

# **DIR29S2\1021**

## **Protecting Biodiversity by improving community wellbeing in Southeast Madagascar**

Until 2018, Madagascar's Manombo Rainforest was shrinking rapidly, threatening its biodiversity, including several species endemic to Madagascar alone and the people who live around it. Drivers of deforestation include substantial nutritional and economic poverty of local communities and lack of alternatives to swidden agriculture. This project will address community poverty and deforestation through agroforestry, reforestation, and testing acceptability of cricket-based nutrition and agriculture initiatives, increasing community well-being and reducing the need to degrade Madagascar's biodiversity for resources.

# DIR29S2\1021

Protecting Biodiversity by improving community wellbeing in Southeast Madagascar

## Section 1 - Contact Details

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### PRIMARY APPLICANT DETAILS

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Name	Annalise
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Address	[REDACTED]

### CONTACT DETAILS

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Title	Dr
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### GMS ORGANISATION

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Type	Organisation
Name	Health In Harmony
Phone (Work)	[REDACTED]
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## Section 2 - Title, Ecosystems, Approaches & Summary

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### Q3. Title:

Protecting Biodiversity by improving community wellbeing in Southeast Madagascar

## What was your Stage 1 reference number? e.g. DIR28S1\1123

DIR29S1\1314

### Q4. Key Ecosystems, Approaches and Threats

Select up to 3 biomes that are of focus, up to 3 conservation actions that characterise your approach, and up to 3 threats to biodiversity you intend to address, from dropdown lists.

#### Biome 1

Tropical-subtropical forests

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#### Biome 2

No Response

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#### Biome 3

No Response

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#### Conservation Action 1

Land/water management (area, invasive control, restoration)

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#### Conservation Action 2

Livelihood, economic & other incentives (incl. conservation payments)

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#### Conservation Action 3

Education & awareness (incl. training)

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#### Threat 1

Climate change & severe weather

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#### Threat 2

Biological resource use (hunting, gathering, logging, fishing)

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#### Threat 3

Natural system modifications (fires, dams)

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### Q5. Summary of project

Please provide a brief summary of your project: the problem/need it is trying to address, its aims, and the key activities you plan on undertaking. Please note that if you are successful, this wording may be used by Defra in communications e.g. as a short description of the project on the website.

Please write this summary for a non-technical audience.

Until 2018, Madagascar's Manombo Rainforest was shrinking rapidly, threatening its biodiversity, including several species endemic to Madagascar alone and the people who live around it. Drivers of deforestation

include substantial nutritional and economic poverty of local communities and lack of alternatives to swidden agriculture. This project will address community poverty and deforestation through agroforestry, reforestation, and testing acceptability of cricket-based nutrition and agriculture initiatives, increasing community well-being and reducing the need to degrade Madagascar's biodiversity for resources.

### Section 3 - Title, Dates & Budget Summary

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#### Q6. Country(ies)

Which eligible host country(ies) will your project be working in? Where there are more than 4 countries that your project will be working in, please add more boxes using the selection option below.

<b>Country 1</b>	Madagascar	<b>Country 2</b>	No Response
<b>Country 3</b>	No Response	<b>Country 4</b>	No Response

Do you require more fields?

No

#### Q7. Project dates

<b>Start date:</b>	<b>End date:</b>	<b>Duration (e.g. 2 years, 3 months):</b>
01 April 2023	31 March 2025	2 years

#### Q8. Budget summary

Year:	2023/24	2024/25	2025/26	2026/27	Total request
<b>Amount:</b>	£276,889.50	£216,127.90	£0.00	£0.00	<b>£</b> 493,017.40

Q9. Proportion of Darwin Initiative budget expected to be expended in eligible countries: %



Q10a. Do you have matched funding arrangements?

Yes

What matched funding arrangements are proposed?

Matched funding from this project includes £ [redacted] from Madagascar Biodiversity Center (MBC). Their funding will support the cricket frass and fertilizer research conducted by HIH and communities, as well as

development of cricket farms. Other matched funding supporting project activities includes individual donations and foundation grants from IUCN, The Grantham Foundation, Disney Conservation Fund, Kiphart Centre, and Zoo New England.

Q10b. Total confirmed & unconfirmed matched funding (£)

£ [REDACTED]

Q10c. If you have a significant amount of unconfirmed matched funding, please clarify how will you fund the project if you don't manage to secure this?

We do not have any unconfirmed match funding.

## Section 4 - Problem statement

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### Q11. Problem the project is trying to address

**Please describe the problem your project is trying to address in terms of biodiversity and its relationship with poverty. What is the need, challenge or opportunity?**

**For example, what are the drivers of biodiversity loss that the project will attempt to address? Why are they relevant, for whom? How did you identify these problems? Please cite any evidence you are using to support your assessment of the problem (references can be listed in a separate attached PDF document).**

Building on Darwin Partnership Project collaborations, this project addresses systemic poverty and lack of livelihood opportunities threatening communities and biodiversity in Southeastern Madagascar's Manombo Rainforest region. Madagascar is a global biodiversity hotspot and conservation priority. Covering only 0.5% of earth's land, it contains 5% of earth's species, and 80% of its species live nowhere else.(1) 85% of Madagascar's plants, 90% of mammals and reptiles, and all lemurs, the island's iconic primate, are endemic.(2)

Despite legal protected status, Manombo Rainforest has shrunk rapidly. The drivers of biodiversity loss are clear: swidden agriculture and resultant wildfires, rooted in nutritional and economic poverty of communities in the region. Of the people living around the Manombo Rainforest, 40% are food stressed, 76% struggle to afford healthcare, and 92% have no access to safe drinking water.(3) In 2022, Health In Harmony (HIH) initiated screening of children between the ages of 6 months and 5 years; this showed that 17% were malnourished, with 6% severely malnourished, numbers generally considered emergency thresholds.(4) Climate change compounds these stresses with extended droughts, unpredictable growing seasons, and climate shocks like Cyclones Batsirai and Emnati. Without food and economic security, climate-stressed people are forced to degrade rainforests to survive.

The Indigenous communities here appreciate and value the importance of the forest for their health and livelihoods. According to HIH's 2019 baseline survey, 94% of households around Manombo believe the rainforest should be protected for future generations.(5) 91% of lands managed by Indigenous and local communities globally are in good or moderate condition, demonstrating that their custodianship is good for biodiversity conservation.(6) Developed over hundreds of years, community members have an understanding of how to live in balance with this landscape by sustainably harvesting and nourishing the intact rainforest. These communities are a powerful barrier, protecting the rainforest from outside loggers and poachers who would deforest the land and push critically endangered wildlife toward extinction. Yet, poverty forces community members to degrade the rainforest and allow access to outsiders in order to

secure basic income, food, and healthcare.

HIH believes that rainforest communities are the experts that know precisely what they need to live in balance with the rainforests they steward. Using an innovative methodology called Radical Listening, HIH identifies and supports community-designed solutions. Around Manombo, communities identified a need for regenerative agriculture and agroforestry training, to introduce additional sources of income and food to increase resilience to climate change, reforestation to protect forest biodiversity, and access to healthcare.

This project will decrease poverty and protect biodiversity by strengthening food security, providing alternative livelihoods, restoring the rainforest, and increasing climate resilience. Activities include training 2,000 community members in climate-resilient agroforestry, reforestation of critical lemur habitat, and the introduction and testing of cricket farming for cricket-based soil fertilizer and nutritional formulations, new initiatives to address nutritional and economic poverty and community resilience. These activities directly address poverty and community capacity for reforestation and economic return, while decreasing degradation of critical wildlife habitat.

## Section 5 - Darwin Objectives and Conventions

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### Q12. Biodiversity Conventions, Treaties and Agreements

**Q12a. Your project must support the commitments of one or more of the agreements listed below.**

**Please indicate which agreement(s) will be supported and describe which objectives your project will address.**

- Convention on Biological Diversity (CBD)
- United Nations Framework Convention on Climate Change (UNFCCC)
- Global Goals for Sustainable Development (SDGs)

### Q12b. National and International Policy Alignment

**Using evidence where available, please detail how your project will contribute to national policy (including NBSAPs, NDCs, NAP etc.) and in turn international biodiversity and development conventions, treaties and agreements that the country is a signatory of.**

CBD: The project protects lowland rainforest and one of Madagascar's last remaining pandanus swamps. It provides habitat for the aye-aye, Jolly's mouse lemur, southern bamboo lemur, Manombo woolly lemur, greater dwarf lemur, and brown mouse lemur—all endemic to Madagascar and threatened with extinction—plus the critically endangered black-and-white ruffed, gray-headed brown, and Manombo sportive lemurs, and the endemic Malagasy poison frog. The IUCN warned that Manombo Rainforest's biodiversity is in danger of extinction if alternative livelihoods are not made available to the people who live here.(7)

UNFCCC: This project will protect thousands of tonnes of carbon stored in the trees, swamps, and soils of Manombo Rainforest by avoiding slash-and-burn agriculture techniques. Tropical forests represent 23% of the solution to keep warming below 1.5°C.(8) Research completed by Woodwell Climate Research Center in collaboration with Health In Harmony revealed an above-ground carbon stock of 1,051,119 tonnes in 2020.(9) This represents over a million tonnes of carbon stored in the Manombo Rainforest rather than

escaping into the atmosphere and adding to existing greenhouse gasses. The research additionally reveals a trend of rapid deforestation between 2003-2017 and a following stabilization and the beginning of regeneration from 2018-2020.(10) This stabilization correlates with the implementation of HIH programs, which have been proven to be an effective means of reducing deforestation according to a study by Jones et. al. conducted at an HIH site in Borneo.(11) In Madagascar, reforestation and agroforestry on heavily-degraded land will continue to sequester more carbon over the coming decades as trees mature.

SDGs: The solutions in this project address multidimensional poverty by recognizing that ecosystem and human wellness are inextricably linked. Regenerative agriculture training and cricket powder nutritional programs support Goal 2 (Zero Hunger) by improving food security. Agroforestry and cricket farming and fertilizer programs support Goal 1 (No Poverty), Goal 8 (Decent Work and Economic Growth), Goal 5 (Gender Equality) by providing sustainable income opportunities and prioritizing women-led enterprises. Together, these programs are powerful actions for Goal 13 (Climate Action) and Goal 15 (Life on Land) by addressing the drivers of deforestation, preventing multiple extinctions of endemic biodiversity, avoiding the carbon emissions from rainforest burning, and sequestering carbon through reforestation.

## Section 6 - Method, Change Expected, Gender & Exit Strategy

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### Q13. Methodology

**Describe the methods and approach you will use to achieve your intended Outcome and contribute towards your Impact. Provide information on:**

- how you have reflected on and incorporated **evidence and lessons learnt** from past and present similar activities and projects in the design of this project.
- the specific approach you are using, supported by **evidence that it will be effective, and justifying why you expect it will be successful** in this context.
- how you will undertake the work (activities, materials and methods)
- what will be the **main activities** and where will these take place.
- how you will manage the work (governance, roles and responsibilities, project management tools, risks etc.).

Through the 2021 Darwin Partnership Project and supporting reforestation and agroforestry in the Manombo Rainforest region since 2019, HIH has reflected on the need for innovative and climate resilient reforestation and agroforestry strategies. This reflection, alongside collaborative conversations with partners like Madagascar Biodiversity Center (MBC) through the Darwin Partnership Project, has influenced this proposal's implementation research and testing of cricket-based fertilizer for reforestation and agriculture and nutrition initiatives in this project. Conversations with partners like Missouri Botanical Garden (MBG) and MBC also taught lessons around reforestation, including species choice for planting and planting methods that will be implemented during this project to ensure higher climate resiliency. Detailed monitoring will also play a significant role in the cricket fertilizer and nutrition trials, supported by protocols created with MBG, MBC, and a Malagasy PhD student.

Ultimately, iterative Radical Listening with Manombo communities is our primary source of reflection. The Radical Listening methodology is a community-design-based approach, prioritizing community expertise on living in balance with the forest and then investing precisely in their solutions. Radical Listening sessions invite community members to convene, determine these needs, design the solutions, and provide iterative feedback through consensus-based, participatory community sessions throughout program implementation.(12) To ensure problems and solutions support the entire community, Radical Listening is

a flexible process that places a strong emphasis on equal gender and age inclusion and can be adapted for each unique community to ensure equal representation.(13) Conservation interventions often fail when community-designed solutions are not at the forefront. Through Radical Listening, Health In Harmony programs are designed by community members who are the experts in designing integrated systems-based solutions to address climate change.(14)

Communities will co-lead every aspect of this project, with roles including livelihood managers, research initiative consultants, forest guardians, and managing of cricket farms created in this project. The Forest Guardian program employs 16 community members to monitor and protect Manombo Rainforest. Forest Guardians facilitate communication between HIH and 31 partner communities, monitor reforestation sites, and engage and train their respective communities on rainforest and biodiversity protection.

This project will protect Manombo Rainforest by helping vulnerable communities overcome poverty without having to destroy their ecosystem. Project activities will introduce and test innovative solutions to address nutritional and economic poverty and protect critical biodiversity.

1. Reforest 30 hectares of Manombo Rainforest over two years, using Assisted Natural Regeneration (ANR) and conventional planting techniques.

2. Convert 10 hectares of land to agroforestry plots, training 2,000 community members in agroforestry management for improved returns and increased community engagement in agroforestry.

3. Implement strengthened reforestation and agroforestry strategies using best practices developed with MBC, Centre ValBio, Ambatovy, and others in a 2021 Darwin Partnership Project.

4. Translational research on impact of cricket frass soil fertilizer (CFF) and cricket powder nutritional formulations on agricultural and nutritional indicators, partnering with Madagascar Biodiversity Center (MBC) for technical advice and Manombo community members for co-implementation.

- Year One: Begin CFF trial, monitoring improvements on agriculture, agroforestry, and reforestation return for 12 species of plants in community plots compared to plots using conventional and chemical fertilizers. Insect excrement, or frass, provides multiple benefits, enhancing soil quality, strengthening plants' pest resistance, and potentially increasing crop yield and profit, thus improving human wellbeing. This project will trial cricket frass fertilization, engaging local communities in research implementation and monitoring.

- Year One: Qualitative research assessing acceptability and utilization of three cricket powder nutritional supplement formulations (powder, porridge, cracker) with seven communities, evaluating for optimal ingestion, nutrition, and marketability based on community feedback. Cheap and climate-friendly to produce and high in vitamins, fat, and protein, cricket-supplemented food mixtures present opportunities to address nutritional poverty and provide alternatives to hunting in the rainforest. This research will provide Manombo communities the opportunity to choose formulations that are both nutritionally sound and accepted by community members of all ages, addressing the widest range of nutritional poverty.

- Year Two: Construct cricket farms in seven village communities for ongoing production of CFF and powder, managed by trained community members (goal of 70% women leadership), creating a foundation for scaling to 31 communities around Manombo Rainforest after the project period. This initiative will grow community capacity, increase opportunities for female leadership in livelihood opportunities, and set up to scale nutrition, reforestation, and agroforestry initiatives beyond the grant period.

By supporting continued reforestation of Manombo Rainforest and researching new initiatives to improve agroforestry, food security, and livelihoods prioritizing women, project activities will simultaneously address community poverty and food insecurity and reduce threats to the region's climate-critical biodiversity.

## **Q14. Capability and Capacity**

**How will you support the strengthening of capability and capacity in the project countries at**



**organisational or individual levels, please provide details of what form this will take, who will benefit, and the post-project value to the country.**

This project invests in both physical and knowledge-sharing capacity. At the individual level, Health In Harmony invests in local community members' ability to learn skills to combat poverty and poor nutrition and to share knowledge with other community members and with other communities. Building connections through this project will enable communities to collaborate on issues like poverty and biodiversity protection beyond the project period.

Furthermore, this project strengthens local community awareness of other NGOs working in the area. Knowledge-sharing between other NGOs and local communities allows communities to access resources and additional partners that can provide further investment and support. Similarly, the NGO-community relationships developed through this project will also create feedback loops so that work done by other NGOs will take community needs, preferences, and ideas into account. For example, Manombo village kings visited the MBC cricket farms to understand the process and technology. The kings provided critical information on how cricket powder as a nutritional supplement can best be distributed to the communities.

At an organizational level, this project deepens HIH's investment in our local Malagasy staff, 100% of which are native to Madagascar. HIH invests in staff capacity to manage and implement community-centered programming. Additionally, Health In Harmony intends to support project activities after the end of this project period. Relationships developed throughout this project will build the capacity of local HIH staff to implement community-supported programs like agroforestry, reforestation, and alternative fertilizer development. Through this project, HIH strives to deepen collaboration with community members and partners like MBC, MBG, and CRS.

Nationally, HIH programming will continue to serve as a model that is replicable and can be scaled throughout Madagascar. Health In Harmony will serve as a connector and source of knowledge to anyone who wishes to implement similar projects in Madagascar.

## **Q15. Gender equality**

**All applicants must consider whether and how their project will contribute to reducing inequality between persons of different gender. Explain how your understanding of gender equality within the context your project, and how is it reflected in your plans. Please summarise how your project will contribute to reducing gender inequality. Applicants should, at a minimum, ensure proposals will not increase inequality and are encouraged to design interventions that proactively contribute to increased gender equality.**

Equality, particularly in terms of gender, is built into the HIH approach through multiple facets. 100% of HIH in-country staff are nationals of Madagascar, and health and livelihoods approaches have a significant focus on female ownership and direction.

HIH conducted a baseline survey in 2019 around Manombo Rainforest, which found that the multidimensional poverty experienced disproportionately affects women. 40% of women have completed primary school and 9% have completed secondary school, limiting their independence. Only 15% of women report access to contraception, and women risk serious birth complications when they cannot access midwifery or obstetric care. High childhood malnutrition rates around Manombo Rainforest add additional burden to women.(15)

This gender disparity is why HIH invests in solutions designed by community members through Radical

Listening. Diverse representation and gender equity is central to this methodology and the process ensures that women have equal opportunity to speak. If an individual or demographic does not participate actively, break-out groups are utilized to elicit input directly from those members not comfortable speaking in a larger group setting. HIH also prioritizes training and deploying female Radical Listeners, as we have found that men continue to voice their ideas and women are more likely to attend and voice their ideas to female Radical Listeners. This process results in an equitable power structure in which the designers of programs are those from the most marginalized groups.

This grant will further expand female ownership of livelihoods, as women will be target participants in agroforestry training (target: 60% of participants are women) and management of cricket farms. With the goals of increasing income, reducing community malnutrition rates, and exploring the possibility of using the cricket powder for livelihoods in the longer term, this women-focused model could be replicated across similar local and national level contexts if successful.

## **Q16. Awareness and understanding**

**How will you raise awareness and understanding of biodiversity-poverty issues in your stakeholders, including who your stakeholders are, what approaches/formats/products will you use, how you will ensure open and free access to all data, and how will you know that the messages are understood?**

The primary stakeholders in this project are the Malagasy communities that co-design solutions to dwindling forest biodiversity and intense nutritional poverty. As the people directly experiencing the devastating impacts of these issues, the 31 Malagasy communities included in this project understand these problems best. To share ideas and programmatic information with communities, HIH uses audiovisual information sharing and in-person knowledge sharing. These methods are intentionally inclusive to all community members, regardless of literacy. HIH will know that communities understand messages when they engage in the program development process, share ideas for addressing key issues, and participate in solution-oriented programs like reforestation, agroforestry, and development of cricket-based farms and products.

Secondary stakeholders include project partners like Madagascar Biodiversity Center, Missouri Botanical Gardens, and Catholic Relief Services, which each bring unique expertise on biodiversity-poverty issues. HIH will keep these partners briefed on project implementation and development through active collaboration and written briefs. These partners are also implementing projects in the region, so HIH will know messages are understood through continued collaboration and knowledge sharing. Based on information gained through knowledge sharing, each organization, including HIH, will adjust their projects to best suit community needs and ensure success.

Final project stakeholders include the national and international communities working to address loss of biodiversity and nutritional poverty. All findings from this project will be available online for this wider community. Upon request, HIH will provide further insight into issues identified and solutions implemented. Additionally, HIH's cricket farms and project implementation site can be used as a model for other NGOs interested in taking on cricket farming in Madagascar.

## **Q17. Change expected**

**Detail the expected changes to both biodiversity and poverty reduction, and links between them, this work will deliver. You should identify what will change and who will benefit a) in the short-term (i.e. during the life of the project) and b) in the long-term (after the project has ended) and the potential to scale the approach.**

**When talking about how people will benefit, please remember to give details of who will benefit, differences in benefits by gender or other layers of diversity within stakeholders, and the number of beneficiaries expected. The number of communities is insufficient detail – number of households should be the largest unit used.**

The ultimate impact of this project will be creating economic and nutritional poverty reduction opportunities for 1,512 Antaisaka, Antaifasy and Betsileo households living in 31 communities around Manombo Rainforest. The project will also protect 5,800 hectares of biodiversity that remain of the rainforest's original 15,000 hectares.

Short-term: Immediately, this project will employ lessons learned through 2021's Darwin Partnership Protocol by applying improved agroforestry and reforestation techniques and enhanced monitoring and evaluation, topics discussed during the workshops. In the short-term, increasing food security will enhance community capacity to expand existing programs for agroforestry and reforestation through refined protocols and training. At least 60% of project participants are expected to be women, who will benefit from both increased food security and more livelihood opportunities and continue increasing gender equality in the region. As community members paid to monitor and protect the forest, Forest Guardians will experience similar benefits of increased food security and livelihood opportunities. The project will also introduce and test new, community-led initiatives to combat nutritional poverty and increase economic opportunities through cricket frass fertilizer and cricket farming programs, initiatives which are innovative and women-led and have potential for immediate short-term impacts on food security and driving down biodiversity harm through hunting.

Long-term: Research completed by Woodwell Climate Research Center reveals a trend of rapid deforestation between 2003-2017 and a following stabilization and the beginning of regeneration from 2018-2020.(16) This stabilization correlates with the implementation of HIH programs which had been proven to be an effective means of reducing deforestation according to a study by Jones et. al. conducted at an HIH site in Borneo.(17) Long term, reforestation and agroforestry on heavily-degraded land will continue to sequester more carbon over the coming decades as trees mature, mitigating climate change and subsequent impacts as well as provide critical habitat for threatened wildlife species having positive impacts on biodiversity. If successful, the introduction and testing of cheap and climate-friendly cricket-based fertilizer and nutritional formulation methods will increase community capacity for livelihoods, food production, crop return, and resilience to periods of drought and climate shocks.

Scale: This initiative will grow community capacity, increase opportunities for female leadership in livelihood opportunities, and set up to scale nutrition, reforestation, and agroforestry initiatives beyond the grant period. The creation and management of cricket farms will eventually be replicated across all 31 communities (1,512 households) in the Manombo Rainforest region, creating livelihood opportunities and contributing to long-term food security and biodiversity protection opportunities by offering further alternatives to slash-and-burn agriculture and hunting.

## **Q18. Pathway to change**

**Please outline your project's expected pathway to change. This should be an overview of the overall project logic and outline why and how you expect your Outputs to contribute towards your overall Outcome and, longer term, your expected Impact.**

Following the expertise of rainforest communities, our theory of change recognizes that rainforest and human well-being are intertwined, meaning outputs protecting biodiversity in Manombo Rainforest must also address poverty and malnutrition affecting the health of communities and driving deforestation.

The theory of change for this project is that IF we support reforestation of key buffer zones for lemur habitat, IF more community members are trained in and begin implementing agroforestry, and IF we partner with communities to test and launch cost-effective and climate-friendly improvements to food security and soil quality, THEN nutritional and economic poverty will improve and capacity for biodiversity protection, specifically of endemic lemur species, will increase.

By supporting the above community-designed and -led activities, this project also builds trust and potential for successful introduction of the activities across other regions and countries for long-term scale. These activities and outputs drive the project's impact - protecting 5,800 hectares of lemur habitat in Manombo Rainforest from degradation and improving poverty indicators for 1,512 households through implementation of livelihood opportunities, reforestation, and food security for surrounding communities.

## **Q19. Exit Strategy**

**How will the project reach a sustainable point and continue to deliver benefits post-funding?**

**How could post-project scaling of the approach (if proven) be delivered: through new finance or through uptake by stakeholders or other mechanisms? Are there any barriers to scaling and how will these be addressed?**

**How will the required knowledge and skills remain available to sustain the benefits?**

HIH is committed to financing and implementing programming in Madagascar on an ongoing basis. Fundraising efforts are continuous and primarily focus on grants and donations. HIH agroforestry and reforestation programs will continue after the close of the Darwin project as they are central to restoring the Manombo Rainforest. We hope that the cricket farms developed through this project will be self-sustainable; until that point, HIH is committed to supporting the communities in developing the farms.


Programming in Madagascar is a replication of Health In Harmony's proof-of-concept site in Indonesia, which began in 2007. As HIH continues to observe success of the programs supported under the Darwin Initiative proposal, we will use this strategy to expand our reach. There are several avenues for expansion - uptake of programming by partners or new or increased financial support of HIH to allow for expansion.


HIH is poised to scale our model and catalyze climate solutions globally. In 2024, HIH Madagascar will grow to include neighboring villages. We have already identified 15 villages as potential partners within the intervention site that are known to degrade the Manombo Rainforest. Externally, HIH also works with partners like Médecins Sans Frontières to implement Radical Listening as part of their work. HIH also serves as a model for interventions in other protected areas in Madagascar.

Barriers to scale include funding and climate shocks. While the model is replicable, to scale properly will require significant financial investment. HIH is working to generate investment in programmatic scale, but funding remains a barrier to successful scaling. Cyclones, heavy rains, flooding, and intense drought are costly should they impact agroforestry sites, agricultural fields, cricket farms, and other program activities. In recent years the southeastern region of Madagascar has experienced both droughts and flooding and HIH anticipates these climate-induced effects to continue.


**If necessary, please provide supporting documentation e.g. maps, diagrams, references etc., as a PDF using the File Upload below:**

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 [1314 - References](#)


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 [1314 - Maps](#)

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## Section 7 - Risk Management

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### Q20. Risk Management

Please outline the 6 key risks to achievement of your Project Outcome and how these risks will be managed and mitigated, referring to the [Risk Guidance](#). This should include at least one Fiduciary, one Safeguarding, and one Delivery Chain Risk.

Projects should also draft their initial risk register using the [Risk Assessment template](#) provided, and be prepared to submit this when requested if they are recommended for funding. Do not attach this to your application.

Risk Description	Impact	Prob.	Gross Risk	Mitigation Header	Residual Risk
<b>Fiduciary</b> Inflation causes changes to costs on purchases needed to complete activities (equipment, fuel, etc.)	Moderate	Likely	Major	Mitigated by cost-sharing expenses whenever possible across funded programs. Mitigated by collaboration with partners to share equipment.	Moderate
<b>Safeguarding</b> Project partners and consultants break codes of conduct and ignore principles of safeguarding during training, field work, and when collaborating with local communities.	Moderate	Rare	Minor	Mitigated by working with reputable organizations with established trust from local communities who will participate in the project. Mitigated by ensuring all partners and consultants sign an agreement to adhere to Health In Harmony's Safeguarding Policies and Codes of Conduct.	Minor

<b>Delivery Chain</b>	Extreme weather events like cyclones, heavy rains, and flooding affecting project progress.	Major	Likely	Major	Mitigated by planning activities carefully in an appropriate timeframe to avoid seasons of highest-risk for cyclones or other extreme weather events.	Major
					Mitigated by employing proactive emergency response protocols developed by Health In Harmony.	
<b>Risk 4</b>	Periods of drought in the southeastern region of Madagascar (where Manombo is located) have grown notably longer in recent years and may impact the availability of seeds, seedling survival rate, quality of the soil, and other indicators of success for agroforestry and agroforestry programs.	Moderate	Possible	Major	Mitigated by constructing climate-resilient seedling nurseries close to reforestation and agroforestry plots, encouraging more seedling growth before planting.	Moderate
					Mitigated by employing updated agroforestry and reforestation protocols developed during Darwin Partnership Project.	
					Mitigated by conducting thorough monitoring and enrichment planting of reforestation and agroforestry sites every six months.	
<b>Risk 5</b>	One or more partners become unable to support the project, putting applicable Outputs at risk of not being fulfilled.	Major	Rare	Moderate	Mitigated by working with reputable organizations with established relationships with Health In Harmony for project implementation.	Minor
					Mitigated by signing an agreement with partners requesting a timely exit strategy if unable to support project, including a notice of two or more months to prepare for output reassessment.	

<b>Risk 6</b>	Cricket frass is not proven acceptable to Manombo-based communities during Year One research trial.	Major	Unlikely	Major	Mitigated through involving village leadership in the process of acceptability and gaining approval of village kings before beginning.	Three formulation trials increases likelihood of finding acceptability.	Moderate	Radical Listening will proactively address acceptability issues before risk is too high to mitigate.
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## Section 8 - Implementation Timetable


### Q21. Provide a project implementation timetable that shows the key milestones in project activities


Provide a project implementation timetable that shows the key milestones in project activities. Complete the Word template as appropriate to describe the intended workplan for your project.


[Implementation Timetable Template](#)

Please add/remove columns to reflect the length of your project. For each activity (add/remove rows as appropriate) indicate the number of months it will last, and fill/shade only the quarters in which an activity will be carried out. The workplan can span multiple pages if necessary.

 [1314 - Implementation Timetable](#)

 09/12/2022

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## Section 9 - Monitoring and Evaluation

### Q22. Monitoring and evaluation (M&E)

Describe how the progress of the project will be monitored and evaluated, making reference to who is responsible for the project's M&E.

Darwin Initiative projects are expected to be adaptive and you should detail how the monitoring and evaluation will feed into the delivery of the project including its management. M&E is expected to be built into the project and not an 'add' on. It is as important to measure for negative impacts as it is for positive impact. Additionally, please indicate an approximate budget and level of effort (person

**days) to be spent on M&E (see [Finance Guidance](#)).**

Health In Harmony’s work is rooted in scientific research and methods, ensuring that our problems and solutions are scientifically-backed and data-proven. We position our work amongst leaders in climate research, allowing their findings to inform and direct the work. For example, the Intergovernmental Panel on Climate Change issued a report in 2018 declaring that we have just 10 years to halve greenhouse gas emissions and prevent catastrophic global warming.(18) We know from research that tropical forests represent 23% of the solution to keep warming below 1.5°C.(19) HIH’s work is a direct response to the climate and nature crises and scientific evidence that rainforests are an essential part of the solution. HIH mitigates climate change through three strategies: preventing forest degradation, reforestation, and preventing fires.

Monitoring and evaluation lead HIH to a circular, iterative process of program development and implementation. We continuously conduct community-focused Radical Listening to ensure that our programs best support communities and protect the rainforest. Data and learning drawn from this project will directly inform future program development and implementation in Madagascar, including reforestation, healthcare, alternative livelihoods, and research.

Data collected by Forest Guardians at our reforestation and agroforestry sites will allow us to calculate the growth rate, survival rate, and species diversity. Additionally, agroforestry programs specifically will be monitored for crop yield. Assessments will be conducted every three months by Forest Guardians and community members they’ve trained. HIH’s Agricultural Technicians will provide training in monitoring techniques and community members who participate will be given a stipend.

HIH will make use of available satellite imagery, such as that from Google Earth and Planet Labs, to monitor landscape-scale changes in forest coverage over time. In 2020, HIH collaborated with Stanford University researchers to use remote sensing data to evaluate the impact of our planetary health programs in Borneo. (20) Similarly, we are currently working with Dr. Wayne Walker of Woodwell Climate Research Center to determine the best methods for evaluating remote-sensing data of forest coverage in and around the Manombo Rainforest. We will also measure biomass accumulation and other parameters such as soil organic matter and nutrient content, leaf litter accumulation, and soil erosion. These measurements will allow us to estimate changes in above- and below-ground carbon stocks and watershed functions.

All data collected will be made available to communities, Madagascar National Parks officials, and other governmental, non-profit, and academic entities interested in reforestation in Madagascar. Any necessary research permits will be obtained from the relevant government offices in Antananarivo with logistical assistance from MICET. We will also use data and learning from this project to improve HIH programs in Brazil and Indonesia, as well as our efforts to scale.

While the two cricket research projects will be conducted under scientific conditions, the cricket farm implementation will be monitored closely by MBC and HIH through weekly visits, expected growth and distribution thresholds, and external quality assurance from MBC identified consultants.

<b>Total project budget for M&amp;E in GBP (this may include Staff, Travel and Subsistence costs)</b>	£ [REDACTED]
<b>Percentage of total project budget set aside for M&amp;E (%)</b>	[REDACTED]
<b>Number of days planned for M&amp;E</b>	70



## Section 10 - Logical Framework

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### Q23. Logical Framework (logframe)





Darwin Initiative projects will be required to monitor and report against their progress towards their Outputs and Outcome. This section sets out the expected Outputs and Outcome of your project, how you expect to measure progress against these and how we can verify this.

- [Stage 2 Logframe Template](#)

The **logframe template** (N.B. there is a different template for Stage 1 and Stage 2) needs to be downloaded from Flexi-Grant, completed and uploaded as a PDF within your Flexi-Grant application – **please do not edit the logframe template structure (other than adding additional Outputs if needed) as this may make your application ineligible.**

#### Please upload your logframe as a PDF document.

---

 [1314 - Stage 2 BCF Logical Framework](#)  
 09/12/2022  
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 pdf 78.48 KB

#### Impact:

Improved livelihoods, reforestation, and malnutrition strategies are implemented in southeastern Madagascar; nutritional and economic poverty will improve and capacity for biodiversity protection, specifically of endemic lemur, will increase.

#### Outcome:

31 Manombo communities will reforest 30 hectares of lemur habitat, convert 10 hectares of agroforestry plots, and test cricket-based nutrition, fertilization, and farming programs, improving malnutrition, poverty, and biodiversity protection.

#### Project Outputs

---

##### Output 1:

Reforest 30 ha (36,000 seedlings) over 2 years

---

##### Output 2:

Cricket frass fertilizer (CFF) trials developed and conducted in reforestation, agroforestry, and agriculture test plots (4 species in each plot), and evaluated for potential long-term production in cricket farms in communities

---

##### Output 3:

Seven village communities evaluate and identify the most acceptable formulation cricket powder based nutritional supplements

---

**Output 4:**

Create successful self-sustaining cricket farms in 7 village communities

---

**Output 5:**

Implementation of 10 ha of agroforestry on community land, training 2,000 community members in agroforestry techniques

---

**Do you require more Output fields?**

**It is advised to have fewer than 6 Outputs since this level of detail can be provided at the Activity level.**

No

**Activities**

**Each activity is numbered according to the Output that it will contribute towards, for example, 1.1, 1.2, 1.3 are contributing to Output 1.**

- 1.1 - Prepare for planting by preparing seedlings (many collected as non-cash healthcare payments from communities), identifying and preparing plots, conducting Radical Listening with communities
- 1.2 - Maintain and build seedling nurseries to prepare and store seedlings for planting (also house agroforestry seedlings)
- 1.3 - Transport seedlings from nurseries to plots, creating holes of the proper depth and width to maximize seedling survival, and planting seedlings
- 1.4 - Reforestation staff and community members conduct photo-monitoring of seedlings once annually before planting, and conduct monitoring of planted seedling survival rate and height twice annually
- 1.5 - Forest Guardians and community members lead the construction and monitoring of firebreaks alongside reforestation staff once per month
  
- 2.1 - Identify the scientific team to develop the protocol, permissions received from local authority, stockpile fertilizers
- 2.2 - Identify and prepare the plot sites, engagement with the local community, selection of plant species
- 2.3 - Soil preparation, harmonization and tailoring pH to fertilizers, calibration of fertilizer dosage
- 2.4 - Quality analysis of measurements over time, collation of datasets into database and data cleaning
- 2.5 - Data analysis and preparation for publication, submission, dissemination
  
- 3.1 - Identify the scientific team to develop the protocol, permissions received from local authority and ethical review board
- 3.2 - Procurement of three products for identified beneficiaries in communities, sensitization of communities
- 3.3 - Conducting interviews, observations and feedback loops, codify data, identify thematic
- 3.4 - Data analysis and preparation for publication, submission, dissemination
  
- 4.1 Identify community participants in each of the seven villages
- 4.2. Construct or modify existing structures for cricket farms, distribution of cricket farming manuals
- 4.3. Hold community workshops in each village to learn farming techniques and powder processing
- 4.4 Monitor farming and production and modify SOP based on feedback from community successes.
  
- 5.1 Organize and plan quarterly trainings for 1,000 community members per year in agroforestry management protocols

- 5.2 Conservation director and team work with community to identify land and plant seedlings
- 5.3 Conduct participatory monitoring to collect community observations and refine protocol post-planting
- 5.4 Monitor crop yield every six months to ensure over 500 tons of yield by the end of Year 2
- 5.5 Agroforestry staff and trained community members monitor seedling survival rate, tree health, flowering and fruiting, and conduct enrichment plantings twice annually

## Section 11 - Budget and Funding

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### Q24. Budget

**Please complete the appropriate Excel spreadsheet, which provides the Budget for this application. Some of the questions earlier and below refer to the information in this spreadsheet. Note that all Darwin Main should be using the over £100,000 template. Please refer to the [Finance Guidance](#) for more information.**


- [Budget form for projects over £100k](#)


**Please ensure you include any co-financing figures in the Budget spreadsheet to clarify the full budget required to deliver this project.**


**N.B.: Please state all costs by financial year (1 April to 31 March) and in GBP. The Darwin Initiative cannot agree any increase in grants once awarded.**


**Please upload the Lead Partner's accounts at the certification page at the end of the application form.**

---

 [1314 - Final Budget](#)

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 xlsx 369.08 KB

### Q25. Funding

Q25a. Is this a new initiative or does it build on existing work (delivered by anyone and funded through any source)?

- Development of existing work

**Please provide details:**

HIH has 15 years' experience supporting community-led solutions addressing biodiversity protection and poverty. We have supported a 90% decrease in logging households and preservation of \$65 million worth of carbon stores using the Radical Listening methodology in Indonesia, alongside a 69% decrease in infant mortality and improvements in economic security.(21) We bring this experience and a unique, truly community-based approach to Madagascar at this critical collision of a health emergency with the climate and biodiversity crises.

This project will also build on the existing works of partners at the Madagascar Biodiversity Center,

Missouri Botanical Garden, and Catholic Relief Services. MBC has been developing cricket farming programs for over a decade in southern Madagascar, and will advise on strategies that HIH will implement with Manombo-based communities in this project. CRS is planning to launch concurrent cricket powder nutritional assessments in Farafangana, and has agreed to share lessons learned with HIH and partners. In 2021, MBC conducted acceptability assessments of different cricket powder nutritional formulations in the Vohidava-Betsimalaho region of southern Madagascar. We will build on the quantitative data from villagers in this assessment regarding taste of different nutritional formulations when introducing this work around Manombo to maximize potential acceptability.

Q25b. Are you aware of any current or future plans for similar work to the proposed project?

Yes

**Please give details explaining similarities and differences, and explaining how your work will be additional and what attempts have been/will be made to co-operate with and learn lessons from such work for mutual benefits.**

Reforestation and agroforestry techniques are being used by our partners in other areas of Madagascar and the rest of the world, but the Manombo Rainforest has been overlooked by many of these actors. Madagascar Biodiversity Center (MBC)'s cricket farming project extends beyond their partnership with Health In Harmony on the activities detailed in this grant. Missouri Botanical Garden (MBG) serves as a reforestation expert for this grant. Their reforestation efforts in Madagascar extend far beyond the consultation activities detailed in this grant. Catholic Relief Services' cricket powder nutritional assessment is an effort to integrate nutritional cricket powder into Farfangana schools separate from Health In Harmony's efforts.

For this project, HIH will consult with each of these experts to inform our activities, while utilizing a unique planetary health approach that works at the intersection of human and environmental wellbeing. Through HIH programming, communities are provided with solutions that they design. These solutions include reforestation and agroforestry because communities know that their wellbeing is tied to forest health. This work is crucial for the immense biodiversity of the Manombo Rainforest and the wellbeing of the people who live on its borders.

## Q26. Capital items

**If you plan to purchase capital items with Darwin funding, please indicate what you anticipate will happen to the items following project end. If you are requesting more than 10% capital costs, please provide your justification here.**

With funding from Darwin, Health In Harmony intends to purchase four hand tractors, two motorbikes, and one car. One motorbike will support the agroforestry program and be used by HIH's Malagasy Livelihood Coordinator, agricultural, reforestation, and agroforestry technicians to support and monitor activities and interact with communities. The other motorbike will support the development of cricket farms by allowing HIH and MBC staff to visit communities. Once cricket farms are complete, this motorbike will support HIH's agroforestry and reforestation programs. The proposed model (Honda 250cc) is a mid-range model that has proven resilience for the extremely challenging geography in and around the project area.

The car will support HIH's agroforestry and reforestation programs, allowing staff to visit communities for trainings, plantings, and monitoring. Four hand tractors will support the Agroforestry program, enabling communities to convert their land into productive, food yielding land.

## Q27. Value for Money

**Please demonstrate why your project is good value for money in terms of impact and cost-effectiveness of each pound spend (economy, efficiency, effectiveness and equity). Please make sure you read the guidance documents, before answering this question.**

HIH programs are designed efficiently to complement each other. Agroforestry and reforestation programs utilize the same climate-resilient nurseries, streamlining staff time and allowing for better monitoring of all crops. Seedlings used for reforestation are first collected from community members as non-cash payment for healthcare. Additionally, because of their design, the agroforestry and cricket farming programs in this proposal will become self-sustaining once enough community members are trained in management. An investment from Darwin will create a ripple effect of poverty alleviation and biodiversity protection for generations.

Indigenous Peoples and Local Communities' wisdom guides HIH every step of the way. Community needs and solutions are prioritized over external actors, providing investment continuity that strengthens program effectiveness. Ultimately, stable goals of reforestation to protect biodiversity, provision of alternative livelihoods to minimize forest exploitation, nourishment through agroforestry and an agricultural program, and affordable, quality healthcare to protect the forest and biodiversity generate positive results more efficiently.

With every project, HIH strives to build on previous projects, strategies, and partnerships. Projects do not cease at the end of the project period; rather, HIH is committed to supporting projects, strategies, and partnerships after the project period as they continue to be effective for IPLCs and the Manombo Forest. Ultimately, these investment strategies address the root drivers of deforestation, preventing multiple extinctions of endemic biodiversity, avoiding carbon emissions from rainforest burning, and sequestering carbon through reforestation. Protected and restored rainforests have tremendous impacts on human health, nutrition, and climate resilience.

## Section 12 - Safeguarding and Ethics

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### Q28. Safeguarding

**Projects funded through the Darwin Initiative must fully protect vulnerable people all of the time, wherever they work. In order to provide assurance of this, projects are required to have appropriate safeguarding policies in place.**

**Please confirm the Lead Partner has the following policies in place and that these can be available on request:**

**Please upload the lead partner's Safeguarding Policy as a PDF on the certification page.**

**We have a safeguarding policy, which includes a statement of our commitment to safeguarding and a zero tolerance statement on bullying, harassment and sexual exploitation and abuse**

Checked

<b>We have attached a copy of our safeguarding policy to this application (file upload on certification page)</b>	Checked
<b>We keep a detailed register of safeguarding issues raised and how they were dealt with</b>	Checked
<b>We have clear investigation and disciplinary procedures to use when allegations and complaints are made, and have clear processes in place for when a disclosure is made</b>	Checked
<b>We share our safeguarding policy with all partners</b>	Checked
<b>We have a whistle-blowing policy which protects whistle blowers from reprisals and includes clear processes for dealing with concerns raised</b>	Checked
<b>We have a Code of Conduct for staff and volunteers that sets out clear expectations of behaviours - inside and outside the work place - and make clear what will happen in the event of non-compliance or breach of these standards</b>	Checked

**Please outline how you will implement and strengthen your safeguarding policies in practice and ensure that all partners apply the same standards as the Lead Partner. If any of the responses are “no”, please indicate how it is being addressed.**

HIH is an Equal Opportunity Employer that takes a strong stance against discrimination and will take appropriate disciplinary action against any employee who violates policy. Partners are vetted based on mission alignment, which includes emphasis on safeguarding policies that protect employees, communities, and partners. HIH's partners will adhere to high standards of conduct and protection set forth by HIH. In the event that safeguarding policies are violated, HIH will take appropriate action to protect employees, communities, and other partners. These policies and processes are implemented by Health In Harmony's human resources department.

## **Q29. Ethics**

**Outline your approach to meeting the key principles of good ethical practice, as outlined in the guidance.**

Health In Harmony practices an innovative methodology called Radical Listening. This approach involves not only listening to Indigenous Peoples and Local Communities (IPLCs), but investing precisely in their solutions that lead to rainforest stabilization, restoration, and community wellbeing. Radical Listening prioritizes knowledge of IPLCs over Western knowledge. HIH was founded with the fundamental belief that the community members in these climate-critical areas hold the solutions to effectively address the climate crisis.

As those closest to the problem, IPLCs can best identify and implement climate solutions. For this reason, 100% of HIH's Madagascar team are local Malagasy community members. HIH is committed to providing a clean, safe, and healthful work environment for this team and partner communities. HIH shares an Employee Handbook that complies with Malagasy labor laws with all employees upon hiring. Additionally, HIH practices Free, Prior, and Informed Consent with all employees and community members for all programmatic activities, including Radical Listening. When climate solutions take place on community land, HIH negotiates and signs formal land agreements, honoring indigenous land ownership and rights.

Finally, the powder acceptability research will go through a full national ethical review process.

## Section 13 - FCDO Notifications

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### Q30. FCDO Notifications

Please state whether there are sensitivities that the Foreign Commonwealth and Development Office will need to be aware of should they want to publicise the project's success in the Darwin Initiative in any country.

No

Please indicate whether you have contacted FCDO Embassy or High Commission to discuss the project and attach details of any advice you have received from them.

Yes (no written advice)

## Section 14 - Project Staff

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### Q31. Project staff

Please identify the core staff (identified in the budget), their role and what % of their time they will be working on the project.

Please provide 1-page CVs or job description, further information on who is considered core staff can be found in the [Finance Guidance](#).

Name (First name, Surname)	Role	% time on project	1 page CV or job description attached?
Sakib, Burza	<b>Project Leader</b>	10	Checked
Doriens Cédric, ANDRIAMANANARIVO	Reforestation Coordinator	100	Checked
TBD	Conservation Manager	30	Checked
Dr. Andriantiana, TSIRIMANANA	Program Director	20	Checked

Do you require more fields?


Yes


Name (First name, Surname)	Role	% time on project	1 page CV or job description attached?
Lovaso Samson, Rakotovelo	Deputy Director	20	Checked


Sedera, Ramaromanana	Alternative Livelihood Coordinator	15	Checked
Annalise, Peterson	Partnerships Associate	10	Checked
Noor, Trienekens	Program Director	10	Checked
Alaine, Ball	Program Manager	10	Checked
Nina, Finley	Research Program Manager	10	Checked
Mahardika, Putra Purba	Program Specialist	10	Checked
Fanampy Fidy, RAZAFINDRALAMBO	Forest Guardian Coordinator	10	Checked


**Please provide 1 page CVs (or job description if yet to be recruited) for the project staff listed above as a combined PDF.**

**Ensure the file is named clearly, consistent with the named individual and role above.**

 [1314 - CVs.docx](#)

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**Have you attached all project staff CVs?**

Yes

## Section 15 - Project Partners

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### Q32. Project Partners

**Please list all the Project Partners (including the Lead Partner - i.e. the partner who will administer the grant and coordinate the delivery of the project), clearly setting out their roles and responsibilities in the project including the extent of their engagement so far and planned.**

**This section should demonstrate the capability and capacity of the Project Partners to successfully deliver the project. Please provide Letters of Support for all project partners or explain why this has not been included.**

**The partners listed here should correspond to the Delivery Chain Risk Map (within the Risk Register template) which you will be asked to submit if your project is recommended for funding.**

**Lead partner name:** Health In Harmony (HIH)

**Website address:** healthinharmony.org



Details (including roles and responsibilities and capacity to engage with the project):

HIH is leading this project because we have existing relationships with the 31 involved Malagasy communities as well as each of the project partners. Furthermore, HIH has experience implementing reforestation and agroforestry in the Manombo Forest as well as in rainforests in Borneo and Brazil.

Our responsibility within this project is program implementation, community engagement, and partner coordination. It will be HIH employees leading the bulk of the outlined activities with the exception of MBC's cricket program partnership. We expect to use our existing relationships to ensure the success of this program.

Allocated budget (proportion or value):

£ [REDACTED]

Represented on the Project Board

Yes

Have you included a Letter of Support from this organisation?

Yes

Have you provided a cover letter to address your Stage 1 feedback?

Yes

Do you have partners involved in the Project?

Yes

1. Partner Name:

Madagascar Biodiversity Center (MBC)

Website address:

<https://www.madagascarbio.org/>

Details (including roles and responsibilities and capacity to engage with the project):

Madagascar Biodiversity Center (MBC) will co-develop a research plan measuring the impacts of using cricket frass as organic fertilizer to mitigate the low level of nutrients in the soil around Manombo and support the growth of planted seedlings. MBC will provide the cricket frass needed for initial fertilizer trials and assist with research and monitoring. They will also partner with Health In Harmony and Manombo communities on designing and testing ideal cricket powder nutritional services, and will technically support the design of the cricket farms in Year Two of the project. MBC will also offer their cricket farming facilities to Manombo community members for educational visits. MBC will provide cost contribution of FTEs technical support and materials to the amount of GBP [REDACTED] for these initiatives.

Allocated budget:

£0.00

Represented on the Project Board

Yes

Have you included a Letter of Support from this organisation?  Yes

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**2. Partner Name:** Missouri Botanical Gardens (MBG)

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**Website address:** <http://www.missouribotanicalgarden.org/>

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**Details (including roles and responsibilities and capacity to engage with the project):**

The Missouri Botanical Garden's mission is driven by the need to protect and conserve plants and their ecosystems. MBG seeks to inspire and educate all members of our local region about the benefits of being good environmental stewards through responsible and sustainable use of natural resources. Committed to the goals and principles of the Global Strategy for Plant Conservation, MBG has restoration and conservation programs throughout the world, including Madagascar.

As collaborators of Health In Harmony's during the 2021 Darwin Partnership Project, The Missouri Botanical Gardens will serve as a continued source of support and feedback on agroforestry and reforestation protocols.

---

**Allocated budget:** £0.00

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**Represented on the Project Board**  Yes

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Have you included a Letter of Support from this organisation?  Yes

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**3. Partner Name:** Centre ValBio (CVB)

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**Website address:** [stonybrook.edu/commcms/centre-valbio/](http://stonybrook.edu/commcms/centre-valbio/)

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**Details (including roles and responsibilities and capacity to engage with the project):**

CVB's mission is to be the standard-bearer for research stations in the tropics. By approaching the interrelated problems of climate action, poverty, and health with the interrelated solutions of quality education, economic growth, and scientific innovation, we hope to demonstrate that sustainable communities and reduced inequality are possible alongside a flourishing natural environment.

As collaborators of Health In Harmony's during the 2021 Darwin Partnership Project, Centre ValBio will serve as a continued source of support and feedback on agroforestry and reforestation protocols.

---

**Allocated budget:** £0.00

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**Represented on the Project Board**  Yes

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Have you included a Letter of Support from this organisation?  Yes

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**4. Partner Name:** *No Response*

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**Website address:** *No Response*

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Details (including roles and responsibilities and capacity to engage with the project): *No Response*

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**Allocated budget:** £0.00

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**Represented on the Project Board**  Yes  No

---

Have you included a Letter of Support from this organisation?  Yes  No

---

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**5. Partner Name:** *No Response*

---

**Website address:** *No Response*

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Details (including roles and responsibilities and capacity to engage with the project): *No Response*

---

**Allocated budget:** £0.00

---

**Represented on the Project Board**  Yes  
 No

---

Have you included a Letter of Support from this organisation?  Yes  
 No

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**6. Partner Name:** *No Response*

---

**Website address:** *No Response*

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Details (including roles and responsibilities and capacity to engage with the project): *No Response*

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**Allocated budget:** £0.00

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**Represented on the Project Board**  Yes  
 No

---

Have you included a Letter of Support from this organisation?  Yes  
 No

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**If you require more space to enter details regarding Partners involved in the project, please use the text field below.**





*No Response*

**Please provide a cover letter responding to feedback received at Stage 1 if applicable and a combined PDF of all letters of support.**

---

 [1314 - Letters of Support](#)  
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 [1314 - Stage 2 - Darwin Initiative 29 Cover letter](#)  
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 19:23:31  
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## Section 16 - Lead Partner Capability and Capacity

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### Q33. Lead Partner Capability and Capacity

**Has your organisation been awarded Darwin Initiative, Darwin Plus or Illegal Wildlife Trade Challenge Fund funding before (for the purposes of this question, being a partner does not count)?**

Yes

**If yes, please provide details of the most recent awards (up to 6 examples).**

Reference No	Project Leader	Title
DARPP226	Ashley Emerson	Cooperative Knowledge Exchange on Reforestation & Restoration in Madagascar
<i>No Response</i>	<i>No Response</i>	<i>No Response</i>
<i>No Response</i>	<i>No Response</i>	<i>No Response</i>
<i>No Response</i>	<i>No Response</i>	<i>No Response</i>
<i>No Response</i>	<i>No Response</i>	<i>No Response</i>
<i>No Response</i>	<i>No Response</i>	<i>No Response</i>

**Have you provided the requested signed audited/independently examined accounts?**

**If yes, please upload these on the certification page. Note that this is not required from Government Agencies.**

Yes

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## Section 17 - Certification

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### Certification

**On behalf of the**

Company

**of**

Health In Harmony

## I apply for a grant of

£493,017.40

I certify that, to the best of our knowledge and belief, the statements made by us in this application are true and the information provided is correct. I am aware that this application form will form the basis of the project schedule should this application be successful.

(This form should be signed by an individual authorised by the applicant institution to submit applications and sign contracts on their behalf.)

- I have enclosed CVs for project key project personnel, cover letter, letters of support, a budget, logframe, Safeguarding Policy and project implementation timetable (uploaded at appropriate points in application)
- Our last two sets of signed audited/independently verified accounts and annual report are also enclosed.





Checked

**Name** Jonathan Jennings

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**Position in the organisation** Executive Director

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**Signature (please upload e-signature)**  [Jonathan Jennings signature](#)  
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**Date** 09 December 2022






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### Please attach the requested signed audited/independently examined accounts.



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 [Health-In-Harmony-Inc.-Signed-Financial-State  
ments-12.31.2021](#)  
 09/12/2022  
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### Please upload the Lead Partner's Safeguarding Policy as a PDF

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 [Safeguarding Child and Vulnerable Adult Protection Policy](#)  
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## Section 18 - Submission Checklist

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### Checklist for submission

	Check
<b>I have read the Guidance, including the "Darwin Initiative Guidance", "Monitoring Evaluation and Learning Guidance", "Risk Guidance" and "Financial Guidance".</b>	Checked
<b>I have read, and can meet, the current Terms and Conditions for this fund.</b>	Checked
<b>I have provided actual start and end dates for the project.</b>	Checked
<b>I have provided my budget based on UK government financial years i.e. 1 April – 31 March and in GBP.</b>	Checked
<b>I have checked that our budget is complete, correctly adds up and I have included the correct final total at the start of the application.</b>	Checked
<b>The application been signed by a suitably authorised individual (clear electronic or scanned signatures are acceptable).</b>	Checked
<b>I have attached the below documents to my application</b> <ul style="list-style-type: none"><li>• my completed logframe as a PDF using the template provided</li></ul>	Checked
<ul style="list-style-type: none"><li>• my budget (which meets the requirements above)</li></ul>	Checked
<ul style="list-style-type: none"><li>• my completed implementation timetable as a PDF using the template provided</li></ul>	Checked
<b>I have included a 1 page CV or job description for all the Project Staff identified at Question 31, including the Project Leader, or provided an explanation of why not.</b>	Checked
<b>I have included a letter of support from the Lead Partner and partner(s) identified at Question 32, or an explanation of why not.</b>	Checked
<b>I have included a cover letter from the Lead Partner, outlining how any feedback received at Stage 1 has been addressed where relevant.</b>	Checked
<b>I have included a copy of the Lead Partner's safeguarding policy, which covers the criteria listed in Question 28.</b>	Checked
<b>I have been in contact with the FCDO in the project country/ies and have included any evidence of this. If not, I have provided an explanation of why not.</b>	Checked
<b>I have included a signed copy of the last 2 annual report and accounts for the Lead Partner, or provided an explanation if not.</b>	Checked

**I have checked the Darwin Initiative website immediately prior to submission to ensure there are no late updates.** Checked

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**I have read and understood the Privacy Notice on the Darwin Initiative website.** Checked

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### **We would like to keep in touch!**

**Please check this box if you would be happy for the lead applicant (Flexi-Grant Account Holder) and project leader (if different) to be added to our mailing list. Through our mailing list we share updates on upcoming and current application rounds under the Darwin Initiative and our sister grant scheme, the IWT Challenge Fund. We also provide occasional updates on other UK Government activities related to biodiversity conservation and share our quarterly project newsletter. You are free to unsubscribe at any time.**

Checked

### **Data protection and use of personal data**

Information supplied in the application form, including personal data, will be used by Defra as set out in the **Privacy Notice**, available from the [Forms and Guidance Portal](#).

This **Privacy Notice must be provided to all individuals** whose personal data is supplied in the application form. Some information may be used when publicising the Darwin Initiative including project details (usually title, lead partner, project leader, location, and total grant value).



**Project Title:** Protecting Biodiversity By Improving Community Wellbeing In Southeast Madagascar

**Guidance – please delete before submitting**

Provide a **Project Implementation Timetable** that shows the key milestones in project activities. Complete the following table as appropriate to describe the intended workplan for your project. **Quarters are based on UK FYs (1 April – 31 March - Q1 therefore starts April 2023).**

Please add/remove columns to reflect the length of your project. For each activity (add/remove rows as appropriate) indicate the number of months it will last, and shade only the quarters in which an activity will be carried out. The activity numbers should correspond to the activities in your logical framework (logframe). The workplan can span multiple pages if necessary.

This template covers multiple Biodiversity Challenge Funds schemes, so ensure you check the eligible dates/project length for the scheme you are applying to and feel free to delete later years if not applicable for your project.

	Activity	No. of months	Year 1 (23/24)				Year 2 (24/25)			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Output 1</b>	<b>Reforest 30 ha (36,000 seedlings) over 2 years</b>	<b>24</b>								
1.1	Prepare for planting by preparing seedlings (many collected as non-cash healthcare payments from communities), identifying and preparing plots, conducting Radical Listening with communities	6	x		x		x		x	
1.2	Maintain and build seedling nurseries to prepare and store seedlings for planting (also house agroforestry seedlings)	24	x	x	x	x	x	x	x	x
1.3	Transport seedlings from nurseries to plots, creating holes of the proper depth and width to maximize seedling survival, and planting seedlings	6	x				x			
1.4	Reforestation staff and community members conduct photo-monitoring of seedlings once annually before planting,	10	x		x		x		x	

**Project Title:** Protecting Biodiversity By Improving Community Wellbeing In Southeast Madagascar

	Activity	No. of months	Year 1 (23/24)				Year 2 (24/25)			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	and conduct monitoring of planted seedling survival rate and height twice annually									
1.5	Forest Guardians and community members lead the construction and monitoring of firebreaks alongside reforestation staff once per month	24	x	x	x	x	x	x	x	x
<b>Output 2</b>	<b>Cricket frass fertilizer (CFF) trials developed and conducted in reforestation, agroforestry, and agriculture test plots (4 species in each plot), and evaluated for potential long-term production in cricket farms in communities</b>	<b>24</b>	x	x	x	x	x	x	x	x
2.1	Identify the scientific team to develop the protocol, permissions received from local authority, stockpile fertilizers	2	x							
2.2	Identify and prepare the plot sites, engagement with the local community, selection of plant species	2	x							
2.3	Soil preparation, harmonization and tailoring pH to fertilizers, calibration of fertilizer dosage	6		x	x					
2.4	Quality analysis of measurements over time, collation of datasets into database and data cleaning	14		x	x	x	x	x	x	
2.5	Data analysis and preparation for publication, submission, dissemination	6							x	x
<b>Output 3</b>	<b>31 total communities test and choose acceptable cricket powder based nutritional supplements for potential</b>	<b>12</b>	x	x	x	x				

**Project Title:** Protecting Biodiversity By Improving Community Wellbeing In Southeast Madagascar

	Activity	No. of months	Year 1 (23/24)				Year 2 (24/25)			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	<b>long-term production in cricket farms in communities</b>									
3.1	Identify the scientific team to develop the protocol, permissions received from local authority and Ethical review board	4	x							
3.2	Procurement of three products for identified beneficiaries in communities, sensitization of communities	6	x	x						
3.3	Conducting interviews, observations and feedback loops, codify data, identify thematics	8		x	x					
3.4	Data analysis and preparation for publication, submission, dissemination	13			x	x	x			
<b>Output 4</b>	<b>Create successful self-sustaining cricket farms in 7 village communities</b>	<b>12</b>					x	x	x	x
4.1	Identify community participants in each of the seven villages	3					x			
4.2	Construct or modify existing structures for cricket farms, distribution of cricket farming manuals	6					x	x		
4.3	Hold community workshops in each village to learn farming techniques and powder processing	12					x	x	x	x
4.4	Monitor farming and production and modify SOP based on feedback from community successes.	9						x	x	x

**Project Title:** Protecting Biodiversity By Improving Community Wellbeing In Southeast Madagascar

	Activity	No. of months	Year 1 (23/24)				Year 2 (24/25)			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Output 5</b>	<b>Implementation of 10 ha of agroforestry on community land, training 2,000 community members in agroforestry techniques</b>	<b>24</b>								
5.1	Organize and plan quarterly trainings for 1,000 community members per year in agroforestry management protocols	8	x	x	x	x	x	x	x	x
5.2	Conservation Director and team work with community to identify land and plant seedlings	6	x				x			
5.3	Conduct participatory monitoring to collect community observations and refine protocol post-planting	5	x	x	x		x		x	
5.4	Monitor crop yield every six months to ensure over 500 tons of yield by the end of Year 2	3			x		x		x	
5.5	Agroforestry staff and trained community members monitor seedling survival rate, tree health, flowering and fruiting, and conduct enrichment plantings twice annually	4		x		x		x		x

Project Title: **Protecting Biodiversity by improving community wellbeing in Southeast Madagascar**

Project Summary	SMART Indicators	Means of Verification	Important Assumptions
<p><b>Impact:</b> Improved livelihoods, reforestation, and malnutrition strategies are implemented in southeastern Madagascar; nutritional and economic poverty will improve and capacity for biodiversity protection, specifically of endemic lemur, will increase. (Max 30 words)</p>			
<p><b>Outcome:</b> (Max 30 words) 31 Manombo communities will reforest 30 hectares of lemur habitat, convert 10 hectares of agroforestry plots, and test cricket-based nutrition, fertilization, and farming programs, improving malnutrition, poverty, and biodiversity protection.</p>	<p>0.1 - Number of total hectares reforested in Manombo Rainforest will increase by 15 hectares annually, starting in Year One of project implementation</p> <p>0.2 - Mixed-methods study for the acceptability of three cricket powder nutritional formulations completed and disseminated at the national level and in a peer reviewed journal</p> <p>0.3 - Cricket frass fertilizer trials developed and</p>	<p>0.1 - Online reforestation database - updated quarterly to track ha reforested and number of seedlings planted</p> <p>0.1 - Polygons of areas reforested included in public mapping platforms for ongoing monitoring</p> <p>0.2 - Program reports and acceptability study team updates produced quarterly; financial reports produced annually</p> <p>0.3 - Program reports and fertilizer study team updates produced quarterly, financial reports produced annually</p>	<p>Climate events/shocks (i.e. cyclones) do not impact reforestation progress</p> <p>Acceptability study demonstrates willingness and acceptance of cricket powder formulations</p> <p>Wildfire patrolling and community education on preventing fire usage in land management will continue alongside reforestation work</p> <p>Species chosen for agroforestry may change according to community feedback, affecting crop yield potential</p>

Project Title: **Protecting Biodiversity by improving community wellbeing in Southeast Madagascar**

	<p>conducted in 12 total reforestation, agroforestry, and agriculture test plots</p> <p>0.4 - 70 people (70% female) will be trained and actively managing 7 cricket farms by end of Year Two for continued production of frass and powder</p> <p>0.5 - 2,000 Manombo community members (60% female) will be trained in conventional agroforestry techniques</p> <p>0.6 - Prevalence of global acute malnutrition in the beneficiary population aged 6- 59 months decreases by 25% between year one and the end of year two</p>	<p>0.4 - Training participation logs, kept in online database</p> <p>0.5 - Training participation logs, kept in online database</p> <p>0.6 - Routinely collected data from mobile clinics and health services</p>	<p>At least 50% of community members who have engaged in training will implement and continue to apply techniques to achieve the best yields</p>
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Project Title: **Protecting Biodiversity by improving community wellbeing in Southeast Madagascar**

<p><b>Outputs:</b>  <b>1. Reforest 30 ha (36,000 seedlings) over two years</b></p>	<p>1.1 - Number of total hectares reforested in Manombo Rainforest will increase by 15 hectares annually, starting in Year One of project implementation (Baseline: 36 hectares reforested)</p> <p>1.2 - Number of total seedlings planted in Manombo reforestation plots will increase by 18,000 seedlings annually, starting in Year One of project implementation (Baseline: 43,200 seedlings planted)</p> <p>1.3 - Seedlings planted will achieve a survival rate of 70% after 18 and 24 months of project implementation (Baseline: 60%</p>	<p>1.1 - Online reforestation database - updated quarterly to track ha reforested and number of seedlings reforested</p> <p>1.1 - Polygons of areas reforested included in public mapping platforms for ongoing monitoring</p> <p>1.2 - Online reforestation database - updated quarterly to track ha reforested and number of seedlings reforested</p> <p>1.3 - Monitoring using reforestation protocol three times per year (outlined in Activity Table)</p> <p>1.4 - Online reforestation database - updated quarterly to track km of firebreaks constructed</p>	<p>1.1 - Five climate-resilient seedling nurseries on-site are constructed to accommodate seedlings needed for reforestation goal</p> <p>1.2 - Climate events/shocks (i.e. cyclones) do not impact reforestation progress</p> <p>1.3 - Wildfire patrolling and community education on preventing fire usage in land management will continue alongside reforestation work</p>
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	<p>survival rate, Target: 70% survival rate)</p> <p>1.4 - Total kilometers of firebreaks constructed will increase by 6 km annually, starting in Year One of project implementation (Baseline: 5 km of firebreaks existing, Target: 17 km of firebreaks)</p>		
<p><b>2.</b> Cricket frass fertilizer (CFF) trials developed and conducted in reforestation, agroforestry, and agriculture test plots (4 species in each plot), and evaluated for potential long-term production in cricket farms in communities</p>	<p>2.1 - Protocol developed and study equipment/material sourced within 2 months of Year One of project implementation.</p> <p>2.2 - Study initiated at all identified plots and all study team appointed and in place within 4 months of Year One of project implementation</p>	<p>2.1 - Study protocol uploaded to OSF repository; confirmation of all materials received on site.</p> <p>2.2 - Program reports and study team updates produced quarterly, financial reports produced annually.</p> <p>2.3 - Program reports and study team updates produced quarterly,</p>	<p>Study area is not disrupted by climate shocks such as cyclones</p>



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	<p>2.3 - Study completed successfully by 20 months of project implementation</p> <p>2.4 - Results disseminated at the national level and in a peer reviewed journal by end of Year Two</p>	<p>financial reports produced annually.</p> <p>2.4 Publication in open access journal available</p>	
<p><b>3.</b> Seven village communities evaluate and identify the most acceptable formulation cricket powder based nutritional supplements</p>	<p>3.1 Develop mixed-methods protocol for the acceptability study within 4 months of project implementation</p> <p>3.2 Procure all three cricket formulations (powder/porridge/rice cake) within 6 months of project implementation</p> <p>3.3 Study conducted in all 7 villages within</p>	<p>3.1 - Study protocol uploaded to OSF repository; confirmation of all materials received on site.</p> <p>3.2 &amp; 3.3 Program reports and study team updates, financial reports.</p> <p>3.4 Publication in open access journal available</p>	

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	<p>8 months of project implementation</p> <p>3.4 Study results disseminated at the national level and in a peer reviewed journal within 13 months of project implementation</p>		
<p><b>4. Create successful self-sustaining cricket farms in 7 village communities</b></p>	<p>4.1 - At least 70 total people (70% female) will be trained on developing and managing a cricket farm by end of year Two.</p> <p>4.2 - Starting in Year Two, the number of cricket farms producing cricket powder and frass in Manombo will increase from zero to seven by the end of the project</p>	<p>4.1 &amp; 4.2- Project monitoring reports</p> <p>4.3 &amp; 4.4 - External evaluation of project by MBC, project and monitoring reports</p> <p>4.5 Routinely collected data from mobile clinics and health services</p>	<p>Acceptability study demonstrates willingness and acceptance of cricket powder formulations</p> <p>Project is not affected by major climate shocks (cyclones, etc).</p>

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	<p>4.3 - At least 75% of cricket farms (5 farms) are functioning to the expected capacity by 6 months into Year Two</p> <p>4.4 - Over 75% of the beneficiary population of each farm consumes the pre-defined amount of cricket powder daily by the beginning of Year Two</p> <p>4.5 - The prevalence of global acute malnutrition in the beneficiary population aged 6- 59 months of each farm reduces by 25% during Year Two.</p>		
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<p><b>5.</b> Implementation of 10 ha of agroforestry on community land, training 2,000 community members in agroforestry techniques</p>	<p>5.1 - The total amount of land converted to agroforestry in Manombo will increase by 5 ha annually, starting in Year One of project implementation (Baseline: 9.41 ha of agroforestry plots)</p> <p>5.2 - By the end of Year Two of the project, 2,000 Manombo community members (60% female) will be trained in conventional agroforestry techniques</p> <p>5.3 - Beginning six months into Year One, designated agroforestry crops will yield 300 tons every six months after planting (Baseline: not currently measured;</p>	<p>5.1 - Polygons of areas reforested included in public mapping platforms for ongoing monitoring</p> <p>5.2 - Training participation logs, kept in online database</p> <p>5.3 - Monitoring using agroforestry protocol three times per year (Photo monitoring pre-planting in Year One and then once annually; seedling survival rate and general observations twice annually in Year Two)</p>	<p>5.1 Communities will engage with agroforestry trainings and Radical Listening to decide preferred species to plant for agroforestry</p> <p>5.2 - At least 50% of community members who have engaged in training will implement and continue to apply techniques to achieve the best yields</p> <p>5.3 - Climate events/shocks (i.e. cyclones, extended dry or rainy seasons) do not impact agroforestry progress</p> <p>5.4 - Soil nutrients through available organic fertilizers will be sufficient to support crops and trees</p> <p>5.5 - Wildfire patrolling and community education</p>
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	<p>Target based on average production calculations of current crops/ha/year)</p>		<p>on preventing fire usage in land management will continue alongside agroforestry work</p> <p>5.6 - Projections used for crop yield are correct (mitigated by monitoring, evaluation, and target adjustment)</p>
<p><b>Activities</b> (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1. Each activity should start on a new line and be no more than approximately 25 words.)</p> <p>1.1 - Prepare for planting by preparing seedlings (many collected as non-cash healthcare payments from communities), identifying and preparing plots, conducting Radical Listening with communities</p> <p>1.2 - Maintain and build seedling nurseries to prepare and store seedlings for planting (also house agroforestry seedlings)</p> <p>1.3 - Transport seedlings from nurseries to plots, creating holes of the proper depth and width to maximize seedling survival, and planting seedlings</p> <p>1.4 - Reforestation staff and community members conduct photo-monitoring of seedlings once annually before planting, and conduct monitoring of planted seedling survival rate and height twice annually</p> <p>1.5 - Forest Guardians and community members lead the construction and monitoring of firebreaks alongside reforestation staff once per month</p> <p>2.1 - Identify the scientific team to develop the protocol, permissions received from local authority, stockpile fertilizers</p> <p>2.2 - Identify and prepare the plot sites, engagement with the local community, selection of plant species</p> <p>2.3 - Soil preparation, harmonization and tailoring pH to fertilizers, calibration of fertilizer dosage</p>			

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2.4 - Quality analysis of measurements over time, collation of datasets into database and data cleaning

2.5 - Data analysis and preparation for publication, submission, dissemination

3.1 - Identify the scientific team to develop the protocol, permissions received from local authority and ethical review board

3.2 - Procurement of three products for identified beneficiaries in communities, sensitization of communities

3.3 - Conducting interviews, observations and feedback loops, codify data, identify thematics

3.4 - Data analysis and preparation for publication, submission, dissemination

4.1 Identify community participants in each of the seven villages

4.2. Construct or modify existing structures for cricket farms, distribution of cricket farming manuals

4.3. Hold community workshops in each village to learn farming techniques and powder processing

4.4 Monitor farming and production and modify SOP based on feedback from community successes.

5.1 Organize and plan quarterly trainings for 1,000 community members per year in agroforestry management protocols

5.2 Conservation director and team work with community to identify land and plant seedlings

5.3 Conduct participatory monitoring to collect community observations and refine protocol post-planting

5.4 Monitor crop yield every six months to ensure over 500 tons of yield by the end of Year 2

5.5 Agroforestry staff and trained community members monitor seedling survival rate, tree health, flowering and fruiting, and conduct enrichment plantings twice annually