

Darwin Initiative/Darwin Plus Projects

Half Year Report

(due **31st October 2021**)

Project reference	26-015
Project title	Traditional African vegetables strengthen food and nutrition security in Madagascar
Country(ies)/territory(ies)	Madagascar
Lead organisation	World Vegetable Center
Partner(s)	World Vegetable Center, Centre National de la Recherche Appliquée au Développement Rural (FOFIFA), Université d'Antananarivo (UA), SEMANA
Project leader	<i>Sognigbe N'Danikou</i>
Report date and number (e.g. HYR1)	29 October 2021, (HYR3)
Project website/blog/social media	N/A

1. Outline progress over the last 6 months (April – Sept) against the agreed project implementation timetable (if your project has started less than 6 months ago, please report on the period since start up to end September).

This report includes the period from 1 April - 30 September 2021.

Output 1: Good understanding of the status of agro-biodiversity in Malagasy food systems.

- Agrobiodiversity (ABD)-4 cells assessments were finalized in eight communities in different agroecological zones. Malagasy Darwin student's day was organized on August 16, 2021 at the University of Antananarivo, Faculty of Science, whereby the students supported by the Darwin project presented the progress with their MSc research and the findings. There were 11 MSc students in total who participated in the Darwin student's day. Later on, three of the MSc students have defended their MSc theses and graduated from the University of Antananarivo. The other students will graduate later in 2021 or early 2022. The ABD data helped to understand the current use and conservation status of traditional vegetables and other Malagasy food plants. The results had fed the development of the ABD catalogue which is now being finalized for publication. Collected herbarium specimens during the inventories have been deposited in the national herbarium of Madagascar, as reference specimens for future studies.

Output 2: Protected and characterized genetic resources of vegetable diversity.

- Another 304 accessions were collected in June 2021 in Itasy and Vakinankaratra regions, making a total of 915 accessions of traditional African vegetables collected. The collected materials have then been sorted, cleaned, processed and tested by FOFIFA genebank and laboratory in Antananarivo. The germplasm is ready to be shared with WorldVeg using a Standard Material Transfer Agreement. An import permit is being applied for by WorldVeg to receive an initial batch of 438 accessions in its Tanzania office. This batch will also be accompanied with a germplasm export permit.

- Agro-morphological characterization of 14 crop varieties (4 of nightshade, 5 of amaranth, 2 of African eggplant, 2 of Ethiopian mustard, and 1 pumpkin variety) was carried out at FOFIFA's research station in Antsirabe. This was conducted from November 2020 to June 2021. The vegetables grew well and more seeds were saved for all the varieties despite some diseases and pest damages. The agronomic and morphological characters were measured and the data was processed. One MSc student has graduated in 2021 and one scientific paper on the morphological characterization of landrace of traditional vegetables is in progress.

Output 3: Malagasy extension workers and women farmers trained on seed saving and production of traditional vegetables.

- Seed kits of 250 of 14 WorldVeg lines/ crop varieties were developed and sent to Madagascar for cultivation by 200 women farmers and home gardens in the project year 3. The team is preparing for the training of extension workers and women farmers, which is scheduled from the last week of October 2021.
- The trained 200 women farmers evaluated on-farm the 14 vegetable crop varieties from WorldVeg. A survey was conducted among these farmers during April - May 2021. Their opinions about the TAVs have evolved compared to year 1. In project year 2, the women had more experience in growing TAVs and were already able to prepare, sell and share their crops. The women in Itasy encountered problems with poor soil (20% of the women) and lack of irrigation water for the plants (79%) when the rain stops for many days or weeks. Rainfall is very erratic. However, both in Itasy and Betafo the women found that the TAVs adapt well to their environments. Many women of Itasy faced disease and insect problems on their crops, but most of them said that the loss is not important. Regarding farmers' preferences, *Amaranthus cruentus* (variety Madiira 1) is the most preferred and 55% of the women found it is the tastiest of all the TAVs, followed by two *Solanum scabrum* varieties (Malala and Olevolosi). Although Madiira 1 is the tastiest, it does not sell well, because most consumers do not yet know amaranth, unlike nightshades, which are a very popular food for Malagasy people. The sale of TAVs is strongly and steadily increasing compared to the baseline and the sales volumes are also increasing.

Output 4: Regional school garden programs strengthened to promote conservation and use of agro-biodiversity.

- Activities were conducted with eight biodiversity-rich school gardens in the period. Focus-group discussions were held with school children and care takers on their knowledge, attitudes and practices regarding traditional vegetable production in the school gardens.
- The agro-biodiversity catalogue has been developed. The traditional vegetables of Madagascar in the regions of Itasy, Vakinankaratra and Bongolava are presented in the catalogue and a summary of this catalogue (preprints of shorter version) was distributed to the participants at the national and regional biodiversity-rich school gardens conference in October 2021.
- Regional conferences on the value and benefits of growing traditional vegetables for income generation and nutrition and school gardens were organized on October 5 in Antsirabe and on October 7, 2021 in Arivonimamo. The guests were regional authorities, regional directors of governmental agencies under different Ministries (Ministries of Agriculture, Environment, Education, Health, and Population and Promotion of Women), directors of primary schools, women farmers, parents of students, and private and public organizations working in nutrition. The conference presented project achievements on strengthening regional school garden programs and building the capacity of women farmers on the production and marketing of traditional vegetables. There were interesting discussions with the participants during the conference. It was recommended by the stakeholders that (i) the project should be extended to other regions of Madagascar, (ii) it is necessary to include women's associations (which are numerous in the Vakinankaratra and Itasy regions) if we want to disseminate the seeds of traditional vegetables; (iii) increase the number of primary schools receiving training on traditional vegetables; (iv) consider how to sustain this activity after the end of the project; (v) develop and distribute recipes books/leaflets on how to cook traditional vegetables. Many

NGOs requested to partner with the project for the scaling of the school gardens and to distribute more TAVs seeds. CEFFEL NGO for e.g. has a new EU funded project to create school gardens and they want to collaborate in order to have access to TAV seeds for dissemination. The coordinator of the Regional Nutrition Office requested a collaboration to introduce the TAVs to women who are monitored in the scope of a program to fight against malnutrition in Vakinankaratra region.

Output 5: Malagasy women farmers trained on seed production for commercialization.

- The trained women farmers are selling their seeds of traditional African vegetables to household gardeners in the communities and to farmers in the local markets. The success with the women’s seed saving activity has also resulted in a partnership with the municipalities of Arivonimamo I and Arivonimamo II and the local NGO "ACTION CONTRE LA FAIM" whereby the women sell the seeds to the municipalities and NGOs for distribution to vulnerable communities. Further partnership is expected to arise after the national workshops conducted in October 2021.
- 10 progressive women farmers have received vegetable seed business trainings.

2a. Give details of any notable problems or unexpected developments/lessons learnt that the project has encountered over the last 6 months (for COVID-19 specific delays/problems, please use 2b). Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

Because of poor performance on her duties, one of the 25 extension workers was withdrawn from the project and had to be replaced. The replacement extension agent was trained to the standards of the project and has taken on his responsibilities. This change will not affect project implementation, the budget or the timetable of project activities.

2b. Please outline any specific issues which your project has encountered as a result of COVID-19. Where you have adapted your project activities in response to the pandemic, please briefly outline how you have done so here. Explain what residual impact there may be on your project and whether the changes will affect the budget and timetable of project activities.

The last year, the schools were able to open again and the biodiversity-rich school gardens were established and run to provide healthy vegetables to the schools. It is hoped that the government maintain the schools open for the new school year, so that this activity can continue. Should the schools not remain open as a measure to mitigate the third covid-19 wave, then the project team will have to readjust and to adapt.

2c. Have any of these issues been discussed with LTS International and if so, have changes been made to the original agreement?

Discussed with LTS:	No
Formal change request submitted:	No
Received confirmation of change acceptance	No

3a. Do you currently expect to have any significant (e.g. more than £5,000) underspend in your budget for this year?

Yes No Estimated underspend: £

3b. If yes, then you need to consider your project budget needs carefully. Please remember that any funds agreed for this financial year are only available to the project in this financial year.

If you anticipate a significant underspend because of justifiable changes within the project, please submit a rebudget Change Request as soon as possible. There is no guarantee that Defra will agree a rebudget so please ensure you have enough time to make appropriate changes if necessary. Please DO NOT send these in the same email as your report.

4. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures?

No.

If you were asked to provide a response to this year's annual report review with your next half year report, please attach your response to this document.

Please note: Any planned modifications to your project schedule/workplan can be discussed in this report but **should also be raised with LTS International through a Change Request. **Please DO NOT send these in the same email.****

Please send your **completed report by email** to Darwin-Projects@ltsi.co.uk. The report should be between 2-3 pages maximum. **Please state your project reference number in the header of your email message e.g. Subject: 25-001 Darwin Half Year Report**