





Foreign & Commonwealth Office Departi

Department for International Development



DPLUS037

Darwin Plus: Overseas Territories Environment and Climate Fund Project Application Form

Submit by Monday 4 August 2014

Please read the Guidance Notes before completing this form Information to be extracted to the database is highlighted in blue

Basic Data						
1. Project Title (max 10 words)	Conserving the genetic diversity of St Helena's threatened endemic flora					
2. UK OT(s) involved	St Helena					
3. Start Date:	1 April 2015					
4. End Date:	31 March 2017					
5. Duration of project (no longer than 24 months)	24 months					

Summary of Costs	2015/16	2016/17	Total		
6. Budget requested from Darwin	£61,337	£7,910	£69,247		
7. Total value of matched funding	£18,717	£13,116	£30,768		
8. Total Project Budget (all funders)	£80,054	£101,080			
9. Names of Co-funders	Royal Botanic Gardens, Kew				

10. Lead applicant organisation (responsible for delivering outputs, reporting and managing funds)	Royal Botanic Gardens, Kew
11. Project Leader name	Thomas Heller
12. Email address	
13. Postal address	Richmond, Surrey, TW9 3AB
14. Contact details: Phone/Fax/Skype	

* Notification of results will be by email to the Project Leader in Question 11

15. Тур	15. Type of organisation of Lead applicant. Place an x in the relevant box.												
OT GOVT		UK GOVT		UK NGO		Local NGO		International NGO		Commercial Company		Other (e.g. Academic)	x (non- departmental public body)

16. Principals in project. Please identify and provide a one page CV for each of these named individuals. You may copy and paste this table if you need to provide details of more personnel or more than 2 project partners.

Details	Project Leader	Project Partner 1	Project Partner 2
Surname	Heller	Sansom	
Forename(s)	Thomas Mark	Ben	
Post held	Assistant Coordinator – Millennium Seed Bank Partnership	Head of Environmental Management Division	
Institution (if different to above)		St Helena Government	
Department	Seed Conservation Department	Environment and Natural Resources Directorate	
Telephone/Skype			
Email			

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

Reference No	Project Leader	Title
DPLUS006	Thomas Heller	Seed Conservation in the Caribbean UKOTs
DPLUS016	Martin Hamilton	Caicos pine forests: mitigation for climate change and invasive species, Turks and Caicos Islands
21-003	Hugh Pritchard	Protecting Ugandan endemic cycads from biodiversity loss and trafficking
21-005	Moctar Sacande	Pesticide plants for organic cotton, livelihoods and biodiversity in Mali
21-006	Kate Gold	Balancing conservation and livelihoods in the Chimanimani forest belt, Mozambique
20-021	William Milliken	Forest Futures: livelihoods and sustainable forest management in Bolivian Amazon

18. If your answer to Q17 was No, provide details of 3 contracts previously held by your institution that demonstrate your credibility as an implementing organisation. These contacts should have been held in the last 5 years and be of a similar size to the grant requested in this application. (If your answer to Q17 was Yes, you may delete these boxes, but please leave Q18)

Project Details

19. Project Outcome Statement: Describe what the project aims to achieve and what will change as a result. (50 words max)

The genetic diversity of St Helena's threatened endemic flora secured as high quality seed collections in long-term storage, representative of wild populations. Capabilities of conservation staff in St Helena to monitor wild plants and manage *ex-situ* collections improved.

20. Background: (What is the current situation and the problem that the project will address? How will it address this problem? What key OT Government priorities and themes will it address? (200 words max)

St Helena is home to 45 endemic higher plant species, many under severe immediate threat of extinction, such as through the effects of invasive species and climate change. Although there are intensive efforts to improve their outlook, additional measures are available for their conservation.

Ongoing work to collect seed of native species is concentrating on the production of material for environmental mitigation associated with the airport development, with seed stored mostly on a short-term basis.

St Helena's endemic flora is inadequately represented in long-term storage, with several existing Millennium Seed Bank collections suffering low seed quantity and quality (poor germination rates, hybridisation), and some endemics not represented at all, either in-country or duplicated at the MSB. Though data on wild populations and *ex-situ* collections exist, these are stored in disparate, unconnected sources. Their management and monitoring could be much improved by unifying these sources.

This project contributes to several objectives of St Helena's National Environmental Management Plan 2012-2022 (<u>http://goo.gl/OV1Cxg</u>): objective B ("...knowledge management and capacity building"), D ("...safe guarding ecosystems, species and genetic diversity"), and F ("...minimise the impact of climate change..."). This in turn feeds into the Sustainable Development Plan's National Goal 3: "Effective management of the environment."

21. 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). Give details of any innovative techniques or methods. (500 words max)

Gap analysis & data management

Disparate data sources on existing *ex-situ* collections (seed and living collections) and wild populations will be compiled into a single database. Freely available BRAHMS software (Botanical Research and Herbarium Management System) will be used, as it has been in botanical work across the UKOTs. Various sources will be used, including locally held databases (local seed collections, rare plant census data from "DPLUS008: Rare plant census of St Helena"), as well as Kew's Seed Bank Database and Living Collections Database) to identify gaps in *ex-situ* seed collections, and prioritise wild and cultivated plants for targeted collecting. Ongoing data gathering in a standardised format will also allow easy interchange with other databases, such as the MSBP's Data Warehouse and the national GIS.

Though not usually targeted in conventional germplasm conservation, endemic fern species will also be targeted in this project, where there is a reasonable likelihood that their spores will tolerate desiccation and storage in liquid nitrogen (e.g. see http://goo.gl/BsLclo).

The terrain on St Helena presents particular challenges for seed collecting. One innovative technique to partially overcome this will be the use of a highly manoeuvrable 'quadcopter' drone to monitor inaccessible populations which, as well as helping with planning seed collecting exercises, will enable safe surveying of areas not previously explored.

Training

A bespoke training programme will be provided at the Millennium Seed Bank and Wakehurst Place's conservation nurseries, as well as in-country, to further develop St Helena-based staff's capacity to employ best practice in seed conservation and plant propagation. Training in the UK will enable the trainees to learn from a range of specialists, as well as gain experience using a selection of equipment, which can then be applied to the particular circumstances that apply to St Helena. As well as seed conservation training, some horticultural training will also be available, in particular from staff involved in propagating plants and producing seed for the UK Native Seed Hub. Seed collecting programme

A programme of targeted seed collecting will be undertaken, following established protocols developed by the MSBP to ensure high quality collections are made at levels that avoids damage to wild populations. While collections will be made directly from the wild wherever possible, in some situations it may be necessary to make seed collections from cultivated plants, such as where wild plants cannot be accessed, or controlled pollination is necessary to exclude the possibility of hybridisation. Such activities will be possible as a result of the work of the Darwin-funded "DPLUS029: Securing St Helena's rare Cloud Forest trees." Collecting seed using a portable vacuum cleaner will also be trialled for some species, an innovative technique.

Banking

Seeds will be banked in-country and at the MSB wherever possible, according to established MSBP protocols. Capacity for banking locally will be improved through training, as well as upgrading some equipment, such as providing a seed aspirator and a drying oven for drying silica gel.

Seeds are tested at the MSB for viability and germination requirements.

22. How does this project:

a) Deliver against the priority issues identified in the assessment criteria

b) Demonstrate technical excellence in its delivery

c) Demonstrate a clear pathway to impact in the OT(s)

(500 words max)

a) This project will make a contribution to two of the priority funding areas: "Developing appoaches to deal with the effects of climate change" and "Developing data systems on biodiversity". By significantly improving *ex-situ* collections, the conservation of maximal genetic diversity will mean that future conservation interventions can more robustly address the challenges that climate change will present to species survival. This project will also make extensive use of data for planning conservation activities, bringing together disparate sources of information which will then be available for others to use. It will also build on this dataset through surveying populations and making collections during the course of the project.

The project will also contribute to commitments of the CBD, <u>Art.9</u> especially (*Ex-situ* conservation), but also <u>Art.12</u> (Research and training), <u>15</u> (Access to genetic resources), <u>17</u> (Exchange of information) and <u>18</u> (Technical and scientific cooperation); and directly to targets 8 ("At least 75 per cent of threatened plant species in ex situ collections…"), and 15 ("The number of trained people working with appropriate facilities sufficient according to national needs") of the <u>GSPC</u> and <u>Aichi target 12</u> ("By 2020 the extinction of known threatened species has been prevented…").

- b) The project will benefit from the extensive experience gained by partners in St Helena in tackling the acute plant conservation challenges on the island, and is complementary to recent and ongoing work in-country, including Darwin-funded projects (e.g. DPLUS008, DPLUS029), by strengthening areas where additional capacity is important. Kew is uniquely placed to provide this support in capacity building, through its leadership of the Millennium Seed Bank Partnership, with proven success in delivering *ex-situ* outcomes, and its longstanding relationship with UK Overseas Territories through Kew's UKOTs Programme.
- c) The careful management of genetic resources is important in the future survival of many of St Helena's severely threatened plant species, where genetic diversity is key to the ability of them to cope with threats such as climate change and introduced pests. This project will have a positive impact in this respect, through building capacity for such management, as well as significantly developing *ex-situ* collections with great potential for use in undertaking restoration activities and supporting horticultural activities in conservation nurseries.

23. Who are the **stakeholders** for this project and how have they been consulted (include local or host government support/engagement where relevant)? Briefly describe what support they will provide and how the project will engage with them. (250 words max)

The principal stakeholder for this project is the Environmental Management Division of the St Helena Government, with responsibilities for biodiversity conservation on the island. They have been consulted since the inception of the project. A major focus of the project is to build EMD's capacity to conserve threatened plants, by delivering specialist training and equipment to improve facilities to bank seed, needs identified by them. Training will include two weeks' bespoke training at the MSB and conservation nurseries at Wakehurst Place for two EMD staff members as well as in-country training during visits by Kew staff. EMD will be undertaking seed collecting (including data capture) for the project, which will be banked in their own local seed bank and also duplicated at the MSB.

Kew have worked with EMD (and its predecessors) on plant conservation for almost 20 years, providing technical support and advice. This project represents a continuation of this long-standing collaboration.

24. Institutional Capacity: Describe the implementing organisation's capacity (and that of partner organisations where relevant) to deliver the project. (500 words max)

Kew's mission is 'to inspire and deliver science-based plant conservation worldwide, enhancing the quality of life'. RBG Kew's UKOTs Science Team has well-established links with St Helena, having collaborated with the St Helena Government and National Trust on plant conservation projects, providing technical support in plant identification, management plans and horticultural expertise, as well as caring for St Helenan *ex-situ* collections, including seeds and living plants. Kew has in the past regenerated and repatriated seed of endangered plants to St Helena for conservation work, including that of the St Helena Boxwood, *Mellissia begoniifolia*, which at one time was thought to be extinct in the wild until a small number of individuals were discovered between 1998 and 2001.

Kew's Seed Conservation Department is the world leader in the field, managing the extensive Millennium Seed Bank Partnership, and is well experienced in capacity building and technology transfer, with partners in over 50 countries. It is able to provide training tailored to a wide variety of needs and experience, and has developed approaches to seed conservation employing the latest high-tech equipment as well as low-cost and simple approaches. To date it has secured over 34,000 species in the vaults of the MSB, including many threatened species. RBG Kew will provide overall project coordination, providing training and technical support. Collections will be duplicated at the MSB in the UK.

The St Helena Government has been working on the conservation of its native plant species for many years, with the Environmental Management Division currently responsible for significant numbers of important plants in its nurseries and seed orchards, as well as caring for wild populations across the island. Government staff have gained much capacity in developing *ex-situ* plant collections in recent years, and are well-placed to further develop skills appropriate to the particular conservation challenges in St Helena.

25. Expected Outputs			
		Status before project/baseline data (what is the situation before the project starts?)	Source of information (where will you obtain the information to demonstrate if the indicator has been achieved?)
1. Gap analysis and action plan	Database of <i>ex-situ</i> collections (seed and living collections) and wild populations accessible in St Helena	Data dispersed in various formats, e.g. Kew's Seed Bank Database, UKOTs BRAHMS database,	Database accessible in St Helena and Kew. Targeting lists. Reports, publicity, e.g.

		and Kew. List of species and populations identified for targeted collecting. Poorly known/inaccessible populations assessed using 'quadcopter' drone and data recorded.	databases held in- country. Many populations only accessible by abseil or difficult climbing, impractical for routine monitoring. Many localities and populations never explored in detail.	newspaper reports, blogs.
2	. Capacity building: seed conservation and horticulture skills and equipment	Two St Helena Government staff trained in advanced seed conservation techniques and propagation work. Equipped with 'quadcopter' drone to monitor and assess difficult to access plants, resulting in high quality population data. Equipped with vacuum cleaner, seed aspirator and drying oven for collecting and processing of seed collections. All seed collections cleaned in- country to a high standard.	Government staff skilled have received some seed conservation training during a visit by Kew staff in 2009, but training in cleaning and banking techniques limited. Horticultural skills good, but will benefit from input from specialist staff working with conservation collections at MSB. Many populations only accessible by abseil or difficult climbing, impractical for routine monitoring, and in some cases potentially dangerous. Many localities and populations never explored in detail. Government labs currently equipped with simple drying equipment (silica gel drying chamber, hygrometer, sieves) and banking facilities (two freezers, foil bags and plastic clips).	Training reports, feedback from MSB staff. Database with population data. Habitat and population images. Kew's Seed Bank Database, with details of seed quality and cleaning undertaken.
3	. <i>Ex-situ</i> collections	All endemics represented by at least one new high quality seed collection, including bankable ferns. All collections with more than 500 seeds. Where quantity not achieved constraints identified	70 collections representing 29 species banked at MSB. x collections banked in St Helena. No ferns banked at MSB. 33 collections of fewer	Training reports, feedback from MSB staff. Database with population data. Habitat and population images. Kew's Seed Bank Database, with details of seed quality and

and plans to overcome in place. Species where hybridisation likely collected under controlled conditions.	than 500 seeds at MSB. Collections of <i>Trochetiopsis,</i> <i>Wahlenbergia</i> and <i>Commidendron</i> at MSB not known to be made under controlled conditions.	cleaning undertaken.
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26. Expected Outcomes: How will each of the outputs contribute to the overall outcome of the project? (100 words max)

Output 1 will ensure that collecting is done in a targeted manner and thus new *ex-situ* collections will be a valuable addition to those already existing, capturing a greater range of threatened genetic diversity.

Output 2 will ensure that conservation activities are carried out according to best practice during the lifetime of the project as well as building capacity for future conservation efforts.

Output 3 will ensure that the genetic diversity of St Helena's threatened flora is conserved for future generations and available for use in plant reintroductions, habitat restoration and research.

27. Main Activiti	es
Output 1	Activities or tasks to be done to deliver the outputs. Include activities on open access information sharing and collaboration with other OTs
1.1	Data sources from Kew and St Helena assembled, standardised and compiled.
1.2	Priority lists and collecting plans drawn up for all endemic species.
1.3	Key populations and remote locations surveyed by drone.
Output 2	
2.1	Staff from St Helena to visit Wakehurst Place for seed conservation and horticultural training.
2.2	Staff from Kew to visit St Helena to deliver in-country training and collecting and horticultural support.
2.3	Procure equipment and ship to St Helena.
Output 3	
3.1	Monitor target populations for availability of seed.
3.2	Make seed collections, with associated data and voucher specimens (either herbarium specimens or photos, as appropriate to vulnerability of target populations).
3.3	Dry and clean seed collections, using internationally approved protocols.
3.4	Seal and bank seed collections in local seed bank.
3.5	Ship duplicate seed collections to MSB.

28. Risks			
Description of the risk	Likelihood the event will happen (H/M/L)	Impact of the event on the project (H/M/L)	Steps the project will take to reduce or manage the risk
Unusual seasonal weather results in poor seed production.	L	Н	Collecting programme to take place over two years. Good local monitoring system in place to track seed ripening.
Quadcopter is damaged or lost in inaccessible location.	М	М	Piloting drone well practised and use restricted to skilled staff members. Use is restricted to calm weather conditions.
Injury due to difficult terrain.	L	Н	Field work thoroughly assessed for risks. Collecting done under supervision of experienced persons/familiar with terrain. Limit collecting to sites where risks can satisfactorily be managed.

29. Sustainability: How will the project ensure benefits are sustained after the project has come to a close? If the project requires ongoing maintenance or monitoring, who will do this? (200 words max)

Long-term sustainability is an important part of seed conservation, and Kew is committed to the care of its MSB collections long beyond current MSBP activities to 2020, where much of the infrastructure has been designed with hundreds of years of use in mind. These duplicate collections represent an 'insurance policy' against extinction, a real risk for the most threatened plants of St Helena.

In St Helena, this project will achieve long-term benefits by building capacity to manage genetic diversity cost effectively and with relatively little ongoing maintenance, whilst remaining a useful resource for other conservation activities long into the future.

While current seed conservation work in St Helena, such as that undertaken as part of the airport development, is specifically aimed at mitigating the impacts of construction work, threats to the survival of St Helena's endemics will continue in the form of climate change, introduced organisms and habitat modification and loss. Banked seed can help to address this beyond the life of this project.

If the continued maintenance of a local seed bank becomes uncertain, the MSB has the capacity to store national seed collection at no cost to St Helena.

30. Monitoring & Evaluation: How will the project be monitored and who will be responsible? Will there be any independent assessment of progress and impact? When will this take place, and by whom? (250 words max)

Project progress will be monitored by the project coordinator at Kew, with regular reporting from partners. A logframe based on the outputs table will be developed and used to regularly evaluate progress of the project against indicators and targets.

Undertaking a gap analysis will enable collecting priorities to be clearly defined and used as a measure of success of the collecting programme, while feedback following the accessioning process at the MSB will allow quality of seed collections to be monitored.

Kew will manage the project adaptively, working with our partners to respond to circumstances in a strategic manner so that the overall objective is achieved.

In Kew's current structure, the project falls under the MSBP's Collecting and Network Support (CNS) sections, to which projects report quarterly via the Species Conservation Group, to ensure that targets are delivered in a timely fashion and within budget.

The project completion report is after the project is over and is linked to the final payment.

31. Financial controls: Please demonstrate your capacity to manage the level of funds you are requesting. (Who is responsible for managing the funds? What experience do they have? What arrangements are in place for auditing expenditure?)

Kew will be responsible for managing the funds for this project. The Kew Finance Department has a team dedicated to supporting financial management of projects and to reporting to funders. Institutional and project accounts are audited each year by external accountants.

See http://www.kew.org/sites/default/files/Annual%20Report%202012-13.pdf

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.

NB: Please state all costs by financial year (1 April to 31 March) and in GBP. **Budgets submitted in other currencies will not be accepted.** Use current prices – and include anticipated inflation, as appropriate, up to 3% per annum. The Darwin Initiative cannot agree any increase in grants once awarded.

33. 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. (200 words max)

The project represents excellent value for money, seed conservation being a relatively low cost and highly effective means of securing species in *ex-situ* conservation, with benefits for future conservation projects with a need for seeds of native species. The UK and in-country training elements will allow partners to see the range of techniques available and select and adapt those most appropriate to St Helena, and implement efficient methodologies.

Periods of training by Kew staff will be focussed and intensive, while the experience of local staff will enable a highly targeted seed collecting programme, ensuring time is spent well.

Travel and subsistence costs have been calculated based on past experience, allowing for a reasonable inflationary increase.

Equipment costs are based on the MSB's experience in sourcing reliable tools that represent good value for money.

The Kew UKOTs programme has already established links with St Helena, enabling efficient collaboration, while the MSBP has developed a cost-effective global programme over the last 12 years, with additional economies of scale that are of benefit to small partners.

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 2014)

	Activity	No of		Ye	ar 1		Year 2			
		Months	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 1										
1.1	Data sources from Kew and St Helena assembled, standardised and compiled.		x	x						
1.2	Priority lists and collecting plans drawn up for all endemic species.			х						
1.3	Key populations and remote locations surveyed by drone.				х	х	x	х	х	х
Output 2										
2.1	Staff from St Helena to visit Wakehurst Place for seed conservation and horticultural training.			х						
2.2	Staff from Kew to visit St Helena to deliver in-country training and collecting and horticultural support.				x					
2.3	Procure equipment and ship to St Helena.		x	x						
Output 3										
3.1	Monitor target populations for availability of seed.		х	х	х	х	х	х	х	х
3.2	Make seed collections, with associated data and, where appropriate, voucher specimens.		x	x	x	x	x	x	x	x
3.3	Dry and clean seed collections.		x	x	x	x	x	x	x	x
3.4	Seal and bank seed collections in local seed bank.		x	x	x	x	x	x	x	x
3.5	Ship duplicate seed collections to MSB.					x				x

CERTIFICATION

On behalf of the trustees of

THE ROYAL BOTANIC GARDENS, KEW

I apply for a grant of **£69,247** 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 lead institution to submit applications and sign contracts on their behalf.*)

I enclose CVs for project principals and letters of support. Our most recent audited/independently verified accounts and annual report can be found at:

http://www.kew.org/about/our-work/reports-accounts-plans

Name (block capitals)	PROFESSOR KATHERINE WILLIS
Position in the organisation	Director of Science

Signed

Date:

31st July 2014

Application Checklist for submission

	Check
Have you read the Guidance Notes?	\checkmark
Have you checked the Darwin Plus website immediately prior to submission to ensure there are no late updates?	✓
Have you provided actual start and end dates for your project?	\checkmark
Have you provided your budget based on UK government financial years ie 1 April – 31 March and in GBP?	✓
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?	✓
Has your application been signed by a suitably authorised individual ? (clear electronic or scanned signatures are acceptable in the email)	✓
Have you included a 1 page CV for all the principals ?	\checkmark
Have you included a letter of support from the <u>main</u> partner(s) organisations?	√
Have you included a copy of the last 2 years' annual report and accounts for the lead organisation? An electronic link to a website is acceptable.	 ✓

Once you have answered the questions above, please submit the application, not later than midnight GMT Monday 4 August 2014 to <u>Darwin-Applications@ltsi.co.uk</u> using 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 (e.g. 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 Darwin Plus. Application form data will also be held by contractors dealing with Darwin Plus 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 (i.e. name, contact details and location of project work) on the Darwin Initiative and Defra/FCO/DFID 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 Governor's Offices outside the UK, 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.