Department for Environment Food & Rural Affairs

Submit by Tuesday 1 December 2015

DARWIN INITIATIVE APPLICATION FOR GRANT FOR ROUND 22: STAGE 2

Please read the Guidance Notes before completing this form. Where no word limits are given, the size of the box is a guide to the amount of information required.

Information to be extracted to the database is highlighted blue. Blank cells may render your application ineligible

ELIGIBILITY

1. Name and address of organisation

(NB: Notification of results will be by email to the Project Leader in Question 6)

Applicant Organisation Name:	Royal Botanic Gardens, Kew
Address:	Kew
City and Postcode:	Richmond, TW9 3DS
Country:	UK
Email:	
Phone:	

2. Stage 1 reference and Project title

Stage 1 Ref: 3215	**Title (max 10 words):** Edible wild orchid trade: sustaining livelihoods and biodiversity in Zambia

3. Project description (not exceeding 50 words)

(max 50 words)

Food security and livelihoods of poor rural women and girls[1] in Zambia are enhanced through development of a community based natural resource management plan for wild orchids, preventing their over-exploitation (that includes trade across national borders), while building capacity for participatory biodiversity conservation, research, environmental education and policy development.

4. Country(ies)

Which eligible host country(ies) will your project be working in? You may copy and paste this table if you need to provide details of more than four countries.

Country 1: Zambia	**Country 2:**
Country 3:	**Country 4:**

5. Project dates, and budget summary

Start date: 01/04/2016		**End date:** 31/03/2019		**Duration:** 3 years
Darwin request	**2016/17**	**2017/18**	**2018/19**	**Total request**
	£ 120,202	£ 60,845	£ 39,266	£ 220,313
Proposed (confirmed & unconfirmed) matched funding as % of total Project cost				36%

[1] 70% poverty rate, IMF Country Report No. 15/ 153, June 2015

Are you applying for DFID or Defra funding? (Note you **cannot** apply for both)	**DFID**~~/Defra~~

6. Partners in project. Please provide details of the partners in this project and provide a CV for the individuals listed. You may copy and paste this table if necessary.

Details	Project Leader	Project Partner 1	Project Partner 2
Surname	Bone	Wightman	Vinya
Forename (s)	Ruth E. (Dr.)	Nicholas	Royd (Dr.)
Post held	Research Fellow	Director	Head of Department
Organisation (if different to above)		Homegarden Landscape Consultants Ltd., Zambia	Copperbelt University, Zambia
Department	Comparative Plant & Fungal Biology	NA	Plant and Environmental Sciences, School of Natural Resources
Telephone			
Email			

Details	Project Partner 3	Project Partner 4	Project Partner 5
Surname	Veldman	Mickels-Kokwe	Bingham
Forename (s)	Sarina	Gun	Mike
Post held	Researcher (PhDc)	Director	Senior “Emeritus” Researcher
Organisation (if different to above)	Uppsala University, Sweden	Sanga Research & Development (NGO), Zambia	Sanga Research & Development (NGO), Zambia
Department	Dept. of Organismal Biology		
Telephone			
Email			

Details	Project Partner 6	Project Partner 7	Project Partner 8
Surname	Yokoya	Kendon	Bachman
Forename (s)	Kazutomo (Dr.)	Jonathan	Steve
Post held	In Vitro Biology Project Research Assistant	Lab Technician, In Vitro Biology	Research Leader, Species Conservation
Organisation (if different to above)	RBG Kew	RBG Kew	RBG Kew
Department	Natural Capital and Plant Health	Comparative Plant and Fungal Biology	Conservation Science
Telephone			

Email			

Details	**Project Partner 9**	**Project Partner 10**
Surname	Crous	Seaton
Forename (s)	Hildegard	Philip
Post held	Owner and Director	Freelance
Organisation (if different to above)	Cape Institute of Micropropagation, South Africa	Orchid Seed Stores Sustainable Use (OSSSU), formerly RBG Kew (UK)
Department		
Telephone		
Email		

7. Has your organisation been awarded a Darwin Initiative award before (for the purposes of this question, being a partner does not count**)? If so, please provide details of the most recent awards (up to 6 examples).**

Reference No	**Project Leader**	**Title**
22-005	Paul Wilkin	Conserving Madagascar's Yams through cultivation for livelihoods and food security.
22-006	Aaron Davis	Mainstreaming biodiversity conservation and climate resilience at Yayu Biosphere Reserve.
22-012	Philip Stevenson	Harnessing agricultural ecosystem biodiversity for bean production and food security
21-006	Kate Gold	Balancing conservation and livelihoods in the Chimanimani forest belt, Mozambique
21-005	Moctar Sacande	Pesticide plants for organic cotton, livelihoods and biodiversity in Mali
21-003	Hugh Pritchard	Protecting Ugandan endemic cycads from biodiversity loss and trafficking

8a. If you answered 'NO' to Question 7 please complete Question 8a, b and c.
If you answered 'YES', please go to Question 9 (and delete the boxes for Q8a, 8b and 8c)

8b. DO NOT COMPLETE IF YOU ANSWERED 'YES' TO QUESTION 7.

8c. DO NOT COMPLETE IF YOU ANSWERED 'YES' TO QUESTION 7.

9. Please list all the partners involved (including the Lead Institution) and explain their roles and responsibilities in the project. Describe the extent of their involvement at all stages, including project development. This section should illustrate the capacity of partners to be involved in the project. Please provide written evidence of partnerships. Please copy/delete boxes for more or fewer partnerships.

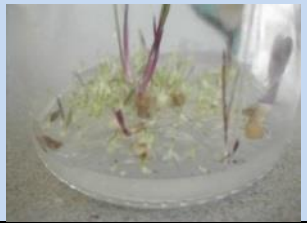
Lead institution and website:	**Details (including roles and responsibilities and capacity to lead the project): (max 200 words)**
RBG Kew http://www.kew.org/	RBG Kew is a global resource for plant and fungal knowledge, and curates one of the world's largest collections of plant and fungal specimens. Combined with a wealth of data-rich resources, scientific expertise and global partnerships (>400 collaborating institutions in 110 countries), Kew is at the forefront of plant and fungal conservation and research. Kew researchers are active in 16 sub-Saharan African countries. Kew leads DFID stream Darwin Initiative (DI) projects in Ethiopia, Madagascar, Mozambique and Tanzania. RBG Kew will ensure overall project coordination. Project leader Dr. Ruth Bone has >15yrs of relevant experience. Since fieldwork in Zambia in 2013, she has established a firm foundation for the proposed project with a network of in-country partners (including signature of an MoU with the University of Zambia earlier this year). Dr. Kaz Yokoya and Jonathan Kendon bring expertise in collection, isolation and culture of fungal symbionts (essential partners for effective seed germination of many orchid species), with methodologies established in their Madagascar Orchid Conservation project. J. Kendon leads on lab set-up and initial staff training at Copperbelt University (CBU). Steve Bachman (senior author "State of the Word's Plants"), will lead the IUCN Red List and rapid conservation assessment workshop.  
Photo caption: Kew Madagascar Orchid Conservation Team, Left: 12 weeks symbiotic culture of Madagascan terrestrial orchids. Right: Fieldwork (collection fungal symbionts).	
Have you included a Letter of Support from this institution?	Yes/~~No~~

Partner Name and website where available:	**Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)**
Copperbelt University http://www.cbu.edu.zm/ Dr. Royd Vinya: http://www.royd-vinya.com/  Photo caption: Nursery facilities recently installed at Copperbelt University (CBU) and available for orchid cultivation.	The School of Natural Sciences, Copperbelt University (CBU), has three departments that contribute to natural resource governance and socio-economic development in Zambia, tourism and conservation management. The Dept. of Plant and Environmental Sciences is led by Dr. Royd Vinya (DPhil. University of Oxford, Environmental Change Institute). The Department promotes learning and research in plant sciences and environmental management, and contributes to a better understanding of impacts of future climate change scenarios. Dr. Vinya has >20yrs experience in tropical forest resources management, with a particular focus on participatory, community based management initiatives. He has particular expertise in carbon dynamics of Miombo woodlands and sustainable charcoal production, and lectures on the MSc programme in Natural Resource Management. Drawing on these skills Dr. Vinya, leads the natural resource management "Mitigation" Output, and gathering of socio-economic data in the target project communities in Northwestern province and identifying alternative sustainable income streams CBU specifically seek technical support with conservation biotechnology methods for terrestrial orchid cultivation. Consequently CBU has committed 35% time of three technical staff who will run the conservation biotechnology facility.  
Have you included a Letter of Support from this institution?	Yes/~~No~~

Partner Name and website where available:	**Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)**
UPPSALA UNIVERSITET Uppsala University (Sweden) http://www.iob.uu.se/research/systematic-biology/ De Boer Lab: http://www.iob.uu.se/research/systematic-biology/de-boer/?languageId=1 Photo caption: Top right, photo by Sarina Veldman of women processing Chikanda cake. Right: Hugo de Boer with Tanzanian colleagues and edible wild orchids targeted for Chikanda.	Sarina Veldman is a PhDc registered at Uppsala University, Sweden, with academic supervision from Dr Hugo de Boer. De Boer's research programmes include development of novel molecular methodologies for wildlife forensics, with funding from two Swedish Science Council grants (2015-2018) on DNA barcoding of traded plants. These include traded wild edible orchids in Iran and Tanzania (the latter in collaboration with Dr Joseph Otieno of Muhimbili University of Health and Allied Sciences, Dar es Salaam). Sarina brings her expertise in DNA barcoding of traded orchids and first-hand knowledge of the Tanzanian Chikanda trade- including engagement with harvesters, traders and legislative authorities to develop sustainable solutions, and mapping wild orchid harvest to identify populations that are susceptible to exploitation.  Sarina will expand her research into Zambia (the origin of increasing demand for Chikanda orchids from Tanzania) by supervising an MSc student (registered at Uppsala University). Supported by Sarina and in-country teams (particularly Sanga R&D), the MSc student will sample traded orchid tubers and processed Chikanda in Zambia for identification using molecular barcoding techniques. Trained in interview methods, and adhering to PIC guidelines, the student will also gather data on orchid tuber origins and trade routes. 
Have you included a Letter of Support from this institution?	Yes/~~No~~

Partner Name and website where available:	**Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)**
Sanga Research and Development (Zambia**)**	Sanga Research and Development (Zambia) bring expertise in social science and plant identification to this project, working on the market survey and supply chain analysis. Gun Mickels-Kokwe MSc. has expertise that includes: • Social science & participatory action research • Community-based Natural Resource Management (CBNRM) in Southern Africa • Facilitation of stakeholder involvement in development processes • Project planning, appraisal, implementation, management & evaluation • Language skills, including Cibemba and Kiswahili. Mike Bingham worked as a Conservation Biologist in the Zambian Ministry of Agriculture, before leaving government service to earn a living as a farmer, later taking on environmental consultancy assignments. Mike has a rich knowledge of the Zambian Flora and is an active contributor to the online Flora Zambia project, as well as national and international research collaborations with a focus on floristics. In addition to working on the market survey for the project, Mike will continue his mentoring role with Project Manager, Nick Wightman.
Photo caption: Photos by Mike Bingham showing traded orchid tubers (left) and processed Chikanda cake (right).	 
Have you included a Letter of Support from this institution?	Yes/~~No~~

Partner Name and website where available:	**Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)**
Nicholas Wightman, Homegarden Landscape Consultants Ltd. (Zambia).	Nicholas Wightman MSc., is Director of his own garden landscaping firm and smallholding, with an academic background in agro-forestry. He has particular interests in propagation, and knowledge of in vitro biology methods that he is keen to augment through participating in the specialist skills workshops. An enthusiastic and active natural historian, Nick gives up much of his free time to botanising, and contributes to the online Flora Zambia project. Mike Bingham (Sanga R&D) has been mentoring Nick on botanical methods. Nick has the flexibility and available time to take on Project Management and his own 4x4 will enable access to remote locations for fieldwork in Zambia. Nick will visit Kew at project onset to receive training in herbarium specimen preparation and use of Lucid software to create interactive keys for plant ID. He will take responsibility for organising training workshops with CBU partners, assist Sanga R&D with Market Survey work, and liaise with all in-country partners, providing regular reporting for DI, and to the Project Leader in monthly meetings (by phone/ Skype). Through involvement in this project, Nick will gain additional, valuable skills that will enable him to further his ambitions in plant conservation and environmental consultancy. 
Photo caption: *Plectranthus mirabilis* Photographed by Nick Wightman for Flora Zambia	
Have you included a Letter of Support from this institution?	Yes/~~No~~

Partner Name and website where available:	**Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)**
Cape Institute for Micropropagation (South Africa). http://www.saorchids.co.za  Photo caption: From left to right: *Disa barbata* germination; tubers and ready to plant. Photos: Hildegard Crous.	Formerly a horticulturist at Kirstensbosch Botanic Garden (SANBI), Cape Town, Hildegard Crous has managed her own nursery and laboratory since 2000, and specialises in terrestrial African orchid cultivation, including genera that are targeted for the wild edible orchid trade in Zambia and the region (*Disa, Habenaria* and *Satyrium*). Alongside her commercial success, Hildegard advises on orchid conservation, species reintroduction methods and cultivation. In 2001 she was approached by Dr Benny Bytebier (Co-Chair of the Afro-Madagascar Regional IUCN/SSC Orchid Specialist Group) to assist with the *in vitro* propagation of *Disa barbata*, one of South Africa's most threatened orchids. More recently she has worked with Dr. Otieno (Institute of Traditional Medicine, Muhimbili University, Tanzania) to develop protocols for propagation of African wild edible orchids (Chikanda) in Tanzania, and has begun a collaboration with the Uppsala University team on this Darwin project. Hildegard leads Workshop 2 on orchid seed collection using greenpod methods, and orchid cultivation for commercial and conservation purposes.   
Have you included a Letter of Support from this institution?	Yes/~~No~~

[As C.V. only]

Partner Name and website where available:	Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)
Philip Seaton  Phil Seaton Photo caption: OSSSU website	Philip Seaton MPhil. is an expert on orchid seed harvest, seed banking and culture. He was Project Manager for the Darwin Initiative funded Orchid Seed Stores for Sustainable Use (OSSSU), (Seed Conservation Department, Wakehurst Place, Royal Botanic Gardens, Kew; 2007- 2012) and has been Chair of the *Ex situ* Conservation Group for the IUCN SSC Orchid Specialist Group since 2000. He is a Trustee of Orchid Conservation International and author of "*Growing Orchids from Seed*" with Margaret Ramsay. He has a strong interest in building partnerships for conservation, and environmental education. Philip is 'Visiting Scientist' at King Charles 1 School, Kidderminster that was awarded a Royal Society grant in 2005 to set up an orchid micropropagation facility. Philip leads Workshop 3 on orchid seed collection, viability testing, seed banking and germination using dry (vs. green) pod methods.
Have you included a Letter of Support from this institution?	Yes/~~No~~

[As C.V. only]

10. Key Project personnel

Please identify the key project personnel on this project, their role and what % of their time they will be working on the project. Please provide 1 page CVs for these staff, or a 1 page job description or Terms of Reference for roles yet to be filled. Please include more rows where necessary.

Name (First name, surname)	Role	Organisation	% time on project	1 page CV or job description attached?
Ruth, Bone	Project Leader	RBG Kew	10% Yrs1-3	Yes
Nicholas, Wightman	Project Manager	Homegarden Landscape Consultants Ltd.	50% Yrs1-3	Yes
Royd, Vinya And 3x technical staff	CO-I	Copperbelt University	20% [and 3x 35%] Yrs 1-3	Yes
Sarina Veldman	Supervision of MSc student	Uppsala University	10% Yr 1	Yes
MSc student	Research	Uppsala University	100% Yr 1	Yes
Gun, Mickels Kokwe (& 1x Junior Research Assistant)	Research leader	Sanga R&D	10% Yr 1 (and 15% for assistant)	Yes

Mike Bingham (& 1x Junior Research Assistant)	"Emeritus" researcher	Sanga R&D	10% Yr 1 (and 15% for assistant)	Yes
Kaz, Yokoya	Symbiotic fungi research and in vitro biology	RBG Kew	40% Yrs 1-2	Yes
Jonathan, Kendon	Lab set-up at CBU, training and in vitro biology	RBG Kew	10% Yrs 1-3	Yes
Steven, Bachman	Workshop 1 leader	RBG Kew	5% Yr 1	Yes
Hildegard, Crous	Workshop 2 leader	Cape Institute for Micropropagation	5% Yr1	Yes
Philip, Seaton	Workshop 3 leader	Independent (formerly OSSSU)	5% Yr 1	Yes

11. Problem the project is trying to address

Please describe the problem your project is trying to address in terms of biodiversity and (essential for DFID projects) its relationship with poverty. For example, what are the drivers of loss of biodiversity that the project will attempt to address? Why are they relevant, for whom? How did you identify these problems?

If your project is working on an area of biodiversity or biodiversity-development linkages that has had limited attention (both in the Darwin Initiative portfolio and in conservation in general) please give details.

(Max 300 words)

Edible tubers are collected from wild orchids and processed into food, known as *Chikanda.* A traditional food source in rural diets[2], demand from urban populations has increased over the last 20 years[3,4] and food products are now available commercially[5,4], raising income from inflated prices while depleting wild orchid populations and jeopardising livelihoods.

Collection, processing and trade of tubers are almost exclusively undertaken by women and girls who depend upon them as a major livelihood source, particularly in poor rural households.

Up to 80% of households in the vicinity of orchid-bearing grasslands collect the tubers[6]. Traditional practices that allowed for natural regeneration (hereafter termed "replanting") have been abandoned, and alternative species are sought[7] (ca. 85-140 species[6] in ≥4 genera are harvested).

Scarcity of local wild orchid populations causes women/girls to travel greater distances, risking their personal safety as they cross national borders, increasing their time away from other tasks, and carrying school-age children who are deprived of their education[8]. In addition, natural resource loss reduces Zambia's ability to meets its CBD obligations[9].

[2]Richards, A.I. (1939). *Land, Labour and Diet: An Economic Study of the Bemba Tribe.* London: Oxford University Press.

[3]Bingham, M. Chikanda, an unsustainable industry. *Pollina.* 7(2): 10-25.

[4]Veldman, S. *et al.* (2014). Efforts urged to tackle thriving illegal orchid trade in Tanzania and Zambia for *chikanda* production. *TRAFFIC Bulletin*. 26(2): 47-50

[5]Otterdijk, R. (2013). *Experiences and commercial potential for traditional and specialty food products in Africa, 2013.* FAO unpublished report.

[6]Sanga R&D. (2015). Unpublished report.

[7]Mickels-Kokwe, G.M. & Kokwe, M. (2003). *Survey from the Mabumba wetland, Luapula Province*. ZAPE Research & Consultancy Report No. 2. Study commissioned by International Water Management Institute (IWMI), IUCN and FAO

[8]Dr. Royd Vinya, (CBU School of Natural Resources, Zambia) personal observation.

[9]Edible orchids are not covered by National Biodiversity Strategy and Action Plan (NBSAP) or recent CBD Reports; CITES legislation not yet implemented for plants in Zambia; no orchids reported in CITES Trade Database.

There are anecdotal reports of attempts to cultivate Chikanda orchids by individuals seeking to gain control over the resource[10] and demand for orchid cultivation expertise is rising as conservation practitioners (protected area managers[5] and research institutions, including CBU) seek means of supplying seedlings for field trials. Baseline data are required to understand harvest and processing practices, control over the resource and habitat[11] and methods of cultivating orchids for income generation and conservation.

We aim to understand the trade and identify options that can reduce the risks and labour involved for women/girls, while improving their income. Additional outcomes include the development of an integrated conservation programme to protect orchid biodiversity with community participation, and enhanced understanding of orchids and orchid habitats in local communities.

12. Biodiversity Conventions, Treaties and Agreements

Which of the conventions supported by the Darwin Initiative will your project support? Note: projects supporting more than one convention will not achieve a higher scoring

Convention On Biological Diversity (CBD)	Yes/~~No~~
Nagoya Protocol on Access and Benefit Sharing (ABS)	Yes/~~No~~
International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)	~~Yes~~/No
Convention on International Trade in Endangered Species (CITES)	Yes/~~No~~

12b. Biodiversity Conventions

Please detail how your project will contribute to the objectives of the convention(s), treaties and agreements your project is targeting. You may wish to refer to Articles or Programmes of Work here. Note: No additional significance will be ascribed for projects that report contributions to more than one convention

(Max 200 words)

Contribution to the Conventions is intrinsic to our project.

CBD: All project Outputs contribute to GSPC Objectives and are in direct response to gaps identified in the Zambia NBSAP. Specific examples include:

- Obj. 1, Target 2 addressed in Output 3.1
- Obj. 2, Target 9, & Obj. 3, Targets 12 & 13 addressed in Output 1
- Obj. 3, Target 11, addressed in Output 2
- Obj. 4, Target 14 addressed in Output 4

Nagoya Protocol (ABS): The Zambia ABS authority acknowledges that Community Based Natural Resource Management (CBNRM) schemes have been successful mechanisms for ABS implementation. Royd Vinya (CBU) brings CBNRM experience to the project and Gun Mickels-Kokwe (Sanga R&D) has extensive market survey expertise.

Generating additional sustainable income is a key goal, and creates opportunities for ABS within communities. Progress has already been made (e.g. expressions of interest in our objectives received from Tropical Forest Products/ Kasamba Honey).

CITES: We provide baseline knowledge of traded orchids in Zambia and the region, through identification of traded tubers and derivatives using molecular barcodes. The specimen Reference Collection enables development of species-specific molecular markers and an accessible, freely available plant ID tool that will assist CITES authorities with field-based practical identification of traded orchids.

[10] Sanga R&D. (2015). Unpublished report.

[11] Mickels-Kokwe, G. (2001). *Commercialisation of bush resources. A study of chikanda, edible orchids, in Zambia.* SARIPS, SA-PES Trust, Harare.

12c. Is any liaison proposed with the CBD/ABS/~~ITPGRFA~~/CITES focal point in the host country?

Yes ~~No~~ if yes, please give details:

CBD: A concept note highlighting key project outputs, specifically related to increased capacity (skills, resources and knowledge) to implement the CBD has been circulated among CBD national focal points.

We have made contact with the Ministry of Lands, Natural Resources and Environmental Protection, Director of Environment Mr. Godwin Fishani Gondwe - who is known personally to Dr. Royd Vinya. Mr Gondwe is also Operational Focal Point for GEF in Zambia and Chief Environment Officer for RAMSAR. At the Ministry, we have begun correspondence with CBD Primary National Focal Point (NFP) Mr. Ephraim Mwepya Shitima. Mr Shitima has expressed interest in integrating our work with future revisions to the NBSAP, and has received a concept note outlining our project aims and contributions to the GSPC Objectives.

Nagoya (ABS): Correspondence is also underway with the ABS NFP Mr. Allan Dauchi, who has expressed interest in the project. ABS is written into the NBSAP.

CITES: In-country partners Gun Mickels-Kokwe and Royd Vinya have direct contacts at the CITES scientific authority the Zambian Wildlife Authority (ZAWA). In addition the PI has made contact with the ZAWA office to alert them to this proposal and (at the Darwin Stage 2 workshop in London) discussed project plans with Griffin Kaize Shanungu, of ZAWA and the International Crane Foundation. Following advice from Dr. Noeleen Smyth, Senior Science Officer CITES Policy at RBG Kew, the PI has contacted the Africa CITES focal point Ms. Beatrice Khayota.

Ms. Matimba Changala, of the FCO Lusaka, is Investment Promotion Officer at the Zambia Development Agency. Ms. Changala has expressed interest in our project aims, and willingness to assist with dissemination of project outcomes to environmental legislators/ policy makers. In addition she has put us in contact with the local DfID office in Lusaka.

13. Methodology

Describe the methods and approach you will use to achieve your intended outcomes and impact. Provide information on how you will undertake the work (materials and methods) and how you will manage the work (roles and responsibilities, project management tools etc.).

Note from Ruth Bone (PI): I have changed this section to align methods with the project LogFrame Activities and Timeline, where Partner responsibility for activities is colour-coded.

(Max 500 words – this may be a repeat from Stage 1, but you may update or refine as necessary. Tracked changes are **not** required.)

Activities 1.1-1.2; 1.4-1.8 Approached through traditional structures, participatory methods used to empower communities (especially women) to be proactive throughout, from planning (including cultivation trials) throughout implementation, monitoring and evaluation.

Activity 1.2 As above, supplemented by correspondence and meetings to secure UK market for products where appropriate (e.g. honey) and potential additional funding (beyond Darwin) to develop access to markets in rural communities (led by PI).

Activity 1.3: Household socio-economic surveys and school attendance registers.

Activity 2.1 Existing CBU lab equipped by Kew staff member, plant material (for teaching purposes and to kick-start lab) imported by Kew trainer (in compliance with plant health and CITEs legislation).

Activities 2.2-2.4 are delivered by specialist training workshops led by experts in the field[12,13,14]; with some techniques also disseminated to rural communities (in Activity 1.5).

[12]International Union for Conservation of Nature (IUCN) Red List methodology available here: http://www.iucnredlist.org/technical-documents/red-list-training/red-list-guidance-docs

[13]Methods will follow those used by the South African Biodiversity Network (SANBI) Threatened Species Programme http://redlist.sanbi.org/methods.php.

[14]Orchid Seed Stores for Sustainable Use DI Project Reference Number: 16-012, 2007-201

Activity 2.5 Follows standard herbarium specimen collection methods. Tissue Bank is silica-dried material following standard protocols for collection of material for DNA extraction.

Activity 2.6 Multi-access illustrated orchid identification key created using Lucid software, illustrations created in Adobe Illustrator/ Inkscape (existing licences/ freeware) and made available for download in Google Play Store.

Activities 2.7- 2.8 Use novel orchid conservation biotechnology methods established by team members.[15]

Activity 3.1 Formalises results of Activity 1.6, written into agreed "Participatory orchid management plan" for rural, community-managed resources, incorporating local traditional knowledge.

Activity 3.2 (IUCN Red-Listing) is included above (Activities 2.2-2.4) - enables "top-ten" list of rare Chikanda orchids to be prioritised for fungal symbiont research and orchid culture.

Activities 3.3 links with Activities 2.7-2., with methodologies established by Kew's team.[15]

Activity 3.4-3.5 Seed is required to culture symbiotic seedlings, following collection of fungal symbionts. Seed collection and viability testing follow methods from Workshop leader Phil Seaton.[14]

Activity 3.6 Paper writing and conference presentation preparation.

Activities 3.7-3.9 MSc following established market survey and molecular barcoding methods from Sarina Veldman's research, under her supervision (please refer CVs from Uppsala University partners).

Activity 4.1 The communication and environmental awareness strategy will be developed and implemented in rural communities through participatory meetings (please see methods for Output 1 activities).

Activity 4.2 Correspondence (including circulation of the project bi-annual newsletter) and meetings will be used to make Biodiversity Convention national focal points aware of project.

Activities 4.3-4.4 Will be led by Sanga R&D using their extensive social sciences research experience (please refer to Gun Mickels-Kokwe's CV). Market survey and supply chain analysis using questionnaires (statistical analysis in SPSS) completed in 3 urban areas: Lusaka (Soweto market), Ndola (Masala) and Kitwe (Sokoine).

Activities 4.5-4.7 are reporting activities (bi-annual illustrated newsletter, policy brief/ results and report to CITES officers and CBD and NSBAP contact officers).

Activity 4.8 Builds on the successful environmental awareness programme "Patchwork Meadow" run by Plantlife International, and an existing UK-Zambia cultural-educational exchange programme with >15 yrs experience (advisory support secured from Plantlife).

Activity 4.9 Builds on the successes of Writhlington Orchid School and the Rwandan Orchid Schools' Project, with advisory support from these networks (Please see letter of support from Simon Pugh-Jones).

14. Change Expected

Detail the expected changes this work will deliver. You should identify what will change and who will benefit a) in the short-term and b) in the long-term.

- If you are applying for Defra funding this should specifically focus on the changes expected for biodiversity conservation and its sustainable use.
- If you are applying for DFID funding you should in addition refer to how the project will contribute to reducing poverty. Q15 provides more space for elaboration on this.

(Max 300 words)

1. Mitigation: Sustainable resource management practiced, securing livelihoods for women in poor rural communities

[15]The Madagascar Orchid Conservation Project; *cf*. Yokoya *et al*., (2015). Preliminary findings on identification of mycorrhizal fungi from diverse orchids in the Central Highlands of Madagascar. *Mycorrhiza*: DOI: 10.1007/s00572-015-0635-6, and Dr. Kaz Yokoya's Kew Science Blog.

Short-term A. Women from ≥600 participating households in 2 Districts engaged in CBNRM scheme, reporting 30% increase in household income from sustainable natural-resource products, and indirect benefit of 40% reduction in school absenteeism by end Yr 3.
Long-term B. Wider community benefits include less conflict, improved education and employment and opportunities for other shared natural resource initiatives.

2. Capacity: Both local level community capacity AND conservation practitioner capacity increased to: Manage wild orchid populations; enhance delivery of CBD (GSPC Objectives); and facilitate implementation of CITES legislation for plants.
A. ≥40% of participating CBNRM households gaining access to cultivated orchid stock and techniques-training for household nurseries by end Yr 3. Resources and skills increased for ≥12 conservation practitioners, cascading to ≥40 by end Yr 3 enabling ex situ conservation and cultivation of orchids (implementation of GSPC). B. Skills and knowledge cascaded to many more households and conservation practitioners.

3. **Knowledge: Understanding of orchid identity, rarity, cultivation and traditional utilization practices incorporated into Chikanda orchid conservation plan.**
A. For 20 of the most commonly traded Chikanda orchid species, and 10 of the rarest: understanding of identity, traditional use and cultivation requirements documented by end Yr 3* B. i) Data available globally*. ii) Potential developed to apply established methods to additional taxa. iii) Knowledge informing policy development. *[Please refer to Ethics Statement].

4. Awareness: Communication and environmental awareness strategy developed and implemented.
A. Communication and environmental awareness strategy implemented providing increased awareness of environmental implications of orchid harvesting: Among ≥600 rural households in participating communities; ≥40 conservation practitioners; ≥60 urban school children (and their families). B. Increased environmental awareness creating demand from urban populations for sustainably sourced products.

15. Pathway to poverty alleviation – ESSENTIAL FOR DFID PROJECTS, OPTIONAL FOR DEFRA PROJECTS

Please describe how your project will benefit poor people living in low-income countries. Give details of who will benefit and the number of beneficiaries expected to be impacted by your project. The number of communities is insufficient detail – number of households should be the largest unit used. If possible, indicate the number of women who will be impacted.

(Max 300 words)

The two focus communities for sustainable harvest initiatives are Ikelenge (Mwinilunga District) and Lumwana (Solwezi District), in Northwestern province. We expect at least 30% of Chikanda-harvest households (ca. 350 households @ ~2 adults per household = 700 adults ca. 50% women) to participate from Yr1.

Below, figures from last Census[16]. Number of households involved in the seasonal Chikanda trade are estimates based on observations from Dr. Royd Vinya.

		Population			% Households
Village	Households	Total	Male	Female	involved in orchid trade
Ikelenge	1,461	8,038	3,940	4,098	80% (90% women)
Lumwana	1,483	7,166	3,508	3,658	25% (90% women)

[16] 2010 Census of Population and Housing, Republic of Zambia Central Statistical Office

Baseline data on household income is not available for these target communities. A recent (2014[17]) socio-economic survey for Ntambu (Mwinilunga District) is shown below (converted GBP).

	Population			Average incomes (GBP)	
Households in Ntambu	Total	Male	Female	Annual income per household	Daily income per person
1,479	9,319	4,559	4,760	£1,851	£0.71

Source[17]: West Lunga Trust survey team

By Yr 2 we seek to reduce the number of households practising destructive harvest by a further 30% (60% total), and by Yr3 provide supplementary Chikanda plants for household nurseries. We will also identify supplementary sustainable income streams and, by Yr 3, aim to increase household income by 30%.

Processing raw honeycomb into beeswax (illustrated[18]) and honey beer is dominated by women in Zambia, generating female controlled income. This village-based work also supports women with childcare responsibilities and additional household income reduces school absenteeism.

Please see "expression of interest" (letter enclosed) from David Wainwright (Tropical Forest Products) in adding an orchid conservation message to UK products and supporting expansion of honey buying activities to Chikanda source areas. David Wainwright says: "Sale of honey and beeswax can make a dramatic impact on the family income" with "revenue of £5,000 to £10,000" within one to two years.

16. Exit strategy

State whether or not the project will reach a stable and sustainable end point. If the project is not discrete, but is part of a progressive approach, give details of the exit strategy and show how relevant activities will be continued to secure the benefits from the project. Where individuals receive advanced training, for example, what will happen should that individual leave?

(Max 200 words)

We seek to establish a "toolkit" addressing livelihood security, sustainable harvest methods and conservation, applicable across the region [e.g. Tanzania and Malawi where solutions to unsustainable orchid harvest are also sought; *cf.* letter from Nyikya-Vwaza Trust].

The CBU team proactively seek funding and collaborations (*cf.* R. Vinya's CV) and have identified need for specialist skills and lab equipment to build on their success. By project end, we aim to see our orchid conservation biotechnology programme integrated into the AU (NEPAD) African Biosciences Initiative[19].

[17] Ntambu socio-economic survey (31st March 2014): http://westlungatrust.com/2014/03/31/news-2/

[18] Photo from Tropical Forest Products, Zambia photo essay http://www.tropicalforest.com/tfp_slides_zambia.php

[19] http://www.nepad.org/foodsecurity/africa-biosciences-initiative-abi/about

Sanga R&D is a growing concern with a track record of securing grants (e.g. UNDP, GEF, Civil Society Environment Fund) for social and environmental research.

Mentoring is built into the project. Project Manager Nick Wightman is guided by the PI and "Emeritus" professional Mike Bingham, who seek continuity of knowledge and capacity for botanical research and conservation in Zambia.

The Uppsala University team is led by early career researcher Sarina Veldman, with support from her academic supervisor Dr. Hugo de Boer. A new MSc student is recruited specifically for the project.

Places on our specialist skills workshops are competitive. Applicants are required to outline their approach to cascading acquired skills to colleagues at their respective institutions.

17a. Harmonisation

Is this a new initiative or a development of existing work (funded through any source)? Please give details (Max 200 words)

Our project unites experts on the trade in African wild edible orchids, supplemented with orchid biotechnology expertise from RBG Kew.

CBU: 2012> "*Domestication of wild tubers and bulbs in Zambia*", Swedish Government grant.

Royd Vinya (PI) supports user communities in a non-productive Chikanda orchid site with domestication of wild edible tubers and bulbs. The Darwin project is specific to Chikanda with emphasis on local communities benefiting from its sustainable management and brings specialist skills for orchid cultivation to CBU (orchid biotechnology methods).

Sanga R&D: 1999-2001 Gun Mickels-Kokwe Principal Researcher for "*Commoditisation of bush resources. Livelihoods, economic restructuring and environment security"* directed by SARIPS.[20] Involved research on harvesting and trading of CITES-protected orchid species in Zambia and Tanzania. Mike Bingham involved (3-week-long survey of trade in NE Zambia). Sanga R&D seeks continuation of work begun in 2000.

Uppsala University: 2012-2018, Hugo de Boer PI for "*Identifying and monitoring trade in Tanzanian wild-harvested medicinal plants using innovative genomics-based DNA barcoding*" TASENE award, Swedish Science Council. Sarina Veldman will expand this work into Zambia through our Darwin project.

Hildegard Crous: Expert in cultivation of terrestrial African orchids; developing propagation protocols with Uppsala team and Dr Otieno (Muhimbili University, Tanzania).

17b. Are you aware of any other individuals/organisations/projects carrying out or applying for funding for similar work? ~~Yes/~~No

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

18. Ethics

Outline your approach to meeting the Darwin Initiative's key principles for research ethics as outlined in the guidance notes.

[20] Southern African Regional Institute for Policy Studies.

(Max 300 words)

The project leader (PI) is committed to ensuring the legality of the research, prioritising the safety of all project participants, respecting the culture and traditions of project participants, and respecting Zambia's sovereign ownership of its biological resources, following established ethics guidelines[21,22] and PIC principles with partner communities, national legislation and the Biodiversity Conventions.

The project lead institution (RBG Kew) has internationally recognised expertise that is available to guide the PI and partners throughout the project cycle. These include Ms. China Williams, a recognised expert in CBD and the Nagoya Protocol with over 10 yrs of experience in negotiation of ABS agreements and advising UK and international stakeholders.

Kew is the UK CITES Scientific Authority. Dr. Noeleen Smyth and Ms. Rose Simpson advise the project team on CITES.

Also available for guidance is Dr. Olwen Grace, a Kew Research Leader with extensive experience in ethics and ethnobotanical research, lecturing and writing on this topic[22] and a member of the MedPlant consortium project. Project partners at Uppsala University are part of MedPlant and follow these same agreed ethics guidelines.

The project is based on a demand identified by an in-country partner (CBU) as part of longer-term efforts to address the unsustainable harvest and trade of Chikanda orchids. CBU specifically seek technical support with conservation biotechnology methods for terrestrial orchid cultivation. The project thus has strong involvement and leadership from in-county partners, including the role of Project Manager, led by a Zambian horticulturist and botanist (Mr. Nicholas Wightman), enabling him to develop his passion for Zambian biodiversity conservation and botanical fieldwork; senior academic (Dr. Royd Vinya) and technical staff from Copperbelt University, and social scientist Ms. Gun Mickels-Kokwe (Sanga R&D) bringing their expertise, ensuring a strong legacy for this project and harmonisation with their existing goals.

19. Raising awareness of the potential worth of biodiversity

If your project contains an element of communications, knowledge sharing and/or dissemination please provide a description of your intended audience, how you intend to engage them, what the expected products/materials there will be and what you expect to achieve as a result. For example, are you expecting to directly influence policy in your host country or is your project a community advocacy project to support better management of biodiversity?

(Max 300 words)

Output 1 is focused on community advocacy supporting development of sustainable harvest of wild edible orchids and diversification of income. This programme is led by Dr. Royd Vinya (CBU) who brings >20yrs experience in participatory workshops and development of CBNRM in Zambia. Taking IP and PIC principles into account, knowledge of traditional Chikanda orchid management techniques will be integrated into guidelines developed during workshops, culminating in an illustrated manual of best practice. The Market Survey (by Sanga R&D) will culminate in pamphlets describing best practice to reduce waste in the supply chain of traded tubers.

Output 4 is focused on dissemination of research outputs and methods to diverse stakeholders, following GSPC Target 3, and seeks to influence policy makers and the scientific community through the bi-annual project newsletter, regular blog posts, specialist skills workshops, research papers and conference presentations. In addition to dissemination to national focal points (see 12c), Ms. Matimba Changala (Investment Promotion Officer at the Zambia Development Agency) has expressed willingness to assist with dissemination of project outcomes to environmental legislators/ policy makers.

[21] E.g. International Society of Ethnobiology (2006). International Society of Ethnobiology Code of Ethics (with 2008 additions). http://ethnobiology.net/code-of-ethics/

[22] Grace, O.M., Caruso E. Ethics in ethnobotanical research: intellectual property rights, international agreements, and best practice. In: *Conducting and Communicating Ethnobotanical Research: A Methods Manual.* MedPlant Project & Global Diversity Foundation, UK; 2015:6-19.

Raising awareness of the importance of conserving plant diversity (GSPC Target 14) to the wider public is a key aim, and orchid conservation is a topic rich with opportunities for engagement through popular press articles, radio broadcasts, social media and Kew's annual Orchid Festival lecture series.

Plantlife International has endorsed use of its successful "Patchwork Meadow*" programme within the existing cultural exchange (Kingsmead-Zambia Link), offering opportunities for Zambia-UK promotion of the underlying conservation message. The PI has secured advisory support from Writhlington Orchid School and the Rwandan Orchid Schools' Project for educational activities related to promotion of Chikanda orchid and habitat conservation awareness.

Photo caption: Left, Kingsmead-Zambia Link teachers (with PI) 2013. Right: Students at Rwandan Orchid Schools' Project partner college, Kitabi. Below: *Patchwork-Meadows.

20. Capacity building

If your project will support capacity building at institutional or individual levels, please provide details of what form this will take and how this capacity will be secured for the future.

(Max 300 words)

Output 1 increases capacity of rural communities for natural resource management (CBNRM), and income diversification, addressing an identified need from the ABS national focal point.

In addition to the work programme led by CBU (Dr. Royd Vinya), the PI (with the support of David Wainwright, Director, Tropical Forest Products[23]) is actively developing improved access to the UK honey market for remote communities directly involved with the orchid tuber trade.

Output 2 is focused on enhanced capacity to address gaps identified in the NSBAP for delivery of GSPC Objectives and implementation of CITES for plants in Zambia.

At institutional levels, the project builds on identified need (by Project Partner CBU) for support with orchid conservation biotechnology. By project close:

- CBU facilities enhanced with specialist equipment.
- CBU staff trained by experts, adding skills in orchid biotechnology (including seed collection, viability testing, seed banking and culture).
- CBU staff equipped with IUCN Red Listing and plant ID skills (based on the accessible plant ID tool).

CITES officers will be among the ca. 12 conservation practitioners invited to attend the IUCN Red List specialist skills workshop (GSPC Target 2). The accessible plant ID tool, market surveys and molecular data all serve to enhance capacity for monitoring of traded CITES-listed plants in Zambia.

At individual levels: In addition to fulfilling his Project Manager (PM) duties, by project close the PM will be equipped with a suite of specialist knowledge, adding to in-country capacity for plant conservation and improving his future opportunities for consultancy/ contract work in the Zambian environmental sector. Examples:

[23] Please see "expression of interest" letter from David Wainwright enclosed in application pack

- Visit by PM to RBG Kew for training in herbarium techniques and creation of accessible plant ID tools.
- Participation in specialist training workshops.
- Continued mentoring from Mike Bingham (Sanga R&D) in specialist plant ID knowledge and contributions to online floras[24,25] (GSPC Target 1).

21. Access to project information

Please describe the project's open access plan and detail any specific costs you are seeking from Darwin to fund this.

(Max 250 words)

Specific costs sought from Darwin:

- Two Open Access publications for results of research work (2 x £2,000).
- Free access to plant identification tool disseminated during project, and published in Google Play Store allowing free download (Play Store publication £90).
- A laptop for the Project Manager, enabling botanical data entry and development of the interactive key, is sought from Darwin (£1000).

Botanical collection records will be made available freely via online publication of botanical data (via BRAHMS Online/ Scratchpad websites). Precise geographical localities will be restricted for rare plant populations deemed at risk of exploitation by collectors.

Wider access to botanical data will be enabled via the Plants of the World Online portal (under development at RBG Kew), and GBIF.

Entry of botanical specimen data is covered by salary costs for the PI and Project Manager. Data entry by CBU staff is coved by CBU salary costs (not sought from Darwin).

Access to genetic material from the Tissue Bank (silica-dried plant materials for DNA extraction) will be restricted, and only made available on mutually agreed terms of Material Transfer Agreements between project partners: CBU (in-country), RBG Kew and Uppsala University, in the first instance and in line with CITES and ABS policy. Sharing of these materials beyond this network will be at the discretion of CBU and will require additional MTAs outside this project.

Data collected from interviews and surveys will only be made publicly available with the Prior Informed Consent of all participants.

22. Match funding (co-finance)

a) Secured

Provide details of all funding successfully levered (and identified in the Budget) towards the costs of the project, including any income from other public bodies, private sponsorship, donations, trusts, fees or trading activity.

[24] Zambia Flora; http://zambiaflora.com/speciesdata/utilities/utility-display-records-by-person.php?person_id=383

[25] Plants of the World online; http://www.kew.org/science-conservation/kews-science-strategy/2020-strategic-outputs/plants-world-online-portal

Confirmed:

All £GBP	Project Yr 1	Yr 2	Yr 3	Total	Source
CBU, Royd Vinya salary					CBU
CBU, 3x technical staff salaries					CBU
CBU vehicle costs					CBU
Uppsala lab costs					Swedish Science Council VR-UF grant E0347601
Uppsala overheads					Uppsala U.
Kew overheads contribution					Kew
Sanga R&D overheads					Sanga R&D
Uppsala, Sarina Veldman salary					PhD studentship (TASENE).

22b) Unsecured

Provide details of any matched funding where an application has been submitted, or that you intend applying for during the course of the project. This could include matched funding from the private sector, charitable organisations or other public sector schemes.

Date applied for	Donor organisation	Amount	Comments
Uppsala University	SIDA Minor Field Studies grant	£725	Hugo de Boer has had 100% success rate with this grant (8 awards).
Sanga R &D	CSEF2 (Zambia), GEF or UNDP	£11,900	Sanga R&D has a strong track record of securing grants. Activity is planned at end of Yr 1 allowing ca. 11 months to secure grant.

22c) None

If you are not intending to seek matched funding for this project, please explain why.

(max 100 words)

PROJECT MONITORING AND EVALUATION

MEASURING IMPACT

23. LOGICAL FRAMEWORK

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

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Impact: (Max 30 words) Vulnerable rural livelihoods enhanced, and threatened wildlife resources protected, by community-governed resource management practices, supported by in-country conservation biotechnology expertise and demand for sustainable products from environmentally aware populations.			
Outcome: (Max 30 words) Sustainable orchid harvest, cultivation and conservation adopted in poor Zambian communities, providing improved livelihoods and security for women, and enhanced local and national governance of wetland genetic/species diversity.	0.1 Women from ≥600 participating households in 2 Districts engaged in CBNRM scheme, reporting 30% increase in household income from sustainable natural-resource products, and 40% reduction in school absenteeism by end Yr 3. 0.2 a) ≥40% of participating CBNRM households gaining access to cultivated orchid stock and techniques training for household nurseries by end Yr 3. 0.2 b) Resources and skills increased for ≥12 conservation practitioners, cascading to ≥40 by end Yr 3 enabling ex situ conservation and cultivation of orchids (implementation of GSPC). 0.3 For 20 of the most commonly traded Chikanda orchid species, and 10 of the rarest: understanding of identity,	0.1 Orchid conservation action plan (incorporating traditional utilization, agreed sustainable harvest measures and identified supplementary income streams); community surveys to record average income at project start (Yr 1) and close (Yr 3); local school attendance registers (comparison between Yrs 1 and 3). 0.2 Community surveys (Yrs 1 and 3) and project reports; workshop attendance application forms and certificates; photo essay of CBU lab facility development; collections database of CBU seedlings/ plants. 0.3 Orchid conservation plan; community surveys and meeting minutes; scientific papers and presentations; collections databases.	No breakdown in communication or change of priorities between UK lead and collaborating institutes. *Mitigation for this IA*: Strong foundation for all project partnerships from outset with regular communication (email/ Skype/ meetings). Strong individual and institutional commitment to project aims from main partners. Edible orchids can be successfully cultivated and tubers obtained for harvest. *Mitigation for this IA:* We have access to a wide range of expertise at Kew and from a specialist growers and conservationists, using a range of methods. The genus *Disa* will be our first priority due to ease of seed germination and some taxa growing from stolons (that rapidly give rise to new tubers).

	traditional use and cultivation requirements documented by end Yr 3. 0.4 Awareness of environmental implications of orchid harvesting increased among: ≥600 rural households in participating communities; ≥40 conservation practitioners; ≥60 urban school children (and their families).	0.4 Surveys (by interview or questionnaire) among participating rural communities at project start and close; correspondence with legislative focal points; pre- and post- specialist training workshop questionnaires, and liaison with Contact Officer for CBD and NBSAP, for increased plant conservation capacity (skills and resources) updated in national reports; surveys (interviews and feedback forms) following urban exhibition/ outreach event(s).	[Please refer to cover letter, and supporting documents from Hildegard Crous for "Proof of Concept"].
Outputs: **1**. **Mitigation:** Sustainable resource management practiced, securing livelihoods for women in poor rural communities.	1.1 Number of households practising destructive harvest methods reduced (from baseline measured in Yr 1) by 60% by Yr 2, and gaining access to supplementary cultivated Chikanda plants for household nurseries by Yr 2. 1.2 a) Household income increased (from baseline measured in Yr 1) by 30% in Yr 3 through adoption of supplementary sustainable income streams (cultivated Chikanda and other sources). 1.2 b) School absenteeism reduced (from baseline measured in Yr 1) by 40% in Yr 3 due to increased household income, and reduced pressure on school-age children to participate in Chikanda harvest. 1.3 Orchid tuber waste reduced at entry to supply chain (due to reduced	1.1 a) Community surveys and participatory meetings* (comparison between Yrs 1 and 3). 1.1 b) Minutes of Commodity groups and village conservation clubs* 1.1 c) Illustrated manual describing best practice, following consultation with harvesters/ the community.* 1.2 a) Community surveys* to record household income (comparison between Yrs 1 and 3); recorded interviews* for qualitative data; newspaper article or newsletter entry. 1.2 b) School attendance registers, and community surveys* (comparison between Yrs 1 and 3). 1.3 Qualitative data (interviews*) reporting positive/ negative trends.	Identifying communities/ individuals willing to participate, and gaining free, prior and informed consent from Chikanda harvester and trader communities/ individuals for all initiatives and activities. *Mitigation for this IA*: Project partners (Dr. Royd Vinya's team and Sanga R&D) have considerable experience in participatory community based natural resource management in Zambia, in both rural settings, and urban market places. This includes (in rural settings) sensitivity to traditional community hierarchies and language skills.

	harvest of juvenile material) from baseline in Yr 1, by 30% in Yr 3.	*For all Outputs: all meeting attendance records, survey data and interview participation aggregated by gender, and data gathered and shared in line with our Ethics Statement.*	
2. Capacity: Both local level community capacity AND conservation practitioner capacity increased to: Manage wild orchid populations; enhance delivery of CBD (GSPC Objectives); and facilitate implementation of CITES legislation for plants.	2.1 1,000 asymbiotic seedlings cultivated for supplementary plantings or household nurseries, by end Yr 1, rising to 5,000 by end Yr 2. 2.2 By end Yr 2, 40% of the participating community households are cultivating orchid germplasm supplied by the CBU laboratory. 2.3 By end Yr 1, specialist plant conservation skills base increased to ≥12 individuals (3xCBU staff and ≥ nine other conservation practitioners) [IUCN Red List, orchid conservation biotechnology methods and augmented with seed banking]. 2.4 Increased resources for classical and molecular identification of traded taxa, from 0 specimens to ≥ 150, by end Yr 2 (two field collection seasons). 2.5 Increased accessibility to orchid identification tools by end Yr 2, to support implementation of CITES for plants [target for ≥20 species of the most commonly traded Chikanda	2.1 CBU collections database (available online); laboratory reports; blog posts and photographs to project website. 2.2 Training workshop reports, local level community meeting minutes, work plans, and quarterly reports. 2.3 Attendance certificates, attendance lists and workshop reports. 2.4 Collections data retrievable via free, online* data repositories; project reports; scientific publications and/ or conference proceedings. [When sufficient material is available, collections will be duplicated at RBG Kew and University of Uppsala]. **Detailed specimen locality data will be obscured to protect rare species from exploitation. Ethnobotanical & traditional knowledge data will be safeguarded in line with our Ethics Statement.* 2.5 Interactive key made available online and number of views/ downloads tracked by Google analytics.	Local communities willing to adopt new methods. *Mitigation for this IA:* There is an identified need from communities seeking to gain control over the resource in household nurseries. The communities will be involved from the outset, and will inform the conservation plan to ensure that traditional use is respected alongside new cultivation methods. The real potential for increased income (both from sustainable management and cultivation, and additional income streams) are strong incentives for participation and willingness to adopt methods. Infrastructure and need identified, enabling specialist methods/ skills from training workshops to be applied by participants. *Mitigation for this IA:* Attendance of specialist training workshops is prioritised for 3 core staff at CBU who have been assigned to the project (CBU that has pledged institutional

	orchid species, and ≥5 species from the "Top-10" rarity list]. 2.6 First symbiotic seedlings (5,000) of Zambia's 10 rarest Chikanda orchid species made available for in-country ex situ conservation and species recovery plans by end Yr 3. [A foundation towards future work by CBU staff to begin symbiotic seed culture in-house].	Informal interviews with users of key reported (annual DI report). 2.6 RBG Kew and CBU collections databases (available online); blog posts and photographs to project website; Darwin Project report.	commitment to the project). Additional places at workshops will be assigned competitively, based on the capacity (existing resources, skills and institutional remit) available that enable the prospective participants to make immediate use of the methods/ skills and who have potential to cascade to their teams. Users can access the internet. *Mitigation of this IA:* Mobile internet connections are widely used in Zambia (via portable USB "dongles", e.g. MTN Fastlink). The interactive key can also be downloaded for use offline. The illustrations from the key, and described spot ID characters, can be re-purposed for hard-copy pamphlets/ posters. Fungal symbionts can be found and host orchid species identified (see mitigation for IA 3.2). Seeds of the target taxa are gathered and delivered to RBG Kew for culture. *Mitigation for this IA:* At least one in-country project partner will participate in fieldwork for collection of target taxa fungal symbionts, ensuring follow-up seed collection is accurate and timely.

3. **Knowledge:** Understanding of orchid identity, rarity, cultivation and traditional utilization practices incorporated into Chikanda orchid conservation plan.	3.1 Traditional, local utilization practices of the 20 most commonly harvested Chikanda orchid species documented by end Yr 1. *[Please refer to Ethics Statement].* 3.2 a) Preliminary, rapid Red List assessments completed for the three target Chikanda genera (100 species) by end Yr 1. 3.1 b) A "top-10" of the most endangered species identified for in-depth research and ex situ conservation, by end Yr 1. 3.3 In-depth study of seed germination requirements completed for high risk species (from "top-10" list), enabling in-country ex situ conservation and species recovery (contributing to GSPC Targets 3 and 8), by end Yr 2. Includes collection of 250 root samples 3.4 First seed storage information and viability testing data available for Chikanda orchids of Zambia (completed for 30 species), by end Yr 3. 3.5 Molecular data gathered for ≥200 samples of traded wild orchid tubers and derivatives, collected (by MSc student) from markets in ≥2 urban centres in Zambia for identification at Uppsala University, Sweden, by end Yr 1.	3.1 Survey reports. Orchid conservation plan (incorporating local utilization practices). 3.2 List of "Top-10" most at risk orchid species included in Darwin Project Report, press releases, the project website and a short popular press article. 3.3 a) Species-specific seed germination protocols delivered to project partners towards development of Conservation Action Plans for the "Top-10" species most at risk. 3.3 b) Field records and associated herbarium vouchers, for number of root samples gathered. Laboratory records (reports/ database) for accessions of fungal isolates, cryopreserved specimens and symbiotic orchid seedlings cultured in vitro. 3.3 c) Results presented in an academic paper submitted for peer review and open access publication, and at least one scientific conference. 3.4 CBU collections database (available online). 3.5 MSc thesis, scientific paper and article in Traffic Bulletin (for Traffic, the wildlife trade monitoring network).	Electricity "load shedding" causing disruption to power supply in Zambia and reduces computing and internet access. *Mitigation for this IA:* Conservation assessments will be completed during a rapid participatory workshop, reducing dependence on long-term use of online resources. Fungal symbionts can be found and host orchid species identified. *Mitigation for this IA:* The team member leading this work programme has considerable relevant experience, most recently working on the successful Madagascar Orchid Conservation Project (RBG Kew) in challenging field conditions. Herbarium vouchers and material for DNA extraction will be gathered to enable classical and molecular ID of host orchids. MSc student can be recruited and gain access to the markets. *Mitigation for this IA:* The MSc supervisors have recruited several past students and completed a complementary study (using similar methods) in Tanzania. The MSc student will be supported by in-country collaborators for the market surveys,

			who bring participatory meeting and local language skills.
4. Awareness: Communication and environmental awareness strategy developed and implemented.	4.1 a) All participating local communities (traditional leadership, headmen, households, government agencies) are aware of the project purpose. 4.1 b) Environmental awareness strategy leading to 60% of the commodity groups aware of the negative environmental implications of their orchid harvesting methods by 2nd Quarter of Yr 2. 4.2 Increased awareness of traded Chikanda waste management options among traders in 3 urban markets by mid- Yr 2. 4.3 a) Strong communication channels established with CITES (Zambian Wildlife Authority) and CBD (Director of Environment) focal points by mid- Yr 1; 4.3 b) >20 senior conservation practitioners aware of project activities and early outputs by end Y1; 4.3 c) >40 conservation practitioners aware of project activities by project end (in addition to workshop participants). 4.4 Public awareness increased (of vulnerable rural livelihoods, plant conservation and DI project) with minimum of 60 school children (+ families) participating in an education/	4.1 Copperbelt University project quarterly reports (sensitization workshop report); Communication and environmental awareness strategy document. 4.2 Market survey results and value chain analyses report; recorded interviews for qualitative data; newspaper article or newsletter entry; pamphlets from Sanga R&D advising on best practice for Chikanda (available among traders and marketing associations). 4.3 a) Correspondence. 4,3 b) Meetings recorded in DI report(s). 4.3 c) Wildlife "forensics" article made available. 4.2 d) Outcomes regularly communicated throughout project cycle, Yrs 1-3, via bi-annual project newsletter. 4.3 e) Final report delivered to CBD and NBSAP focal point (Contact Officer). 4.4 Press releases and radio broadcasts; social media posts (e.g.	Communities will want to engage (Please see box 2 for mitigation). Focal points will want to engage. *Mitigation for this IA:* The PI and other project partners (CBU) have worked with the focal points in the past and have made them aware of proposed project. In addition, we have contacted the FCO who are involved in lobbying on environmental issues in Zambia. Schools will want to participate. *Mitigation for this IA*: One high school (Helen Kaunde School, Kitwe) has already been approached by the PI (in 2013) and the idea was warmly received. In addition this is one of two schools in Kitwe that participate in a UK-Zambia cultural exchange programme (>15 exchanges completed). The PI has secured advisory support from the Rwandan Orchid Schools Project (led by Writhlington Orchid School, UK and Kitabi College for Conservation and Environmental Management, Rwanda), and Plantlife International.

	outreach exhibition in a major urban area, by end Yr 2.	Kingsmead-Zambia Link Facebook Page); promotional materials featuring project from Plantlife International; entry in bi-annual project newsletter.	

Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)

1.1 Baseline study completed on current wild resource management of Chikanda orchid tubers (harvesting practice, handling and storage).
1.2 Local supplementary sustainable income streams identified.
1.3 Baseline & repeat studies of household income and school attendance (Yrs 1 and 3).
1.4 Local-level enterprises and institutional structures established (to support production and trade of cultivated orchids).
1.5 Training needs for local communities for orchid management, storage of tubers, and cultivation assessed.
1.6 Participatory orchid management plan (including handling and storage of harvested tubers) formulated and implemented.
1.7 Cultivated orchid stock distributed to participating households.
1.8 Survey of changes in harvesting practice of Chikanda orchid tubers.

2.1 CBU lab equipped for orchid culture; 3xCBU technical staff trained in asymbiotic orchid seed germination and culture methods.
2.2 3xCBU technical staff (≥9 other conservation practitioners) trained in greenpod orchid seed harvest and sowing, and general orchid cultivation (Workshop 2) for dissemination to rural communities (in Activity 1.5).
2.3 3xCBU technical staff (≥9 other conservation practitioners) trained orchid seed banking and viability testing, and orchid seed bank established at CBU (Workshop 3).
2.4 3xCBU technical staff (≥9 other conservation practitioners) trained in IUCN Red List and rapid conservation assessment methods (Workshop 1; see 3.1).
2.5 Reference Collection & Tissue Bank (orchid specimens) established for DNA extraction and identification of traded species using molecular markers.
2.6 Multi-access illustrated orchid identification key created using Lucid software and made available for download in Google Play Store.
2.7 Symbiotic seedlings (5,000) of ten of the rarest Chikanda orchid species cultured at RBG Kew, for in-country ex situ conservation and species recovery plans.
2.8 Symbiotic seedlings repatriated to Zambia (CBU ex situ conservation facility).

3.1 Participatory orchid management plan (Activity 1.6) agreed for rural, community-managed resources, incorporating local traditional knowledge.
3.2 Workshop 1: Participatory IUCN Red List and rapid assessment workshop completed.
3.3 Fungal symbionts of "10-ten" orchids sampled from the field, isolated, identified and cultured, with full voucher specimens.
3.4 Follow-up seed collection completed for target taxa and seeds dispatched to RBG Kew for symbiotic culture.

3.5 Orchid seed viability testing undertaken during orchid seed collection phases.

3.6 Open access paper submitted for publication, and conference/ symposium presentation delivered.

3.7 Chikanda orchid tubers and processed Chikanda cake sampled from urban markets for identification using molecular barcodes.

3.8 Four molecular markers sequenced for ≥200 samples of traded wild orchid tubers and derivatives.

3.9 MSc thesis and paper(s) prepared.

4.1 Communication and environmental awareness strategy developed and implemented in rural communities through participatory meetings (required for all Output 1 activities).

4.2 Biodiversity Convention national focal points aware of project through correspondence and meetings with project leader and partners.

4.3 Market survey and supply chain analysis completed in 3 urban areas: Lusaka (Soweto market), Ndola (Masala) and Kitwe (Sokoine).

4.4 Pamphlets produced and made available to traders/ market associations with recommendations on improved Chikanda handling and storage.

4.5 Bi-annual project newsletter circulated.

4.6 First results of wildlife "forensics" study (DNA bar-coding) communicated in a report/ article written, directed at CITES officer and legislators.

4.7 Report delivered to CBD and NBSAP focal point (Contact Officer) detailing facilities, resources, and skills available for implementation of GSPC Objectives, in preparation for 6th CBD Report and updated 1999 NSBAP.

4.8 Public awareness programme completed: "Patchwork Meadow" programme integrated into existing UK-Zambia cultural-educational exchange programme, culminating in a public exhibition.

4.9 Field trip to orchid habitats with workshop on plant ID (using interactive key tool); visits by local school groups to CBU orchid conservation facility, to learn lab methods (with advice from the Rwandan Orchid Schools' Project).

24. Provide a project implementation timetable that shows the key milestones in project activities. Complete the following table as appropriate to describe the intended workplan for your project (Q1 starting April 2016)

	Activity (*please Legend below for colours)*	**No of months**	**Year 1**				**Year 2**				**Year 3**			
			Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Output 1														
1.1	Baseline study completed on current wild resource management of Chikanda orchid tubers (harvesting practice, handling and storage).	2												
1.2	Local supplementary sustainable income streams identified.	2												
1.3	Baseline & repeat studies of household income and school attendance (Yrs 1 and 3).	2												
1.4	Local-level enterprises and institutional structures established (to support production and trade of cultivated orchids).	5												
1.5	Training needs for local communities for orchid management, storage of tubers, and cultivation assessed.	1												
1.6	Participatory orchid management plan (including handling and storage of harvested tubers) formulated and implemented.	5												
1.7	Cultivated orchid stock distributed to participating households.	1												
1.8	Survey of changes in harvesting practice of Chikanda orchid tubers.	2												
Output 2														
2.1	CBU lab equipped for orchid culture; 3xCBU technical staff trained in asymbiotic orchid seed germination and culture methods.	0.5												
2.2	3xCBU technical staff (≥9 other conservation practitioners) trained in greenpod orchid seed harvest and sowing, and general orchid cultivation (Workshop 2) for dissemination to rural communities (in Activity 1.5).	0.5												
2.3	3xCBU technical staff (≥9 other conservation practitioners) trained orchid seed banking and viability testing, and orchid seed bank established at CBU (Workshop 3).	0.5												
2.4	3xCBU technical staff (≥9 other conservation practitioners) trained in IUCN Red List and rapid conservation assessment methods (Workshop 1; see 3.1).	0.5												

2.5	Reference Collection & Tissue Bank (orchid specimens) established for DNA extraction and identification of traded species using molecular markers.	1													
2.6	Multi-access illustrated orchid identification key created using Lucid software and made available for download in Google Play Store.	2													
2.7	Symbiotic seedlings (5,000) of ten of the rarest Chikanda orchid species cultured at RBG Kew, for in-country ex situ conservation and species recovery plans.	18							500				4500		
2.8	Symbiotic seedlings repatriated to Zambia (CBU ex situ conservation facility).	2							pilot				done		
Output 3															
3.1	Participatory orchid management plan (Activity 1.6) agreed for rural, community-managed resources, incorporating local traditional knowledge.	5													
3.2	Workshop 1: Participatory IUCN Red List and rapid assessment workshop completed. (See Activity 2.4).	0.5													
3.3	Fungal symbionts of "10-ten" orchids sampled from the field, isolated, identified and cultured (with full voucher specimens).	10													
3.4	Follow-up seed collection completed for target taxa and seeds dispatched to RBG Kew for symbiotic culture.	2													
3.5	Orchid seed viability testing undertaken during orchid seed collection phases.	2													
3.6	Open access paper submitted for publication, and conference/ symposium presentation delivered.	6													
3.7	Chikanda orchid tubers and processed Chikanda cake sampled from urban markets for identification using molecular barcodes.	1.5													
3.8	Four molecular markers sequenced for ≥200 samples of traded wild orchid tubers and derivatives.	6													
3.9	MSc thesis and paper(s) prepared.	3													
Output 4															
4.1	Communication and environmental awareness strategy developed and implemented in rural communities through participatory meetings (required for all Output 1 activities).	5													

4.2	Biodiversity Convention national focal points aware of project through correspondence and meetings with project leader and partners.	0.5													
4.3	Market survey and supply chain analysis completed in 3 urban areas: Lusaka (Soweto market), Ndola (Masala) and Kitwe (Sokoine).	2													
4.4	Pamphlets produced and made available to traders/ market associations with recommendations on improved Chikanda handling and storage.	1													
4.5	Bi-annual project newsletter circulated.	1													
4.6	First results of wildlife "forensics" study (DNA bar-coding) communicated in a report/ article written, directed at CITES officer and legislators	0.5													
4.7	Report delivered to CBD and NBSAP focal point (Contact Officer) detailing facilities, resources, and skills available for implementation of GSPC Objectives, in preparation for 6th CBD Report and updated 1999 NSBAP.	0.5													
4.8	Public awareness programme completed: "Patchwork Meadow" programme integrated into existing UK-Zambia cultural-educational exchange programme, culminating in a public exhibition.	3													
4.9	Field trip to orchid habitats with workshop on plant ID (using interactive key tool); visits by local school groups to CBU orchid conservation facility, to learn lab methods (with advice from the Rwandan Orchid Schools' Project).	1													

Legend: Lead project partner/ personnel for each activity

Copperbelt University (CBU)
RBG Kew team and Project Manager
Specialist trainer (Hildegard Crous)
Specialist trainer (Philip Seaton)
Uppsala University
Sanga R&D

25. Project based monitoring and evaluation (M&E)

Describe, referring to the Indicators above, 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.

(Max 500 words)

We draw on extensive skills from our project team, who have previous contracts or grant-funded projects. Dr. Royd Vinya (CBU), Gun Mickels-Kokwe (Sanga R&D), Sarina Veldman (PhDc) and Dr Hugo de Boer (Uppsala University) bring complementary expertise to the project objectives and planned activities, including monitoring and evaluation of project progress, adaptation to change and response to unforeseen negative consequences of planned work programmes.

The PI and Project Manager will take on the over-arching M&E role across the project, administering finances and financial reporting, drawing together outputs and reports from the project activities, compiling the bi-annual newsletter and reporting to the Darwin Initiative.

In rural communities we use survey results and issues raised (and Minuted) at participatory meetings, commodity group and village conservation club meetings to ensure that we are mindful of community concerns and feedback on our initiatives (both negative and positive), and aggregating all meeting attendance, and Minuted points, by gender. CBU staff bring CBNRM expertise to this role, relevant language skills and knowledge of community structures. Summaries of community feedback will be included in the final illustrated manual describing best practice (pending PIC; cf. Ethics Statement].

Household surveys in rural communities (at project start/ close) enable us to monitor trends in household income. Informal, qualitative data gathered during site visits (throughout project cycle) will be used to detect any negative household income impacts, to be flagged up quickly.

Compilation of existing data will be used to monitor school attendance (indirect benefit of school age children being available to attend school and household income for school costs). Intermediate, qualitative data (informal interviews) will be used to monitor school attendance during site visits.

Progress on increased capacity (skills and resources) at the CBU lab, will be communicated by the CBU team, and evidence gathered through specimen and associated data collections (database records) and photo essay. CBU has its own in-house reporting structure (quarterly reports) that will also be used to monitor progress.

Excluding core x3 CBU technical staff, training workshop participants are required to apply for workshop places. Applications will enable assessment of suitability of candidates and availability of existing expertise and resources, for implementation of the GSPC, directly feeding back to the focal point. Applicants are also required to outline plans to cascade specialist skills following workshops, providing us with a benchmark for comparison at project close.

Database records and scientific reports and publications allow us to evaluate success of "knowledge" based activities. Use of the interactive key can be tracked by Google Analytics, augmented with qualitative data from informal interviews with users, to seek improvements on early versions.

Meeting attendance records, survey data and interview participation aggregated by gender, and data gathered and shared in line with our Ethics Statement

In the financial document, M&E costs are incorporated into salary costs for the Output leaders. Below PI and Project Manager salaries are given as an estimate of value of M&E.

Total budget for M&E	£49,619
Percentage of total budget set aside for M&E	14.5%

FUNDING AND BUDGET

Please complete the separate Excel spreadsheet which provides the Budget for this application. Some of the questions earlier and below refer to the information in this spreadsheet. You should also ensure you have read the 'Finance for Darwin' document and considered the implications of payment points for cashflow purposes.

NB: The Darwin Initiative cannot agree any increase in grants once awarded.

26. Value for Money

Please explain how you worked out your budget and how you will provide value for money through managing a cost effective and efficient project. You should also discuss any significant assumptions you have made when working out your budget.

(max 300 words)

By drawing on existing skills within the team and partnership organisations, we have eliminated the need for Consultancy costs.

For development of the conservation biotechnology unit at CBU, we build on existing infrastructure (lab equipment and nursery facilities) recently enhanced by active grant-funded programmes (CBU School of Natural Resources and Forestry Department Silviculture Research Branch) supported by the Gov. Republic of Zambia (GRZ) Interim Environment Fund (IEF).[26]

The project has institutional commitment from CBU, commitment of 35% time for 3 CBU technical staff for lab and field work, and 20% time Dr. Royd Vinya who leads Output 1 Activities. Use of vehicles from CBU has been agreed for CBNRM initiatives.

At RBG Kew, lab work costings have recently been revised at Kew, and all costings enclosed have been approved by current lab managers based on agreed institutional plans offerings Kew staff projects access to lab services and value for money. In addition, RBG Kew contributes to overheads to support this project, and includes advisory services for policy, ethics and the Biodiversity Conventions.

Per diems and field costs are based on quotes from at least three in-country contacts (project partners and other) with field experience in Zambia, and based on PI's own first-hand experience.

Recruitment of an in-country Project Manager enables response to unforeseen issues as they arise, with minimal international travel. Vehicle hire and fuel are major costs in Zambia. The PM has access to a 4x4 vehicle enabling participation in fieldwork at minimal additional cost. Expertise of the PI enables "in-house" training of the PM in identification tool development (Lucid software) and creation of the Tissue Bank and Reference Collection.

27. Capital items

If you plan to purchase capital items with Darwin funding, please indicate what you anticipate will happen to the items following project end.

(max 150 words)

Laptop for Project Manager. By project end laptop will be 3 years old. Will be kept by Project Manager to support continued botanical inventory projects with Flora Zambia and the established Darwin project partnership.

[26] http://www.zema.org.zm/index.php/dloadspage/doc_details/11-interim-environmental-fund-guidelines

FCO NOTIFICATIONS

Please check the box if you think that there are sensitivities that the Foreign and Commonwealth Office will need to be aware of should they want to publicise the project's success in the Darwin competition in the host country.

Please indicate whether you have contacted your Foreign Ministry or the local embassy or High Commission (or equivalent) directly to discuss security issues (see Guidance Notes) and attach details of any advice you have received from them.

Yes (no written advice) ~~**Yes, advice attached**~~ ~~**No**~~

CERTIFICATION

On behalf of the trustees of Royal Botanic Gardens, Kew

(*delete as appropriate)

I apply for a grant of £220,313 in respect of **all expenditure** to be incurred during the lifetime of this project based on the activities and dates specified in the above application.

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 enclose CVs for key project personnel and letters of support.
- I enclose our most recent signed audited/independently verified accounts and annual reports (if appropriate)

Name (block capitals)	CHARLOTTE SWEENEY
Position in the organisation	Head of Science Directorate Office

Signed**  **Date:** 01/12/2015

If this section is incomplete or not completed correctly the entire application will be rejected. You must provide a real (not typed) signature. You may include a pdf of the signature page for security reasons if you wish. Please write PDF in the signature section above if you do so.

Stage 2 Application – Checklist for submission

	Check
Have you **read the Guidance Notes**?	YES
Have you provided **actual start and end dates** for your project?	YES
Have you indicated whether you are applying for DFID or Defra funding? **NB: you cannot apply for both**	YES
Have you provided your **budget based on UK government financial years** i.e. 1 April – 31 March and in GBP?	YES
Have you checked that your **budget is complete**, correctly adds up and that you have included the correct final total on the top page of the application?	YES
Has your application been **signed by a suitably authorised individual**? (clear electronic or scanned signatures are acceptable)	YES
Have you included a **1 page CV for all the key project personnel** identified at Question 10?	YES
Have you included a **letter of support from the main partner organisations** identified at Question 9?	YES
Have you **been in contact with the FCO** in the project country/ies and have you included any evidence of this?	YES
Have you included a **signed copy of the last 2 years annual report and accounts** for the lead organisation?	YES
Have you **checked the Darwin website** immediately prior to submission to ensure there are no late updates?	YES

Once you have answered the questions above, please submit the application, not later than 2359 GMT on Tuesday 1 December 2015 to Darwin-Applications@ltsi.co.uk using the application number (from your Stage 1 feedback letter) and the first few words of the project title **as the subject of your email**. If you are e-mailing supporting documentation separately please include in the subject line an indication of the number of e-mails you are sending (eg whether the e-mail is 1 of 2, 2 of 3 etc). You are not required to send a hard copy.

DATA PROTECTION ACT 1998: Applicants for grant funding must agree to any disclosure or exchange of information supplied on the application form (including the content of a declaration or undertaking) which the Department considers necessary for the administration, evaluation, monitoring and publicising of the Darwin Initiative. Application form data will also be held by contractors dealing with Darwin Initiative monitoring and evaluation. It is the responsibility of applicants to ensure that personal data can be supplied to the Department for the uses described in this paragraph. A completed application form will be taken as an agreement by the applicant and the grant/award recipient also to the following:- putting certain details (ie name, contact details and location of project work) on the Darwin Initiative and Defra websites (details relating to financial awards will not be put on the websites if requested in writing by the grant/award recipient); using personal data for the Darwin Initiative postal circulation list; and sending data to Foreign and Commonwealth Office posts outside the United Kingdom, including posts outside the European Economic Area. Confidential information relating to the project or its results and any personal data may be released on request, including under the Environmental Information Regulations, the code of Practice on Access to Government Information and the Freedom of Information Act 2000.