

Darwin Initiative Main: Annual Report

Darwin Initiative Project Information

Project reference	28-024
Project title	Diverse agroforestry protects natural capital around Betampona and Vohibe, Madagascar
Country/ies	Madagascar
Lead Partner	Madagascar Fauna and Flora Group
Project partner(s)	Association Lovasoa, Missouri Botanical Gardens- Madagascar, Kew Madagascar Conservation Centre, Prof Christof den Biggelaar, The Fruits, Vegetables, and Environmental Education (FVEE) Program of the Church of Jesus Christ in Madagascar (FJKM), Organe de Développement de Diocèse de Toamasina (ODDIT), MC Ingredients
Darwin Initiative grant value	£314,523
Start/end dates of project	1 Oct 2021 to 30 Sep 2024
Reporting period (e.g. Apr 2023 – Mar 2024) and number (e.g. Annual Report 1, 2, 3)	Apr 2023 – Mar 2024, Annual Report 3
Project Leader name	Karen Freeman
Project website/blog/social media	Madagascar - MFG - Home Page (madagascarfaunaflora.org) ; MFG (@MadaFaunaFlora) / Twitter Madagascar Fauna & Flora Group Facebook
Report author(s) and date	Karen Freeman, Christian Rabeloson, Alice Heliarisoa, Fortunat Rakotoarivony, 30 April 2024

1. Project summary

This project is designed to address the rapid loss of forest in Madagascar due to widely practised slash and burn agriculture, which has resulted in the loss of over 44% of Madagascar’s forests over the past six decades (Vielledent et al. 2018). Through our own remote sensing research with partners from Saint Louis University’s Geospatial Institute, significant loss of forest has been recorded in the immediate vicinity of Betampona Strict Nature Reserve (RNI) over the past two decades with almost all of it being converted into agricultural land (Ghulam 2014, Cota et al. 2021). Given that Madagascar is considered one of the top ten biodiversity hotspots of the world (Myers et al. 2000), the reduction of remaining forest is deeply relevant in terms of biodiversity conservation, provision of ecosystem services for local communities, as well as far wider implications for global climate change mitigation.

This project seeks to work with local farmers in 5 target villages around the protected areas of Betampona Strict Natural Reserve, the Vohibe Forest (part of the Ankeniheny-Zahamena forest corridor) and the Ampasina Forest (all in eastern Madagascar), to promote agroforestry as a more sustainable farming approach. It also concurrently promotes community management of remaining forest fragments in the target areas. Madagascar is currently listed by [Poorest Countries in the World 2024 \(worldpopulationreview.com\)](https://www.worldpopulationreview.com) as the eleventh poorest country in the world with many people living on less than a dollar a day. This project will not only strive to provide the basic tools, start-up trees and crop seeds necessary for the project but will also build capacity in fruit-tree propagation and care, establishment of farmer cooperative and business planning. Over the course of the project, we hope to establish “model” villages that will quickly become renowned for their increased standard of living and better management

of remaining forest fragments (some of which contain critically endangered plant species not known from the protected areas), producing a long-term cascade effect. Many fruit trees will take 5-7 years to mature and start producing fruit for sale. In the meantime, we will work with our partners to increase household income through the production of yams, vegetables and maize and through promotion of farmer cooperatives and setting up direct links with exporters for already-grown commodities such as spices. In this way we should be able to reduce poverty for the 100 target families and families of local staff we hire for the project duration in the short term, and in the longer term, the wider community as the techniques become more widely practised.

In return for the project's support in developing agroforestry on their own land, participants will contribute to collective community monitoring and management of specified target forest remnants, in partnership with the project partners. Management plans will be developed by the community groups with support from project partners for target forest fragments detailing the agreed sustainable-use criteria and a 5-year restoration plan. Quarterly patrols will be carried out jointly by project partners at each site and members of the community associations to monitor slash and burn agriculture, illegal activities such as poaching and illegal logging, restoration efforts and vertebrate diversity.

Maps are included of the three target sites in [Annex 4.1](#).

References

Cota, G., Sagan, V., Maimaitijiang, M., Freeman, K. 2021. Forest Conservation with Deep Learning: A Deeper Understanding of Human Geography around the Betampona Nature Reserve, Madagascar. *Remote Sensing*, 13, 3495. <https://doi.org/10.3390/rs13173495>

Ghulam, A. (2014). Monitoring tropical forest degradation in Betampona Nature Reserve, Madagascar using multisource remote sensing data fusion. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*. DOI: [10.1109/JSTARS.2014.2319314](https://doi.org/10.1109/JSTARS.2014.2319314)

Vieilledent, G.; Grinand, C.; Rakotomalala, F.A.; Ranaivosoa, R.; Rakotoarijaona, J.R.; Allnutt, T.F.; Achard, F. (2018). Combining global tree cover loss data with historical national forest cover maps to look at six decades of deforestation and forest fragmentation in Madagascar. *Biol. Conserv.* 222, 189–197.

2. Project stakeholders/ partners

The partnership of the 3 main actors in this project (MFG, Missouri Botanical Garden (MBG) and Association LOVASOA remains very strong. Each partner is working to deliver results for the project at the respective sites of Betampona, Vohibe and Ampasina. The work is carefully coordinated across the sites through the Project Leader and Project Coordinator and the accounting from the 3 sites is submitted to MFG on at least a quarterly basis and compiled by MFG's accountant, Jacques Razafimpeheno. Each of these three partners submit semestrial reports ([Annexes 4.2](#), [4.3](#) and [4.4](#)) that are compiled by the Project Leader to form the basis of the annual report. The annual report is written with frequent consultation via email of the Site Coordinators to clarify points and gain extra detail.

Each of these three partners is responsible for project planning, monitoring and evaluation, and decision making at their respective sites within the agreed parameters set out in the MoUs and the logframe. For any larger decisions or suggestions to do additional activities, the respective Site Coordinators contact the Project Leader directly by email or in person (for Betampona and Ampasina during annual site visits). Propositions are discussed openly, and decisions made finally by the Project Leader in consultation with the Project Coordinator, MFG In-Country Director and Site Coordinators as to whether the proposals are feasible within the approved Darwin Initiative budget and respond to the agreed project goals. Each of the three major partners have delivered on agreed targets for the year and many of the final project goals have already been met or exceeded (see [Section 3.1](#)).

The further partnerships with the Fruits, Vegetables and Environmental Education (FVEE) team of the FJKM church and Prof Christof den Biggelaar remain strong with each providing important agroforestry training, insights and evaluation of efforts by both participants and project staff. Prof den Biggelaar spent just over a month in Madagascar from 13th October 2023 to 19th November 2023 visiting participants plots at Betampona and Ampasina and providing individual follow up ([Annex 4.12](#)). The training and evaluation by FVEE this year was delayed due to a family bereavement for one of the main trainers but was carried out at Ampasina in March 2024 and scheduled for April and May 2024 for Vohibe and Betampona respectively. Once again FVEE have provided excellent quality agroforestry trees to reinforce those already distributed in the past 2 years for participants' trial plots and the project-managed "mother tree" orchards ([Section 3.1](#), [Annex 4.6](#)).

MC Ingredients kept to our agreed collaboration and carried out a follow up visit to Ambodiriana in early November 2023 where they met with representatives of all the newly formed cooperatives around

Betampona to develop contracts. Despite offering a more than fair price ([see Section 8](#)), the cooperatives did not accept it and purchases of cloves were not done finally through the cooperatives. It is a great shame that this potentially great arrangement for the cooperatives was not able to be negotiated successfully ([see Section 8](#)).

Our discussions with Catholic Relief Services with regard to their SPICES programme (Securing and Protecting Investments & Capacities for Environmental Sustainability) led to us developing an MoU with their formal partner in eastern Madagascar for developing community-based action: the Organe de Développement de Diocèse de Toamasina (ODDIT). The MoU was signed on 7th January 2023 ([Annex 4.5](#)). ODDIT contributed to training carried out and reported on in YR2 and a further training session on 3rd November 2023 at Ambodiriana for all prospective cooperative members from Betampona and Ampasina ([Annex 4.2](#)).

The field component of the formal collaboration with the Kew Madagascar Conservation Centre was completed in Year 2 but they will be further consulted and included for the development of the project final report. As per comments from the annual report 2023 reviewer, as to the uncertainty of which of our listed partners constitute genuine partners and which would be better described as stakeholders and/or participants, we have decided that Madagascar National Parks and Association Soavinala would be better described as a stakeholders and hence have removed them from the list of active partners for this project in this year's annual report.

3. Project progress

3.1 Progress in carrying out project Activities

Output 1. A diversity of plant species attractive to local farmers are easily available for use in agroforestry trials.

Project nurseries continue to be well maintained and provisioned (Activity 1.2.2). Follow up has been carried out in all project “mother-tree” orchards to clear away weeds from around the trees and mulch each tree with the resulting cut vegetation (Activity 1.2.2). The survival and growth of the trees is also being tracked ([Annexes 4.2 to 4.4](#)). The FVEE team have been carrying out annual evaluation visits to the orchards and nurseries at each project site and providing technical support and additional trees to add to the stock presently available ([Annexes 4.6 and 4.7](#)).

Activity 1.2.6 was accomplished with nearly threefold the target number of agroforestry trees produced. In total, 35,617 agroforestry trees have been produced since the project start across the three sites comprising at least 27 varieties/types. 24,322 trees were produced in YR3 alone ([Annexes 4.8 and 4.9](#)) indicating that production has ramped up significantly given that 9,111 trees had been produced up until the end of YR2. A special mention needs to be given to the Missouri Botanical Garden (MBG) team who produced over half of the agroforestry trees for the project (16,281 trees, comprising of at least 16 varieties/types) at Ampitabe ([Annexes 4.3, 4.8 and 4.9](#)). Importantly, many of the trees produced at Ampasina and Ampitabe were done so using newly-acquired grafting and air-layering propagation techniques taught by the FVEE team during the course of this project (Activity 1.1.1). Progress has been slower at Betampona with only one of the four project nurseries there implementing their new skills (Marovato) so further work needs to be done at Betampona to promote the production of fruit trees using grafting and air-layering techniques ([Annex 4.8](#)). As well as the nursery staff becoming competent in grafting and air-layering techniques, many project participants have also gained these important skills as planned through the project with all of the Ampasina participants having tried grafting mango, lemon, orange and avocado trees on site in their own field under supervision from the project team and producing a resultant 54 successful grafts from the 207 attempted ([Annexes 4.6, 4.8 and 4.10](#)). Overall, the Site Coordinator rates that 12 participants are very competent propagators using the new techniques, of which 5 are women. For Betampona the Project Coordinator judges that 23 participants are very competent of which 8 are women. At Ampitabe, 17 participants (of which 5 are women) have successfully carried out grafting and air-layering using mother-trees in the project-established orchard. Between them they were successful in producing 28 new trees through grafting and 73 by air-layering. To recap, 52 participants (28.6%) are deemed competent in grafting and air-layering techniques, of which 34.6% are women). Following the various project trainings at Ampitabe, 8 participants have proven a particular skill for tree production and have set up their own nurseries, producing 2,970 agroforestry trees between them (coffee and clove trees) ([Annex 4.3](#)). This is exactly the kind of development we have been working towards for long-term sustainability of the project post project end and we feel this is a great indicator that the desired “cascade” effect is achievable.

Despite us having neglected to include a specific activity related to native tree production in the logframe, the project nurseries have also produced an impressive 76,260 native trees since the project start ([Annex 4.9](#)).

Site coordinators have maintained the routine of regular visits to each site nursery to collect plant production data (native and agroforestry trees), provisioning needs and offer technical assistance as required (Activity 1.2.7). By the end of YR3, 14,455 project nursery-grown agroforestry trees had been distributed across the three sites to project participants since the project start ([Annex 4.9](#)), thereby achieving our goal for Activity 1.3.1. This number will increase significantly in YR4 given the large stock of agroforestry trees presently in the project nurseries.

In addition to the project-grown trees, further trees have been purchased in Toamasina commercial nurseries for Ampasina and Betampona to supply participants' requests ([Annex 4.11](#)). In YR3 5,484 trees were purchased for this purpose. Support from the FVEE team continues in this regard as well with the supply of top-quality plants, often of new cultivars for the region. FVEE supplied 1,187 high quality trees across the three sites in YR3 ([Annex 4.6](#)). These trees have predominantly been shared between project participants, but some have also been planted in the project orchards to further diversify the range of fruit and spice trees available for grafting for ongoing agroforestry needs post project end. We are extremely grateful to FVEE for providing us with such an incredible range of high-quality trees of such a diverse range of species and varieties. This will allow the greatest chance of success as some trees will be better suited to different local conditions at each site and there is also a strong chance that markets for new products can be generated locally and at trading centres such as Toamasina (for Betampona and Ampasina) and Vatomantry (for Ampitabe). In addition to the trees, we have continued to supply participants with seeds for market gardening, ginger bulbils and suchlike to allow active production in the meantime while the agroforestry trees are growing to maturity. It is intended that this small-scale intercropping of seasonal crops will continue long term as part of the functioning agroforestry approach on each plot.

Output 2. Farmers living in the landscape surrounding the two protected areas are aware of the opportunities presented by agroforestry to meet their tree product and food production needs and some are skilled, effective and convinced practitioners (target 50% female participation).

By end of YR3 we have 98 participating households and a total of 179 participants, of which 48.6% are female ([Annex 4.9](#)). Extension agents and project animators have kept up regular contact and follow up with project participants at each site (Activity 2.3.1). Most of the training and awareness-raising activities were carried out, completed and reported on in YR1 and YR2 but further training and technical support was provided in YR3 from Prof Christof den Biggelaar and the FVEE team ([Annexes 4.6, 4.7, 4.12, 4.13 & 4.14](#)). Prof den Biggelaar came to Madagascar from 13th October 2023 to 19th November 2023 with his time being split between visits to Betampona and Ampasina participants' plots to evaluate progress to date and provide further agroforestry training/support ([Annexes 4.12, 4.13 & 4.14](#)). The FVEE team completed site visits and evaluations for all three sites in Nov/Dec 2023 including the project orchards and nursery and participants' plots ([Annexes 4.6 & 4.7](#)) and an additional visit in March 2024 for Ampasina ([Annex 4.6](#)). The evaluation and training visits to Betampona and Ampitabe had to be postponed until early YR4 due to a family bereavement for one of the main FVEE trainers.

Training in the set-up of cooperatives has continued in YR3 with a joint workshop for all Betampona and Ampasina prospective cooperative members, led by staff from MFG, MC Ingredients and the Organe de Développement de Diocèse de Toamasina (ODDIT) on 3rd November 2023. The training this year centred predominantly on the process to register cooperatives and discussions relating to the sale of cloves (see [Section 8](#)). A big achievement this year was the completion of the registration process for the registration of two cooperatives: one at Ampasina and one at Ampitabe ([Annex 4.15](#)). The official registration process is still underway for three Betampona cooperatives (one each in the project target sites of Antananarina and Analamangahazo and a third in the non-target site of Fontsimavo but as a result of training provided during the course of this DI project as we opted for open training sessions and meetings to maximise inclusion in the local communities). The process for registration of a cooperative for the other non-target site of Ambodirafia has stalled at present as the cooperative elects a new President. Sadly, for the proposed cooperative at Ambanitothaka (one of our project target intervention sites) they do not have enough unrelated members to satisfy the registration requirements (minimum requirement of 10 unrelated people). Negotiations are underway to see if they can join the Ambodirafia cooperative once that is finalised but given the long distance between the two sites it is not clear if this is going to be feasible. The main blockage in the process for official registration at Betampona and Ampasina had been the inability of the cooperatives to cover the relatively high registration fees of 504,000 MGA (approximately £90, which is a large sum for cooperative members who are largely subsistence farmers to raise). It was agreed between the Project Leader, the Project Coordinator and the In-Country Director that we would support the cooperatives to pay this initial registration fee through the DI grant on the strict understanding that all

subsequent costs would be at the charge of the cooperatives themselves. The cooperatives are yet to realise their potential for helping the participants gain increased incomes (see [Section 8](#)) but we will work with our partners at ODDIT to try to continue building capacity within the cooperatives for business management skills and marketing before project end.

The final project survey is listed as being due to be carried out at the end of YR3 (Activity 2.4.1) but it was an oversight on our part not to update the timeline for this activity when the project extension of 3 months was agreed with DEFRA at the end of YR1 due to the delays to project start caused by the exceptionally heavy cyclone season and a large village-wide fire at one of our main intended sites of intervention. As such we will be carrying out this activity around July 2024 at the start of the last quarter of the project. Planning and discussions are already underway between the Project Leader, Project Coordinator, Site Coordinators and MFG In-Country Director to design the final evaluation survey format.¹⁴

Output 3. Community in host landscapes agree to conserve certain unprotected forest fragments.

Activities for this output were mainly completed and reported on in YR1 and YR2. The remaining activity to complete quarterly community-led patrols of target forest fragments is ongoing (Activity 3.3.1). [Annex 4.16](#) shows the number of project participants that have been involved in the patrols and ecological monitoring (Activities 3.3.1 and 4.1.3.1). For Ampitabe 27 of the participants have taken part (67.5%), of which 10 were female (37.0%). For Betampona, 24 project participants (25.8%) have taken part of which none were female and also a further 3 members of the village association (VOI) that are not DI project participants, that were again all male. For Ampasina 11 have taken part in patrols/ecological monitoring (23.9%), of which none were female but there is a commitment from the Site Coordinator to actively seek female participants to assist with the patrols in YR4 (see [Annex 4.16](#)). A similar commitment will be sought from the Betampona Site Coordinator to include female participants in the patrols and ecological monitoring.

In YR3, patrols were carried out every quarter for every site at Betampona with the exception of Ambanitohaka in the 4th quarter due to prolonged bad weather and heavy rains ([Annex 4.2](#)). The patrols were carried out every quarter at Ampasina with the exception of the final quarter of YR3 due to the extended absence due to illness of the site Extension agent who assists every patrol ([Annex 4.17](#)). For Vohibe, patrols were carried out nearly every day of the week (257 in total over YR3) ([Annex 4.17](#)).

Efforts to protect the forest fragments have been very successful as no forest in the targeted conservation areas for the project have been converted to agricultural land (personal communication with each site coordinator). What is extremely encouraging is that for the Ampitabe area, as a consequence of the community surveys being carried out for our project target area of Vohibe, there is now a knock-on effect with the MBG team being successful in persuading the community to also start surveying the nearby relict Mitsinjo Forest (not in our project target strict conservation area). Some infractions have been discovered in the Mitsinjo Forest, but this kind of community motivation, surveillance and awareness of the threats is the first step in working towards mitigating them.

The patrol data across all sites will be analysed in full and summarised for the final report.

Output 4. Community engages in participatory baseline and quarterly surveys of destructive forest harvesting and natural capital (including biodiversity) in target forest fragments surrounding the main protected areas.

Although very belatedly due to the heavy DI project and MFG staff workloads, training was carried out for the Ampasina and Vohibe field teams and VOI members responsible for carrying out the patrols and vertebrate distance-sampling transects in best practice methods for ecological monitoring (Activity 4.1.1). Both training sessions were carried out by MFG Betampona Head Agent, Jean Noel, who has around 25 years of experience in this field. The training was for 2 days at Ampasina in July 2023 and 3 days at Vohibe in August 2023.

During YR3, quarterly diurnal and nocturnal surveys were carried out at Betampona for all transects (2 at Antananarina, 2 at Ambanitohaka and 3 at Analamangahazo's forest fragments) with the exception of the nocturnal Transect 3 in the 3rd quarter at Antananarina and diurnal and nocturnal transects for both Ambanitohaka transects in the 4th quarter due to severe bad weather and heavy rain (Activity 4.1.3.1). For Ampasina the ecological monitoring transects were carried out each quarter. For Vohibe the ecological monitoring got off to a late start due to lack of technical capacity on the part of the MBG team to carry out fauna research and identifications (given that MBG's focus is predominantly on the botanical side). Although it is possible to train methodological techniques over a 3-day period, it is impossible to teach field identification for a large number of species over such a short time period. Further capacity in this aspect needs to be built during YR4. For participants in Activity 4.1.3.1 see above section under Output 3.

All target forest fragments were monitored through the patrols and ecological monitoring and no areas were converted to agriculture during YR3 (Activity 4.1.4). The perimeter of each forest fragment was not mapped by GPS during this year due to prolonged bad weather at the end of YR3 but will be done as part of the final project evaluation.

3.2 Progress towards project Outputs

Output 1. A diversity of plant species attractive to local farmers are easily available for use in agroforestry trials.

All indicators have been met and surpassed for Output 1:

1.1. Capacity built through the provision of one training workshop per target site for all personnel in local existing nurseries or ones newly established for the project in nursery management, grafting/marcottage, care protocols for newly introduced species and business planning by June 2022.

Two workshops were provided (one on site and one later in Dec 2022 for selected best performers from each site in the first training). The baseline was that none of the participants had had previous experience in grafting and air-layering techniques for fruit tree production. Data (see [Section 3.1](#) and [Annex 4.10](#)) show that at least 52 participants are now competent practitioners (of which 34.6% are women- see Section 6). 6 participants at Ampitabe have already set up their own agroforestry tree nurseries and in YR3 produced 2,970 trees between them ([Annex 4.3](#)).

1.2 At least 12,000 good quality young plants (including at least two new fruit cultivars) with height > 25cm (ideal planting height) of pre-selected species available in total between all the project nurseries by July 2023.

This target was met and nearly tripled by end YR3 with 35,617 agroforestry trees having been produced across the three sites ([Section 3.1](#) and [Annexes 4.2, 4.3, 4.4 & 4.9](#)). For Ampasina the baseline had been zero production of agroforestry trees before project start. For Betampona the only trees produced formerly in the MFG nurseries were clove trees for a former development project but production had been ceased prior to this project start up. MBG have been producing agroforestry trees for some years at their site near Ampitabe but their production has greatly diversified since project start (full analysis to be done during the upcoming final evaluation).

1.3 At least 12,000 trees produced by nurseries distributed to local landowners for planting in agroforestry plots by Nov 2023 to reinforce trees distributed by FVEE.

This target has already been met with 14,455 agroforestry trees having been distributed from our project nurseries by end of YR3 ([Section 3.1](#) and [Annexes 4.2, 4.3, 4.4 & 4.9](#)). This number is set to increase substantially in YR4 judging by present nursery stock. Again, the baseline for Betampona and Ampasina had been zero just prior to the DI project setting up (though clove trees had been distributed formerly from the MFG nurseries in other development projects). The baseline for the MBG nursery agroforestry annual distribution will be calculated in the final evaluation from past reports.

Output 2. Farmers living in the landscape surrounding the two protected areas are aware of the opportunities presented by agroforestry to meet their tree product and food production needs and some are skilled, effective and convinced practitioners (target 50% female participation).

The output target was for 50% female participation across the three project sites, which we have not been able to meet but we have been able to secure a 48.6% female participation rate, which is very close ([Section 3.1, Annex 4.9](#)). We feel we have amply achieved this output in all but the 50% female participation aspect. All indicators have been met apart from 2.5, which we cannot evaluate at this point until we complete the final evaluation in the coming months.

2.1 By the end of July 2022, all extension workers and community animators will have been given formal training through workshops to facilitate and inform their role.

Achieved in Years 1 and 2 (see YR1 and YR2 annual reports). Training carried out by the FVEE team, Prof Christof den Biggelaar, Project Coordinator and MBG Site Coordinator. Evidence of achievement of the animators and extension workers through the mid-term evaluations ([Annex 4.18](#)). Data will be fully analysed in the final evaluation.

2.2 By the end of 2022, at least 100 farming households of diverse demographics across the target sites understand the principles of agroforestry and best practice for design, installation and management.

At least 107 farming households have been trained since project start ([Annex 4.9](#)).

2.3. At least 75 farming households across the target sites have installed and are correctly maintaining agroforestry plots by end April 2024.

By end of YR3 there are 98 households that have actively installed an agroforestry plot of a minimum of 1 ha and are maintaining their plots ([Annexes 4.9 & 4.18](#)). We are very confident that those same households will be continuing in the maintenance of their plots until end April 2024 (just one month later) but this will be fully assessed during the final evaluation.

2.4 By YR 2 at least 75 households have planted early successional crops within their trial plot and by YR3 these are enriched with a diverse selection of woody plants including trees that will contribute to the household's own fuelwood and timber needs by end April 2024.

By end of YR3 all 98 participating households had planted early successional crops and a diverse selection of woody agroforestry plants as evidenced by the mid-term evaluations ([Annex 4.18](#)). The number of trees suitable for firewood and construction timber will be assessed for each household agroforestry plot during the final evaluation.

2.5 By end Dec 2023 collaboration between participating farmers at each site enables them to access regional markets for at least one product produced from their plots with 10% improved income per unit area compared to baseline median annual income.

We feel we are well on the way to completing this indicator. As of end YR3, the cooperatives at Ampasina and Ampitabe were both formally registered and ready to start trading ([Section 3.1](#) and [Annex 4.15](#)). The cooperatives for Antananariva and Analamangahazo are well underway with the formal registration process ([Section 3.1](#)). Despite not having been formally registered as yet, the cooperatives entered into discussions with project partners, MC Ingredients for the 2023 clove season but were not able to agree a price that was amenable to both parties ([Section 8](#)). Although it will be just beyond the project end, we are hopefully that this will be possible for the 2024 clove season. Data on income from sold produce will be collected during the final evaluation to allow us to evaluate whether the cooperative efforts have made any impact on household income to date.

Output 3. Community in host landscapes agree to conserve certain unprotected forest fragments.

This output has been achieved. Commitment to protect these forest fragments from local communities has been confirmed by the formal agreements with Malagasy authorities and the participation levels of community-patrols.

*3.1 By Dec 2021 community in host landscapes have reflected on the value of the 1,940 ha of unprotected forest fragments, the important ecosystem services they provide and have suggested ways to protect them (ie. What **they** can do to protect forests).*

Community consultations were carried out in each of the target sites in YR1 (see YR1 annual report) and community members debated the various advantages gained through the forest fragments in their area and how they could be better protected. Project staff discussed community ecosystem service benefits from the forest parcels.

3.2 By Dec. 2021 host communities agree to stop further clearing of the agreed 1,940 ha target conservation forest fragments for agriculture and develop rules for sustainable, non-destructive forest uses within these defined areas in return for support for agroforestry trials. Review and amendment (if needed) of any existing community association agreements for forest protection and establishment of new agreements where none exist.

The communities in question have all committed to protecting forest fragments in their target area. Formal agreements have been made with the regional branch of the Ministry of the Environment and Sustainable Development (DREDD-Atsinanana) for the Betampona and Ampasina target forest parcels through the work of Madagascar National Parks for forest fragments around Betampona (supported by MFG) and Association LOVASOA for Ampasina (see YR1 annual report).

3.3 From July 2022 the communities will organise their own quarterly patrols of the target forest fragments in their area, following up on infractions using locally agreed procedures or local and/or regional authorities as required.

For the most part the patrols have been carried out on at least a quarterly basis (almost daily on week days at Vohibe) apart from during extended periods of severe bad weather. There has been good participation by the local communities to carry out the patrols ([Section 3.1](#) and [Annex 4.16](#)).

Output 4. Community engages in participatory baseline and quarterly surveys of destructive forest harvesting and natural capital (including biodiversity) in target forest fragments surrounding the main protected areas.

This output has mainly been achieved at Betampona and Ampasina and surpassed at Vohibe (with nearly daily week-day patrols being carried out) ([Annexes 4.2 & 4.17](#)). In each patrol all infractions are recorded, including any conversion of the target forest fragments to agriculture. In YR3 none of the target

conservation areas were converted to agriculture (communications with all site coordinators). Further capacity building is needed at Vohibe for fauna species identification.

4.1 Participative community monitoring within the target 1,940 ha forest fragments to assess natural capital, forest conversion and forest harvesting practices using measures such as i) number of destructively cut stems (i.e., not including sustainable coppicing/pollarding practices), ii) number of illegal animal traps, iii) biodiversity (in terms of key animal groups), iv) area converted to slash-and-burn farming.

This indicator has been met ([Annexes 4.2](#) and [4.17](#)) and data will be analysed for the final evaluation.

3.3 Progress towards the project Outcome

Outcome: A critical mass of farmers living in landscapes surrounding the two protected areas are committed to nurturing natural capital through sustainable use of remaining forest and agroforestry.

O.1 By end YR3 rates of destructive timber exploitation within target 1,940 ha forest fragments have reduced by 70% from baseline.

Planned means of verification: Counts of new destructively-cut stems (ie. not including agreed coppicing or invasive species) along replicated transects within target forests compared to baseline counts, which will be carried out once household participants have been selected by end of YR1.

We have been unable to complete this analysis to date for Betampona due to lack of time since receiving the final quarter data on 25th April (see [Section 8](#)). For Ampasina and Ampitabe, this data has not yet been submitted to MFG but has been requested. We will make sure to analyse the data in full for the final project report.

O.2. During YR3, when project is well established, no part of the target 1,940 ha forest fragments converted to agriculture.

Planned means of verification: Geo-referencing and mapping of all fragment boundaries and new areas of shifting cultivation.

Although the areas have not yet been mapped by GPS (planned for the final evaluation, see [Section 3.1](#)), site coordinators and project staff who have been visiting the target fragments regularly through the course of the patrols and ecological monitoring (see [Section 3.1](#)) report that no new areas have been converted to agriculture in our target fragments during YR3 ([Annexes 4.2 & 4.17](#)). Some areas close to our target forest fragments (at Betampona and at Vohibe) have been cleared for slash and burn agriculture (communication with Site Coordinators ([Annex 4.14](#)) and even though not in our target areas, for Betampona it is being followed up with the regional branch of the Ministry of the Environment and Sustainable Development (DREDD) to deter any further areas being cleared in the near vicinity of the target conservation forest fragments. Any slash and burn agriculture carried out anywhere near the vicinity of the target fragments runs the risk of resulting in uncontrolled fires, which could inadvertently encroach the project conservation zones.

There is always a risk of slash and burn (tavy) plots being installed even in officially Protected Areas and the economic situation seems to have substantially worsened locally in recent years due to racing inflation and reduced security and governance so we cannot be complacent in this respect and will continue to encourage the continuation of the community quarterly patrols and annual mapping of the forest cover. We will also continue to promote and facilitate forest restoration efforts with the respective village associations (VOIs) managing each forest fragment around the remaining forest to try to reverse the previous negative trend towards deforestation. Through these restoration efforts we can create a buffer for the remaining fragments against fire, cyclone damage and illegal logging. By encouraging the planting of agroforestry plots around and in between the forest fragments we further protect the remaining forest as areas planted with trees are unlikely to be intentionally burnt. By prioritising village association (VOI) members who are responsible for protecting the forest fragments for inclusion in the agroforestry programme and marrying up the goals of agroforestry promotion and forest protection, we are more likely to achieve our intended output as the project participants will seek to actively protect their own agroforestry investment from uncontrolled tavy fires.

At present (pending verification by GPS mapping), we are confident that we have achieved this output for YR3. The challenge will be to maintain this success in YR4 and beyond the project end in the ever-worsening local economic situation. With the approaches outlined above and strong relationships having been built with both the VOIs managing the target fragment and the DREDD team enforcing the management and following up on any infractions reported, we are confident that we are doing all we can to maintain this present success in the longer-term.

O.3. By end of YR2 at least 75% of participating farming households at each site have developed and submitted plans to Project Coordinator to indicate how they intend to expand agroforestry on their land. Planned means of verification: Sketch maps produced by participating farmers illustrating their future land-use plans with an annexed list of preferred species for planting.

By end of YR3 100% of participating households had submitted their individual plan detailing present plantings (already existing pre-Project and the trees planted through the course of the project) and lists of their requested agroforestry species moving forwards ([Annex 4.18](#)). Follow up training carried out in YR3 by Prof Christof den Biggelaar at Betampona and Ampasina included further training on various ways that agroforestry plots can be organised to accommodate both trees and successional crops and also how to choose the best spot for particular trees that may have more specific needs to maximise its growth ([Annexes 4.12, 4.13 & 4.14](#)). This training may have led to some adaptations of plot plans and new trees will have been planted since the preliminary plans were submitted so we will repeat the process in the upcoming final project evaluation for all project participants. Project extension agents and animators will work with the participants to help them develop their plan and provide further technical support if needed for these important planning stages as the participants continue their agroforestry efforts in a more independent fashion.

We have achieved this outcome indicator at all sites.

O.4 By end of YR3 at least 75% of participating farmers at each site have installed a trial plot on their land. Planned means of verification: Surveys completed of plots of participating households by end of YR3.

At end of year 3 we have 98 participating households, all of whom have planted a minimum 1ha agroforestry plot. This has been evidenced by evaluation visits by Site Coordinators and project staff ([Annexes 4.2, 4.3 & 4.4](#)), FVEE staff ([Annexes 4.6 & 4.7](#)) and Prof Christof den Biggelaar ([Annexes 4.12, & 4.14](#)). As such we have achieved and surpassed our output goal of 75 participating households. Furthermore, the participating households seem very keen to continue to expand their current agroforestry plots as evidenced by the large numbers of agroforestry trees being requested each year ([Annexes 4.2, 4.3 & 4.4](#)). We are very confident that we can retain these participating households until the project end, but extension agents and animators will continue to visit them regularly, particularly through the final evaluation process, to provide ongoing technical support and encouragement. As part of the final evaluation, we will ask if the participants have any particular concerns for the ongoing durability of their agroforestry plot post project end. If we are in a position to address any of these concerns within the project term and budget, we will do so.

3.4 Monitoring of assumptions

Assumption 1- A sufficient number of farmers are included in the project to constitute a “critical mass” with respect to influencing non-participants. To increase our impact in any given area we have chosen to target specific sites to set up “model villages” with a high proportion of households participating in the programme. Villager associations in all our proposed sites have been consulted already and have given written commitment to participate in the proposed programme.

We have easily managed to fill any available places on the project for households that have left the project for any reason and have been receiving multiple requests from non-participants to be included in the agroforestry projects at our various sites ([Annex 4.19](#)). We have now also secured a new CEPF grant to address the many requests for agroforestry capacity at Betampona from community members and local leaders alike so we feel confident that this assumption will hold.

Assumption 2: Land use remains in the farmers’ hands and they are not disenfranchised by outsiders (such as artisanal miners, commercial mining companies, powerful people wishing to obtain land, new immigrants to area). MFG will work with local Mayors to investigate possibilities for formalising individual land rights.

So far, this assumption has borne true, and we have not yet had any significant land rights issues raised through the project at any of the sites.

Assumption 3: Nurseries not seriously impacted by cyclones. MFG and MBG each have over two decades’ experience in tree nursery design and cyclone proofing measures in the Eastern cyclone belt of Madagascar so will implement this knowledge in the design of any new nurseries and improvements on existing nurseries. Easily replaceable local materials will be used for construction to allow easy repair and replacement of damaged materials.

Despite severe impacts from the 5 severe cyclones/tropical storms in Year 1, the past 2 years the assumption has held true, and no severe damage has been done to project nurseries. The one nursery that was relocated at Ambanitohaka in YR1 has been fine and has not suffered any flooding. One of the project orchards at Ampasina was slightly damaged during flooding in this past wet season in YR3 but affected trees were able to be recovered and translocated. We will need to continue to be vigilant in this respect though as with global warming we can expect cyclones and storms and associated flooding to become ever more frequent and intense.

Assumption 4: Nursery workers are able to carry out successful grafting/marcottage. The training and planned follow-up by FVEE staff will ensure success in this respect.

This assumption has proven to be correct. Nursery staff and some participants have already proven to be successful at grafting and air-layering and to date 35,617 agroforestry trees have been produced across our sites, many through using the new techniques ([Section 3.1](#), [Annex 4.8](#)).

Assumption 5: Permits can be secured for seed collection in forest fragments. MFG has a 14-year record of gaining permits to collect seed in forest fragments around Betampona from the regional branch of the Ministry of the Environment and Sustainable Development and we do not foresee any issues in this respect. Likewise, MBG has similar agreements for the Vohibe Forest.

This has proved to be the case with both MFG and MBG continuing to secure permits ([Annex 4.20](#)).

Assumption 6: The COVID-19 pandemic and any resulting work and travel restrictions will not interrupt the project's progress overly. Although local or national restrictions could certainly interfere with plans for specialised training from Dr den Biggelaar and FVEE, our project managers at each site have sufficient personal experience in agronomy and grafting techniques to carry out basic training themselves if needs be. By targeting in-country expertise, we are not reliant on international borders being open to ensure the completion of this project. Dr den Biggelaar has worked remotely providing advice and coaching to MFG's proposed project coordinator for Betampona for many years in addition to his in-person site visits. MFG has a formal COVID-19 sanitary protocol that all staff are obliged to respect to reduce the risks of inadvertent spread of the disease.

This assumption proved to be correct. Prof den Biggelaar's visit to carry out his agroforestry training for project staff and participants, that was originally scheduled for early in Year 2, had to be postponed initially due to COVID-related travel cost and insurance-related issues. His rescheduled trip was then further delayed due to him becoming quite ill after contracting COVID-19 just a few weeks before he was due to fly to Madagascar. As a result, his trip was delayed again by several weeks to enable him to properly recover. Nonetheless the project went ahead as planned and participants carried on developing their parcels in the meantime under the guidance of in-country project staff. Although some improvements could have been made regarding tree spacing and maximising land use had Prof den Biggelaar's training been carried out earlier as originally planned, on the whole he was satisfied with the results and felt that good progress had been made. Some changes/improvements will now be made following his recommendations, but the project was managed successfully by in-country staff. His visit in YR3 went equally without hitch.

Assumption 7: Farmers are sufficiently trusting and open-minded to trial new approaches. Our past reforestation and extension activities in these areas have proven that at least some individuals are open to trialling new methods and varieties. By having already first consulted with the farmers about their planting preferences we are confident that the chosen species for inclusion in the project are of interest to farmers in these specific target areas.

Participant farmers seem to have been very enthusiastic thus far to trial new varieties ([Annex 4.18](#)) in part most likely due to the extensive experience and careful selections made by FVEE for species suitable for the area, which no doubt have added to farmer confidence to trial new crops. Similarly, the yam training offered by Dr Mamy Tiana Rajaonah of KMCC has been met with similar support and enthusiasm, again probably in part due to his obvious knowledge and expertise, which must reassure farmers during the offered training, but also due to suitable species being selected to answer local needs and preferences. There had been particular interest in the yam cultivation and efforts as being made to source rarer varieties ([Annexes 4.2](#) & [4.12](#)).

Assumption 8: Farmers have areas of land under their management that are suitable for agroforestry. Preliminary studies by MFG and MBG have already established this to be the case in both target areas.

It is true that farmers have suitable land available for agroforestry, however, in many sites the soil seems to be very poor and lacking in nutrients due to erosion ([Annexes 4.12](#) & [4.21](#)). Recommendations from both FVEE ([Annex 4.6](#)) and Prof Christof den Biggelaar ([Annex 4.12](#)) have been to continue to compost,

mulch and use natural fertilisers (such as animal dung) to improve soil on participants parcels and in our established project orchards.

Assumption 9: The COVID-19 pandemic and any resulting work and travel restrictions will not adversely affect the project. If necessary, we can adapt the training approach to avoid the need for large workshops and instead focus on one to one and small group training respecting all locally-imposed restrictions on travel and group size. By targeting the hire of local staff for the most part we avoid the need for much long-distance travel. MFG has a formal COVID-19 sanitary protocol that all staff are obliged to respect to reduce the risks of inadvertent spread of the disease.

This assumption has proven true in YR2 and YR3 and there have been no serious work disruptions due to COVID-19 this year. No travel or work restrictions have been imposed by the Malagasy government.

Assumption 10: On reflection, the community will decide that the forest fragments that remain in their landscape are valuable and worth conserving and that it is possible for them to do so. The target areas have been chosen because active interest has already been shown there to protect the target forest fragments through the creation of local village associations (VOI). MFG and MBG will work with these existing structures to facilitate their goals to protect remaining forest fragments.

This assumption has held true as reflected by the three MoU's already signed with village associations in Betampona making a commitment to manage and monitor forest patches under their jurisdiction (YR2 Annual report, Annex 4.3). An MoU with Association LOVASOA was also finalised for Ampasina along similar terms in YR2 ([Annex 4.22](#)). An MoU was not sought with VOI SOAVINALA at Ampitabe but their commitment to protect the forest fragments has been proven by their willingness to carry out the baseline survey and ecological monitoring ([Annex 4.16](#)).

Assumption 11: Community is cohesive and inclusive without powerful factions who act contrary to majority consensus. MFG works closely with the local Mayors, the regional branch of the Ministry of the Environment and Sustainable Development and Madagascar National Parks, who will support MFG and local communities to take legal action against any persons breaking locally-agreed resource-management rules or national laws protecting the environment.

So far this assumption has held true. There was a presidential election year during YR3 in Madagascar, but the situation remained calm in all our target sites. There were some major Cabinet changes made in the Malagasy government despite the incumbent President remaining in office and we had been expecting knock-on changes at the regional level in terms of people in office, but this has so far not materialised in any of the authorities we deal with through this project. We will need to continue to keep abreast of any changes and implications that may have to ensure that the project continues to run smoothly. There have been additional security issues around Betampona, potentially brought about by the seemingly increased local poverty due to several years of particularly high inflation rates, but we have introduced new measures to try to reduce any risk (see [Section 12](#)).

Assumption 12: Participants will be able to learn to identify different vertebrate species and learn their vernacular names. Our experience working in these areas has demonstrated that the majority of local people are familiar with locally-occurring species and know their local vernacular names. Plasticised photo ID sheets of commonly-occurring species will be made available to survey participants.

This assumption has mostly held true, but more support is needed at Ampitabe to help MBG staff and VOI members identify fauna species, particularly frogs and reptiles, which are less well known, harder to spot and identify with accuracy. There was a three-day training in YR3 but that is not sufficient to learn to identify multiply species so further capacity building is required in this regard for Ampitabe (Vohibe Forest).

3.5 Impact: achievement of positive impact on biodiversity and poverty reduction

Our impact as stated in the original application form is “Natural capital in the landscape surrounding the Betampona and Vohibe protected areas restored thereby reducing pressure on the natural goods within these reserves.”. Our project has started to make significant contributions to higher-level impact on biodiversity conservation though the commitment to conserve and monitor forest fragments being made in the target areas, the native trees being produced for restoration efforts in the target areas and the promotion of agroforestry ([Section 3.1](#), [Annexes 4.2](#) & [4.17](#)). All of these will lead to conservation and increase of present forest and general tree cover (in the case of agroforestry) in areas that are presently mostly devoid of trees. These activities are all being carried out around the periphery of the target conservation areas (Betampona Strict Nature Reserve and the Vohibe Forest), thereby creating a buffer zone for the protected areas against fire, cyclone damage, conversion to agriculture etc., and alternative sources for essential daily

needs for local communities (for firewood, construction timber and food- see [Section 3.1](#)). Betampona is considered a mega diverse biodiversity hotspot for Madagascar and globally with designation as a Key Biodiversity Area (KBA) and many listed single-site endemic species. Vohibe is also extremely biodiversity rich and part of the Ankeniheny-Zahamena Forest Corridor. As such the project activities ultimately contribute to global biodiversity conservation. Many of these activities that help biodiversity also directly contribute to making a higher-level impact on human development and wellbeing by producing food for the household (improving food security) and potentially for sale to increase household income. The production of crops by every participant ([Annex 4.18](#)), the creation of farming cooperatives to strengthen the farmers' capacity to access new markets for their crops and bargain for higher prices are underway though still not yet fully realised (see [Section 8](#)). Once the distributed agroforestry trees have reached maturity, the full positive benefits of the project on poverty-reduction will really start to be felt ([Section 3.1](#), [Annexes 4.6](#) & [4.11](#)).

4. Project support to the Conventions, Treaties or Agreements

Madagascar's National Biodiversity Strategy and Action Plan (2016) is still in force until 2025. Our project has addressed its goals as follows:

Strategic Goal B: "Reduce the direct pressures on biodiversity and promote sustainable use of natural resources." By encouraging active conservation and quarterly monitoring of remnant forest fragments, native restoration efforts around them and promotion of agroforestry to produce alternative sources of many forest products ([Section 3.1](#), [Annexes 4.2](#), [4.3](#) & [4.4](#)), this project is directly addressing this goal.

Objective 5: "By 2025, the rate of degradation, fragmentation and loss of habitats or ecosystems is reduced." As above, the establishment of agroforestry plots ([Section 3.1](#), [Annexes 4.18](#)) deters the traditional tavy (slash and burn) agriculture practised in our intervention zones and prolongs the productive life of any given piece of agricultural land, thereby reducing the need to clear new areas and reducing the risk of uncontrolled wildfires. As of end of YR3, our participants have 98 established agroforestry plots (including trees for timber and firewood) that are already productive for successional crops and will become more so as the planted agroforestry trees come to productive maturity ([Annex 4.18](#)).

Objective 7: "In 2025, all zones allocated to agriculture, aquaculture and forestry are managed according to sustainable production plans, ensuring an integrated approach to biodiversity conservation." The MoUs signed between the target village associations and the regional branch of the Ministry of the Environment and Sustainable Development (DREDD) that are supported and upheld through this project, help to ensure an integrated approach to biodiversity conservation and the regular quarterly patrols and ecological monitoring now being carried out by end YR3 ([Annex 4.17](#)), helps uphold and reinforce those agreements.

Strategic Goal C: "Improve the biodiversity status by safeguarding ecosystems, species and genetic diversity." Betampona is classified as a KBA due to the high levels of biodiversity and single-site endemic species and Vohibe is part of a significant biodiversity forest corridor. All of our combined project approaches ([Section 3.1](#), [Annexes 4.2](#), [4.3](#) & [4.4](#)) contribute to reduce pressures on these two target protected areas.

Objective 11: "In 2025, 10% of terrestrial ecosystems . . . especially areas of particular importance for biodiversity and ecosystem services, are conserved adequately in ecologically representative systems and in protected areas and are managed effectively by different strategic approaches." As above.

Objective 12: "By 2025, the extinction of endangered species is reduced and their conservation status improved." Again, due to the multiple single-site endemic species at Betampona, any actions to help protect the Reserve and prevent encroachment through agriculture, illegal logging or bushmeat collection will in the long-term contribute to reducing global species extinctions. Betampona and Vohibe are home to a number of critically endangered species. In YR3 no land was converted to agriculture in our target protected areas ([Section 3.1](#)).

The project addresses Target 6 of the CBD-linked Global Strategy for Plant Conservation (2011-2020), which concerns the sustainable management of production lands; and Article 6.2 of the ITPGRFA:

Article 6.2.a. "Pursuing . . . the development and maintenance of diverse farming systems that enhance the sustainable use of agricultural biological diversity and other natural resources;"

Article 6.2.e. "Promoting, as appropriate, the expanded use of local and locally adapted crops, varieties and underutilized species;"

Article 6.2.f. "Supporting, as appropriate, the wider use of a diversity of varieties and species in on-farm management, conservation and sustainable use of crops."

We have already surpassed our target of signing up 75 farming households across our target areas to agree to trial sustainable agroforestry methods by securing commitment from 98 households across all our target villages by end of YR3 ([Annex 4.9](#)). All of these 98 households have already established

agroforestry plots with the inclusion of fruit trees and yams and annual market gardening crops. 103 households participated in the initial training offered by FVEE for fruit tree propagation and care techniques in Year 1 of the project and 143 people received follow-up training during Year 2 (44.8% women) as demonstrated by Annex 4.20 of YR2 annual report. In addition, 114 participants (44.7% female) attended cascade workshops led by Prof Christof den Biggelaar on agroforestry techniques across Betampona and Ampasina (Annex 4.20 of YR2 annual report). The mid-term evaluations of the plots carried out in YR3 demonstrate that a good diversity of crops are being grown, a good number and diversity of forestry trees have already been planted and more are being requested ([Annex 4.18](#)).

5. Project support for multidimensional poverty reduction

This project is **directly** leading to poverty reduction for the communities living around the two protected areas of Betampona and Vohibe through the following means:

- Providing an alternative livelihood strategy to at least 75 farming households through the provision of start-up materials, training, plants and technical support. At present 98 participants have signed MoUs to commit to adopting this strategy for at least 1 ha of their land, which would otherwise have been most likely used for slash and burn (tavy) agriculture (Annex 4.4 of YR2 annual report).
- Increased household income through the creation of farming cooperatives to directly supply buyers: 2 cooperatives completely registered in YR3 and 2 more in the process of registration ([Annex 4.15](#)).
- Improving food security for participating households within the lifetime of the project: all 98 household already producing successional crops in their plots ([Annex 4.18](#)).
- MFG’s safeguarding policy, which all project partners have also been obliged to adopt for the purposes of this project, will help ensure that all project members are treated fairly and with respect (copy of MFG safeguarding policy submitted with application).
- By striving for a 50:50 ratio of men to women in all target interventions, MFG and partners are seeking to reduce gender inequality. 48.6% of project participants are women. This is a very notable achievement as this is not generally the status quo for farming training interventions in rural Madagascar when often it is almost exclusively men that respond to offers of training and to get involved in new farming initiatives. Several women have been trained to be very competent agroforestry tree producers (by new techniques taught through the course of this project) provide real income generation potential ([Section 6](#)).

This project will **indirectly** lead to poverty reduction through the following means:

- Increased ecosystem services through the protection of 1940 ha of forest fragments around the two target protected areas that would otherwise likely have disappeared within a decade (based on remote sensing data analysis for Betampona: Ghulam 2014, Cota et al. 2022).
- Improved community governance of remaining forest fragments under their management ([Annex 4.3 of Annual Report YR2](#)).
- Increased awareness of local fauna in the forest fragments through the set up and regular execution of transects for ecological monitoring ([Section 3.1](#), [Annex 4.17](#)).

6. Gender Equality and Social Inclusion (GESI)

Please quantify the proportion of women on the Project Board ¹ .	2 women (Association LOVASOA and MFG Project Leader), 2 males (MFG Project Coordinator, MBG Site Coordinator) = 50% women (note question misunderstood last year)
Please quantify the proportion of project partners that are led by women, or which have a senior leadership team consisting of at least 50% women ² .	MFG, Association LOVASOA, KMCC all run by women = 3 women leaders of 7 in project partners = 42.9% women leaders (note change in definition of partners this year following reviewer comments (see Section 9)).

¹ A Project Board has overall authority for the project, is accountable for its success or failure, and supports the senior project manager to successfully deliver the project.

² Partners that have formal governance role in the project, and a formal relationship with the project that may involve staff costs and/or budget management responsibilities.

GESI Scale	Description	Put X where you think your project is on the scale
Not yet sensitive	The GESI context may have been considered but the project isn't quite meeting the requirements of a 'sensitive' approach	
Sensitive	The GESI context has been considered and project activities take this into account in their design and implementation. The project addresses basic needs and vulnerabilities of women and marginalised groups and the project will not contribute to or create further inequalities.	
Empowering	The project has all the characteristics of a 'sensitive' approach whilst also increasing equal access to assets, resources and capabilities for women and marginalised groups	X
Transformative	The project has all the characteristics of an 'empowering' approach whilst also addressing unequal power relationships and seeking institutional and societal change	

Throughout the project design, we have aimed to take into account the GESI context, particularly as regards the inclusion of women in project staff hiring, participant selection and in project activities. In all aspects we have aimed for a 50:50 male to female ratio. In order to achieve this for the animator posts (responsible for project awareness-raising/promotion/training), we hired a male and a female animator for each village of intervention to try to maximise participation of women participants in the project and to help understand differing perspectives/needs that might be felt by the different sexes. We strove for 50% female participants in the project and have achieved 48.6% across the three sites ([Annex 4.9](#) & [4.23](#)). At one site, Ampasina, which is led by a female Site Coordinator, there is 58.7% female participation.

We have actively encouraged all participants to attend all offered training but in YR 2 when we completed the majority of the training sessions, we overall only succeeded in a 35.3% female participation rate across all the combined training across all three sites ([Annex 4.24](#)). If we consider the sole example of Ampasina, led by a female Site Coordinator, then the female participation rate in trainings was 51.8% in YR2, proving that it is possible to achieve equality. At all trainings, sex disaggregated data was collected in the evaluation sheets. We pro-actively selected women to attend the intensive FVEE agroforestry tree production training at FVEE's main training site in Mahatsinjo in YR2. Here all participants gained intensive training in fruit tree production skills (grafting, air layering etc) so this can be considered practical vocational training that could lead to future income-generation potential. Overall, the percentage attendance at the training from our participants across all sites was 35.8% female (again for just Ampasina alone the percentage was 42.8%) ([Annex 4.24](#)). When analysing data from across the sites as to which of the project participants are competent fruit-tree producers (through grafting and air-layering techniques), the percentage that are women is 34.6% ([Annex 4.10](#)). Again, at Ampasina that percentage increases to 41.7%. In terms of percentage women joining cooperatives, the percentage for Ampitabe was 27.8%, whereas for Ampasina it was 53.8% (data not yet available for Betampona) ([Annex 4.15](#)). These examples from Ampasina suggest that to really increase female participation in projects such as these it can make a very big difference to have a strong female site coordinator to actively push that agenda and to set an inspiring example. The Project Leader strongly feels that Alice Heliarisoa, the Ampasina DI project Site Coordinator, is such an inspirational example.

Even at Ampasina there remain some very traditional gender assignments when it comes to roles. For example, across both Ampasina and Betampona, not a single female participant took part in the community-based patrols or ecological monitoring in YR3 (though women have participated in these patrols in earlier project years at Ampasina- pers comms Ampasina Site Coordinator). We aim to redress this balance in YR4. The percentage participation by women was far higher at Ampitabe with 10 of 27 participants being female (37.4%)

Overall, we feel that this project has empowered women in the target sites to take more active part in agroforestry, gain capacity in the necessary techniques, join cooperatives and become very competent

horticulturalists in some cases, creating real income-generation potential. There are still points that need significant work such as the encouragement of women to assist in the community patrols and ecological monitoring, and our GESI context results are not uniform at all of our sites, but we feel the project has made an overall very positive difference for many women living in our target areas. There is an argument for the GESI context to be described as “Transformative” at our Ampasina intervention site, but we don’t feel that we have achieved that same level at the other two intervention sites so have opted to classify our project as “Empowering” overall.

As well as pro-actively encouraging women to participate in agroforestry, patrolling and restoration activities, the project has also sought to include young people in our activities with children being invited to participate in community tree planting activities ([Annex 4.14](#)).

7. Monitoring and evaluation

M&E work is shared between all main project partners and information is shared with all relevant partners by email after particular interventions. There have been no changes to our M&E approach over this period.

On-site evaluations have been carried out of planting efforts both in project orchards and in participants’ plots by FVEE (fruit tree follow-up) and Prof den Biggelaar (general agroforestry techniques) during YR3 ([Annexes 4.6 & 4.12](#)). Prof den Biggelaar carried out pre and post training quizzes to assess the uptake of the main messages in his agroforestry training in YR3 ([Annex 4.28](#)).

Examples of indicators of achievement for the building of capacity in agroforestry are the following:

- Production of 35,617 agroforestry trees across all site nurseries since project start represented by 27 species/varieties ([Section 3.1, Annex 4.9](#)).
- Site Coordinators reporting that 52 people are competent propagators of fruit trees using new techniques (28.6% of all participants, of which 34.6% are women) ([Section 3.1, Annex 4.9](#)).
- 8 participants at Ampitabe having set up their own agroforestry tree nurseries and having produced 2,970 trees between them in YR3 ([Section 3.1, Annex 4.3](#))

Project Site Coordinators, extension agents and animators this year completed the mid-term evaluation assessments of participant efforts in the field ([Annex 4.18](#)). We are currently planning the final evaluation needs for the upcoming months.

During compilation of annual reports, it is clear that much capacity-building is needed to improve critical data compilation and analysis over multiple years by the Site Coordinators in some of our sites. Although we hired Master’s level graduates, and purposely selected graduates from the local university of Toamasina for two of our sites, they have not been given much formal training on report-writing, data compilation and summarising. This is a phenomenon that we have come across on multiple occasions in other projects while supervising Bachelor’s and Master’s degree level students. Combined with the late submission date we agreed in MoUs (see [Section 8](#)) to allow each Site Coordinator to have sufficient time to gather and compile their data from the past quarter, it makes for an extremely difficult process to sort through for the Project Leader for the production of this report. Hence, on this occasion an extension had to be requested for submission of the annual report in order to allow time to follow up on all resulting queries. We will need to be very aware of this issue going into the final evaluation for the project and allow extra time for capacity building on report-writing, data checking and analysis. We will seek the help of the new MFG Research Coordinator, who is shortly to start in post, for extra support and critical data checking/analysis.

8. Lessons learnt

The biggest disappointment of the project to date was the non-successful negotiation of a contract between the spice exporter and project partner, MC Ingredients, and the newly created farmer cooperatives around Betampona. Having raised awareness of the benefits of creating cooperatives and facilitated training in how to set up cooperatives and payment of the necessary registration fees through the first two years of the project, we had high hopes for the potential of the cooperatives to command a higher price for their produce. As a project partner we have been working with MC Ingredients since the project proposal development stage and building a strong relationship. The MC Ingredients staff came as agreed to meet with representatives from the newly formed cooperatives around Betampona in a general meeting at Ambodiriana on 3rd November 2023 and were ready to negotiate a fair deal with the cooperatives. At this point the clove season was already underway and prices had been fluctuating between 25,000 to 27,000 MGA per kilogram. MC Ingredients staff offered to set a fixed price of 29,000 MGA per kilogram, but this

offer was not acceptable to the cooperatives who were pushing for 30,000 MGA per kilogram. In the end no contract was agreed, and the cooperatives were not able to benefit from the offered deal from MC Ingredients. After so much work in developing the relationship with MC Ingredients and in supporting the creation of the cooperatives, this result was a huge disappointment.

While the price of the cloves offered by MC Ingredients seemed very fair given the market values at that time, the price of cloves, as for any crop, can fluctuate a great deal. Presently (5 months later) the price is varying between 33,000 to 35,000 MGA per kilogram but it isn't clear if that is because we are now out of the main harvest season and cloves are harder to come by and have been stored (engendering further costs). In hindsight it would have been a good idea for us to monitor the fluctuating price of cloves since the start of the project and to have shared that information with the cooperatives though this still wouldn't allow for capricious and sometimes sudden market changes. It is completely understandable on both sides (exporter and producer), that it is very difficult to agree a fixed price at the beginning of the harvest season. MFG staff have helped facilitate the setting up of the cooperatives but cannot (and should not) intervene in any negotiations of this type on cost-setting. The Project Coordinator is, however, suggesting that for the next clove harvest season (which will be beyond the end of this current project) that we try to invite representatives from more than one exporter to meet with the cooperatives in a combined meeting. It is not obvious whether this will help the cooperatives fix a higher price or if it could have the opposite effect. We will seek advice from our partners at ODDIT (implementers of Catholic Relief Services SPICES programme for eastern Madagascar- see [Section 2](#)), who have far wider experience in promoting the creation of cooperatives as to how they feel MFG's role in supporting the cooperatives should evolve now beyond the initial set-up stage. We will also propose to include a clause in any developed MoU between cooperatives and exporters/buyers that prices can be reviewed and renegotiated during the given collecting season should any significant shifts in market prices arise. This should help to protect both buyers and producers and give them more confidence to enter into agreements together. We have learnt a valuable lesson that merely facilitating setting up the cooperatives is not enough to secure the desired results to help local farmers secure fair prices for their produce.

Ongoing soil sampling tests throughout the project at Ampasina and Betampona (completed by Prof Christof den Biggelaar and the MFG Ivoloina Conservation Training Centre Manager, Veronique Ravololonarivo) have demonstrated that soils in participants plots are mostly low, particularly at Ampasina, where the soils are particularly sandy and impoverished of nutrients ([Annexes 4.12 & 4.21](#)). We were aware that soil quality would be low but had not foreseen exactly how poor the starting conditions for the agroforestry plots would be (see annual report for YR2, Section 11). This could lead to slower growth and maturation rates for many of the planted trees from the project and hence a slower "cascade" effect than we had hoped for in promoting further agroforestry efforts in the project areas and beyond post project end.

Due to a technical problem caused by lack of memory capacity, some project data and photos have been lost at the Ampitabe site. At MFG we have a policy to do regular backups on a centralised system at our headquarters, which include data from Betampona and Ampasina but in hindsight we should have reviewed the procedures in place for the MBG field team too. We should have budgeted for an external drive in the project budget to ensure that all project data could be backed up at least quarterly. We have suggested that the MBG team buy an external drive now to facilitate regular backups despite there being no formal budget for this cost as we feel it is vitally important. A cloud-based back up system for MFG and MBG data would be safer and in future projects of this kind we would consider including a budget line for this type of assurance system if the budget limit allowed.

As for each annual report, it has been a struggle to compile the data from the different sites in time for the DI report submission date. In this instance we had to request an extension of a few days to submit this report. In our MoUs with project partners we requested that quarterly reports be submitted by the 25th of the month following the quarter end. We did this to allow sufficient time for our partners to compile thorough and accurate reports. However, despite efforts made by the Project Leader to standardise the reporting format from each site over the project's duration, much of the data arrives in incomparable formats (some measuring by households, others by numbers of participants etc). It takes days of back and forth via email to clarify points and standardise measures to enable correct compilation. More time is required to do this in a less stressful manner and to allow all outstanding issues to be resolved and any follow up analysis or data compilation to be done to fully answer all the report questions. It is too late to change the agreed MoUs now but in hindsight, although not allowing a lot of time for partners to compile their reports, we should have requested a report submission date of the 15th of the month (or the 20th at the latest), rather than the 25th. In addition, as discussed in [Section 7](#), we are lacking critical data compilation experience and report-writing capacity at some of our intervention sites despite having hired Master's level graduates for the lead posts. In any future projects, if the budget allowed, it would be worth investing in

provision of basic data management and compilation training with a trained professional in the project's startup phase.

Finally, we have been having a lot of challenges with regards to reliable soil-testing. We had invested in a good system from the UK-based Palintest for the MFG project several years back (pre DI project) but the meter developed a malfunction and was no longer able to be used. We planned to buy a replacement meter and new reagents in 2023 but were informed that Palintest were due to discontinue their soil testing reagents needed to use the system imminently, so we did not go ahead with the purchase. After much online research and many calls to manufacturers by both the Project Leader and Prof Christof den Biggelaar, we were unable to find an affordable equivalent that was mobile and relatively easy to use, so the Project Leader made the decision to trial a new electronic soil probe system. In order to test accuracy of the new system, Prof den Biggelaar brought a Palintest meter with him when he came to Madagascar in October 2023 (the same model we had had in Madagascar and with which we did baseline soil tests in some intervention areas), that was lent to us short term by Appalachian State University. With the reagents we still had in hand, Prof Biggelaar and the MFG Conservation Training Manager (who runs the MFG teaching laboratory and is responsible for any project soil testing) carried out comparative tests between the two systems. Unfortunately, the new electronic soil probe was not at all accurate at the low pH levels of the soils being found in the participants' plots ([Annexes 4.12 & 4.21](#)). The trial further reaffirmed that we are dealing with quite low pH and very low nutrient-level soils for the most part (even lower than we had expected- see Annual report YR2 section 11) and that needs to be tackled proactively through the planting of nitrogen-fixing plants in or around the plots, use of mulching, composting and addition of animal manure as much as possible to ensure better growth and plant health ([Annexes 4.6 & 4.12](#)).

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

Following questions raised in the last annual report, we have critically evaluated which of the organisations we had listed as partners in the annual report 2023 were genuinely project partners with coordination and management responsibilities within the project and which were better defined as stakeholders. As such we have reclassified Madagascar National Parks and Association Soavinala as stakeholders for the present project.

We appreciate and understand the criticism in our 2023 annual report review that our outcome and output-level indicators could be SMARTer. We have followed the reviewer's advice and proposed the inclusion of a 5th outcome-level indicator to track the number of non-target household farmers that express an interest in taking up agroforestry as a result of the present project (see [Annex 4.25](#)). This indicator will help us to track the expected "cascade effect" we are working towards through this project when neighbouring farmers express an intention to adopt the agroforestry approaches promoted through the project through their exposure to the target participants' plots and discussions with the participants. We have taken the reviewer's advice and contacted the BCF team to ask for guidance and advice on how we can make our output-level indicators SMARTer. We have been searching for ways in which we can modify the present indicators to reflect the change effected by the actions rather than the simple completion of the actions. It is far harder to assess impact in a meaningful and objective way, which is why we had erred on the side of indicators that we could provide more tangible evidence of having achieved. Some of the output-level indicators are for actions that were completed so it is no longer possible to adapt them and for some others it is hard to see how they can be adapted at this advanced stage of the project. Where possible we have suggested new wording in the logframe to address the reviewer's concerns and have submitted this to the BCF team to ask for further guidance and help on how we can further improve them and the process we need to follow in order to formally adopt the changes. A copy of the proposed logframe changes are included in [Annex 4.25](#).

A question was raised as to the low amount of counterpart funding mentioned in the annual report for YR2. Apologies for this, on verification it was an error in the totalling and should have read £37,143.35. In the final end of year calculations for the final claim form, the amount was actually £49,672.30 so 18.5% above that predicted in the original budget.

We were requested to calculate the percentage of new DI project-inspired agroforestry plantation in comparison to the overall area available for cultivation in each of the target sites. Such data is not available within the Communes so we have had to use remote sensing techniques to estimate the percentages. For Vohibe the area that is available for development and cultivation outside the main conservation area was delimited when the protected area was established by MBG and is 1,622.7 Ha. For Ampitabe the percentage of this land currently planted with agroforestry as a direct result of the DI project is 2.1% since project start. The method at present for the calculation is very approximate for Betampona and Ampasina with the land area for the whole Fokontany to which the village in question belongs being calculated by

downloading the Fokontany perimeters from the Malagasy National Disaster Management Office (BNGRC). The Madagascar Fokontany (adm4) polygons were cleaned and merged by the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) in 2018: https://data.humdata.org/dataset/26fa506b-0727-4d9d-a590-d2abee21ee22/resource/ed94d52e-349e-41be-80cb-62dc0435bd34/download/mdg_adm_bngrc_ocha_20181031_shp.zip (Annex 4.26). Estimated land for target restoration areas and rivers/lakes/villages were then removed as estimated using Bands 1 to 11 of Sentinel-2 L2A/b freely available satellite data (Source Sentinel -2 :Karra, Kontgis, et al. “Global land use/land cover with Sentinel-2 and deep learning.” IGARSS 2021-2021 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2021. Estimates were completed by MFG’s database manager, Hervé Razafiarison. The estimates are likely a large overestimate of land that would actually be tenable for agriculture and hence our percentage estimates of the DI parcels in comparison are likely to be underestimated. For the case of Ambanitohaka in particular, the village is a very small village but set in the huge Fokontany of Ambodirafia. We will work during the final evaluation to try to secure more accurate estimates of available agricultural land in our target villages. The preliminary results for Betampona and Ampasina are 1.17% and 1.98% respectively so when combined with the Ampitabe figures give an overall project total of 1.75% (Annex 4.9). This number, even considering the high probability of it being a significant underestimate, is indeed very low and on the face of it unlikely to cause significant change across the target landscapes but our early indications are that significant interest is being shown by non-target households across the three sites (see below and Annex 4.19).

In the previous review we were asked to expand further on the mention of Critical Ecosystem Partnership Fund (CEPF) funding for which we had applied for promotion of further agroforestry activities around Betampona Strict Nature Reserve. For this present DI grant, we had had to limit intervention target sites to just three villages due to funding and personnel limitations. We do, however, have several other MFG programmes (such as a community-based restoration programme, conservation education, fauna and flora research in the remaining forest fragments outside the Reserve, Saturday Schools and more) in other villages around Betampona. Through the course of this other work and during the travels of the DI Project Coordinator between target sites at Betampona, several community members, community leaders such as Fokontany Presidents (a Fokontany is the smallest governmental administrative unit in the Malagasy system and general comprises of one large village or several smaller ones), and Commune Mayors (the next highest administrative level) approached MFG staff and expressed a strong interest in conserving their own forest fragments, carrying out greater restoration efforts and promoting agroforestry either on their own land or within their Fokontany/Commune. In some cases, formal requests for help of this kind were made to MFG management and the DI Project Leader by the Mayors of the two Communes that comprise Betampona and its surroundings. People had either seen the agroforestry plots being set up in the target areas, talked to project participants or seen the agroforestry trees being transported. On the back of this interest and the specific requests, we applied to the CEPF funding round in 2022 and were successful in securing a 3-year grant (CEPF 113986) of £352,285.33 to promote further agroforestry in new target areas around Betampona, protect further forest fragments (using the DI project approach), promote native forest restoration to increase connectivity between forest fragments, promote family planning and carry out invasive plant control and restoration within the Betampona Reserve. The CEPF project started in July 2023 and builds very much on the strong foundations, methods and reputation gained during the DI project. Under Section 5 of the reviewer’s feedback, the reviewer commented that “The notable achievements detailed are somewhat underwhelming: securing commitment from 85 households across target villages to trial sustainable agroforestry methods; 103 households trained in fruit tree propagation; 114 participants attending cascade workshops on agroforestry techniques etc.”. It is very difficult to know how to address this point. We have achieved most of the objectives as set out and agreed with DI for this project as per the logframe. The number of target household was always going to be small compared to the overall population size due to financial and logistical constraints. The philosophy that our project relies on for a larger overall impact in the long term hinges on our work towards creating a “cascade” effect in the target areas with agroforestry being taken up by many more households as a result of this DI project. Over the course of the three years of the project to date none of the distributed agroforestry trees will have become productive (for many agroforestry species this takes a minimum of 5-7 years to reach maturity with full production capacity often not being achieved until several years after this point). As such the long-term impact of this project will need to be assessed over a longer time period as it is only when actual incomes start increasing significantly due to the mature agroforestry tree production that the vast majority of neighbours will be inspired to follow suit. Nonetheless, as evidenced by the 105 people already expressing an interest in agroforestry and requesting agroforestry trees across the sites (Annex 4.19) and from the positive comments that have been received from local authorities and community members in response to efforts

already made we are very confident that the desired “cascade” effect is already starting. Through the CEPF grant we will be able to continue building on this in the coming years. 65 new households have already signed up for the new CEPF-funded agroforestry project around Betampona, thereby already doubling the number currently practising agroforestry through the DI project at this site. While we completely understand that projects need to be evaluated on what they achieve within the project duration, we feel that this project’s true impact will only be felt several years after the scheduled project end. Our whole approach has been to build local capacity to continue the agroforestry production and activities post project end and the long-term invested partners at each site (MFG, MBG and Association LOVASOA) have each made a strong commitment to continue supporting agroforestry development and forest fragment protection at each of the intervention sites.

Partner reports have been included in annexes where relevant and hyperlinked as requested.

10. Risk Management

No new risks have arisen this past year. Despite our concerns as expressed in the last annual report, the presidential election year passed relatively smoothly and there were no obvious impacts at our intervention sites other than delays caused by non-availability of local authorities during much of the election campaigning and voting period. Although the incumbent President has remained in office, there have still been very significant recent cabinet changes and we will need to be aware of this over the coming year to make sure we stay abreast of any changes in governmental personnel that we work with, procedures and policy changes. We do not foresee any specific risks to our project.

We were not requested to complete a risk register at the time we applied for this grant but will investigate what one entails and try to develop one for the final months of the project.

10. Sustainability and legacy

We have worked closely with local Mayors of the three Communes covering Betampona and Ampasina, the regional teams of the Ministry of the Environment and Sustainable Development (DREDD) and Fokontany Presidents at the local level to promote the project. Much support has been given to the initiative from these local authorities and significant interest has been generated within the local target communities. The Site Coordinators from our three intervention sites have all received requests for further interested parties wanting to establish agroforestry plots themselves (see [Annex 4.19](#)).

In our application under the “Exit Strategy” section we noted “By training at least two nursery workers and multiple farming households (ranging from 40 individuals (men and women) at Ampasina to up to 60 individuals at Ampitabe (the Betampona households will be split between three locations)), we reduce the risks of losing expertise inferred from the intensive training programme from the area should any individuals move away during or after the duration of the project. At each of the 3 main target areas there is a long-term presence by MFG, MBG or LOVASOA, which will ensure that ongoing support and development of the initiative can continue beyond the end of the project duration. By setting up the nurseries in a self-sustaining fashion and also providing training in business management, we envisage that the network of small, local, grass-roots nursery businesses will expand to provide the growing demand for agroforestry trees in the target areas and beyond.” These intended sustainable benefits post-project remain valid.

The creation and registration of two farmer cooperatives (one at Ampasina and one at Ampitabe) have been completed and the official registration process is well underway for two further cooperatives at Betampona. This will add significantly to the project’s legacy (both social and economic). Some business management training has been carried out by our partners at ODDIT for the cooperatives for Ampasina and Betampona cooperatives, but we will seek to expand on this in YR4. Already 8 participants at Ampitabe have set up their own small agroforestry tree nurseries, producing 2,970 trees in YR3 between them (see [Section 3.1](#) & [Annex 4.15](#)). With the securing of CEPF grant 113986 to further expand agroforestry in the area building on the principles, experiences and training gained through this DI project (see [Section 9](#)), that will further ensure the legacy and sustainability of our project at the Betampona site.

11. Darwin Initiative identity

Several posts have been made on MFG’s social media platforms ([MFG \(@MadaFaunaFlora\) / Twitter](#) and [Madagascar Fauna & Flora Group | Facebook](#)) to promote the project, all mentioning funding from DI/Biodiversity Challenge Funds. The project is featured prominently in MFG’s annual report 2020-2022 ([Annual Reports - Madagascar - MFG \(madagascarfaunaflora.org\)](#)) and a summary of the project and progress to date has been added to the MFG website’s Darwin Initiative page ([Darwin Initiative -](#)

[Madagascar - MFG \(madagascarfaunaflora.org\)](http://madagascarfaunaflora.org). The project was explained to Mr David Ashley, His Majesty's Ambassador to the Republic of Madagascar during his visit to Parc Ivoloina (one of MFG's sites of interventions) on 9th March 2024. Unfortunately, the time available for his visit did not permit a site visit to either Betampona or Ampasina but updates were given by the MFG In-Country Director on the present DI project and the Ambassador was taken to visit the still very active plant nursery and restoration plots set up in our earlier DI grant (23-004). The Ambassador was kind enough to make a post about his visit to Ivoloina on his social media site ([Annex 4.27](#)).

12. Safeguarding

Has your Safeguarding Policy been updated in the past 12 months?	No
Have any concerns been reported in the past 12 months	No
Does your project have a Safeguarding focal point?	Yes, [REDACTED]
Has the focal point attended any formal training in the last 12 months?	No formal training but some extensive online personal research into best practices by the focal point and several consultation meetings with MFG staff and community members.
What proportion (and number) of project staff have received formal training on Safeguarding?	Past: 100% [87] Planned: 0% [0]
<p>Has there been any lessons learnt or challenges on Safeguarding in the past 12 months? Please ensure no sensitive data is included within responses.</p> <p>We have realised that we should have allocated some budget to the safeguarding aspects of the project for construction of durable, waterproof "Comments boxes" for each main site of intervention and a small stipend for local people to check and deliver any submitted comments on a monthly basis. As raised by our Safeguarding focal point, it is not ideal to have local project staff collecting the comments when comments could be pertaining to themselves. We have now created a Safeguarding Committee for MFG to make sure every site has a representative and that further viewpoints can be considered. The Committee Members were democratically voted for by the staff members from that site.</p>	
<p>Does the project have any developments or activities planned around Safeguarding in the coming 12 months? If so please specify.</p> <p>Regular quarterly Committee Meetings are planned.</p>	
<p>Please describe any community sensitisation that has taken place over the past 12 months; include topics covered and number of participants.</p> <p>In the wake of the set-up of the new CEPF project, awareness-raising workshops have been carried out (funded by CEPF) but as some of the target areas overlap with the DI project and as some DI participants have expressed an interest to expand their present agroforestry efforts in the CEPF project, that has led to a useful reminder for these participants of MFG's safeguarding policy. The report including participation numbers has not yet been received. Topics covered included an overview of the MFG Safeguarding Policy, procedure to report a complaint/comment and placement of "Comments boxes" within the village.</p>	
<p>Have there been any concerns around Health, Safety and Security of your project over the past year? If yes, please outline how this was resolved.</p> <p>Yes, there have been some security issues following an armed attack on one of our MFG personnel (not involved or employed directly on the DI project). They were not physically harmed other than scrapes and bruises, but it has led us to further review our security procedures. Security lighting was set up at our Rendriendry field station (that also serves the DI project MFG Extension Agent and periodically the Project Coordinator). Measures have been taken to pay all staff salaries, including temporary labourers in a cashless system to reduce risk to all personnel. Several meetings were held with all MFG managers and all staff at Rendriendry to discuss ways to minimise security risks and stay vigilant.</p>	

13. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2023 – 31 March 2024)

DRAFT FIGURES

Project spend (indicative) since last Annual Report	2023/24 Grant (£)	2023/24 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)				Many salaries have increased significantly since the budget was prepared due to inflation.
Consultancy costs				Only one of three FVEE evaluation visits were able to be done due to a bereavement.
Overhead Costs				Overhead under calculated in the initial budget
Travel and subsistence				MBG used other funding sources to purchase air tickets. Only one of three FVEE evaluation visits were able to be done due to a bereavement
Operating Costs				Only one of three FVEE evaluation visits were able to be done due to a bereavement. Many costs that were originally allocated under operating costs for workshops now classified under travel, cost of workshops cheaper than budgeted.
Capital items (see below)				No budget was allocated but needed to replace soil test kit as could no longer get reagents for old one
Others (see below)				Only one of three FVEE evaluation visits were able to be done due to a bereavement. MBG producing all their own trees so additional purchases not required.
TOTAL	£ 92,152	£83,906.04		

Many of the budget lines have varied more than 10% from the requested budget and several significantly so. Inflation has been very high in Madagascar in recent years and salaries have had to be increased to keep in line. In some cases (eg Operating Costs), amounts that had been budgeted as operating costs for carrying out workshops for example, have now been assigned to other cost lines such as Travel and Subsistence. For the Capital Costs line, we did not envisage needing to replace the soil testing set up but the company that made the original testing kits discontinued the reagents needed and no replacement are available. One of the reasons for the underspend on several budget lines was that our partner FVEE were not able to carry out two of the three planned evaluation workshops due to a family bereavement for one of the main project team. The workshops are being rescheduled for early in YR4 and we will apply to DEFRA for a Change Request to modify the budget accordingly. These variances have not yet been discussed with the DI administrative team.

Table 2: Project mobilised or matched funding during the reporting period (1 April 2023 – 31 March 2024)

	Secured to date	Expected by end of project	Sources

Matched funding leveraged by the partners to deliver the project (£)		FVEE, Christof den Biggelaar, MC Ingredients, ODDIT, MFG
Total additional finance mobilised for new activities occurring outside of the project, building on evidence, best practices and the project (£)		CEPF

11. Other comments on progress not covered elsewhere

12. OPTIONAL: Outstanding achievements or progress of your project so far (300-400 words maximum). This section may be used for publicity purposes.

I agree for the Biodiversity Challenge Funds to edit and use the following for various promotional purposes (please leave this line in to indicate your agreement to use any material you provide here).

File Type (Image / Video / Graphic)	File Name or File Location	Caption including description, country and credit	Social media accounts and websites to be tagged (leave blank if none)	Consent of subjects received (delete as necessary)
				Yes / No
				Yes / No
				Yes / No
				Yes / No
				Yes / No

Annex 1: Report of progress and achievements against logframe for Financial Year 2023-2024

Project summary	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
<p>Impact</p> <p>Natural capital in the landscape surrounding the Betampona and Vohibe protected areas restored thereby reducing pressure on the natural goods within these reserves.</p>	<p>Large steps forwards being made to establish agroforestry around our target conservation sites at Betampona (including Ampasina) and Vohibe (Section 3.1) and promote the community conservation and monitoring of remnant forest fragments outside the main protected areas. Interest to follow suit is now starting to be generated from non-participants living in and around the target communities.</p>	
<p>Outcome: A critical mass of farmers living in landscapes surrounding the two protected areas are committed to nurturing natural capital through sustainable use of remaining forest and agroforestry.</p>		
<p>Outcome indicator 0.1</p> <p>By end YR3 rates of destructive timber exploitation within target 1,940 ha forest fragments have reduced by 70% from baseline.</p>	<p>The patrol data has not yet been analysed. The situation has been complicated by the elevated inflation of the past few years since the COVID-19 epidemic, which has led to increased poverty in many rural areas. Infractions seem to have increased and due to lack of resources and personnel, it has been extremely hard to organise timely follow up from the regional branch of the Ministry of the Environment and Sustainable Development (DREDD) once infractions are detected. Until we analyse the data and compare to baseline rates, we will not be able to assess whether we have made any progress on this outcome indicator.</p>	<p>In the next period we will be carrying out our final project evaluation. As part of this all the MFG (for within Betampona) and community patrol data will be reviewed.</p>
<p>Outcome indicator 0.2</p> <p>During YR3, when project is well established, no part of the target 1,940 ha forest fragments converted to agriculture.</p>	<p>This outcome has been achieved. In Year 3 none of the target 1,940 ha of our target forest fragments were converted to agriculture. See Section 3.1.</p>	<p>The situation will continue to be monitored through the quarterly community patrols during the next period.</p>
<p>Outcome indicator 0.3</p> <p>By end of YR2 at least 75% of participating farming households at each site have developed and submitted plans to Project Coordinator to indicate how they intend to expand agroforestry on their land.</p>	<p>This outcome has been achieved 100% and all 98 participating households have submitted plans as to how they would like to develop agroforestry on their land to their respective Site Coordinators. See Section 3.1 and evidence in Annex 4.18)</p>	<p>As part of the final evaluation, households will be asked further questions as to how they intend to continue development of their agroforestry plot, whether their</p>

		initially stated needs have been met or adapted etc.
<p>Outcome indicator 0.4</p> <p>By end of YR3 at least 75% of participating farmers at each site have installed a trial plot on their land.</p>	<p>This outcome has been met and surpassed with 98 households (23 at Ampasina, 50 at Betampona, 25 at Vohibe) actively trialling agroforestry on their land. See Section 3.1 & Annexes 4.2, 4.3, 4.4, 4.9, 4.18 & 4.23)</p>	<p>Efforts at each plot will be evaluated and documented during the final evaluation.</p>
<p>Output 1 A diversity of plant species attractive to local farmers are easily available for use in agroforestry trials</p>		
<p>Output indicator 1.1</p> <p>Capacity built through the provision of one training workshop per target site for all personnel in local existing nurseries or ones newly established for the project in nursery management, grafting/marcottage, care protocols for newly introduced species and business planning by June 2022</p>	<p>Completed with all 9 project nursery staff having received intensive training from the FVEE team in Year 1 in fruit tree production, grafting and post planting care (evidence was submitted in Annex 4.11 and Annex 4.20 of the 2023 annual report). See Section 3.2 for further details and Annexes 4.8 & 4.14 for proof of this year's production in project nurseries using newly-acquired propagation techniques (grafting, air-layering and cuttings).</p>	<p>Efforts being evaluated by FVEE at the end of YR3 and early YR4.</p>
<p>Output indicator 1.2</p> <p>At least 12,000 good quality young plants (including at least two new fruit cultivars) with height > 25cm (ideal planting height) of pre-selected species available in total between all the project nurseries by July 2023.</p>	<p>This output has been achieved and nearly tripled during the present reporting period (YR 3) with 35,617 young agroforestry trees having been produced since project start at the project-managed nurseries across the 3 sites including at least 13 new fruit cultivars. Section 3.2, Annex 4.9.</p>	
<p>Output indicator 1.3</p> <p>At least 12,000 trees produced by nurseries distributed to local landowners for planting in agroforestry plots by Nov 2023 to reinforce trees distributed by FVEE.</p>	<p>This output was achieved during YR3: 14,455 trees in total have been distributed from our own nursery production across the three sites. Section 3.2, Annex 4.9.</p>	<p>Further trees will be distributed in YR4 to make sure all agroforestry trees produced in our nurseries since project start are either planted in the project orchards or distributed to project participants.</p>
<p>Output 2. Farmers living in the landscape surrounding the two protected areas are aware of the opportunities presented by agroforestry to meet their tree product and food production needs and some are skilled, effective and convinced practitioners (target 50% female participation).</p>		
<p>Output indicator 2.1</p>	<p>Achieved. Completed and reported in Year 1 but further training in agroforestry and extension techniques given by</p>	<p>Further evaluation and training will be offered by the FVEE</p>

<p>By the end of July 2022, all extension workers and community animators will have been given formal training through workshops to facilitate and inform their role.</p>	<p>Prof Christof den Biggelaar at Parc Ivoloina for staff from all sites in YR2 (24-26 October 2022) and in-situ at Betampona and Ampasina in November 2022 and Oct/Nov 2023 (see Section 3.2). Evidence submitted in YR1 and YR2 annual reports and in Annexes 4.12, 4.13 & 4.14.</p>	<p>team at Ampitabe and Betampona at the beginning of YR4 (delayed trips).</p>
<p>Output indicator 2.2</p> <p>By the end of 2022, at least 100 farming households of diverse demographics across the target sites understand the principles of agroforestry and best practice for design, installation and management.</p>	<p>Achieved. Completed and reported in Year 1. Across the project, at least 107 households have received training in agroforestry principles and techniques.</p>	
<p>Output indicator 2.3</p> <p>At least 75 farming households across the target sites have installed and are correctly maintaining agroforestry plots by end April 2024.</p>	<p>On target. Across the sites we have a total of 98 households still participating actively in agroforestry by end YR3 (Section 3.2, Annexes 4.9 & 4.23) with 48.6% of participants being female (evidence submitted in YR2 report). We will continue to support these households to maintain and develop their agroforestry plots over the final 6 months of the project. We are confident that this output indicator success will continue to hold true until end April 2024.</p>	<p>A full review of participating households' progress will be carried out in the final evaluation in the upcoming period.</p>
<p>Output indicator 2.4</p> <p>By YR 2 at least 75 households have planted early successional crops within their trial plot and by YR3 these are enriched with a diverse selection of woody plants including trees that will contribute to the household's own fuelwood and timber needs by end April 2024.</p>	<p>Achieved. 98 households have established working agroforestry plots of a minimum of 1 ha. These plots comprise trees for fuelwood and timber needs, fruit and/or spice trees (according to each participating household's preference), yams and annual market-garden crops (Section 3.2, Annexes 4.2, 4.3, 4.4, 4.9 & 4.18).</p>	<p>A full review of participating households' planting progress will be carried out in the final evaluation in the upcoming period.</p>
<p>Output indicator 2.5</p> <p>By end Dec 2023 collaboration between participating farmers at each site enables them to access regional markets for at least one product produced from their plots with 10% improved income per unit area compared to baseline median annual income.</p>	<p>Not yet achieved. Due to issues with the newly-established cooperatives being unable to successfully agree a set price for their clove harvests with the exporter (see Section 8), the cooperatives have not yet been able to capitalise on their increased bargaining power.</p>	<p>We will review actual income from the clove harvest versus baseline for YR 3 as part of the final evaluation and interview cooperative members to gauge whether they felt that being in the cooperative has provided them with any tangible financial benefits. Further training planned to continue to build capacity in the cooperatives in YR4.</p>

Output 3. Community in host landscapes agree to conserve certain unprotected forest fragments.		
Output indicator 3.1 By Dec 2021 community in host landscapes have reflected on the value of the 1,940 ha of unprotected forest fragments, the important ecosystem services they provide and have suggested ways to protect them (ie. What they can do to protect forests).	Completed and reported in Year 1.	
Output indicator 3.2 By Dec. 2021 host communities agree to stop further clearing of the agreed 1,940 ha target conservation forest fragments for agriculture and develop rules for sustainable, non-destructive forest uses within these defined areas in return for support for agroforestry trials. Review and amendment (if needed) of any existing community association agreements for forest protection and establishment of new agreements where none exist.	Completed and reported in Year 1. Commitment reinforced by the signing of MoUs with all Betampona village associations (VOIs) and now also with Ampasina VOI LOVASOA (Section 3.2 & Annex 4.22).	
Output indicator 3.3 From July 2022 the communities will organise their own quarterly patrols of the target forest fragments in their area, following up on infractions using locally agreed procedures or local and/or regional authorities as required.	Achieved. Quarterly (or more frequent in the case of Vohibe) patrols now being carried out at all sites except for during any prologued periods of bad weather (Ambanitohaka) or illness (Ampasina) and any infractions recorded and reported to Chef Cantonnement at the regional branches of the Ministry of the Environment and Sustainable Development (DREDD (Section 3.2 & Annex 4.17).	Quarterly patrols will be ongoing during YR4. The patrol data for each site will be compiled, reviewed and summarised for the final report.
Output 4. Community engages in participatory baseline and quarterly surveys of destructive forest harvesting and natural capital (including biodiversity) in target forest fragments surrounding the main protected areas.		
Output indicator 4.1 Participative community monitoring within the target 1,940 ha forest fragments to assess natural capital, forest conversion and forest harvesting practices using measures such as i) number of destructively cut stems (i.e., not including sustainable coppicing/pollarding practices), ii) number of illegal animal traps, iii) biodiversity (in terms of key animal groups), iv) area converted to slash-and-burn farming.	Achieved. Quarterly (or more frequent in the case of Vohibe) patrols now being carried out at all sites except for during any prologued periods of bad weather (Ambanitohaka) or illness (Ampasina) and reported to Chef Cantonnement at the regional branches of the Ministry of the Environment and Sustainable Development (DREDD) (Section 3.2 & Annex 4.17).	

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
Impact: Natural capital in the landscape surrounding the Betampona and Vohibe protected areas restored thereby reducing pressure on the natural goods within these reserves. (Max 30 words)			
Outcome: (Max 30 words) A critical mass of farmers living in landscapes surrounding the two protected areas are committed to nurturing natural capital through sustainable use of remaining forest and agroforestry.	O.1 By end YR3 rates of destructive timber exploitation within target 1,940 ha forest fragments have reduced by 70% from baseline. O.2. During YR3, when project is well established, no part of the target 1,940 ha forest fragments converted to agriculture. O.3. By end of YR2 at least 75% of participating farming households at each site have developed and submitted plans to Project Coordinator to indicate how they intend to expand agroforestry on their land. O.4 By end of YR3 at least 75% of participating farmers at each site have installed a trial plot on their land.	O.1 Counts of new destructively-cut stems (ie. not including agreed coppicing or invasive species) along replicated transects within target forests compared to baseline counts, which will be carried out once household participants have been selected by end of YR1. O.2. Geo-referencing and mapping of all fragment boundaries and new areas of shifting cultivation. O.3 Sketch maps produced by participating farmers illustrating their future land-use plans with an Annexed list of preferred species for planting. O.4 Surveys completed of plots of participating households by end of YR3.	- A sufficient number of farmers are included in the project to constitute a “critical mass” with respect to influencing non-participants. To increase our impact in any given area we have chosen to target specific sites to set up “model villages” with a high proportion of households participating in the programme. Villager associations in all our proposed sites have been consulted already and have given written commitment to participate in the proposed programme. - Land use remains in the farmers’ hands and they are not disenfranchised by outsiders (such as artisanal miners, commercial mining companies, powerful people wishing to obtain land, new immigrants to area). MFG will work with local Mayors to investigate possibilities for formalising individual land rights.
Outputs: 1. A diversity of plant species attractive to local farmers are easily available for use in agroforestry trials.	1.1. Capacity built through the provision of one training workshop per target site for all personnel in local existing nurseries or ones newly established for the project in nursery management, grafting/marcottage, care protocols for newly introduced species and business planning by June 2022.	1.1. Records of training workshops held, participants attending and subjects covered.	- Nurseries not seriously impacted by cyclones. MFG and MBG each have over two decades’ experience in tree nursery design and cyclone proofing measures in the Eastern cyclone belt of Madagascar so will implement this knowledge in the design of any new nurseries and improvements on existing nurseries. Easily replaceable local

	<p>1.2 At least 12,000 good quality young plants (including at least two new fruit cultivars) with height > 25cm (ideal planting height) of pre-selected species available in total between all the project nurseries by July 2023.</p> <p>1.3 At least 12,000 trees produced by nurseries distributed to local landowners for planting in agroforestry plots by Nov 2023 to reinforce trees distributed by FVEE.</p>	<p>1.2 Annual nursery inventories at each site, seed germination %, successful grafted seedlings %, successful air-layers %, survival to 25cm height %.</p> <p>1.3 annual inventories of trees distributed, and number of landowners supplied.</p>	<p>materials will be used for construction to allow easy repair and replacement of damaged materials.</p> <ul style="list-style-type: none"> - Nursery workers are able to carry out successful grafting/marcottage. The training and planned follow-up by FVEE staff will ensure success in this respect. - Permits can be secured for seed collection in forest fragments. MFG has a 14-year record of gaining permits to collect seed in forest fragments around Betampona from the regional branch of the Ministry of the Environment and Sustainable Development and we do not foresee any issues in this respect. Likewise MBG has similar agreements for the Vohibe Forest. - The COVID-19 pandemic and any resulting work and travel restrictions will not interrupt the project's progress overly. Although local or national restrictions could certainly interfere with plans for specialised training from Dr den Biggelaar and FVEE, our project managers at each site have sufficient personal experience in agronomy and grafting techniques to carry out basic training themselves if needs be. By targeting in-country expertise, we are not reliant on international borders being open to ensure the completion of this project. Dr den Biggelaar has worked remotely providing advice and coaching to MFG's proposed project coordinator for Betampona for many
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			years in addition to his in-person site visits. MFG has a formal COVID-19 sanitary protocol that all staff are obliged to respect to reduce the risks of inadvertent spread of the disease.
<p>2. Farmers living in the landscape surrounding the two protected areas are aware of the opportunities presented by agroforestry to meet their tree product and food production needs and some are skilled, effective and convinced practitioners (target 50% female participation).</p>	<p>2.1 By the end of July 2022, all extension workers and community animators will have been given formal training through workshops to facilitate and inform their role.</p> <p>2.2 By the end of 2022, at least 100 farming households of diverse demographics across the target sites understand the principles of agroforestry and best practice for design, installation and management.</p> <p>2.3. At least 75 farming households across the target sites have installed and are correctly maintaining agroforestry plots by end April 2024.</p> <p>2.4 By YR 2 at least 75 households have planted early successional crops within their trial plot and by YR3 these are enriched with a diverse selection of woody plants including trees that will contribute to the household's own fuelwood and timber needs by end April 2024.</p> <p>2.5 By end Dec 2023 collaboration between participating farmers at each</p>	<p>2.1 Records of training workshops held, participants attending and subjects covered (sex-disaggregated data to be collected).</p> <p>2.2. Oral and/or hands-on test of understanding at the end of each training event (most farmers will be illiterate). Evaluation of both sexes' reactions and uptake to be recorded separately.</p> <p>2.3. Site visits and interviews with participants at each site including those that installed and maintained projects until end of April 2024, as well as trained participants that did not set up or continue with their plots (sex-disaggregated data to be collected).</p> <p>2.4. Survey of planted and nurtured trees and crops that will contribute towards food and/or household income needs in each active agroforestry plot by end of YR3 (sex-disaggregated data to be collected).</p> <p>2.5 Surveys to describe value chains for first harvests including quantification of</p>	<p>- Farmers are sufficiently trusting and open-minded to trial new approaches. Our past reforestation and extension activities in these areas have proven that at least some individuals are open to trialling new methods and varieties. By having already first consulted with the farmers about their planting preferences we are confident that the chosen species for inclusion in the project are of interest to farmers in these specific target areas.</p> <p>- Farmers have areas of land under their management that are suitable for agroforestry. Preliminary studies by MFG and MBG have already established this to be the case in both target areas.</p> <p>-The COVID-19 pandemic and any resulting work and travel restrictions will not adversely affect the project. If necessary, we can adapt the training approach to avoid the need for large workshops and instead focus on one to one and small group training respecting all locally-imposed restrictions on travel and group size. By targeting the hire of local staff for the most part we avoid the need for much long-distance travel. MFG has a formal COVID-19 sanitary protocol that all staff are obliged to</p>

	site enables them to access regional markets for at least one product produced from their plots with 10% improved income per unit area compared to baseline median annual income.	proxy values of all produce (using average market prices in the area over the year), whether sold or consumed at home (sex-disaggregated data to be collected).	respect to reduce the risks of inadvertent spread of the disease.
3. Community in host landscapes agree to conserve certain unprotected forest fragments.	<p>3.1. By Dec 2021 community in host landscapes have reflected on the value of the 1,940 ha of unprotected forest fragments, the important ecosystem services they provide and have suggested ways to protect them (ie. What they can do to protect forests).</p> <p>3.2 By Dec. 2021 host communities agree to stop further clearing of the agreed 1,940 ha target conservation forest fragments for agriculture and develop rules for sustainable, non-destructive forest uses within these defined areas in return for support for agroforestry trials. Review and amendment (if needed) of any existing community association agreements for forest protection and establishment of new agreements where none exist.</p> <p>3.3 From July 2022 the communities will organise their own quarterly patrols of the target forest fragments in their area, following up on infractions using</p>	<p>3.1. Register of those present at village meetings to discuss value of unprotected forest + video made by the community articulating consensus conclusions concerning the importance of the remaining forest fragments, post meeting oral quizzes to assess understanding of ecosystems services provided (sex-disaggregated records to be collected) and minutes of brainstorming sessions.</p> <p>3.2. Signed minutes of community meeting to document commitment and agreement on permitted non-destructive uses (eg. mushroom, medicine and firewood collection). Copies of community agreed forest use policies.</p> <p>3.3 Written records of each patrol kept with date, duration, participants and findings and written record of follow up</p>	<p>- On reflection, the community will decide that the forest fragments that remain in their landscape are valuable and worth conserving and that it is possible for them to do so. The target areas have been chosen because active interest has already been shown there to protect the target forest fragments through the creation of local village associations (VOI). MFG and MBG will work with these existing structures to facilitate their goals to protect remaining forest fragments.</p> <p>- Community is cohesive and inclusive without powerful factions who act contrary to majority consensus. MFG works closely with the local Mayors, the regional branch of the Ministry of the Environment and Sustainable Development and Madagascar National Parks, who will support MFG and local communities to take legal action against any persons breaking locally-agreed resource-management rules or national laws protecting the environment.</p>

	locally agreed procedures or local and/or regional authorities as required.	from the village association in the case of infractions.	
4. Community engages in participatory baseline and quarterly surveys of destructive forest harvesting and natural capital (including biodiversity) in target forest fragments surrounding the main protected areas.	4.1 Participative community monitoring within the target 1,940 ha forest fragments to assess natural capital, forest conversion and forest harvesting practices using measures such as i) number of destructively cut stems (i.e., not including sustainable coppicing/pollarding practices), ii) number of illegal animal traps, iii) biodiversity (in terms of key animal groups), iv) area converted to slash-and-burn farming.	4.1.1 Surveys of each entire target forest fragment for evidence of conversion of areas to farmland at the beginning of the project (by end July 2022) and annually for the duration of the project. 4.1.2 Quarterly participative transects (starting by July 2022) in each target forest fragment to assess forest harvesting levels (destructively-cut trees, evidence of animal traps), and vertebrate species diversity carried out by trained observers and project participants and thereafter for the duration of the project.	- Participants will be able to learn to identify different vertebrate species and learn their vernacular names. Our experience working in these areas has demonstrated that the majority of local people are familiar with locally-occurring species and know their local vernacular names. Plasticised photo ID sheets of commonly-occurring species will be made available to survey participants.
<p>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)</p> <p>1.1.1 3-day Fruit Tree Cultivation training by FVEE team at each of the 4 target training locations (Antananarina [to include Ambanitohaka participants], Analamangahazo and Ampasina at Betampona and Ampitabe by Vohibe) to introduce fruit-tree cultivation/care and nursery techniques, distribute initial fruit trees to participants, identify potential sites for fruit tree permanent orchards and nurseries and select two proactive participants for further intensive training at a later stage. To be carried out by June 2022.</p> <p>1.1.2 Production of Fruit Tree Cultivation training workshop report for each site including pre and post workshop quiz results produced within 2 months of the training workshop end.</p> <p>1.2.1 Identification and establishment of nursery staff by end December 2021.</p> <p>1.2.2 Construction of new nurseries or renovations/improvements to existing nurseries and establishment of fruit tree orchard to provide scions for grafting long-term at each of the 5 target sites by end of YR1.</p> <p>1.2.3 Provision of nurseries with supplies, commercial seeds and materials needed to begin tree production (mixtures of fruit, spice, timber, fuelwood and N-fixing species) by end of YR1.</p> <p>1.2.4 Securing seed collection permits for the target forest fragments from the Ministry of the Environment and Sustainable Development by end of YR1.</p> <p>1.2.5 Collection of seeds from forest fragments throughout YR2 (seasonally-dependent)</p> <p>1.2.6 Production of at least 12,000 trees (in total between the 5 nurseries) and associated record-keeping by July 2023</p> <p>1.2.7 Quarterly visits to each nursery Project Coordinators to follow progress, offer ongoing technical support and collect nursery records (e.g. numbers of plants, % germination rates, % survival rates etc.)</p> <p>1.3.1 Distribution of at least 12,000 produced trees to project participants by November 2023 with records kept of specific trees supplied to each participant.</p> <p>2.1.1 Extension workers and animators identified for each site by MFG and MBG Project Coordinators by December 2021. 2.1.2 Extension workers and animators trained by MFG and MBG Project Coordinators and Dr den Biggelaar by end of YR2.</p> <p>2.1.3 Reports written of each training session including list of participants, trainer, duration and subjects covered within 2 months of the end of the training session.</p>			

- 2.2.1 Initial community meetings held in each of the 5 target villages by Project Coordinators, Extension Agents and local animators by end December 2021 to explain the benefits of agroforestry, project goals and methods, commitments required of participants to pro-actively protect the target forest fragments. Terms of project participation contract collaboratively developed.
- 2.2.2 Pre/post meeting oral quizzes at each participating village to gauge understanding of the need for participative and communal protection of the target forest fragments and understanding of the ecosystem services they provide (Project Coordinators, Extension Agents and local animators will assist and record the results).
- 2.2.3 Participating households identified and contracts signed by end of YR1.
- 2.2.4 Introductory training workshop held in each of the target villages for all participants to train participants to assess land availability, quality of existing agroforestry trees, techniques for rejuvenation and maintenance of trees, plot planting planning and the value of forming co-operatives and distribution of annual crop seeds by Project Coordinators, Extension Agents, local animators and Dr den Biggelaar by end of 2022.
- 2.2.5 Reports of each introductory training session produced including pre and post workshop quiz evaluation results to gauge efficacy of the training produced within 2 months of the training workshop end.
- 2.2.6 Collection of preliminary questionnaire (baseline) data for each participating household on specific species planting choices, land availability for agroforestry, existing agroforestry trees, and household income by Extension Agents and local animators by end of 2022.
- 2.3.1 Quarterly follow-up visits of each participating household by Extension Agents and/or local animators from end of initial training workshop throughout the duration of the project (unless participants decide to withdraw from the programme)
- 2.3.2 Yam cultivation training workshops by Dr Mamy-Tiana Rajaonah, Kew to collective participants at each of the 4 target training locations (Antananarina [to include Ambanitohaka participants], Analamangahazo and Ampasina at Betampona and Ampitabe by Vohibe) and distribution of 30kg of start-up yam bulbuls by end of 2022. Training session reports for each site submitted within 2 months of the end of the session.
- 2.3.3 Value-chain, financial management, crop preservation and storage, and co-operative farming benefits training by CRS at all 4 target locations (Antananarina [to include Ambanitohaka participants], Analamangahazo and Ampasina at Betampona and Ampitabe by Vohibe) and MC Ingredients at the 3 Betampona sites by end 2022. Training session reports for each site submitted within 2 months of the end of the session.
- 2.3.4 Completion of mid-term survey for all original participants attending the introductory workshop to gauge activities undertaken as a result of the programme, trees and crops planted, crops harvested, household income changes, reasons for programme abandonment (where relevant), feedback on programme and ways to improve it by Extension Agents and local animators by end April 2024.
- 2.4.1 Completion of final survey at end of YR3 for all ongoing programme participants to gauge activities undertaken as a result of the programme, trees and crops planted, crops harvested, household income changes, reasons for programme abandonment (where relevant), feedback on programme and ways to improve it by Extension Agents and local animators.
- 2.5.1 As part of final survey, ask specific questions about membership in farmer co-operatives and subsequent impacts on income from produce sales.
- 3.1.1 Record proceedings of initial community meetings at the 4 target villages (Activity 2.2.1) by end Dec 2021.
- 3.1.2 Community meeting participants will complete oral quizzes to assess understanding of ecosystem services with results to be recorded by Project Coordinators, Extension Agents and local animators at the end of the initial community consultation (Activity 2.2.1).
- 3.2.1 During the initial community meetings review current village association (VOI) agreements for protection of remnant forest fragments outside of the official protected areas, facilitate discussion of acceptable use/activities in the fragments, and document VOI decisions and commitments.
- 3.3.1 Quarterly follow up of community-based patrols of the forest fragments by Project Coordinator, Extension Agents and local animators from July 2022, including collection of patrol data and provision of support as needed to approach local/regional authorities.
- 4.1.1 Training workshops at each site on biodiversity and forest use monitoring (Jul 2022)

- 4.1.2 Project Coordinators, Extension Agents, local animators and a selection of nominated programme participants from each target village will set up permanent transects for surveys of forest use and biodiversity in each target fragment forest by July 2022.
- 4.1.3.1 Extension agents, local animators and alternating programme participants (organised on a rota-basis by the Extension Agents and local animators) will complete baseline transect surveys by end July 2022 to assess forest use (destructive and non-destructive) and quarterly thereafter.
- 4.1.3.2 Extension agents, local animators and alternating programme participants (organised on a rota-basis by the Extension Agents and local animators) will complete baseline transect surveys by end July 2022 to assess vertebrate biodiversity and annual surveys thereafter for the duration of the project.
- 4.1.4 Project Coordinators, Extension Agents, local animators and a selection of nominated programme participants from each target village will map the present forest fragment perimeter by GPS (using the tracking function) and survey the whole fragment for clearings/signs of cultivation. The survey will be repeated annually thereafter for the duration of the project noting any news areas cleared for logging or cultivation.

Annex 3: Standard Indicators

Table 1 Project Standard Indicators

DI Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DI Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
DI-A01	1.1 Capacity built through the provision of one training workshop per target site for all personnel in local existing nurseries or ones newly established for the project in nursery management, grafting/marcottage, care protocols for newly introduced species and business planning by June 2022.	1.1 Capacity built through the provision of one training workshop per target site for all personnel in local existing nurseries or ones newly established for the project in nursery management, grafting/marcottage and care protocols for newly introduced species by June 2022.	People	Gender	9 (9M)			9 (9 M)	9 (9 M)
DI-A01	2.1 By the end of July 2022, all extension workers and community animators will have been given formal training through workshops to facilitate and inform their role.	2.1 By the end of July 2022, all extension workers and community animators will have been given formal training through workshops to facilitate and inform their role.	People	Gender	0	14 (9 M, 5 F)		14 (9 M, 5 F)	14 (9 M, 5 F)
DI-A03	3.3 From July 2022 the communities will organise their own quarterly patrols of the target forest fragments in their area, following up on infractions using locally agreed	3.3 From July 2022 the village associations will organise their own quarterly patrols of the target forest fragments in their area, following up on infractions using locally agreed	Number of organisations	Type of organisation					5 Village associations participating in quarterly patrols (except in case of prolonged bad weather or illness)

DI Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DI Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
	procedures or local and/or regional authorities as required.	procedures or local and/or regional authorities as required.							
DI-A04	2.3. At least 75 farming households across the target sites have installed and are correctly maintaining agroforestry plots by end April 2024.	2.3. Signed participants from at least 75 farming households across the target sites have installed and are correctly maintaining agroforestry plots by end April 2024.	People	Gender	?	162 (79 M, 83 F)	179 (92 M, 87 F)	194 (101M, 93 F)	194 (101 M, 93 F)
DI-A11	2.5 By end Dec 2023 collaboration between participating farmers at each site enables them to access regional markets for at least one product produced from their plots with 10% improved income per unit area compared to baseline median annual income.	2.5 By end Dec 2023 cooperatives set up between participating farmers at target sites enables them to access regional markets for at least one product produced from their plots with 10% improved income per unit area compared to baseline median annual income.	Number	Gender of owners	0	0	2	0	4 (2 cooperatives finalised so far for Ampasina and Ampitabe and 2 more in advanced stage of set-up (Analamangahazo and Antaranarina) but we haven't yet been able to achieve/demonstrate a 10% improved income

Table 2 Publications

Title	Type (e.g. journals, best practice manual, blog post, online videos, podcasts, 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)

Checklist for submission

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the correct template (checking fund, type of report (i.e. Annual or Final), and year) and deleted the blue guidance text before submission?	x
Is the report less than 10MB? If so, please email to BCF-Reports@niras.com putting the project number in the Subject line.	N/a
Is your report more than 10MB? If so, please discuss with BCF-Reports@niras.com about the best way to deliver the report, putting the project number in the Subject line.	x
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	x
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see Section 16)?	N/a
Have you involved your partners in preparation of the report and named the main contributors	x
Have you completed the Project Expenditure table fully?	x
Do not include claim forms or other communications with this report.	