

# **DIR30S2\1006**

## **Seeds4Soils: regenerating soils with agrobiodiversity for climate resilience in Madagascar**

The Seeds4Soils project aims to utilize the potential of traditional African vegetables, their wild relatives and associated soil microorganisms to regenerate agricultural soils and increase climate resilience of vulnerable Malagasy farming communities. The project will: i) rescue soil and crop biodiversity; ii) unravel its adaptive potential for climate-resilient agriculture; iii) increase farming system productivity and resilience through participatory restoration of soil health; and iv) generate livelihood opportunities through new markets for vegetables and co-production of regenerative seed kits (R-kits).

# DIR30S2\1006

Seeds4Soils: regenerating soils with agrobiodiversity for climate resilience in Madagascar

## Section 1 - Contact Details

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### PRIMARY APPLICANT DETAILS

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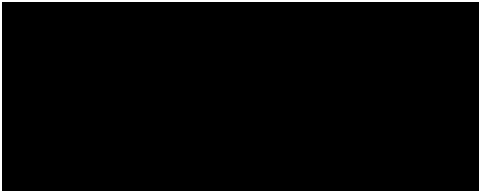
**Name** Kartini  
**Surname** Luther  
**Organisation** World Vegetable Center  
**Website (Work)**  
**Tel (Work)**  
**Email (Work)**  
**Address**



### CONTACT DETAILS

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**Title** Dr  
**Name** Sognigbe  
**Surname** N'Danikou  
**Organisation** World Vegetable Center  
**Tel**  
**Email**  
**Address**



### GMS ORGANISATION

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**Type** **Other**  
**Name** World Vegetable Center  
**Phone (Work)**  
**Email (Work)**  
**Address**



## Section 2 - Title, Ecosystems, Approaches & Summary

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### Q3. Title:

Seeds4Soils: regenerating soils with agrobiodiversity for climate resilience in Madagascar

Please upload a cover letter as a PDF document.

- [Cover letter - WorldVeg Seeds4Soils](#)
- 27/11/2023
- 01:17:46
- pdf 148.45 KB

### What was your Stage 1 reference number? e.g. DIR29S1\1123

DIR30S1\1190

### 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

Intensive land-use systems

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#### Biome 2

Savannas and grasslands

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#### Biome 3

Tropical-subtropical forests

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#### Conservation Action 1

Research & Monitoring

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#### Conservation Action2

Education & Training

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#### Conservation Action 3

Land / Water Management

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#### Threat 1

Climate change & severe weather

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#### Threat 2

Agriculture & aquaculture (incl. plantations)

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#### Threat 3

No Response

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## Q5. Summary of project

Please provide a brief non-technical summary of your project: the problem/need it is trying to address, its aims, and the key activities you plan on undertaking.

The Seeds4Soils project aims to utilize the potential of traditional African vegetables, their wild relatives and associated soil microorganisms to regenerate agricultural soils and increase climate resilience of vulnerable Malagasy farming communities. The project will: i) rescue soil and crop biodiversity; ii) unravel its adaptive potential for climate-resilient agriculture; iii) increase farming system productivity and resilience through participatory restoration of soil health; and iv) generate livelihood opportunities through new markets for vegetables and co-production of regenerative seed kits (R-kits).

## Section 3 - Title, Dates & Budget Summary

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### Q6. Country(ies)

Which eligible host country(ies) will your project be working in?

Country 1	Madagascar	Country 2	No Response
Country 3	No Response	Country 4	No Response

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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 2024	31 March 2027	3 years

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### Q8. Budget summary

Year:	2024/25	2025/26	2026/27	
<b>Amount:</b>	£203,538.00	£208,177.00	£188,144.00	<b>£</b>
				599,859.00

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### Q9. Do you have matched funding arrangements?

Yes

Please ensure you clearly outline your matched funding arrangement in the budget.

## **Q10. If you have a significant amount of unconfirmed matched funding, please clarify how you will deliver the project if you don't manage to secure this?**

*No Response*

## **Q11. Have you received, applied for or plan to apply for any other UK Government funding for the proposed project or similar?**

No

## **Section 4 - Problem statement**

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### **Q12. 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 multi-dimensional poverty.**

Unsustainable agricultural practices degrade soils, biodiversity, livelihood and increase climate vulnerability in Malagasy farming communities.

Madagascar is among the five most vulnerable countries to climate change, and the vast majority of the Malagasy people are particularly vulnerable because they directly rely on agriculture and natural resources for their livelihoods. Unsustainable agricultural practices degrade soils, reduce crop diversity and threaten agroecosystems. This reinforces climate vulnerability of smallholders and increases pressure on natural resources. Solutions are needed to reverse this downward spiral and create win-win situations. Increasing biodiversity can do this by enhancing the resilience of agricultural systems while improving the livelihood of communities.

Below-ground biodiversity is an untapped potential to increase farming system resilience.

Madagascar is well-known for the exceptional biodiversity of its macro-flora and fauna. Madagascar also harbours many traditional African vegetables (TAVs) and crop wild relatives (CWRs) because of its unique evolutionary and cultural history. However, the biodiversity of Malagasy microbial communities remains relatively unexplored. Understanding the adaptive traits associated with this native soil biodiversity that improves soil health, and conserving them could support actions to regenerate degraded soils to become less exposed, more fertile and less vulnerable to unfavourable climate events.

Poor knowledge about native plants to regenerate degraded soils and improve livelihoods.

Studies found that plant diversification has a positive effect on soil fertility in Madagascar (Sauvadet et al. 2021). However, there is a research gap on which plant combinations can help regenerate degraded agricultural soils and bring back beneficial microorganisms (Ripoche et al. 2021; Rabary et al. 2008). TAVs and their CWRs could be potential cover crops, although their regenerative potential and impact on soil microbiome diversity and agroecosystem productivity remain to be researched. In combination with high-value TAVs, species combinations of cover and cash crops could support regenerative and profitable agriculture that makes Malagasy farming communities more climate-resilient.

## **Section 5 - Darwin Objectives and Conventions**

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## **Q13. Biodiversity Conventions, Treaties and Agreements**

**Q13a. Your project must support the commitments of one or more of the agreements listed below. Please indicate which agreement(s) will be supported.**

- Convention on Biological Diversity (CBD)
- Nagoya Protocol on Access and Benefit Sharing (ABS)
- International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)
- United Nations Framework Convention on Climate Change (UNFCCC)
- Global Goals for Sustainable Development (SDGs)

## **Q13b. 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.**

By strengthening the local capacities for sustainable conservation and utilisation of soil and agrobiodiversity, the project will contribute to the National Biodiversity Strategy and Action Plan (NBSAP) of Madagascar. The project also contributes to international biodiversity conventions, treaties and agreements. By rescuing and sustainably utilising crop biodiversity, the project will contribute to the Convention on Biological Diversity (CBD) and to the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). Specifically, the project will help Madagascar to meet Article 9 about farmer's rights because the project supports farmers in seed saving of indigenous crops. With its focus on soil biodiversity, the project aligns with the UN Biodiversity Conference COP15 decision in December 2022 on a plan of action for biodiversity and agriculture with an emphasis on agroecological practices and the conservation of soil biodiversity.

The project will support UNFCCC goals by promoting regenerative agricultural practices that increase soil carbon stocks, reduce GHG emissions and contribute to climate change adaptation. It will contribute to achieving several SDGs, particularly Goal 1-No Poverty, Goal 2-Zero Hunger and Goal 13-Climate Action.

The Nagoya protocol will be applied for the collection and sharing of landraces, CWRs and associated traditional knowledge. Prior Informed Consent will be obtained from corresponding farmer communities and Mutually Agreed Terms will be negotiated with the corresponding farmer communities in coordination with the national ABS focal points. Germplasm collection for ex-situ conservation in the project sites will be done in coordination and with the consent of the involved farmer communities, in addition to the national permits for germplasm collection. National permits for collection and sharing will be requested from the Ministry of Agriculture in coordination with the national focal point of the ITPGRFA following all applicable national and international laws.

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

### **Q14. 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.).**

Seeds4Soils builds on lessons learnt from the Darwin Initiative project 26-015 “Traditional African vegetables strengthen food and nutrition security in Madagascar”, with the farming communities from Itasy and Antsirabe regions. The S4S project aligns with ongoing work on conserving TAVs and CWRs that started in project 26-015 and was scaled up by WorldVeg, the National Center for Applied Research and Rural Development (FOFIFA), and the University of Antananarivo (UA) in the “Taiwan Africa Vegetable Initiative”. We will now focus on TAVs that are preferred by women farmers for income generation. In addition, the new project will evaluate more native species to identify cover crops for regenerating agricultural soils. We will leverage WorldVeg’s experience with seed germination protocols to promote the use of selected cover crops. We will analyze the microbiome diversity associated with TAVs and of the endangered *Vigna keraudnerii* and other CWRs. We will build on the existing efforts by doing targeted collections of TAVs and CWRs. To achieve a progressive impact, Seeds4Soils will work with two groups of beneficiaries. Group 1, includes 150 core farmers (beneficiaries of previous project 26-015) that will benefit from tailored training, on-farm trials, living labs, R-kits and new market linkages. From these, at least 10 women champions will be supported to develop seed/vegetable businesses. Group 2 will include 2,000 surrounding farmers who will benefit from R-kits and training in living labs by innovative farmers from group 1. The project has the following Outputs:

Output 1: Biodiversity of TAVs and CWR (including soil microbiome and traditional knowledge) inventoried and collected

Farming systems practices, traditional uses of TAVs and CWRs, and diversification options will be documented in 10 communities in Itasy and Antsirabe. In addition, collections of TAV landraces and CWRs will be carried out in different agroecological zones across these regions. At least 10 plant genera and their rhizosphere samples will be targeted. rRNA metabarcoding will be used to dissect the bacterial and eukaryotic community composition and combine it with landscape genomics to identify beneficial associations, for instance, crop adaptation to drought or harsh environments.

Output 2: Crop & soil biodiversity conserved on-farm and in genebanks

At least 400 collected landraces and CWRs will be conserved in national and regional genebanks (Output 1). Accessions will be regenerated at WorldVeg-Tanzania and characterized for germination traits compared to other cover crops. Easy-to-use seed germination and on-farm conservation protocols will be developed for selected custodian farmers from group 1 to conserve prioritised crops on-farm. Priorities for crop biodiversity conservation will be defined from mapping activities in Output 1 and community consultations.

Output 3: TAVs and CWRs agro-ecologically characterised and best crop combinations identified

FOFIFA will initiate on-station trials to: i) assess the benefits of TAVs and CWRs for stability of soil aggregates, microbiome diversity, biomass, weed control, and other agroecological services; and ii) evaluate diversified cropping systems of cover crops with high-value TAVs. Then, promising crop combinations and regenerative practices will be validated through on-farm trials with 150 farmers from group 1. Head-to-head trials or a Tricot approach (Steinke and Etten, 2016) will be used to capture yield and locally defined soil health benefits from different crop combinations.

Output 4: Strengthened capacity of stakeholders in regenerative agriculture and seed production, and best practices promoted through participatory demonstrations/living labs.

Participatory demonstrations of best regenerative practices will be established in champion farmers' fields from group 1. These will operate as "living labs" where farmers from groups 1 and 2 and other stakeholders interact and co-create innovations. FOFIFA, WorldVeg experts and champion farmers will provide training (Training-of-Trainers) on agronomic topics requested by participants in the living labs. Trainers will then share new knowledge and R-kits with 2,000 farmers from group 2. Supporting technical leaflets will be developed and disseminated in local languages.

Output 5: Women's business capacities and livelihood enhanced through new networks, training and commercialisation of R-kits and vegetables

At least ten farmer groups/associations with 15-25 members from group 1 will be capacitated in agribusiness and linked to new markets. Business-oriented training will be provided to increase sales of vegetables and R-kits (seed kits combining seeds of high-value vegetables with regenerative cover crops). Ten champion women farmers will be empowered by microgrants to start up/scale up their businesses. A video on regenerative agriculture and leaflets promoting TAVs and R-kits will be disseminated. Lastly, the project will organise a conference to share project results and raise awareness of the importance of agrobiodiversity and regenerative agriculture for soils, livelihood, and climate resilience.

## **Q15. Capability and Capacity**

**How will the project support the strengthening of capability and capacity of identified local and national partners, and stakeholders during its lifetime at organisational or individual levels? Please provide details of what form this will take, who will benefit (noting GESI considerations), and the post-project value to the country.**

Capability strengthening of the national partners, local organizations, students and ultimately, Malagasy farming communities will be at the heart of the Seeds4Soils project.

S4S will strengthen the capacity of two national/regional genebanks in genetic resource conservation through training and practical experience through project activities. This will enhance the capacity of germplasm conservationists beyond the project's lifetime.

Staff and interns from FOFIFA and students from UA will have increased research capacity and skills related to crop and soil characterisation. At least two MSc students from UA will do an MSc thesis within this project, enabling them to become young leaders in biodiversity conservation and sustainable use of genetic resources.

Fifty champion farmers (at least 60% women) will be trained to conserve prioritised landraces and populations of CWRs from at least 10 species together with associated microorganisms on-farm. This will follow protocols and co-created community action plans. In addition, 50 champion farmers and extension workers will receive training and participate in living labs to become promoters of regenerative agriculture, TAVs and cover crops to a wider group of 2,000 surrounding farmers. The local trainers will continue to use their new knowledge to support small-scale farmers in regenerative agriculture.

The 150 direct beneficiaries (at least 60% of whom are women) who are members of existing farmer groups will participate in on-farm trials on regenerative agriculture and cropping system combinations, enhancing their skills in practical experimentation and inclusive learning. These beneficiaries will also have enhanced business capacity after training and coaching by the national NGO Conseil Expérimentation Formation en Fruit Et Légume (CEFFEL). These beneficiaries and farmer groups will further benefit from strengthened linkages with new markets to increase sales of vegetables and seeds. Strong market linkages and established businesses will drive the sustainability of poverty reduction outcomes in the long term.



## Q16. Gender equality and social inclusion

**All applicants must consider whether and how their project will contribute to promoting equality between persons of different gender and social characteristics. Explain your understanding of how individuals may be excluded from equal participation within the context of your project, and how you seek to address this. You should consider how your project will proactively contribute to ensuring individuals achieve equitable outcomes and how you will engage participants in a meaningful way.**

WorldVeg and national partners have experience in gender equity, as demonstrated in Darwin project 26-015 and other projects implemented in Madagascar that focused on supporting women farmer groups. Gender equality and social inclusion will be promoted in the following ways:

**Equal participation:** The project will promote the participation of women and youth as two groups often excluded from agricultural training. The length, place and time of training sessions and the gender of trainers can affect women's and youth's participation and these factors need to be optimised to ensure equality. Women may also have lower literacy than men so training materials need to be made suitable for both groups by using illustrations instead of text as much as possible. The project also defines specific gender targets so that these are tracked throughout the project.

**Access to productive resources:** Women and youth have limited access to productive resources including inputs and financial capital. This project will boost women's and youth's financial capacity by providing market linkages and supporting agricultural business development. Additionally, by providing seed kits to women, the project will improve their access to seed.

**Capacity building:** The documentation of traditional knowledge will consider gender and age, and will particularly value and recognise the knowledge of women and the elderly. Women, men, and people of different ages will engage in on-farm trials, living labs, training and other activities, the team will use communication tools that suit the preferences of men, women, youth and illiterate groups. For example, videos and printed materials will also be suitable for illiterate groups. Overall, targeting women will enhance the impact of project interventions, especially on child nutrition and household poverty.

## Q17. Change expected

**Detail the expected changes to both biodiversity and multi-dimensional poverty reduction, and links between them, that this work will deliver. You should identify what will change and who exactly 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).**

**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.**

Short-term:

At least 400 new accessions of TAVs and CWRs are conserved ex-situ in genebanks.

At least 40 prioritised landraces and CWR populations from at least 10 species, including their rhizosphere microorganisms, will be conserved on-farm in farmers' fields according to new protocols and community action plans.

Group 1, composed of 150 households (750 direct beneficiaries with an assumed mean of 5 people per

household) which will benefit from most of the project activities will at the end of the project have:

- A resilient agricultural system diversified by at least two more crop species.
- Enhanced soil health, resulting in increased crop productivity by at least 30%.
- Improved livelihood and increased annual income by USD 5 per person/year.
- Reduced food insecurity by at least one unit on the Household Food Insecurity Access Scale (e.g. from moderately food insecure to mildly food insecure).

Group 2, composed of 2,000 households (10,000 beneficiaries) will benefit from fewer project activities than group 1, but will have achieved the following benefits at the end of the project:

- A more resilient agricultural system diversified by at least one more crop species.
- A better understanding of how soil health and diversification contribute to increased systems productivity and how soil health can be improved.
- Improved livelihood reported, but perhaps not an immediate increase in annual income, which may take longer to materialise.

Long-term:

Women from group 1 will expand their biodiversity-based businesses and consume a greater diversity and greater quantity of vegetables from their own production or from the market. This will contribute to the diversification of diet and reduce food insecurity. Furthermore, it is estimated that each household from group 1 will improve agricultural practices and food supply in 4 neighbouring households, indirectly benefiting further 3,000 people ( $150 \times 4 \times 5 = 3,000$ ).

2,000 farmers from group 2 will have adopted sustainable soil management practices leading to regenerated and productive soils supplying higher profits and increased incomes. Furthermore, it is estimated that for every direct beneficiary household from Group 2, there will be four other households adopting the same practices thereby benefiting 40,000 people after the project.

Agrobiodiversity in Itasy and Antsirabe regions, including associated microbiome diversity, is being conserved on-farm and ex-situ for future generations.

## **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, in the longer term, your expected Impact.**

Pathway to biodiversity conservation

TAVs and CWRs will be conserved on-farm and ex-situ, and soil microbiome will be conserved on-farm as plant-microbiome-soil systems (Outputs 1,2). These two Outputs have a straightforward pathway to biodiversity conservation. The remaining Outputs contribute to conservation through crop diversification and soil regeneration. Promoting biodiverse R-kits and regeneratively produced vegetables will drive agroecosystem diversification.

Pathway to reduced poverty

Reduction of poverty will be achieved through multiple pathways. One pathway will be through the commercialisation of R-kits (Output 5). Selling vegetables and seeds has been found to contribute to growing annual income, but the annual income was not significantly different from the control groups over the project period (N'Danikou et al. 2022). Thus, the second pathway will be through supporting at least 10 farmer groups/associations to increase vegetable, biomass and seed sales through business skills and access to new

markets (Output 5). The third pathway will be through increasing agricultural productivity by integrating regenerative practices based on on-farm trials, living labs, training and R-kits (Outputs 3,4,5). This will benefit a wider community.

Completing the five Outputs will result in achieving an overall Outcome, which will contribute to the envisioned impact in the long term.

## **Q19. Sustainable benefits and scaling potential**

**Q19a. How will the project reach a point where benefits can be sustained post-funding? How will the required knowledge and skills remain available to sustain the benefits? How will you ensure your data and evidence will be accessible to others?**

To ensure sustained benefits post-funding, the project will strengthen the capacity of national partners and other stakeholders to ensure a multi-layered transfer of knowledge and skills. Investing in training and capacity-building of project stakeholders will ensure independent management, local leadership and continuity of the project's efforts. In addition, the tiered system of beneficiaries combined with established living labs in champion farms will facilitate the continuous local exchange of knowledge from more capacitated beneficiaries to less exposed beneficiaries. By establishing a living co-creation space where innovations emerge and flow between tiers, the project will enhance engagement and ensure a sustained impact. Facilitating access to new markets and enhancing the business capacity of women and youth will have long-term economic benefits. The project will develop protocols, manuals and best practices, as well as adopt open science practices to make project data and evidence publicly accessible for further use and impact.

**Q19b. If your approach works, what potential is there for scaling the approach further? Refer to Scalable Approaches (Landscape, Replication, System Change, Capacitation) in the guidance. What might prevent scaling, and how could this be addressed?**

There is considerable potential for scaling crop diversification and regenerative agriculture through developed capacities, farmer groups and partner networks. In addition, linkages with NGOs, schools, funders and governmental authorities will be established, and development of new initiatives will be explored. With the rapidly growing interest in regenerative agriculture, carbon sequestration and soil health, an inflow of project investments in Madagascar - the hotspot of climate change impacts on agriculture-dependent communities - is expected soon. The S4S project will be extremely timely for paving the way for the regenerative agricultural movement and for the expansion of women's businesses with R-kits of traditional vegetables and cover crops. If the R-kits are confirmed to work well, both as a product with a positive impact on farming systems and as a business, this innovation can be easily replicated to enable the scaling of regenerative agriculture and its benefits across Madagascar and beyond.

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

- [References - WorldVeg Seeds4Soils](#)
- 27/11/2023
- 04:06:37
- pdf 3.4 MB

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## **Section 7 - Risk Management**

### **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.**

<b>Risk Description</b>	<b>Impact</b>	<b>Prob.</b>	<b>Gross Risk</b>	<b>Mitigation Header</b>	<b>Residual Risk</b>
<p><b>Fiduciary</b></p> <p>Misuse of funds through fraudulent acts such as deception, bribery, forgery, extortion, corruption, theft, conspiracy, embezzlement, misappropriation, false representation, and concealment occurs through the funding of this work.</p>	Moderate	Rare	Low	WorldVeg applies anti-fraud and corruption policy and uses an enterprise resource planning (ERP) internal control system to manage all financial transactions. Procurement will be carried out following procurement policy regulation with proper thorough vetting of organisations, and vendors contracted through the project	Low
<p><b>Safeguarding</b></p> <p>Illegal, grossly negligent, dishonest or fraudulent activity, sexual harassment, exploitation and abuse occur during the project.</p>	Severe	Rare	Moderate	Follow WorldVeg safeguarding policy on preventing harassment, exploitation and abuse in all forms, and make all involved aware of the whistle blowing policy and procedures for lodging and investigating complaints. Safeguarding policy articles are included in the sub-contract/sub-agreement with partners	Low
<p><b>Delivery Chain</b></p> <p>Increased crop production can cause surplus production, flood the market and result in lower prices.</p>	Moderate	Likely	Low	Intervene in different market segments and in crops with adaptation to different agroecologies to avoid market gluts.	Low
<p><b>Risk 4</b></p> <p>Loss of germplasm collection: Partial loss of collected germplasm caused by natural or man-made catastrophes.</p>	Moderate	Possible	Low	Depositing collected germplasm as safety duplication in secondary genebank and using black box approach for longterm conservation	Low

<b>Risk 5</b>	Adoption of new farming practices not attained: Farmers are reluctant to adopt regenerative agricultural practices.	Moderate	Possible	Moderate	Extensive outreach and participatory research activities and knowledge transfer facilitated with a focus on women farmers. Establishing inclusive living labs for co-creation, customization and scaling of best practices to ensure uptake of regenerative practices and R-kits.	Low
<b>Risk 6</b>	Competing uses for biomass prevent the improvement of soil health: Farmers prefer to use biomass from crop production and cover crops for other purposes than soil improvement.	Moderate	Likely	Low	Proper planning of efficient and balanced use of generated biomass with the communities at the beginning. Developing simple monitoring for assessing the flow and uses of crop biomass (for soil, livestock, sales, technical uses, and other uses)	Low

## Q21. Project sensitivities

Please indicate whether there are sensitivities associated with this project that need to be considered if details are published (detailed species location data that would increase threats, political sensitivities, prosecutions for illegal activities, security of staff etc.).

No

## Section 8 - Workplan

### Q22. Workplan

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

- [Workplan\\_-\\_WorldVeg\\_Seeds4Soils](#)
- 27/11/2023
- 01:54:19
- pdf 181.44 KB

## Section 9 - Monitoring and Evaluation

### Q23. 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.**

#### Project monitoring & evaluation

A rigorous M&E system will be employed to track beneficiaries and evaluate the intervention's impact. The objectives of the M&E will be to assess the achievement of project goals and objectives, identify and address bottlenecks and ensure accountability and transparency.

The M&E system will record the SMART indicators for outputs that are specified in the logical framework. Data will be collected by project implementing partners as part of the regular project implementation and reported quarterly. Kobo Toolbox or a similar software will be used for the data collection.

#### Adaptive management

Focus group discussions and interviews will be conducted regularly with project participants to understand changes made and discuss bottlenecks as well as opportunities. This feedback together with the M&E system will inform the project managers and allow adaptive changes during the project.

#### Impact evaluation

The impact evaluation will use a survey to collect interview-based data from a sample of project participants and a comparable sample of non-participants as a control. The survey will be conducted at the start of the project and repeated at the end of the project. The M&E system will track the SMART indicators at the outcome level specified in the logical framework. A difference-in-difference estimator will be used to quantify the average treatment effect.

#### Resources

The project M&E team will be composed of 1) local partners engaging in the day-to-day monitoring, 2) enumerators who will collect data on a quarterly basis, and 3) WorldVeg M&E team that will oversee the overall M&E process, ensuring data quality and integrity. Enumerators and local partners will be trained by the M&E team at the beginning of the project, and refresher training will be done whenever required.

In terms of reporting, we will write bi-annual progress reports, and for evaluation, baseline and endline reports will be developed.

**Total project budget for M&E (£)**

£ [REDACTED]

**(this may include Staff and Travel and Subsistence Costs)**

**Total project budget for M&E (%)**

[REDACTED]

**(this may include Staff and Travel and Subsistence Costs)**

**Number of days planned for M&E**

240

## Section 10 - Logical Framework

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### Q24. 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 will measure progress against these and how we can verify this.**

- [Logical\\_Framework - WorldVeg Seeds4Soils](#)
- 27/11/2023
- 01:03:51
- pdf 131.39 KB

#### Impact:

Women farmers from vulnerable Malagasy communities have improved food security and resilient livelihood through a diversified, productive and regenerative agricultural system

#### Outcome:

Smallholder farmers in 10 communities diversify their farming systems with agrobiodiversity to regenerate soils to generate climate-resilient and nutrient-sensitive food production for income generation and food security

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#### Project Outputs

##### Output 1:

Biodiversity of TAVs and CWR (including soil microbiome and traditional knowledge) inventoried and collected

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##### Output 2:

Crop & soil biodiversity conserved on-farm and in genebanks

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##### Output 3:

TAVs and CWRs agro-ecologically characterised and best crop combinations identified

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##### Output 4:

Strengthened capacity of stakeholders in regenerative agriculture and seed production, and best practices promoted through participatory demonstrations-living labs

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##### Output 5:

Women's business capacities and livelihood enhanced through new networks, training and commercialisation of R-kits and vegetables

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#### Do you require more Output fields?

- 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 Documentation of farming systems practices, including soil management and local uses and perceptions of TAVs, CWR and cover crops in 10 Malagasy communities.
- 1.2 Collections of 400 accessions of targeted genetic resources of TAVs and CWRs.
- 1.3 Identification of beneficial microorganisms with adaptive genes to marginal soils and harsh climate

conditions with the use of landscape genomics.

- 2.1 Regeneration, characterisation and conservation of at least 400 newly collected and existing accessions of landraces and CWR in national and regional genebanks.
  - 2.2 Protocol development for seed germination and on-farm conservation to support custodian farmers to conserve prioritised plants on-farm together with associated microorganisms to stimulate soil resilience.
  - 2.3 Supporting 50 custodian farmers to conserve 40 prioritised landraces and populations of CWR from at least 10 species with associated microorganisms on-farm (crop-microbiome systems)
  - 2.4 Training of two national/regional genebank to increase their capacity and and new skills in genetic resources conservation.
- 
- 3.1 On-station field trials to conduct initial screening of agroecological benefits (biomass, soil health, weed control, etc.) of at least 10 cover crop species , and their combinations with high-value TAVs.
  - 3.2 Implementation of participatory on-farm trials with 150 households to test promising crop combinations and regenerative practices in farmers' fields.
- 
- 4.1 Establishment of participatory demonstrations (living labs) of diversification and regenerative practices (TAVs, cover crops, soil management) in champion farmers' fields (at least 1 per community).
  - 4.2 Training of at least 50 champion farmers and extension officers in regenerative agriculture and management of TAVs & cover crops.
  - 4.3 Development and dissemination of leaflets on cover crops, TAVs, R-kits, and soil health.
  - 4.4 Practical training of 2000 farmers in living labs by local trainers on best practices and providing them samples of R-kits.
- 
- 5.1 Annual training of at least 10 champion women farmers in seed production and business of TAVs & cover crops.
  - 5.2 Supporting at least 10 committed women by microgrants to develop and start up seed business, and linking them with seed companies to co-produce diverse R-kits.
  - 5.3 Capacitating existing farmer groups and linking them with new local and urban markets to enhance seed and vegetable sales.
  - 5.4 Business training of 150 members from 10 farmer groups in commercialisation and marketing of regeneratively produced vegetables.
  - 5.5 Development and dissemination of video on regenerative agriculture, and leaflets promoting TAVs and R-kits
  - 5.6 A household M&E survey evaluating the impact of project interventions on poverty reduction and cropping systems (baseline x endline, and intervention x control groups)
  - 5.7 Organising a conference for stakeholders to disseminate results and raise awareness on regenerative agriculture and importance of agrobiodiversity for soils, livelihood and climate resilience.

## **Section 11 - Budget and Funding**

---

### **Q25. Budget**

**Please complete the appropriate Excel spreadsheet, which provides the Budget for this application and ensure the Summary page is fully completed. Some of the questions earlier and below refer to the information in this spreadsheet.**

- 
- [Budget\\_-\\_WorldVeg\\_Seeds4Soils](#)
  - 27/11/2023
  - 01:43:52
  - xlsx 145.49 KB



## Q26. Alignment with other funding and activities

**This question aims to help us understand how familiar you are with other work in the geographic/thematic area, and how this proposed project will build on or align with this to avoid any risks of duplicating or conflicting activities.**

**Q26a. Is this new work or does it build on existing/past activities (delivered by anyone and funded through any source)?**

Development of existing/past activities

**Please provide details:**

Seeds4Soils builds on the WorldVeg-led project supported by the Darwin Initiative: 26-015 “Traditional African vegetables strengthen food and nutrition security in Madagascar”. Seeds4Soils is further aligned to the WorldVeg-led project on “Vegetable seed kits for food security in Madagascar and Benin”, supported by GIZ, Germany, and to the WorldVeg-led Taiwan Africa Vegetable Initiative in four vegetable biodiversity hotspots in Madagascar, and Benin, Tanzania, and Eswatini. These three projects have supported the rescue, conservation, and use of the very special agrobiodiversity in Madagascar to transform agri-food systems to become more biodiversity-friendly, nutrient-sensitive, and climate-resilient, and with more income opportunities for smallholders. Seeds4Soils will add a new dimension by integrating the conservation and use of soil biodiversity to diversify farm systems. Seeds4Soils will further provide a unique opportunity for long-term research and monitoring in an established territory to better understand the long-term impact of agrobiodiversity enhancement on poverty reduction building on the monitoring and evaluation activities in the previous and aligned projects. Seeds4Soils will provide insights into long-term trends in adopting new practices and how this affects livelihoods. The lessons learned will help to improve interventions of agrobiodiversity enhancement more general in other projects of the Darwin Initiative across the world.

**Q26b. Are you aware of any current or future plans for work in the geographic/thematic area to the proposed project that may duplicate or cut across this proposed project?**

No

## 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). Why is it the best feasible project for the amount of money to be spent?**

Seeds4Soils demonstrates significant value for money by employing a robust cost-benefit approach and leveraging existing knowledge, infrastructure, and target beneficiary networks. We anticipate high returns as the investment spreads across ~2,150 direct beneficiaries (~270 GBP/farmer), with the potential to recover this amount within a few seasons, given the expected yield increase; this equals 450,000 GBP as a short-term outcome. By tapping into soil properties, the project aims to achieve sustainable soil regeneration, thus significantly enhancing the long-term productivity of hundreds of farmers in a cost-effective manner. Furthermore, the initiative aims to foster the development of small enterprises, generating supplementary income for women entrepreneurs and reducing seed production costs for other participants. The project's tiered approach, involving different groups of farmers, is designed to streamline scaling expenses, with more trained champion farmers (Group 1) guiding less experienced peers (Group 2) in a dynamic and progressive adoption process.

## Q28. Capital items

**If you plan to purchase capital items with Darwin Initiative 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.**

We plan to purchase a computer, cameras and accessories (█████ GBP) for the lead partner, and one computer for the partner (█████ GBP). These capital items will facilitate good documentation, data management and common research activities. After project completion, the purchased equipment will continue to serve the different partners.

## **Section 12 - Safeguarding and Ethics**

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### **Q29. Safeguarding**

**All projects funded under the Biodiversity Challenge Funds must ensure proactive action is taken to promote the welfare and protect all individuals involved in the project (staff, implementing partners, the public and beneficiaries) from harm. In order to provide assurance of this, projects are required to have specific procedures and policies in place.**

**Please upload the following required policies:**

- **Safeguarding Policy**: including a statement of commitment to safeguarding and a zero tolerance statement on bullying, harassment and sexual exploitation and abuse.
- **Whistleblowing Policy**: which details a clear process for dealing with concerns raised and protects whistle blowers from reprisals.
- **Code of Conduct**: which sets out clear expectations of behaviours – inside and outside the workplace – for all involved in the project and makes clear what will happen in the event of non-compliance or breach of these standards, including compliance with IASC 6 Principles.

**If any of these policies are integrated into a broader policy document or handbook, please upload just the relevant or equivalent sub-sections to the above policies, with (unofficial) English translations where needed.**

**Please outline how (a) beneficiaries, the public, implementing partners, and staff are made aware of your safeguarding commitment and how to confidentially raise a concern, (b) safeguarding issues are investigated, recorded and what disciplinary procedures are in place when allegations and complaints are upheld, (c) you will ensure project partners uphold these policies.**

**If your approach is currently limited or in the early stages of development, please clearly set out your plans address this.**

Partners and collaborators are vetted through an established selection and assessment process at WorldVeg. The contractual agreement with the partners includes the safeguarding, ethical policies, and whistle-blowing policies attached to this proposal submission and required compliance with the policies. The agreement has termination clauses wherein the collaboration will be ended if the partner engages in activities not aligned with our code of conduct. Collaboration can be terminated if the partner breaches the terms of the agreement, misuses funds provided through the project, or commits abuse or crime.

### **Q30. Ethics**

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

WorldVeg has adopted a Code of Ethics which explicitly outlines the obligations of all staff and partners to serve with integrity and impartiality and to hold oneself to the highest standards of professional ethics. The Code

includes compliance to laws, regulations, privileges, and immunities, conflict of interest, confidentiality and benefit sharing, intellectual property rights, corruption favours, and gifts, harassment and discrimination.

All WorldVeg staff members are required to act with honesty and integrity, pay due regard to the appropriate use of the Center's resources, adhere to professional standards of ethics in dealing with donors, partners, vendors, suppliers, contractors, etc., and not to accept gifts or favours or give the same to others to gain or receive favours. As of 2019, WorldVeg contracts a service provider, Lighthouse, an ethics and compliance hotline service where reports of violations of our Code of Ethics can be filed without fear of retribution.

For the ethical implementation on the ground, prior informed consent will be obtained from all participating farmer groups. The project will follow WorldVeg's ethical guidelines for research and development projects involving human participants, and activities will be reviewed by its Institutional Biosafety and Research Ethics Committee prior to implementation.

## **Section 13 - British embassy or high commission engagement**

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### **Q31. British embassy or high commission engagement**

**It is important for UK Government representatives to understand if UK funding might be spent in the project country/ies.**

**Please indicate if you have contacted the relevant British embassy or high commission to discuss the project.**

Yes

**Please attach evidence of request or advice if received.**

- [Correspondence\\_with\\_the\\_British\\_Embassy](#)   
[agascar](#)
- 27/11/2023
- 05:07:40
- pdf 512.73 KB

## **Section 14 - Project Staff**

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### **Q32. 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.**

<b>Name (First name, Surname)</b>	<b>Role</b>	<b>% time on project</b>	<b>1 page CV or job description attached?</b>
Sognigbe N'Danikou	<b>Project Leader</b>	15	Checked
Lukas Pawera	Agroecologist - regenerative agriculture, living labs	8	Checked

Maarten van Zonneveld	Head genetic resources - landraces and CWR assessments	3	Checked
Ricardo Oliva	Plant pathology - soil microbiome diversity assessment	3	Checked

**Do you require more fields?**

Yes

Name (First name, Surname)	Role	% time on project	1 page CV or job description attached?
Mercy Mwambi	Agricultural economist - impact evaluation	7	Checked
Bodovololona Rabary	National project coordinator - Madagascar	15	Checked
Tatiana Rakotoson	Officer - extension and participatory on-farm evaluation	15	Checked
Tendro Radanielina	Officer - collecting missions and characterization	10	Checked
Razanameharizaka Juvet	Officer - M&E household surveys and focus groups	10	Checked
No Response	No Response	No Response	Unchecked
No Response	No Response	No Response	Unchecked
No Response	No Response	No Response	Unchecked

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

- [CV combined - WorldVeg Seeds4Soils \(1\)](#)
- 26/11/2023
- 23:33:32
- pdf 1.38 MB

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

Yes

## Section 15 - Project Partners

### Q33. Project Partners

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

**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 order of the letters must be the same as the order they are presented in below.**

<b>Lead partner name:</b>	World Vegetable Center (legal name: Asian Vegetable Research and Development Center)
<b>Website address:</b>	<a href="https://avrdc.org">https://avrdc.org</a>
<b>Why is this organisation the Lead Partner, and what value to they bring to the project? (including roles, responsibilities and capabilities and capacity):</b>	WorldVeg has the experience, ample capacity, and R&D infrastructure to lead the project and is in a good position to be involved in capacity development of researchers and extension workers of the national partners FOFIFA, staff of NGO CEFFEL, champion farmers, and MSc students. WorldVeg will collaborate with FOFIFA and UA in germplasm collection and characterisation, and will be responsible for ex-situ conservation, landscape genomics, soil microbiome analysis, and the development of germination and on-farm conservation protocols. WorldVeg will also support the development of protocols for on-station and on-farm research and for the establishment of living labs. WorldVeg together with FOFIFA will also guide and backstop the local NGO partner CEFFEL in their activities on regenerative agriculture, business development capacity, and creation of market linkages
<b>International/In-country Partner:</b>	<input type="checkbox"/> International
<b>Allocated budget (proportion or value):</b>	£ [REDACTED]
<b>Representation on the Project Board (or other management structure):</b>	<input type="checkbox"/> Yes
<b>Have you included a Letter of Support from the Lead Partner?</b>	<input type="checkbox"/> Yes

**Do you have partners involved in the Project?**

Yes

<b>1. Partner Name:</b>	National Center for Applied Research and Rural Development (FOFIFA), Madagascar
<b>Website address:</b>	<a href="https://www.fofifa.mg/">https://www.fofifa.mg/</a>

---

**What value does this Partner bring to the project? (including roles, responsibilities and capabilities and capacity):**

FOFIFA is the main agricultural research institution of the National Agricultural Research System in Madagascar, which will be a crucial partner for the S4S project. FOFIFA will lead the on-station research and on-farm participatory trials in poor communities in the Itasy and Antsirabe regions. FOFIFA will also lead the germplasm collection missions and be responsible for the local engagement of stakeholders. FOFIFA will translate research findings into practical guidance for champion farmers, extensionists and NGO CEFFEL to inform their practical actions on the ground. FOFIFA will subcontract with the University of Antananarivo and CEFFEL NGO.

---

**International/In-country Partner:**  In-country

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**Allocated budget:** £ [REDACTED]

---

**Representation on the Project Board (or other management structure):**  Yes

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**Have you included a Letter of Support from this partner?**  Yes

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**2. Partner Name:** University of Antananarivo (UA), Madagascar

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**Website address:** <https://www.univ-antananarivo.mg/>

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**What value does this Partner bring to the project? (including roles, responsibilities and capabilities and capacity):**

University of Antananarivo is the primary public university of Madagascar. UA will participate in collection missions and agroecological characterisation of traditional African vegetables and their wild relatives in collaboration with FOFIFA. UA will engage and supervise students who will do their MSc theses in this project.

---

**International/In-country Partner:**  In-country

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**Allocated budget:** £ [REDACTED]

---

**Representation on the Project Board (or other management structure):**  Yes

---

**Have you included a Letter of Support from this partner?**  Yes

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**3. Partner Name:** Non-governmental organisation CEFFEL (Conseil Expérimentation Formation en Fruit Et Légume), Madagascar

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**Website address:** <https://www.fert.fr/ceffel-une-organisation-nationale-creee-par-fifata-et-fert-au-service-de-la-filiere-fruits-et-legumes/>

---

<b>What value does this Partner bring to the project? (including roles, responsibilities and capabilities and capacity):</b>	NGO CEFFEL, which is a national farmers' organisation specialising in sustainable agricultural development and livelihood creation, will lead training in regenerative agriculture, establishment of living labs, and building the business capacity of participating farmer groups along with creation of new market linkages to enhance sales.
<b>International/In-country Partner:</b>	<input type="checkbox"/> In-country
<b>Allocated budget:</b>	£ [REDACTED]
<b>Representation on the Project Board (or other management structure)</b>	<input type="checkbox"/> Yes
<b>Have you included a Letter of Support from this partner?</b>	<input type="checkbox"/> Yes

<b>4. Partner Name:</b>	<i>No Response</i>
<b>Website address:</b>	<i>No Response</i>
<b>What value does this Partner bring to the project? (including roles, responsibilities and capabilities and capacity):</b>	<i>No Response</i>
<b>International/In-country Partner:</b>	<input type="checkbox"/> International <input type="checkbox"/> In-country
<b>Allocated budget:</b>	<i>No Response</i>
<b>Representation on the Project Board (or other management structure):</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Have you included a Letter of Support from this partner?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No

<b>5. Partner Name:</b>	<i>No Response</i>
<b>Website address:</b>	<i>No Response</i>
<b>What value does this Partner bring to the project? (including roles, responsibilities and capabilities and capacity):</b>	<i>No Response</i>
<b>International/In-country Partner:</b>	<input type="checkbox"/> International <input type="checkbox"/> In-country
<b>Allocated budget:</b>	<i>No Response</i>
<b>Representation on the Project Board (or other management structure):</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No

---

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

---

6. Partner Name: *No Response*

---

Website address: *No Response*

---

What value does this Partner bring to the project? (including roles, responsibilities and capabilities and capacity): *No Response*

---

International/In-country Partner:  International  
 In-country

---

Allocated budget: *No Response*

---

Representation on the Project Board (or other management structure):  Yes  
 No

---

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

---

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 combined PDF of all letters of support.

- [Letters of support - Partners and farmer communities - Seeds4Soils\(3\)](#)
- 27/11/2023
- 04:48:33
- pdf 911.23 KB

## Section 16 - Lead Partner Capability and Capacity

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### Q34. Lead Partner Capability and Capacity

Has your organisation been awarded Biodiversity Challenge Funds (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
--------------	----------------	-------

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DARSC182	Tsvetelina Stoilova	Utilizing biodiversity of traditional African vegetable species in Madagascar
26-015	Sognigbe N'Danikou	Traditional African vegetables strengthen food and nutrition security in Madagascar
No Response	No Response	No Response
No Response	No Response	No Response
No Response	No Response	No Response
No Response	No Response	No Response

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

Yes

## Section 17 - Certification

### Q.35 Certification

**If this section is incomplete the entire application will be rejected.**

**Please note if you do not upload the relevant materials below your application may be made ineligible.**

**On behalf of the**

Company

**of**

World Vegetable Center (legal name: Asian Vegetable Research and Development Center)

**I apply for a grant of**

£599,858.00

**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 key project personnel, cover letter, letters of support, a budget, logframe, Safeguarding and associated policies, and project workplan.**
- **Our last two sets of signed audited/independently verified accounts and annual report (covering three years) are also enclosed.**

Checked

**Name** MARCO WOPEREIS

**Position in the organisation** DIRECTOR GENERAL

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**Signature (please upload e-signature)**

- [Certification - WorldVeg Seeds4Soils](#)
- 27/11/2023
- 01:50:40
- pdf 86.76 KB

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**Date** 27 November 2023

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

---

<input type="checkbox"/> <a href="#">Financial Statements-2021</a>	<input type="checkbox"/> <a href="#">Financial Statement 2022</a>
<input type="checkbox"/> 26/11/2023	<input type="checkbox"/> 26/11/2023
<input type="checkbox"/> 06:40:33	<input type="checkbox"/> 06:34:24
<input type="checkbox"/> pdf 1.13 MB	<input type="checkbox"/> pdf 3.5 MB

**Please upload the Lead Partner's Safeguarding Policy, Whistleblowing Policy and Code of Conduct as a PDF**

---

- [World Vegetable Center - Safeguarding policies combined](#)
- 26/11/2023
- 06:49:09
- pdf 1.66 MB

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## Section 18 - Submission Checklist

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### Checklist for submission

	<b>Check</b>
<b>I have read the Guidance, including the "Darwin Initiative Guidance", "Monitoring Evaluation and Learning Guidance", "Standard Indicator Guidance", "Risk Guidance", and "Finance 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>	
• <b>a cover letter from the Lead Partner, outlining how any feedback received at Stage 1 has been addressed where relevant, as a single PDF.</b>	Checked
• <b>my completed logframe as a PDF using the template provided and using "Monitoring Evaluation and Learning Guidance" and "Standard Indicator Guidance".</b>	Checked
• <b>my budget (which meets the requirements above) using the template provided.</b>	Checked

• a signed copy of the last 2 annual report and accounts (covering three years) for the Lead Partner, or provided an explanation if not.	Checked
• my completed workplan as a PDF using the template provided.	Checked
• a copy of the Lead Partner's Safeguarding Policy, Whistleblowing Policy and Code of Conduct (Question 29).	Checked
• 1 page CV or job description for all the Project Staff identified at Question 32, including the Project Leader, or provided an explanation of why not, combined into a single PDF.	Checked
• a letter of support from the Lead Partner and partner(s) identified at Question 33, or an explanation of why not, as a single PDF.	Checked
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.	Checked
My additional supporting evidence is in line with the requested evidence, amounts to a maximum of 5 sides of A4, and is combined as a single PDF.	Checked
(If copying and pasting into Flexi-Grant) I have checked that all my responses have been successfully copied into the online application form.	Checked
I have checked the Darwin Initiative website immediately prior to submission to ensure there are no late updates.	Checked
I have read and understood the Privacy Notice on the Darwin Initiative website.	Checked

### 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.**

Unchecked

### 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).

Seeds4Soils: regenerating soils with agrobiodiversity for climate resilience in Madagascar

Project Summary	SMART Indicators	Means of Verification	Important Assumptions
<b>Impact: Women farmers from vulnerable Malagasy communities have improved food security and resilient livelihood through a diversified, productive and regenerative agricultural system</b>			
<p><b>Outcome:</b> Smallholder farmers in 10 communities diversify their farming systems with agrobiodiversity to regenerate soils to generate climate-resilient and nutrient-sensitive food production for income generation and food security</p>	<p>0.1 Enhanced soil health resulting in increased cropping system productivity (Baseline to be established in year 1, project target 30% increase in 150* group 1 households participating in on-farm trials and VBN networks).</p> <p>*150 group 1 households translates to 750 beneficiaries with an assumed mean of 5 people/ household (150 x 5 = 750). Furthermore, it is estimated that each group 1 household will improve agricultural practices and food supply in 4 households of relatives, indirectly benefiting 3,000 people (150 x 4 x 5 = 3,000).</p> <p>0.2 Area of improved regenerative agricultural practices making farmers more resilient to weather shocks [DI-D10]. (Baseline to be established in year 1, project target 20% increase annually in 150 group 1 households).</p> <p>0.3 Improved livelihood reported [DI-D16]. (Baseline to be established in year 1, project target at least 125 out of 150 group 1 households have improved livelihood at the project end; and at least 50% of group 2</p>	<p>0.1 a Report and manuscript on the results of on-farm trials</p> <p>0.1 b Report on the impact study</p> <p>0.2a Report and manuscript on the results of on-farm trials</p> <p>0.2b Report on the impact study</p> <p>0.3 Report on the impact study</p> <p>0.4 Report on the impact study</p> <p>0.5 Report on the impact study</p> <p>0.6 Report on targeted collections and report on the characterisation of the collected genetic resources.</p> <p>0.7 Report on targeted collections and report on the characterisation of the collected genetic resources.</p>	<p>There are no extreme climatic or natural events hampering the project interventions or affecting the life situation or livelihood of participating communities.</p> <p>Communities have enough time during project activities and are willing to collaborate and allocate part of the land for project activities.</p> <p>Increases in sales of vegetables and seeds are not affected by a decrease in price for those commodities.</p> <p>International and national regulations continue to allow collection and characterisation of landraces, wild crop</p>

Seeds4Soils: regenerating soils with agrobiodiversity for climate resilience in Madagascar

	<p>households report improved livelihood at the project end).</p> <p>0.4 Increased annual income [DI-D02]. (Baseline to be established in year 1, project target at least 100 out of 150 group 1 households have annual income increased by USD 5 person/year).</p> <p>0.5 Reduced food insecurity by at least one category on Household Food Insecurity Access Scale (e.g. from moderately food insecure to mildly food insecure). (Baseline to be established in year 1, project target at least 100 out of 150 group 1 households have reduced food insecurity at the project end).</p> <p>0.6 At least 40 prioritised landraces and populations of crop wild relatives from at least 10 species including their rhizosphere microorganisms will be conserved on-farm by custodian farmers (Project milestones: 15 by year 1, 30 by year 2, and 40 by year 3).</p> <p>0.7 At least 400 new accessions of targeted TAVs and CWR and their rhizosphere soil samples will be collected across agro-ecological gradients to close collection gaps for these targeted genepools, and conserved in national and regional genebanks (Project milestones: 150 by year 1, 300 by year 2, and 400 by year 3).</p>		<p>relatives and soil microbiome.</p>
<p><b>Output 1. Biodiversity of TAVs and CWR (including</b></p>	<p>1.1 Assessment of farming practices and community use of TAVs and CWRs, and soil</p>	<p>1.1 Report on farming practices and traditional uses of TAVs and CWRs</p>	<p>Communities are willing to share their knowledge and</p>

Seeds4Soils: regenerating soils with agrobiodiversity for climate resilience in Madagascar

<p><b>soil microbiome and traditional knowledge inventoried and collected</b></p>	<p>biodiversity carried out in year 1 and published in year 2 [DI-C04].</p> <p>1.2 400 accessions of targeted landraces of selected TAVs and CWRs including associated soil microbiomes across environmental gradients in Madagascar completed to close collection gaps for these targeted genepools. (Project milestones: 200 by year 1 and 400 by year 2).</p> <p>1.3 Beneficial soil microbiome communities identified from the rhizosphere of landraces and crop wild relatives by year 2.</p>	<p>1.2a Report on targeted collections</p> <p>1.2b Germplasm collection permits</p> <p>1.3 Draft of manuscript on landscape genomics of soil microbiome</p>	<p>accompany researchers during collections.</p> <p>International and national regulations continue to allow collection and characterisation of landraces, wild crop relatives and soil microbiome.</p>
<p><b>Output 2. Crop &amp; soil biodiversity conserved on-farm and in genebanks</b></p>	<p>2.1 At least 400 newly collected and existing accessions of landraces and crop wild relatives are regenerated, characterised, and conserved in national and regional genebanks. (Project milestones: 150 by year 1, 300 by year 2, and 400 by year 3).</p> <p>2.2 At least 50 custodian farmers are trained and are conserving 40 prioritised landraces and populations of crop wild relatives from at least 10 species together with associated microorganisms on-farm by year 2, according to the protocols developed. (Project milestones: 20 by year 1, 20 by year 2, and 10 by year 3).</p> <p>2.3 Two national/regional genebanks have increased capacity and new skills in genetic resources conservation [DI-A03] by year 2.</p>	<p>2.1 Report with characterisation data of the collected TAVs and CWRs</p> <p>2.2 Copies of seed germination and conservation protocols. And notes from monitoring of farmers.</p> <p>2.3 Notes from discussion with genebank staff</p>	<p>FOFIFA will obtain permits from the relevant national authorities in consultation with the ITPGRFA focal point to collect and ship seeds to the WorldVeg genebank in Arusha, Tanzania.</p> <p>International and national regulations continue to allow collection, characterisation and seed shipment of land races and wild crop relatives.</p>

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<p><b>Output 3. TAVs and CWRs agro-ecologically characterised and best crop combinations identified</b></p>	<p>3.1 Staff and students/interns from 2 national research organisations have increased research capacity and applied new skills related to agro-ecological crop and soil characterisation by year 2 [DI-A03].</p> <p>3.2 At least 150 farmers participating in on-farm trials have enhanced skills in practical agricultural research, and their knowledge of regenerative practices is increased through experimentation [DI-A01]. (Project milestones: 50 by year 1, 100 by year 2, and 150 by year 3)</p>	<p>3.1 Notes from discussion with staff and co-authored publications</p> <p>3.2 Reports and manuscripts on the results of on-station and on-farm trials</p>	<p>Farmers will be willing to collaborate and allocate part of the land for participatory trials and demonstrations.</p>
<p><b>Output 4. Strengthened capacity of stakeholders in regenerative agriculture and seed production, and best practices promoted through participatory demonstrations-living labs</b></p>	<p>4.1 At least 50 champion farmers and extension workers are capacitated and are actively promoting regenerative agriculture following multiple training [DI-A01]. (Project target 50 people trained by year 2).</p> <p>4.2 2,000* farmers have enhanced knowledge and strengthened capacity in regenerative agriculture and have received R-kits for sowing from 50 capacitated trainers by the project end [DI-A01]. (Project milestones: 500 by year 2 and 2,000 by year 3).</p> <p>*2,000 farmers translates to 10,000 beneficiaries at household level (2,000 x 5 = 10,000). Furthermore, it is estimated that each supported household will improve agricultural practices and food supply in 4 neighbouring households, indirectly benefiting 40,000 people (2,000 x 4 x 5 = 40,000) after the project.</p>	<p>4.1 Lists of training participants and post training feedback</p> <p>4.2 Records of champion farmers and extension workers</p> <p>4.3 Report on the impact study</p> <p>4.4a Report on the impact study and</p> <p>4.4b Report on farming practices and traditional uses of TAVs and CWRs</p>	<p>Extension workers will be able to attend the training and continue capacity building after the training.</p> <p>There will be open-minded champion farmers who will be willing to allocate part of their land for participatory demonstrations (living labs).</p>

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	<p>4.3 125 out of 150 farmers from group 1 have diversified their agricultural system by at least 2 more crop species (Project milestones: 100 by year 2 and 125 by year 3). And 1,500 out of 2,000 farmers from group 2 have diversified their agricultural system by at least 1 crop species. (Project milestones: 500 by year 2 and 1,500 by year 3).</p> <p>4.4 125 out of 150 farmers from group 1 have improved their management of crop biomass (balancing the need for soil improvement and other uses). (Project milestones: 50 by year 2 and 125 by year 3).</p>		
<p><b>Output 5. Women’s business capacities and livelihood enhanced through new networks, training and commercialisation of R-kits and vegetables</b></p>	<p>5.1 At least 20 women champions have improved capability of doing seed business after 3-day annual training and extension [DI-A01]. (Project target 20 women trained by year 3).</p> <p>5.2 Ten women, supported by microgrants, have developed and submitted their seed microenterprise business plans to local authorities. (Project target 10 business plans submitted by year 3).</p> <p>5.3 Trained women, in collaboration with seed companies, produce at least 2,000 R-kits, which will be sold or distributed within the project [DI-A01]. (Project milestones: 500 R-kits by year 2, and 2,000 R-kits by year 3).</p> <p>5.4 At least 150 members (at least 60% of women) of 10 supported farmer groups have</p>	<p>5.1 Lists of training participants and post training feedback 5.2 Copies of submitted business plans 5.3 Records of women and seed companies 5.4 Report on the impact study 5.5 YouTube website records 5.6 Conference proceedings and participants list</p>	<p>There is a good commercial value and demand for seeds of vegetables and cover crops.</p> <p>Seed companies are willing to collaborate with women farmers to produce seed kits.</p> <p>Government and stakeholders are interested in regenerative agriculture and the potential of TAVs and CWR.</p>



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	<p>enhanced business capacity after training and coaching [DI-A01], and have strengthened linkages with markets by the project end.</p> <p>5.5 A video on regenerative agriculture has at least 1,200 views 6 months after releasing on WorldVeg's YouTube and partners' social media in year 3.</p> <p>5.6 The conference in year 3 is attended by at least 100 national participants [DI-C14] to raise their awareness and encourage further actions. (Project target at least 10 of participants are policymakers).</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><b>Output 1. Biodiversity of TAVs and CWR (including soil microbiome and traditional knowledge) inventoried and collected</b></p> <p>1.1 Documentation of farming systems practices, including soil management and local uses and perceptions of TAVs, CWR and cover crops in 10 Malagasy communities.</p> <p>1.2 Collections of 400 accessions of targeted genetic resources of TAVs and CWRs.</p> <p>1.3 Identification of beneficial microorganisms with adaptive genes to marginal soils and harsh climate conditions with the use of landscape genomics.</p> <p><b>Output 2. Crop &amp; soil biodiversity conserved on-farm and in genebanks</b></p> <p>2.1 Regeneration, characterisation and conservation of at least 400 newly collected and existing accessions of landraces and CWR in national and regional genebanks.</p> <p>2.2 Protocol development for seed germination and on-farm conservation to support custodian farmers to conserve prioritised plants on-farm together with associated microorganisms to stimulate soil resilience.</p> <p>2.3 Supporting 50 custodian farmers to conserve 40 prioritised landraces and populations of CWR from at least 10 species with associated microorganisms on-farm (crop-microbiome systems)</p> <p>2.4 Training of two national/regional genebank to increase their capacity and and new skills in genetic resources conservation.</p> <p><b>Output 3. TAVs and CWRs agroecologically characterised and good crop combinations identified</b></p>			

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3.1 On-station trials to conduct screening of agroecological benefits (biomass, soil health, weed control, etc.) of 10 cover crop species and their combinations with high-value TAVs .

3.2 Implementation of participatory on-farm trials with 150 households to test promising crop combinations and regenerative practices in farmers' fields.

### **Output 4. Strengthened capacity of stakeholders in regenerative agriculture and seed production, and best practices promoted through participatory demonstrations-living labs**

4.1 Establishment of participatory demonstrations (living labs) of diversification and regenerative practices (TAVs, cover crops, soil management) in champion farmers' fields (at least 1 per community)

4.2 Training of at least 50 champion farmers and extension officers in regenerative agriculture and management of TAVs & cover crops.

4.3 Development and dissemination of leaflets on cover crops, TAVs, R-kits, and soil health.

4.4 Practical training of 2000 farmers in living labs by local trainers on best practices and providing them samples of R-kits.

### **Output 5. Women's business capacities and livelihood enhanced through new networks, training and commercialisation of R-kits and vegetables**

5.1 Annual training of at least 10 champion women farmers in seed production and business of TAVs & cover crops.

5.2 Supporting at least 10 committed women by microgrants to develop and start up seed business, and linking them with seed companies to co-produce diverse R-kits.

5.3 Capacitating existing farmer groups and linking them with new local and urban markets to enhance seed and vegetable sales.

5.4 Business training of 150 members from 10 farmer groups in commercialisation and marketing of regeneratively produced vegetables.

5.5 Development and dissemination of video on regenerative agriculture, and leaflets promoting TAVs and R-kits

5.6 A household M&E survey evaluating the impact of project interventions on poverty reduction and cropping systems (baseline x endline, and intervention x control groups)

5.7 Organising a conference for stakeholders to disseminate results and raise awareness on regenerative agriculture and importance of agrobiodiversity for soils, livelihood and climate resilience .