

Darwin Initiative Main/Post/D+ Project Half Year Report (Due 31 October 2017)

Project Ref No	23-034
Project Title	Edible Wild Orchid Trade: Sustaining Livelihoods and Biodiversity in Zambia
Country(ies)/Territory(ies)	Zambia
Lead Organisation	Royal Botanic Gardens, Kew
Partner(s)	Nicholas Wightman (Homegarden Landscape Consultants Ltd.); Dr. Royd Vinya (Copperbelt University); Sarina Veldman (Uppsala University); Guni Mickels-Kokwe (Sanga Research & Development); Mike Bingham (Sanga Research & Development); Dr. Kazutomo Yokoya (RBG, Kew); Jonathan Kendon (RBG, Kew); Dr. Serene Hargreaves (RBG, Kew); Hildegard Crous (Cape Institute of Micropropagation); Philip Seaton (Orchid Seed Stores Sustainable Use)
Project Leader	Dr. Ruth Bone (RBG, Kew)
Report date and number (e.g., HYR3)	HYR2
Project website/ Twitter/ Blog/ Instagram etc	Facebook Page 'Chikanda Orchid Conservation Initiative'
Funder (DFID/Defra)	DFID

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

- Organised and successfully completed mature orchid seed workshop led by Philip Seaton (Orchid Seed Stores for Sustainable Use) teaching participants from government, academia and conservation institutions on proper techniques of seed harvest, storage and viability testing as well as the start of a Chikanda seed bank at CBU (Output 2.3). The workshop has provided a foundation for the handling of large quantities of seed for immediate and/or long-term storage and use as needed during conservation activities.
- Project manager, Nicholas Wightman, travelled to Nairobi to participate in the 2017 AETFAT¹ Congress and promote the project to the wider African botanical and plant conservation community. He presented an illustrated talk in the Conservation section of the Congress on the project goals and activities, which received a very positive response from the audience.
- Laboratory work on the isolation, culture and identification of orchid fungal symbionts collected during the Jan./Feb. 2017 fieldwork has progressed well (Output 3.3). Preliminary reports from Dr. Kazutomo Yokoya (RBG, Kew) mention over 1,700 fungal cultures were isolated from 20 species with approx. 750 isolates selected for DNA sequencing based on morphological similarities to known orchid mycorrhizal fungi. A final report by Dr. Yokoya will hopefully be delivered by the end of the calendar year.

¹Association for taxonomic study of the flora of tropical Africa

- A loan of the Kew herbarium specimens collected during the Jan./Feb. 2017 fieldwork to Dr. Benny Bytebier of the Bews Herbarium at the University of Kwazulu-Natal is being organised to further help in the identification of the more difficult species that can then be matched to the DNA extraction data (Output 2.5). Dr. Bytebier is the preeminent Orchidaceae taxonomic and phylogenetic expert in Africa and his assessment of the Kew herbarium specimens will be a great help for the project.
- Engagement of participating communities in North Western Province for the development of participatory orchid conservation plans have started and a draft plan is being written (Output 1.6). The draft plan will then be taken back to the communities for a further round of discussions and approval (Output 3.1) before the final plan is published in both English and Lunda, the local vernacular of the area. Plans have also been made for the participating communities to visit CBU's laboratory and conservation greenhouse facilities by mid-November of this calendar year.
- Supported by Dr. Serene Hargreaves (RBG Kew Plant Assessment Unit), the PL secured two summer intern placements for the project. From June to September, recent graduates Louise Henry and Amy Barker assisted the project by collating and geo-referencing historic specimen data from the Kew Herbarium, towards generation of the "top-10 of the most endangered species identified for in-depth research and *ex-situ* conservation efforts" (Output 3.2). Towards the end of their internship, Amy and Louise also worked extensively with the literature and combined their data sources to write preliminary Red List assessments.
- Work has commenced on the creation of the multi-access Chikanda orchid field guide and identification key (Output 2.6). It is expected that the guide will continue to increase in the number of species known to be harvested for the Chikanda trade as efforts to identify and catalogue species in the trade carry on with the work of the project manager who has bought tubers from Soweto market in Lusaka for cultivation and production of flowering specimens, that will serve as a reference and enable accurate species identification, as well as documentation of tuber morphology that might be useful to identify species in their dormant state in the trade.
- The project has made strides in raising the national (Zambian) and international profile of the unsustainable trade in wild edible orchids in Zambia and the vulnerability of associated livelihoods and biodiversity, through: liaison with the Nyika-Vwaza Trust (Malawi) to support emerging interest in Chikanda conservation projects (the Trust has identified Chikanda conservation in partnership with our project as a [funding priority](#)); social media updates (dedicated [Facebook page](#) with 163 followers and "reach" exceeding 600 audience members); conventional media, including a feature article in the May 2017 issue of *New Scientist* ("Eaten to Extinction" by Stephanie Paine); circulation of the second issue of the project newsletter (by project manager Nicholas Wightman); the project featured in a talk by Dr Noeleen Smyth (senior policy officer, CITES) at the **State of the World's Plants** symposium at RBG Kew (May 2017); project leader (Ruth Bone) invited to join the IUCN delegation to the **CITES Conference of the Parties** in Geneva (July 2017), and was invited speaker (presented project as "Selling like hot cakes") at a side event convened by the new sub-group on orchid trade (attendance costs sponsored by the IUCN Orchid Specialist Group).

2a. Give details of any notable problems or unexpected developments/lessons learnt that the project has encountered over the last 6 months. Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

- Uppsala University MSc student Seol-jong Kim has had delays in the molecular marker sequencing of samples collected during fieldwork (Output 3.8) due to lower success rates in extracting DNA from the Zambian material compared to Tanzanian material performed previously by the lab. This has also delayed the preparation and submission of his MSc thesis and paper (Output 3.9) by several months but we are expecting

delivery of the thesis by the end of October and a paper to be published hopefully towards the end of this year or early in 2018.

- We have experienced difficulties in communication with the Kingsmead-Zambia Link group (UK school) and are now pursuing alternative schools in Zambia to engage in educational activities in year 3. Due to staff changes at Plantlife International we are no longer pursuing the Patchwork Meadow model as a tool for environmental education. We have instead forged links with iNaturalist (California, USA), the Peace Corps network in Zambia, two Zambian national universities, and a Zambian NGO (focused on improved education for rural Zambian girls) and are fundraising to expand the original activities with the aim of delivering a citizen science workshop with Zambian academics supporting educational activities.
- The shipment of Chikanda orchid seed to Kew from Zambia (Output 3.4) was hindered by delays in attaining proper documentation from the Zambian Forestry Department and a confidential matter, of which the Darwin Initiative/ LTS International office has been made aware. Please refer to the accompanying letter. The delay will affect the culture timeline of *ex-situ* conservation efforts (Output 2.7) and possibly the repatriation timeline of Chikanda seedlings back to Zambia (Output 2.8).

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

Discussed with LTS: The issue described in the accompanying confidential letter was discussed with LTS International.

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.

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

We are grateful for valued guidance from the DI/ LTS Office during this recent reporting period

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 send your **completed report by email** to Eilidh Young at 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: 22-035 Darwin Half Year Report**