and manage baobab resources by strengthening current co-management frameworks.	<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>1.4 By 2020, at least 150 Grandidier's baobab trees are planted in the reforestation area of each site.</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 ready to be signed off and have been reviewed by community members and DREDD (Annex 8). Official sign-off has been delayed by elections and other priorities at the DREDD level, and now with the CoVid-19 crisis. We expect signature to happen at the latest in May 2020</p> <p>1.3 Enforcement did not start yet</p> <p>1.4 Less than 60 of the baobabs planted in 2019 are surviving. People reported that 2020 is drier than 2019 and the seedlings are less likely to survive.</p>	
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		Meetings to remind the management plan and the communities' responsibilities organized at each village	Two training sessions at each village with DREDD team
Activity 1.6 Sign and officialise community management contracts		Awaiting Mayor's official designation and CoVid-19 crisis to stop	To be completed in 2020-21
Activity 1.7 Establish, train and mentor enforcement committee members (n = 8 per village, including at least 3 women)		Not started	To be merged with Activity 1.5

Activity 1.8 Design, produce and share materials to inform on new co-management plan regulations (e.g. signs, posters)		Signs and posters printed	Set up signs and posters with local communities
Activity 1.9: Baobab population monitoring to inform management effectiveness		Monitoring completed for 2019-20	Monitoring to carry out for 2020-21
Activity 1.10: Plant 150 Grandidier's baobab		382 seeds of <i>A. grandidieri</i> planted in February 2020	Look after planted seeds and replace dead ones. Set up nurseries at the villages to include baobabs and other sympatric species.
Output 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>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. We are waiting for the sign-off stage which will confirm endorsement (Activity 1.6)</p> <p>2.2 All 122 people interviewed harvested <i>A. grandidieri</i>, 72% also harvested <i>A. za</i> and 56% harvested <i>A. rubrostipa</i>.</p> <p>2.3 Not possible to monitor due to the baobab fruit harvesting ban</p> <p>2.4 None of the seedlings observed under baobab trees where fruit collection was not allowed survived the drought in May – November 2019. 52 new seedlings were observed in February 2020 and are being monitored</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 2019 for population status and fruit availability. Survey results completed in Annex 11.	Survey to be conducted in September 2020
Activity 2.2. Household interviews of at least 230 households on baobab harvesting activities		122 households interviewed in November and December 2019	Continue household surveys
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 2019-20	Advocate to remove ban and agree quota with community and three businesses for <i>A. grandidieri</i>
Output 3. At least 85 vulnerable members; (children <10yo, pregnant women and elderly >60yo) of	3.1 By August 2019, 230 of women in the three target communities can	3.1 83 (93%) of the 112 people (66 women and 56 men) interviewed in November – December 2019 were able to describe at least one benefit from consuming baobab fruit	

<p>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>describe at least one benefit of consuming baobab fruit. 3.2 By August 2019, at least 150 women can describe how to make baobab powder and store them 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>3.2 Only 8% (n = 7) of the people interviewed could describe correctly how to make the baobab powder and store them 3.3 None of people interviewed reported to have consumed baobab powder during June – October 2019. Only a few people reported having baobab powder stocks for the 2020 hungry months.</p>	
<p>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</p>	<p>06 meetings attended by 180 women organized in 2019-20 90 posters shared with women at the villages in December 2020</p>	<p>Continue awareness at the village level</p>	
<p>Activity 3.2. Establish three working baobab processing units for use by enterprise members</p>	<p>Not started due to the ban</p>	<p>Remove the ban then set up the unit</p>	
<p>Activity 3.3. Train 150 women and 100 men in the use of fruit processing units</p>	<p>Not started</p>	<p>Carry out in 2020-21</p>	
<p>Activity 3.4. 230 semi-structured interviews on knowledge of baobab benefits and consumption during the hungry months (June – October)</p>	<p>Completed in November 2019</p>	<p>Re-design the survey method to include direct observation of baobab stock for each household</p>	
<p>Output 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. 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 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% 4.4 By the end of the project, each enterprise would have three already established clients and five potential buyers</p>	<p>4.1 No community enterprise has been established yet 4.2 Fair price for <i>A. grandidieri</i> has been calculated but still need to be discussed with all stakeholders 4.3 No interview on impacts of baobab trade on the households in 2019-20 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 2020-21
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.	Not started	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	Not started	Rescheduled for 2020-21
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 approved in October 2018

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Impact: <i>Secure and healthy baobab populations, sustainably used and managed by local communities through a supporting national framework, benefiting people and biodiversity.</i>			
<p>Outcome:</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 Annual survey data from 2017 to 2020</p> <p>1.2 Copies of the new contracts between the government (represented by DREEF) and the community-based organizations</p> <p>1.3 Copies of management plans for each area and enforcement records held by communities and DREEF</p> <p>1.4 Interviews records with 90 women and men who sell baobab fruits</p> <p>1.5 Data from 160 random household interviews</p>	<ul style="list-style-type: none"> • <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 >1yo <3yo) • 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. • 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

			<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"> • 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. • 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.
<p>Outputs:</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"> • Community organisations will continue to operate efficiently as part of training and mentoring activities that promotes fairness across social groups and genders. • Matched-funded work to prevent felling and burning of forest will remain in the management plans (as per current agreements) without extra investment • People traditionally harvest Grandidier's baobab for their own

	<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"> • 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). • Both women and men collect fruits from the wild. • <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>). • 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
<p>3 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>	<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"> • 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. • 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 • 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). • 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 • Due to the distribution of the three species around target villages, it is necessary to support consumption of all three species

<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. 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 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% 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 4.2 Fair price evaluation report and minutes of meetings 4.3 Semi-structured interview data 4.4 Signed agreements and email communications</p>	<ul style="list-style-type: none"> • 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. • 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.
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Activities (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)

- 1.1 Update monitoring plan with DREEF for 3 years for three VOI
- 1.2. Nine field visits and meetings to evaluate community achievements against the existing management contract
- 1.3 Six participatory mapping at the community level to update each site's management plan
- 1.4 Write-up new co-management plans (n = 3) and submit to relevant authorities
- 1.5 Three capacity building sessions (one per year) for community-organization leaders and members on natural resource management
- 1.6 Sign and officialise community management contracts
- 1.7 Establish, train and mentor enforcement committee members (n = 8 per village, including at least 3 women)
- 1.8 Design, produce and share materials to inform on new co-management plan regulations (e.g. signs, posters)
- 1.9 Baobab population monitoring to inform management effectiveness
- 1.10 Plant 150 Grandidier's baobab
- 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
TRAINING MEASURES								
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
RESEARCH MEASURES								
9	Three management plans established	NA	Malagasy & French	-	03	-	03	03
10	One field guide for the identification of	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
	the baobab species							
	One field manual for assessing baobab fruit availability	NA	Malagasy	-	-	-	-	01
DISSEMINATION MEASURES								
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
PHYSICAL MEASURES								
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
FINANCIAL MEASURES								
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)

Checklist for submission

	Check
Is the report less than 10MB? If so, please email to Darwin-Projects@ltsi.co.uk putting the project number in the Subject line.	
Is your report more than 10MB? If so, please discuss with Darwin-Projects@ltsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	
Have you included means of verification? You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	
Do you have hard copies of material you want to submit with the report? 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.	
Have you involved your partners in preparation of the report and named the main contributors	
Have you completed the Project Expenditure table fully?	
Do not include claim forms or other communications with this report.	