

Applicant: **Duncan, Darren**
Organisation: **St Helena Research Institute**
Funding Sought: **£98,604.00**

DPR13PS\1056

Capacity-building on St Helena for molecular detection of plant pathogens.

St Helena's endemic trees are under threat of extinction due to recently discovered invasive plant pathogens. Currently, processing of field samples, essential to assess their spread, must be outsourced, with significant cost and biosecurity implications. This project will enhance existing basic diagnostic capabilities by installing suitable qPCR equipment and providing training to local scientists. This will allow more cost-effective 'on-island' processing of samples. Capacity building will make use of training already provided covering the implementation of more basic technologies.

CONTACT DETAILS

Title Mr
Name Darren
Surname Duncan
Website (Work) [Redacted]
Tel (Work) [Redacted]
Email [Redacted]
Address [Redacted]
[Redacted]
[Redacted]
[Redacted]

CONTACT DETAILS

Title Dr
Name Rebecca
Surname Cairns-Wicks
Organisation St Helena Research Institute
Website (Work) www.sthelenaresearch.edu.sh
Tel (Work) [Redacted]
Email (Work) [Redacted]
[Redacted]
Address [Redacted]
[Redacted]
[Redacted]
[Redacted]
[Redacted]

DPR13PS\1056

Capacity-building on St Helena for molecular detection of plant pathogens.

Section 1 - Contact Details

CONTACT DETAILS

Title	Mr
Name	Darren
Surname	Duncan
Website (Work)	
Tel (Work)	
Email	
Address	

CONTACT DETAILS

Title	Dr
Name	Rebecca
Surname	Cairns-Wicks
Organisation	
Website (Work)	
Tel (Work)	
Email (Work)	
Address	

GMS ORGANISATION





Type	Organisation
Name	St Helena Research Institute
Phone (Work)	
Email	
Website (Work)	
Address	

Section 2 - Title, Dates & Budget Summary

Q3. Title

Capacity-building on St Helena for molecular detection of plant pathogens.

Please attach a cover letter as a PDF document.

-  [LOS ENRP](#)
-  23/09/2024
-  23:20:09
-  pdf 355.43 KB

Q4a. Is this a resubmission of a previously unsuccessful application to Darwin Plus Fellowships, as this scheme was previously called?

☒ No

Q5. Project beneficiary/group of beneficiaries

☒ Group

Provide a description of the proposed Darwin Plus beneficiaries and their names (if known)

Description of who the beneficiaries are	Beneficiaries will be staff of the Environment, Natural Resources & Planning Portfolio (ENRP) and St Helena Research Institute (SHRI), each of which is part of the St Helena Government, who work in conservation, agricultural development, agronomy, biosecurity and research.
--	---

Names of individuals in the group (if known)	Martina Leo, Farmer Support (ENRP) Lawanda Leo, Farmer Support (ENRP) Julie Balchin, Biosecurity Officer (ENRP) Andy Timm, Agricultural Development Officer (ENRP) Zac Bargo, Research Assistant (SHRI)
	CV's included with exception of Zac Bargo, Research Assistant (RA), SHRI and Lawanda Leo, who works to support the Agronomy / Pest control and Biosecurity Sections of ENRP. Zac and Lawanda's CV's weren't available to upload at time of submission of the application. Zac's job profile has been included. The RA role is financed by projects and is fixed term and not currently a core role in the SHRI.
Have CVs been provided?	<input checked="" type="radio"/> Yes

Q6. Summary of proposed project

St Helena's endemic trees are under threat of extinction due to recently discovered invasive plant pathogens. Currently, processing of field samples, essential to assess their spread, must be outsourced, with significant cost and biosecurity implications. This project will enhance existing basic diagnostic capabilities by installing suitable qPCR equipment and providing training to local scientists. This will allow more cost-effective 'on-island' processing of samples. Capacity building will make use of training already provided covering the implementation of more basic technologies.

Q7. UKOT involved

Q7a. Please state which UKOT(s) will be involved with the project?

☒ St Helena, Ascension and Tristan da Cunha*

*** if you have indicated a territory group with an asterisk, please give detail on which territories you are working on here:**


St Helena


Q7b. Have you included a letter of support from the relevant OT Government(s) and/or OT-based civil society organisation?


☒ Yes

Please provide a combined PDF of all letters of support

 [Letter of support SHRI 23092024](#)

 23/09/2024

 23:23:37

 pdf 309.35 KB

Q8. Project dates

Start date:
01 April 2025


End date:
31 March 2026


Duration (e.g. 1 year, 2 months):
1 year


Q9. Budget summary


	2025/2026	2026/27	2027/2028	Total
Darwin Plus funding request (1 Apr - 31 Mar)	98,604.00	0	0.00	£ 98,604.00

Please complete the template below which provides the Budget for this application.

 [Copy of bcf-budget-under-100k-master-apr24-S](#)

 23/09/2024

 23:27:26

 xlsx 38.44 KB

Section 3 - Principals

Q10. Principals in the project

Please give the details of the individuals from the Lead Organisation (and other organisations if relevant) who would be directly involved in supervising/ working with the beneficiary/ies.

Details	Project Leader	Other Expert	Other Expert	Other Expert
Surname	Cairns-Wicks	Offord	Yeap	Maczey
Forename(s)	Rebecca	Lisa	Yuen-Ting	Norbert
Post held	Coordinator	Microbiologist	Molecular Biologist	Senior Ecologist
Organisation	SHRI	CABI	CABI	CABI
Email				

Do you require more fields?

☒ Yes

Details

Other Expert


Other Expert


Other Expert

Surname	Buddie	<i>No Response</i>	<i>No Response</i>
Forename(s)	Alan	<i>No Response</i>	<i>No Response</i>
Post held	Senior Molecular Scientist	<i>No Response</i>	<i>No Response</i>
Organisation	CABI	<i>No Response</i>	<i>No Response</i>
Email	a.buddie@cabi.org	<i>No Response</i>	<i>No Response</i>

Please provide a combined 1-page CV for each of these named individuals and remember to include the beneficiary/ies CVs as part of the PDF.

 [CVs](#)

 23/09/2024

 23:34:48

 pdf 421.59 KB

Section 4 - Aims, Activities & Achievements

Q11. Describe briefly the aims, activities and achievements of the employing organisation(s) of the proposed beneficiary/ies.

ENRP and SHRI have been at the core of biodiversity conservation and scientific study in St Helena. Both departments have been responsible for developing and implementing effective management practices at the Peaks National Park. At the core of these activities is the preservation of several endemic tree species, which are crucial umbrella species within the unique cloud forest system in St Helena. Considerable progress has been made in restoring some of the original cloud forest through the planting out of seedlings propagated from surviving individuals of these species. However, several plant pathogens, recently linked to a significant dieback of many endemic tree species, now pose a serious threat to the success of the ongoing conservation strategy. To address this emerging threat a new approach is required, with this project playing a crucial role.

Q12. Describe briefly the current role/s of the proposed beneficiary/ies within their organisation(s) and what relevance this has to one or more of the main themes of Darwin Plus.

The current activities of all beneficiaries are focused on 'Biodiversity' and 'Environmental quality'. Part of the group (Zac Bargo, Martina Leo) has already been involved in activities aimed at the direct conservation of biodiversity in the Peaks National Park for some time. Their focus is currently on the support of visiting researchers to identify and monitor the spread of plant pathogens through lab-based isolation of pathogens from plant tissue and soil samples, and the recording and mapping of diseased trees. Julie Balchin is the lead officer managing biosecurity issues on an island - and training in the use of molecular techniques for the detection of pathogens is intended to improve the capacity to detect potentially harmful plant pathogens during spot checks of plant material and imported soil at ports of entry. Lawanda Leo works across agricultural and biosecurity and has been involved in supporting the laboratory detection of pathogens. This will also increase self-reliance of the St Helena authorities whilst reducing their need for support from external organisations/experts.

Section 5 - Outcomes & Objectives

Q13. Provide a concept note for the project. This should include:

Q13a. A clear outline of the aim and objectives of the project.

The endemic trees of St Helena are under threat of extinction due to invasive plant pathogens. While several associations of pathogens with endemic trees have been recorded, little is currently known about their spread within the Peaks National Park. This lack of knowledge needs to be addressed urgently to enable the St Helena authorities to manage the Park optimally, allowing the continuation of conservation efforts whilst avoiding further spread of the pathogens and further loss of trees. Currently, processing of samples, essential to assess pathogen spread, must be outsourced, with significant cost and timing/biosecurity implications. Recent efforts have focussed on assessing the spread of one of the main pathogens (*Phytophthora kelmarii*). Following the installation and training of some of the beneficiaries in the use of a Loop-mediated Isothermal Amplification (LAMP) molecular diagnostic system, St Helena can now detect this pathogen on-island using samples processed in the ENRP laboratory, with minimal external input from the project partner CABI. However, the LAMP methodology is not easily applicable to the other threats, particularly species of *Fusarium* and *Ilyonectria*. Detecting these will require the use of qPCR-technology (or real-time PCR) on soil samples, which helps avoid taking tissue samples from potentially healthy trees. This project will install suitable qPCR equipment and provide training to the beneficiaries, thereby allowing more cost-efficient processing of samples on-island. Due to the previous training by CABI staff, this project has the advantage of being able to build on the significant levels of skills already within the group. As part of a case study and training exercise led by CABI over several visits and months, up to 400 soil samples collected from within the Peaks National Park will be analysed for the presence of a range of plant pathogens under the guidance of the project partner CABI.

Q13b. The role of the Project Leader, Lead Organisation and the beneficiary/ies, and others where relevant.

The project leader from SHRI will be responsible for the coordination of all activities on-island. The beneficiaries are committed to attending the training provided at the ENRP laboratory throughout 2025, with the aim of independently conducting further pathogen monitoring whenever required. CABI, as the only external partner in this project, is responsible for the purchase of all necessary equipment, accessories and consumables and their shipment/transport to St Helena. CABI is also responsible for the setup of the equipment within the ENRP laboratory and to provide appropriate training sessions. CABI will supervise SHRI and ENRP participants throughout the whole sample processing pipeline of up to 400 soil samples. CABI will also conduct complementary molecular assessments for species identification as required. By the end of the project, not only will capacity have been built, but the project team will also have gathered valuable data on the spread of pathogen. These results will be used to inform any change to the current National Park management plan. The CABI team has considerable experience in delivery of capacity building and in qPCR methodology for diagnostic applications.

Q13c. Where appropriate, how the project will contribute towards one or more of the four themes of Darwin Plus in the OTs i.e. what the expected outcome of the project will be

- Biodiversity: The inclusion of a significant case study (commitment to assess up to 400 soil samples from the Peaks National Park) will provide urgently needed information on the spread of some of the pathogens currently threatening the survival of the endemic trees on St Helena. Results of this study will directly inform further steps towards a long-term sustainable habitat management and biodiversity conservation plan for St Helena.
- Environmental quality: Including staff from the biosecurity team will allow the introduction of modern molecular approaches into biosecurity procedures and therefore will reduce the risk of the accidental introduction of other potentially harmful and invasive plant pathogens (and should also enhance food security for the island).
- Capability and capacity building: The installation of modern molecular equipment and the associated training of on-island staff in its use will significantly improve the capacity of St Helena to deal with current and future threats from plant pathogens. This will not be restricted to biodiversity conservation, but the technology will also

be applicable for use in agriculture and forestry, thereby contributing to enhanced food security and reducing the reliance on import of natural resources such as timber (which may also be sources of phytosanitary threats).

Section 6 - Legacy & Collaboration

Q14. Legacy

Provide information on how the beneficiary/ies will utilise, promote and disseminate the benefits of the project. Will a strategy be developed during the project to ensure this is achieved?

Although plant pathogens play an important role in conservation, agriculture and biosecurity in St Helena, only recently have they come to the forefront of attention, mainly through the devastating dieback of endemic trees. There is an urgent need to intensify research and monitoring within this neglected area of invasion ecology. Building capacity in the use of modern diagnostic technology will help to address some of the most pressing issues caused by plant pathogens. Not only will ENRP be able to monitor pathogen distribution on the island but will also have the means to use this capability in biosecurity to better prevent the introduction of pathogens indicated in future horizon-scanning exercises. The introduction of qPCR technology to St Helena will come at a time when the planned move of biosecurity to new facilities at Ruperts Bay provides a great opportunity to introduce upgraded procedures, thereby making best use of this new technology. It should also be noted that without the implementation of the new technology, other research activities may not be able to proceed in the manner expected.

Q15. Priorities

How will the project assist the OT's environmental priorities? Please refer to international or national environmental conventions, treaties, agreements, strategies and/or action plans relevant to the OT as appropriate.

This project supports the 2022-2025 ENRP Strategy priority objectives, working collaboratively with local and international stakeholders to achieve priority 1 Protect the natural environment by conserving biodiversity, preventing, minimising or mitigating against any negative activity and or impact, to conserve and enhance the Island's natural capital and Priority 4 Safeguard St Helena through implementing a robust biosecurity system and reducing the environmental impact of invasive species.

The project will assist the Government of St Helena to conserve species-rich cloud forests through the management of plant pathogens threatening keystone species. The project supports the Government's implementation of several Articles of the CBD, notably 8 (In-situ Conservation), and 12 (Research & Training) also 6 (General Measures for Conservation & Sustainable Use) and 7 (Identification & Monitoring). The project is in support of the CBD themes "Economics, Trade and Incentives", "Protected Areas", and "Sustainable Use and Biodiversity". It aligns with the goals of CBD's 'Strategic Plan 2011-2020', supporting in particular, the Aichi Biodiversity Targets relating to Strategic Goals B, C & E (reduce direct pressures on biodiversity and promote sustainable use; improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity; enhance implementation through participatory planning, knowledge management & capacity building).

Q16. Collaboration

What collaboration has there been with the proposed beneficiary/ies to date in developing the proposal, and what collaboration is planned for the duration of the project? Where relevant, describe any consultation or collaboration by the proposed beneficiary/ies within their own territory.

This proposal has been discussed between core project partners ENRP, SHRI and CABI and has developed as an outcome of the evolving strategy to manage plant pathogens threatening biodiversity through the implementation of DPLUS157 and the Defra grants.

The group has already received some training during DPLUS157 (Managing the pathogens threatening St Helena's biodiversity and food security) and two Defra grants (C20113 and C25062; St Helena Phytophthora

Outbreak). This training has been very successful and now enables St Helena to cover much of the research required to detect/manage *Phytophthora kelmarii* on-island. The group is keen to expand this training to acquire the skills and technology, which will allow it to deal with other pathogens posing a similar threat to the endemic flora of St Helena in a similar way. The qPCR methodology has greater longer-term application for the detection of new and emerging pathogens, as well as enabling SPS/quarantine capabilities to be strengthened.

Q17. Where will the beneficiary/ies be based?

Please be specific with organisational details and dates (where more than one location).

All members of the group are either staff of SHRI or ENRP. Training activities and the case study work will be located at the laboratory at ENRP, Scotland, St Helena. The laboratory itself has recently been refurbished as part of DPLUS157 (Managing the pathogens threatening St Helena's biodiversity and food security) and is now well suited to cover work based on PCR technology. This is evidenced through the successful conduct of similar technologies including DNA extractions and the regular use of a LAMP system during DPLUS157 and C20113.

Section 7 - Workplan

Q18. Safeguarding

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

Please upload the following mandatory policies:

- **Safeguarding and/or PSEAH Policy:** including a statement of commitment to safeguarding and a zero tolerance to inaction statement on bullying, harassment and sexual exploitation and abuse. Policy should include a commitment to either Core Humanitarian Standard (CHS), IASC minimum operating standards for PSEA MOS-PSEA) or CAPSEAH minimum standards.
- **Whistleblowing Policy:** which details a clear process for dealing with concerns raised and protects whistle blowers from reprisals.
- **Code of Conduct:** which sets out clear expectations of behaviours – inside and outside the workplace – for staff and volunteers involved in the project and makes clear what will happen in the event of non-compliance or breach of these standards, up to and including dismissal.
- **Safety and Security Policy or Security Plan:** that outlines a plan on how to mitigate and respond to potential health, safety and security threats.

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

Please outline how your project will ensure:

1. beneficiaries, the public, implementing partners, and staff are made aware of your safeguarding commitment and how they can confidentially raise a concern,
2. safeguarding issues are investigated, recorded and what disciplinary procedures are in place when allegations and complaints are upheld,
3. you will ensure project partners also meet these standards and policies.


Indicate which minimum standard protocol your project follows and how you meet those minimum standards, i.e. CAPSEAH, CHS, IASC MOS-PSEA. If your approach is currently limited or in the early stages of development, please clearly set out your plans address this.


SHG has a Code of Management Conduct, which sets out fundamental standards of conduct that SHG always expects from all SHG staff members. Policies are set out in both the Code of Management Conduct and the New


Code of Management Conduct as well as periodic new releases. All SHG staff are required to follow the policies and procedures set out in the COM and Staff Handbook. A new safeguarding policy has just been adopted by SHG (Sept 2024), the New code of Management includes policies on: Bullying & Harassment. All SHG staff are required to undertake mandatory St Helena specific safeguarding training. CABI safeguarding policy can be found here: <https://www.cabi.org/wp-content/uploads/SafeguardingPolicy2023.pdf>


Q19. Workplan


Provide a project workplan that shows the key milestones in project activities.

 [BCF Workplan Template 2024-25 ENRP SHRI FI](#)

 [NAL](#)

 23/09/2024

 23:40:01

 docx 29.27 KB

Section 8 - Certification

Certification

On behalf of the
Company

of
St Helena Government

I apply for a grant of
£98,604.00

I certify that, to the best of our knowledge and belief, the statements made by us in this application are true and the information provided is correct. I am aware that this application form will form the basis of the project schedule should this application be successful.

(This form should be signed by an individual authorised by the applicant institution to submit applications and sign contracts on their behalf.)





- I enclose one page CVs for the beneficiary/ies, project principals, cover letter, budget, workplan, letter(s) of support, financial evidence (see guidance), and Safeguarding and associated policies as requested in the Guidance Notes.

Checked








Name	Darren Duncan
Position in Organisation	Portfolio Director, ENRP





Signed	 Signatory.
	 23/09/2024
	 23:43:24
	 pdf 20.74 KB
Dated	23 September 2024

Please attach the requested signed Financial Evidence.

 [SHG-Financial-Statements-2022-23-Signed](#)
 23/09/2024
 23:46:54
 pdf 1.96 MB

Please upload the Lead Organisation's Safeguarding and associated policies as a PDF

 SHG Children and Vulnerable Adults Safeguarding Policy September 2024 (Final)	 Staff Handbook - 191018 Revised Jan 2021
 23/09/2024	 23/09/2024
 23:47:25	 23:47:17
 docx 282.77 KB	 pdf 1003.97 KB

 [NEW CODE OF MANAGEMENT POLICY MANUAL \(Jun 15\)](#)
 23/09/2024
 23:44:37
 pdf 1.32 MB

Section 9 - Submission Checklist

I have read the Guidance documents, including the "Guidance Notes for Applicants" and "Finance Guidance".	Checked
I have read, and can meet, the current Terms and Conditions for this fund.	Checked
I have provided actual start and end dates for the project.	Checked
I have provided a budget based on UK government financial years i.e. 1 April – 31 March and in GBP.	Checked
The application has been signed by a suitably authorised individual (clear electronic or scanned signatures are acceptable).	Checked
I have provided the relevant letters of support, cover letter, workplan, and CVs with this application.	Checked
I have attached a copy of the Lead Organisation's Safeguarding Policy, Whistleblowing Policy, Code of Conduct and Safety and Security Policy or Security Plan (Question 18).	Checked
The additional supporting evidence is in line with the requested evidence, amounts to a maximum of 5 sides of A4, and is combined as a single PDF.	Checked

(If copying and pasting into Flexi-Grant) I have checked that all my responses have been successfully copied into the online application form	Checked
I have checked the Darwin Plus website immediately prior to submission to ensure there are no late updates.	Checked
I have read and understood the Privacy Notice on the Darwin Plus website.	Checked

We would like to keep in touch!

Please check this box if you would be happy for the lead applicant (Flexi-Grant Account Holder) and project leader (if different) to be added to our mailing list. Through our mailing list we share updates on upcoming and current application rounds under the Darwin Initiative, Darwin Plus and our sister grant scheme, the IWT Challenge Fund. We also provide occasional updates on other UK Government activities related to biodiversity conservation and share our quarterly project newsletter. You are free to unsubscribe at any time.

Checked

Data protection and use of personal data

Information supplied in the application form, including personal data, will be used by Defra as set out in the Privacy Notice, available from the [Forms and Guidance Portal](#).

This **Privacy Notice** must be provided to all individuals whose personal data is supplied in the application form. Some information may be used when publicising Darwin Plus including project details (usually title, lead partner, project leader, location, and total grant value).