Darwin Plus Main: Annual Report

To be completed with reference to the "Project Reporting Information Note" (https://darwinplus.org.uk/resources/information-notes)

It is expected that this report will be a **maximum of 20 pages** in length, excluding annexes)

Submission Deadline: 30th April 2024

Submit to: BCF-Reports@niras.com including your project ref in the subject line

Darwin Plus Project Information

Project reference	DP160
Project title	Multi-Purpose Soil Survey: informing environmental management and climate change mitigation
Territory	British Virgin Islands (BVI)
Lead Partner	University of Portsmouth
Project partner(s)	BVI Government: Department of Disaster Management; Land Survey; Agriculture & Fisheries; Environmental Health; Town & Country Planning; and the Ministry of Natural Resources, Labour & Migration; BVI National Parks Trust; and also the H. Lavetty Stout Community College (HLSCC).
Darwin Plus grant value	£ 160,900
Start/end dates of project	20 June 2022 to 31 December 2024
Reporting period (e.g. Apr 2023-Mar 2024) and number (e.g. Annual Report 1, 2)	Apr 2023-Mar 2024; Annual Report 2
Project Leader name	Professor Richard Teeuw
Project website/blog/social media	https://www.facebook.com/profile.php?id=100087320503724
Report author(s) and date	Richard Teeuw & Melanie Daway, 30.4.2024

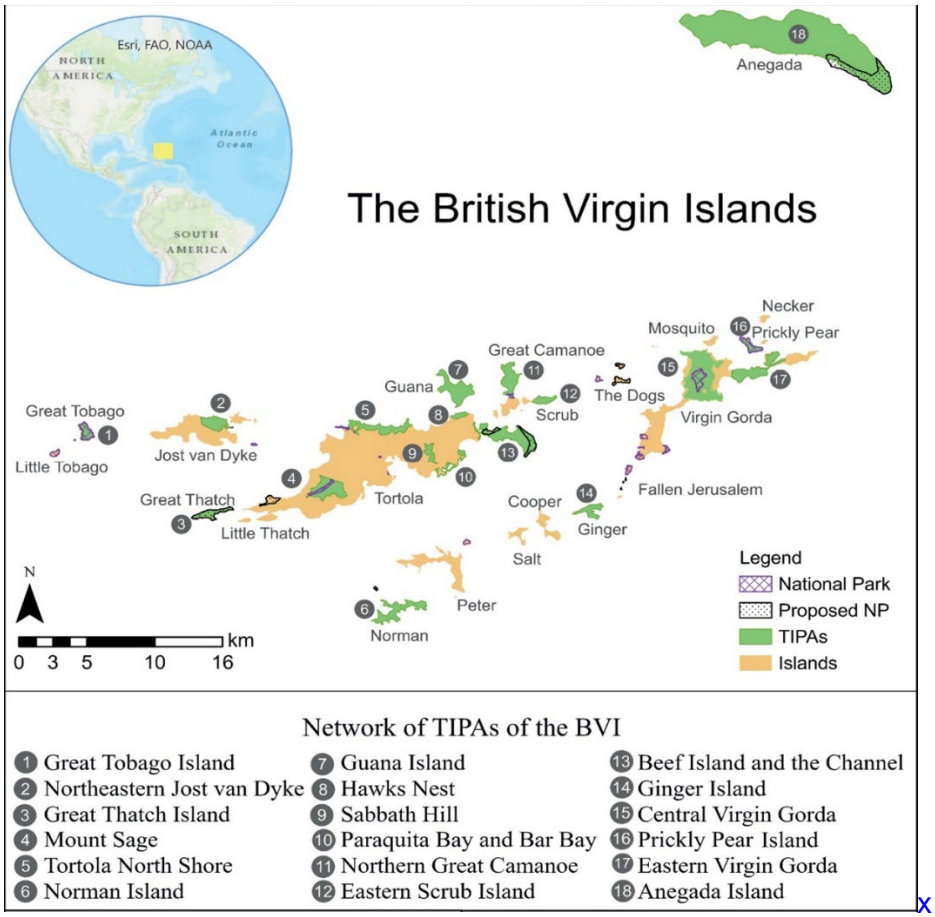
1. Project summary

Why does the BVI need a multi-purpose soil survey?

The lack of digital soil maps for the British Virgin Islands (BVI) is a critical gap in datasets needed for the Territory's environmental management. This project will inform environmental managers about locations of degraded, erosive, hazardous, polluted or vulnerable soils. Mapping soils and their biodiversity will improve knowledge of geo-ecological processes, providing a baseline dataset from which climate change impacts can be assessed.

BVI climate change challenges include increased frequency and magnitude of hurricanes, storm surges, coastal erosion, flooding, extreme rainfall, soil erosion, landslides and debris flows; also, less-predictable growing seasons. Another major challenge is from population pressures from increasing resident population and tourists: issues with water supplies, wastewater management and sites for construction (ie, areas not exposed to geohazards, with suitable soils). BVI environmental problems include soil degradation and loss of fertility, with increased erosion because of deforestation and land clearance for farming or construction. A problem highlighted by our partners in the BVI Environmental Health Division is sewage pollution from waste management systems that overflow in the rainy season. Information about

BVI high-risk soil locations is needed for more effective environmental management or remediation of waste disposal sites.



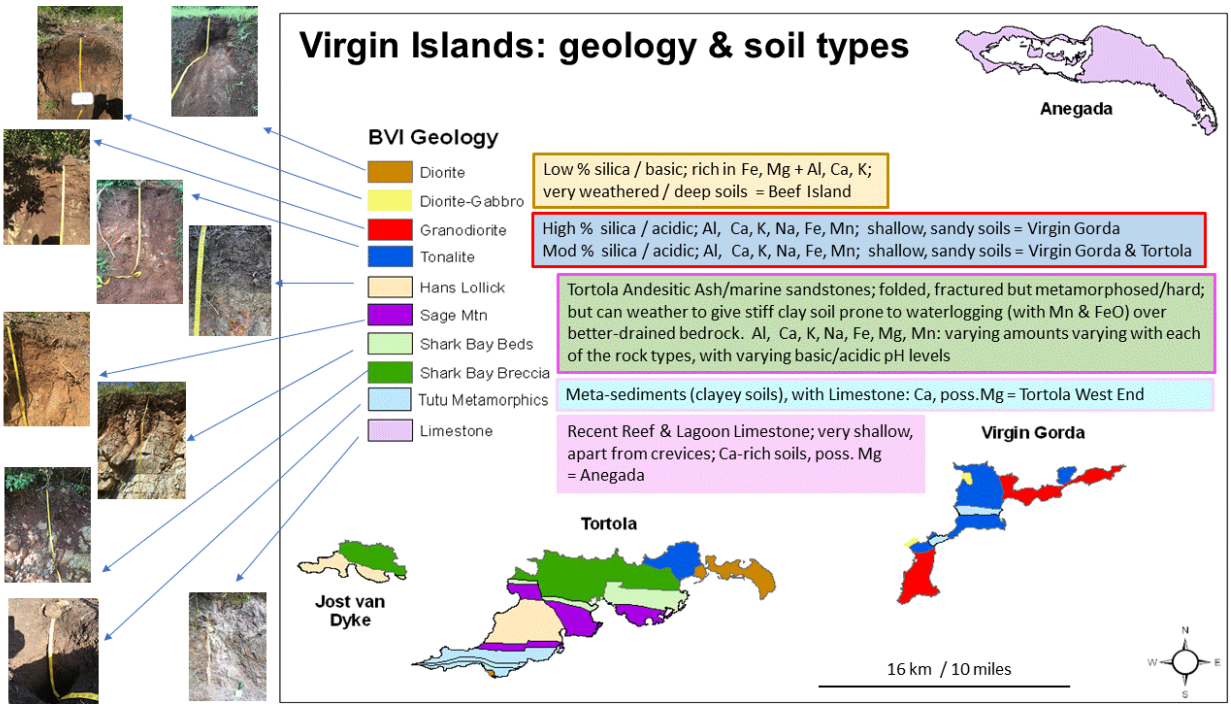


Figure 1. Top: BVI location map, showing National Parks and TIPA sites (source: BVI NPT); Bottom: Geology and representative Soil Types of the BVI (source: this project).

The impacts of climate change and population pressures vary within the BVI because of its diverse range of bedrock and soil types (ie, its geodiversity), as well as local variations in terrain and vegetation cover. Little is known about links between the BVI's biodiversity with its relatively unknown underlying geodiversity and soil biodiversity. This project will inform that research, as well as contributing to an international problem: a global need for more soil biodiversity data and more trained soil survey staff (Guerra et al., 2020). Information is needed about BVI geodiversity, soil types and soil biodiversity; to inform research into soil-plant linkages and ecosystem functions, as well as potential impacts from climate change.

The inclusion of soil biodiversity within soil surveys is often overlooked, despite its importance in ensuring soil function. Plants protect the topsoil from erosive forces, such as rainfall, and bind soil with their roots. Soil micro-organisms provide structure to soil, providing conditions for successful plant growth and reduce erosion or landslide hazards by binding soil particles. Some soil communities rapidly adapt to changing conditions, improving resilience to changing climatic conditions. The relationship between plants and soil is also crucial in conserving above-ground species, such as plants and the fauna that plants support. There is increasing evidence that many plants form symbiotic associations with the range of soil fauna and fungi, but that those associations are vulnerable to disturbance and can also be perturbed by invasive species. It is therefore of critical importance to examine the organisms present in soils and their function within their specific habitat. There is a lack of understanding of those relationships and a dearth of data from developing countries: this study will help to fill that knowledge gap.

2. Project stakeholders/partners

The request for a soil survey of the islands came from BVI government agencies, led by the Department for Disaster Management (DDM). The project has been co-developed by its partner organisations, building on discussions that started in December 2019 during the annual conference of the Caribbean Disaster & Emergency Management Agency (CDEMA), when the project lead (Richard Teeuw, University of Portsmouth) met with a representative of the DDM.

The project partners consist of five BVI Government agencies: the Department for Disaster Management (lead BVI organisation); the Ministry of Natural Resources and the departments of Agriculture, Environmental Health, and Town & Country Planning. Other partners are the BVI National Parks Trust (a para-governmental organisation) and the H. Lavity Stoutt Community College. All 7 stakeholders have been involved in the project design and planning; they are also all involved in the project monitoring, evaluation and decision making, with a representative of each partner organisation on the project Steering Committee, which meets quarterly.

The lead BVI stakeholder is the **Department of Disaster Management (**DDM), which has collaborated with UoP since 2011 via research projects supervised by Prof Teeuw. DDM regards a BVI soil inventory and GIS-based map as essential for geohazard management and climate change risk reduction. DDM will provide organisational, logistical and operational support, with a technician allocated to analysing soil samples.

The BVI **National Parks Trust** (NPT), recognises the need for soil data when managing critical habitats such as TIPAs. NPT has 20 years experience with Darwin projects and highlighted ways in which soil data could support the ongoing DarwinPlus BVI project led by RBG Kew. NPT will provide operational support for accessing remote islands.

The **H.Lavity Stoutt Community College** will provide laboratory space for the soil analysis equipment and host the project training workshops. Training of trainers will be carrying out with college teachers, with Soil Science added to the curriculum – helping to raise public awareness about the importance of soil management.

The other BVI stakeholders mainly have an advisory role: the priority of the **Agriculture** Department is soil suitability for farming; the Ministry of **Natural Resources, Environmental Health** Division and **Town & Country Planning** Department are particularly concerned about waste management and pollution. We also have an MOU with the BVI **Land Survey**

Department, for accessing geospatial datasets in their archive and for the project's Soil GIS being hosted on their website.

Local communities and technical specialists who are not formally partners in the project fall into two main groups: BVI farmers and BVI school students. (i) To represent to viewpoints of BVI farmers, Mr William Georges Sr, a retired agricultural scientist, has been invited to attend the project's Steering Committee meetings - nb. Mr Georges has been able to attended all but one of those meetings, making some very useful inputs to the project logistics, e.g. highlighting to the need for fieldwork to start as early in the day as possible; (ii) School students: the project has initiated an outreach programme for local schools, raising awareness about the importance of soils within that key part of the BVI population (see section 11 for details).

3. Project progress

3.1. Progress in implementing the project's Activities

The BVI fieldwork, laboratory work and training during the past year have gone well. Prof Teeuw, Dr Tatari (soils & civil engineering) and Dr Rumble (soil microbiota and biodiversity) visited the BVI during June 2023 for fieldwork, lab work and training workshops.

Output 1. BVI self-sufficiency in soil survey and soil laboratory analysis, with an associated BVI Soil GIS inventory, mapping and analysis system.

Activity 1.1. BVI Soil Lab established, by Q4 2022 for soil physical analysis; by Q1 of 2023 for soil chemical analysis; and by Q2 of 2023 for soil microbiota analysis. Completed: all of the BVI Soil Lab analytical equipment is now installed and operational, hosted by the H.Lavety Stoutt Community College (HLSCC), Tortola. Evidence of the June 2024 additions to the Soil Lab of equipment for microbiota analysis is provided in the attached report by Dr Rumble.

Activity 1.2. Soil survey, sampling and Soil Lab analyses, by Q3 of 2023. Completed: all scheduled soil samples have been collected and analysed. During June 2023, soil sampling was completed of the one large BVI island that had not yet been surveyed (Anegada – sea conditions are optimal in June), with those samples analysed in the soil laboratory at HLSCC. Evidenced by the log of fieldwork activities and the associated photos, as well as the sample site details and results provided in the BVI Soil Database.

Activity 1.3. Soil inventory, GIS database and maps, by Q4 of 2023. Completed: data from the soil survey and soil analyses have been added to the BVI soil inventory spreadsheet, which is now being converted into an attribute table for the Soil GIS. Evidenced by the sample site details and results provided in the BVI Soil Database

Activity 1.4. Review of predictive accuracy: relative variance of each mapped soil type, by Q1 of 2024. *- ongoing, delayed until Q3 of 2024: awaiting the Soil GIS being fully functional, which has been delayed from Dec 2023, to April 2024.*

Activity 1.5. Soil-based thematic maps, with explanatory documents: BVI Soil Types, and Soil Suitability for: (i) Farming, (ii) Construction, and (iii) Waste Management, by Q1 2024.
- ongoing, delayed until Q3 of 2024: awaiting the Soil GIS being fully functional, which has been delayed from Dec 2023, to April 2024.

Activity 1.6. Soil Laboratory & equipment used by HLS Community College for teaching of Soil science and its applications, by Q1 2024.Completed: the Soil Lab is now being used by HLSCC for the teaching of Soil Science.

Activity 1.7. Workshop on commercialising BVI Soil Laboratory analyses - by Q1 2023. Completed - Prof John Williams (UoP, civil engineering & waste management) discussed ways of commercialising BVI Soil Laboratory analyses in a workshop with the project Steering Committtee, on February 7th 2023. Evidenced by a slide set summarising the workshop findings, on the BVI DDM web site: https://www.bviddm.com/publications/

Output 2. Training provided to BVI Government staff and to the BVI's main higher education institution (the H.Lavity Stoutt Community College, HLSCC):

Activity 2.1. Training in soil survey, soil sampling and soil analysis: two 'hands-on'; workshops, with supporting online training materials, by February 2023. Completed: the workshops run by Dr Rumble and Dr Tatari had to be delayed from February 2023 to June 2023 because of UoP/UWE staff availability issues; but those workshops were run successfully in June 2023. HLSCC hosted the two 1-day workshops: (i) Soils & Civil Engineering, run by Dr Tatari on June 15th 2023 (18 participants 10 male, 8 female); (ii) Soil Microbiota & Biodiversity, run by Dr Rumble on June 28th 2023 (22 participants: 12 female, 10 male). Evidenced by the attendance lists, attendee feedback questionnaires and training materials from each workshop.

Activity 2.2. Training in soil database management and GIS for mapping and climate change impact assessment: a hands-on'; workshop. Completed - delayed until from January 2024 to April 2024 because the Soil GIS was not fully functional until April 2024. Evidenced by the workshop attendance lists, attendee feedback questionnaires and training materials.

Activity 2.3. Training on analysis-ready soil maps & briefing documents, for environmental managers and policy makers: two workshops (a) for Civil Engineering & Geohazards; (b) for Agriculture and Biodiversity. Completed, although delayed until from January 2024 to April 2024 because the Soil GIS was not fully functional until April 2024. Evidenced by the workshop attendance lists, attendee feedback questionnaires and training materials.

***Activity 2.4. Learning outcomes from technical training applied within participating organisations**, by March 2024. Ongoing, delayed until Q3 of 2024: awaiting the Soil GIS being fully functional, which has been delayed from Dec 2023, to April 2024.*

Output 3. BVI soil survey results inform government departments and raise public awareness on soil applications, associated risks and climate change preparedness.

***Activity 3.1. Key soil survey findings used to inform policy**: for each of the project partners, the project will produce a briefing document, by Jan 2024. Ongoing, delayed until Q3 of 2024: awaiting Soil GIS being fully functional, which has been delayed from Dec 2023, to April 2024.*

***Activity 3.2. Report on BVI Soils, their land use suitability and associated risks** for each soil type with recommendations for climate change adaptation, by Feb 2024. Ongoing, delayed until Q3 of 2024: awaiting Soil GIS being fully functional, which has been delayed from Dec 2023 to April 2024.*

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***Activity 3.3. BVI procedures for risk assessment of new developments adjusted** to include guidelines on land use suitability and the Soil GIS maps, by March 2024. Ongoing, delayed until Q3 of 2024: awaiting the Soil GIS being fully functional, which has been delayed from Dec 2023, to April 2024.*

***Activity 3.4. Public-access version of the Soil GIS and user guides**, hosted by the BVI Government NGIS website and Lavetty Stoutt Community College, by March 2024. Ongoing, delayed until Q3 of 2024: awaiting Soil GIS being fully functional, which has been delayed from Dec 2023, to April 2024.*

Activity 3.5. Press releases, to raise public awareness about the importance of soils:
(i) Sept 2022 (completed); (ii) March 2023 (completed); (iii) Sept 2023 (completed)
(iv) March 2024 delayed, but completed for the April 2024 GIS training)
(v) *Sept 2024 – additional Press Release, for extended end of project.*

***Activity 3.6. Scientific articles,** about: (i) BVI soil types; (ii) multi-purpose thematic soil maps; (iii) links between geodiversity, soil types & biodiversity, submitted to Open Access, peer-reviewed journals by March 2024. Ongoing, delayed until Q3 of 2024: awaiting the Soil GIS being fully functional, which has been delayed from Dec 2023, to April 2024.*

3.2. Progress towards project Outputs

Output 1. BVI self-sufficiency in soil survey and soil laboratory analysis, with an associated BVI Soil GIS inventory, mapping and analysis system.

The baseline condition for Output 1 is that the BVI had zero soil survey maps or documentation, only geological maps; zero soil laboratory analysis capabilities; zero soil inventory and Soil GIS mapping or analysis capabilities. For 2022-2023 & 2023-2024, relevant indicator measures are:
1.1 BVI Soil Lab equipment installed and operational (by Nov 2022).
1.2 Field data and soil lab analysis data available to partners, with fieldwork reports available on ResearchGate (by Nov 2023).
1.3 Soil inventory, GIS database and maps (by Dec 2023).
1.7a. Workshop attendee list provides gender disaggregated data (by Feb 2023).
1.7b. Questionnaire to project partner organisations at the end of the workshop, to gain ideas on possible BVI Soil Laboratory commercial activities, with recommendations on a business development strategy (by Feb 2023).

Change record to date:
Output 1.1 is complete, as evidenced by the photos and Facebook posts of Sections 11 & 15.
Output 1.2. is partially complete, as evidenced by the near-complete spreadsheet of sampled BVI Soil Types and soil sub-types in Annex 4. The final phase of fieldwork and soil sampling is due in June 2023, with all the soil analysis due to be completed and shared with our BVI partner organisations by Nov 2023.
Output 1.3. is partially complete, with GIS analysis and mapping of BVI elevation, terrain, geology and geodiversity – evidenced in Annex 4.
Output 1.7. a workshop on ways of commercialising the BVI Soil Laboratory, was completed on February 7th 2023: see the DDM webpage for slides summarising the workshop findings: https://www.bviddm.com/publications/

1.1 BVI Soil Lab established**,** by Q4 2022 for soil physical analysis; by Q1 of 2023 for soil chemical analysis; and by Q2 of 2023 for soil microbiota analysis. Indicator 1.1 has been achieved: all of the BVI Soil Lab analytical equipment is now operational, hosted by the HL Stoutt Community College, Tortola. Evidence of the June 2024 additions to the Soil Lab of equipment for microbiota analysis is provided in the attached report by Dr Rumble.

1.2. Soil survey, sampling and Soil Lab analyses, from Q4 of 2022 to Q3 of 2023. Indicator 1.2 has been achieved: all scheduled soil samples have been collected and analysed. During June 2023, soil sampling was completed of the one large BVI island that had not yet been surveyed (Anegada – sea conditions are optimal in June), with those samples analysed in the soil laboratory at HLSCC. Evidenced by the log of fieldwork activities and the associated photos, as well as the sample site details and results provided in the BVI Soil Database.

1.3. Soil inventory, GIS database and maps, from Q3 of 2022 to Q4 of 2023. Indicator 1.3 has been achieved data from the soil survey and soil analyses have been added to the BVI soil inventory spreadsheet, which is now being converted into an attribute table for the Soil GIS. Evidenced by the sample site details and results provided in the BVI Soil Database.

1.4 Review of predictive accuracy: relative variance of each mapped soil type, by Jan 2024. Ongoing, delayed until Q3 of 2024: awaiting the Soil GIS being fully functional, which has been delayed from Dec 2023, to April 2024.

1.5. Four soil-based thematic maps, with explanatory documents: BVI Soil Types, and Soil Suitability for: (i) Farming, (ii) Construction, and (iii) Waste Management, by January 2024. Ongoing, delayed until Q3 of 2024: awaiting the Soil GIS being fully functional, which has been delayed from Dec 2023, to April 2024.

1.6. Soil Laboratory and Soil Sampling equipment used by the Lavity Stoutt Community College for teaching of Soil science and its applications, by Jan 2024. Indicator 1.6 has been achieved: the Soil Lab is now being used by HLSCC for the teaching of Soil Science.

Progress towards successful completion of Output 1 is indicated by: the completion of Output 1.1, 1.2 and 1.3; with the partial completion of Output 1.7, with no significant problems expected before their completion. Of the 2023-2024 Outputs, 1.4 and 1.5 relate to the BVI Soil GIS and associated guidelines on soil suitability: they build on indicator 1.3 which is now achieved, so no problems are envisaged. Regarding indicator 1.6, the HL Stoutt Community College has already started to incorporate soil science into its teaching curriculum, so no problems are envisaged with that Output.

Output 2. Training provided to BVI Government staff and to the BVI's main higher education institution.

Baseline condition for Output 2 is that BVI Government staff and to the BVI's main higher education institution have had zero training in soil science, soil survey methods and soil laboratory analysis. The indicator measures for Output 2 are:

2.1. Training in soil survey, soil sampling and soil analysis: two 'hands-on'; workshops, with supporting online training materials, by February 2023.

- Indicator 2.1 has been achieved *the workshops run by Dr Rumble and Dr Tatari had to be delayed from February 2023 to June 2023 because of UoP/UWE staff availability issues, but those workshops were run successfully in June 2023.* The HL Stoutt Community College hosted the two 1-day training workshops:
- Soil Engineering, run by Dr Tatari on June 15th 2023 (18 participants 10 male, 8 female);
- Soil Biodiversity, run by Dr Rumble on June 28th 2023 (22 participants: 12 female, 10 male).

Evidenced by the attendance lists, attendee feedback questionnaires and training materials from each of the workshops. (Annex 3, Tables 1 and 2).

2.2 Training in soil database management and GIS usage for mapping and climate change impact assessment: a hands-on'; workshop.

- Indicator 2.2 has been achieved, although delayed until from January 2024 to April 2024 because the Soil GIS was not fully functional until April 2024. Evidenced by the workshop attendance lists, attendee feedback questionnaires and training materials.

2.3 Training on analysis-ready soil maps & briefing documents, for environmental managers and policy makers: two workshops (a) for Civil Engineering & Geohazards; (b) for Agriculture and Biodiversity.

- Indicator 2.3 has been achieved, although delayed until from January 2024 to April 2024 because the Soil GIS was not fully functional until April 2024. Evidenced by the workshop attendance lists, attendee feedback questionnaires and training materials.

2.4. Learning outcomes from each technical training workshop applied within the participating organisations, by March 2024.

- ongoing, delayed until Q3 of 2024: awaiting the Soil GIS being fully functional, which has been delayed from Dec 2023, to April 2024.

Progress towards successful completion of Output 2 is indicated by indicator 2.1 being achieved. Of the Outputs that are being produced during 2023-2024, 2.2 and 2.3 relate to GIS training and are thus dependant on successful production of the BVI Soil GIS (Outputs 1.3, 1.4 and 1.5 – which are all on track); Output 2.4 is the uptake and use of the BVI Soil GIS by government departments, for which no problems are currently envisaged (the Department of Disaster Management, the Land Survey Department and the National Parks Trust are already using outputs from GIS analysis carried out by this project)

Output 3. BVI soil survey results inform government departments and raise public awareness, regarding soil applications, risks and climate change preparedness.

The baseline condition for Output 3 is that BVI government departments – and the BVI general public - have minimal BVI-specific knowledge to inform them about soil applications, associated risks and climate change preparedness – the only major exception is the BVI Department for Disaster Management, which is tasked with climate change preparedness and risk reduction.

For 2022-2023, the only relevant indicator measure for Output 3 is: 3.5. Press releases about the soil survey findings: (i) Sept 2022; (ii) March 2023; (iii) Sept 2023; (iv) March 2024. Change record to date: Output 3.5. is partially complete, with the targeted number of press releases for 2022-2023 achieved, as evidenced by the details in section 11.

3.1 Key soil survey findings used to inform policy: for each of the project partners, the project will produce a briefing document, by January 2024. Ongoing, delayed until Q3 of 2024: awaiting the Soil GIS being fully functional, which has been delayed from Dec 2023, to April 2024.

3.2 Report on BVI Soils, their land use suitability, the risks associated with each soil type and recommendations for climate change adaptation, by Feb 2024. Ongoing, delayed until Q3 of 2024: awaiting Soil GIS being fully functional, which was delayed from Dec 2023, to April 2024.
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3.3. The BVI procedures for risk assessment of new developments will be adjusted to include inputs from the soil survey guidelines on land use suitability and the Soil GIS maps, by March 2024.Ongoing, delayed until Q3 of 2024: awaiting the Soil GIS being fully functional, which has been delayed from Dec 2023, to April 2024.

3.4. Public-access version of Soil GIS and user guides, hosted by the BVI Government NGIS website and the HL Stoutt Community College, by March 2024. Ongoing, delayed until Q3 of 2024: awaiting Soil GIS being fully functional, which was delayed from Dec 2023, to April 2024.

3.5. Press releases, to raise public awareness about the importance of soils:
(i) Sept 2022 (achieved); (ii) March 2023 (achieved) ; (iii) Sept 2023 (achieved)
(iv) March 2024 delayed, but achieved for the April 2024 GIS training)
(v) Sept 2024 – additional Press Release – pending- for the extended end of project.

3.6 Scientific articles, about: (i) BVI soil types; (ii) multi-purpose thematic soil maps; (iii) links between geodiversity, soil types & biodiversity, submitted to Open Access, peer-reviewed journals by March 2024 Ongoing, delayed until Q3 of 2024: awaiting the Soil GIS being fully functional, which has been delayed from Dec 2023, to April 2024.

Progress towards successful completion of Output 3 is indicated by the successful completion of the 2022-2023 component of Output 3.5. Of the Outputs that are being produced during 2023-2024, 3.1, 3.2, 3.3 and 3.4 depend on the completion of the Soil GIS, 3.4 builds on the completion of the soil survey, inventory and Soil GIS, which are progressing well. Progress towards successful completion of Output 3.5 is indicated by the press releases of 2023-204, with an additional press release scheduled for completion of the project in 2024-2025.

3.3. Progress towards the project Outcome

The project Outcome is: *BVI soil maps and information on soil suitability for Farming, Waste Management and Construction, leads to better-informed land management, with increased risk awareness, and climate change preparedness.* That will be achieved via these indicators:

1. Soil survey and soil analysis for the 4 main islands, with baseline BVI geospatial datasets produced for: BVI Soil Types & Biodiversity; and Soil Suitability for: Farming, Construction, and Waste Management, by Dec 2023.
- All of the 4 main islands of the BVI have now had representative soil samples collected from them (see soil sample Excel spreadsheet in Annex 4). The bulk of the samples are from Tortola because that island is the largest and has 8 of the 10 major rock types found in the BVI, along with associated soil types. The 4th main island, Anegada, was sampled in June 2023 (when sea conditions were optimal for boat travel). Civil engineering, agriculture and conservation were the focus of the June sampling, with further soil samples collected from Tortola, Virgin Gorda and Jost van Dyke islands, along with soil biodiversity sampling of smaller islands in conjunction with the National Parks Trust. Final laboratory analyses of soil horizon texture (% gravel, sand, silt and clay), mineralogy and topsoil chemistry will be carried out during June/July 2023. Between September and December 2023, the soil inventory was used to

populate the Soil
GIS.
2. For the BVI partner organisations: technical training on soil survey and sampling, soil laboratory analyses, Soil GIS mapping and soil map interpretation, by Jan 2024.
- A one-day 'hands-on' workshop on soil survey and sampling was provided in and around the Marine Research Centre of the HL Stoutt Community College, in Nov 2022. Trainees logged and sampled soil horizons, tested the topsoil for permeability and then carried out basic physical analysis of the soil samples (ie, sieving gravel, sand and silt/clay components), with microscope examination of peds and soil minerals. Laboratory chemical analysis of topsoil and its nutrients were the focus of training during Jan 2023. The topics of the training during June 2023 will be (i) soil strength and civil engineering applications, via field sampling and analyses such as shear strength; then (ii) soil microbiota and soil biodiversity. Training provided in Dec 2023 will focus on use of the BVI Soil GIS and will be delivered remotely, as online training.

3. Partner organisations use soil suitability maps and guidelines in their activities (ie, for farming, construction, waste management and biodiversity conservation), as well as for soil-related risk management and preparedness for climate change, by March 2024.
– these are Year-3 tasks, to be covered in the final report.

4. Partner organisations' documentation and guidelines for the public, include land use soil suitability information, soil risk management for new developments and soil-related preparedness for climate change, by March 2024.
- these are Year-3 tasks, to be covered in the final report.

All of the indicators are considered adequate for measuring the intended Outcome and the project is likely to achieve the Outcome by end of funding (end-March 2025).

3.4. Monitoring of assumptions

The project has not encountered any major issues with the Outcome and Output level assumptions – they still hold true. However, *some activities are delayed, with completion not expected until Q3 of 2024. This is because the Soil GIS was not fully functional in December 2023, full functionality only being achieved in April 2024.*

4. Project support to environmental and/or climate outcomes in the UKOTs

The project is providing baseline data on BVI soils and geomorphology. Those datasets are needed for the BVI to achieve greater hazard mitigation and environmental protection (BVI Multi-Hazard Mitigation Resilience Framework, 2020, p.26). The Virgin Islands Climate Change Policy (2012: p.9 & 23) and National Physical Development Plan (2019: p.85 & 104) also recognise the need for soil mapping in forestry and water conservation, biodiversity and restoration, food security and disaster planning.

5. Gender Equality and Social Inclusion (GESI)

6. **How have you ensured meaningful participation for all engaged in the project?**

7. - The BVI Soil Study Steering Committee is composed of 15 members from the 7 stakeholders (6 government agencies and the main community college). Of the 15 committee members, there are 8 women and 7 men.

8. - The training workshops were open to all government agencies and also open to businesses.

9. - The outreach programme involved visits to secondary schools on all 4 of the BVI' s main populated islands, with an introductory talk about soil science and practical demonstrations of soil properties, as well as visits by secondary schools to the Soil Lab and nearby soil sampling sites at the HLSCC Marine Centre campus.

10. *- All BVI government agencies will have having access to the Soil Database and GIS map layers, Soil Maps and Land Use Suitability guideline documents via the National Geographical Information System, NGIS (ie, the data and information will not have access restricted by a single 'owning' department) – pending: due by Sept 2024.*

11. - easy-to-follow public-access versions of the Soil Maps and Land Use Suitability guideline documents, will be posted on the DDM website – pending: due by Sept 2024.

Please quantify the proportion of women on the Project Board[1].	Ratio: 8 women to 7 men
Please quantify the proportion of project partners that are led by women, or which have a senior leadership team consisting of at least 50% women[2].	100% All project partners involve women that secure senior leadership or positions within their organisations.

GESI Scale	Description	Put X where your project is
Not yet sensitive	The GESI context may have been considered but the project isn't quite meeting the requirements of a 'sensitive' approach	
Sensitive	The GESI context has been considered and project activities take this into account in their design and implementation. The project addresses basic needs and vulnerabilities of women and marginalised groups and the project will not contribute to or create further inequalities.	**X**
Empowering	The project has all the characteristics of a 'sensitive' approach whilst also increasing equal access to assets, resources and capabilities for women and marginalised groups	
Transformative	The project has all the characteristics of an 'empowering' approach whilst also addressing unequal power relationships and seeking institutional and societal change	

Explain whether and how your project has made it more equitable for women and marginalised groups –The project is aiming for gender equality in its operational tasks. We are following University of Portsmouth guidelines on workplace gender equality and the Athena Swan Equality Charter: https://www.port.ac.uk/about-us/structure-and-governance/corporate-governance/equality-and-diversity/gender-equality. There have been equal opportunities on the project for all genders and social backgrounds. Female participation was encouraged in the information about training sent out to the 7 partnering organisations, with at least Male/Female parity requested when they provide trainees. Each stakeholder organisation has designated two to four staff for training. Consequently there was close to male/female parity in all but one of the training workshops.

Four workshops were conducted during 2023-2024: (i) Soil Engineering and Geotechnics workshop (June 15 2023) involved seven (7) females and seven (7) males; (ii) Soil Microbiota and Biodiversity Workshop (June 28 2023) included ten (10) females and eleven (11) males; (iii) Soil GIS applications in Geohazards and Civil Engineering workshop (April 10th 2024) involved five (5) females and nine (9) males; (iv) Soil GIS applications in Farming, Biodiversity and Conservation (April 11th 2024) involved nine (9) females and ten (10) males.

[1] A Project Board has overall authority for the project, is accountable for its success or failure, and supports the senior project manager to successfully deliver the project.

[2] Partners that have formal governance role in the project, and a formal relationship with the project that may involve staff costs and/or budget management responsibilities.

12. Monitoring and evaluation

The M&E work is shared: the University of Portsmouth is the lead organisation, with the BVI Government (via the Department for Disaster Management) leading the M&E for our partner organisations in the BVI. This approach is working well, with representation of all relevant Government agencies, as well as inputs from the BVI National Parks Trust and the BVI education sector (via the HL Stout Community College). The views of BVI farming community are also informally represented via an *ex officio* member of the project Steering Committee, Mr William Georges, a retired agricultural scientist.

The Steering Committee also has inputs from two external experts who each have experience of managing previous Darwin Projects: Prof Simon Cragg of the University of Portsmouth's School of Biosciences (a mangrove expert) and Dr Premachandra Wattage of the Economics Department of Sarabaguwa University, Sri Lanka (an expert on tropical ecosystem services). Prof Cragg has been able to attend all of the 2022-2023 and 2023-2024 Steering Committee meetings and his feedback on the project's progress has been positive. He has provided some very useful advice – particularly with regard to emphasising the importance of analysing the Carbon content in the BVI topsoil samples - something that was completed for all sample sites during 2023-2024. Unfortunately, Dr Wattage was only been able to attend one of the project's 2022-2023 Steering Committee meetings because of the economic crisis and telecoms disruption in Sri Lanka – and that was cut short because of a power cut. Although Dr Wattage was optimistic about contributing to the Steering Committee meetings during the remainder of the project, he was not able to join any of the 2023-2024 meetings.

The M&E mechanisms that we have utilised for the project seem to be working well for tracking the Outputs and Activities, all of which are on track for meeting the project Outcome by the end of March 2024. Consequently, no changes made to the M&E plan during the reporting period.

The main achievements of the project's second year are:

(i) Completion of the BVI soil survey and sampling - all 4 of the targeted main islands have been surveyed and sampled. Three of the BVI's four main islands (Tortola, Jost van Dyke and Virgin Gorda) were sampled in the first year of the project, the 4th large island (Anegada) was surveyed and sampled during June 2023-2024, along with a handful of sites in Tortola that were inaccessible during 2022-2023 (e.g. due to construction activities; or sites pending access permission), as well as with two National Park sites: Fallen Jerusalem Island and Prickly Pear Island. This is evidenced by the 62 soil sample pits logged, with 215 soil samples collected and analysed; all of the BVI's 10 main Soil Types have been sampled, along with their associated Soil Sub-types (e.g. wet terrain versus dry terrain; ridge/plateau, hillslope and valley-floor).

(ii) Extension of the BVI Soil Laboratory facilities - to include equipment for: (a) soil engineering tests (Atterberg tests of liquid limit and plastic limit; cone penetrometer and pocket penetrometer for evaluating soil density and strength); (b) soil microbiota analysis equipment, for evaluating a key component of soil biodiversity.

(iii) Training workshops: Soils & Civil Engineering; Soil Microbiota & Biodiversity - this is evidenced by the pre- and post-training questionnaires and the trainee responses, which indicate improved soil science awareness and knowledge within the participating government agencies, NGOs and educational establishments.

The Activities and Outputs associated with these achievements have contributed to the project Outcome: *BVI soil types and soil biodiversity surveyed and mapped, with self-sufficiency in soil survey and analysis capabilities, enabling improved management of land and waste, with better risk management and climate change preparedness.*

13. Lessons learnt

What worked well, and what didn't work well, this past year? - The BVI soil survey and sampling has gone well; the BVI Soil Laboratory has been established and is operational, enabling the physical and chemical analysis of the collected soil samples.. The project publicity has been effective, particularly the Facebook posts, creating a widespread interest across the BVI, from the farming community through to school teachers and their students – with both sectors requesting outreach activities.

Project items that did not go well this year – those were primarily with the budget aspects of the project. Our BVI lead partners under-spent the allocated 2022-2024 funding for BVI-incurred project costs. Of the of the [redacted] allocated for BVI-partner costs during 2022-2024, only [redacted] was spent, leaving an under-spend of [redacted] Consequently, [redacted] of that 2022-2024 under-spend was re-allocated to UoP for the 2024-2025 financial year. For details, please see the Change Request submitted on 22nd February 2024.
There was however, a positive outcome: the [redacted] re-allocated to the UoP 2024-2025 project budget has been used to fund the UoP team's previously-cancelled final visit to the BVI, which was re-scheduled for April 2024, That enables the delivery of two face-to-face Soil GIS training workshops, a final phase of soil survey fieldwork, a press conference and project-end meetings with each of our BVI partner organisations to discuss their use of the Soil GIS information.

14. Actions taken in response to previous reviews

Response to the issues raised in the review of your last year's Annual Report

All four of the issues raised (see screenshot below) have been acted on, with the full agreement of our BVI project partners:

No.	Comment	Discuss with BCFs Admin	Next half year report	Next Annual Report	No response needed
1	Please provide more information/evidence from activity implementation. For instance, it would be good to see the pre- and post-training questionnaires and the trainee responses from the technical training workshops mentioned in section 6 of AR1			X	
2	Ensure that the items referred to in hyperlinks can be readily found within the relevant website (see comment in section 4.2 – the list of standard measures in Annex 3 lists 3 documents, of which the reviewer could find only 2 via the link https://www.bviddm.com/publications/			X	
3	Make a clear distinction between Outputs and their logframe indicators			X	
4	Financial reporting should include a comment on any matched funding received / mobilised			X	

- Item #1: more evidence provided to support Activity implementation, e.g. pre- and post-workshop questionnaire results from workshop participants.
- Item #2: all of the workshop training materials from 2022-23 and 2023-24 have now been uploaded to the website of our lead BVI partner, the Department for Disaster Management (DDM), with double-checking that the hyper-links/weblinks are working.
- Item #3. A clear distinction has now been made between Outputs and their logframe Indicators.
- Item #4: Both the University of Portsmouth, as the project lead, and our lead BVI partner (DDM), have reviewed and quantified their in-kind / matched funding inputs into the project budget.

15. Risk Management

No significant risks arose during 2023-2024. Financial risks will be mitigated via the project partners' fiscal control mechanisms, in conjunction with strictly implemented financial reporting standards implemented by the lead organisation, the University of Portsmouth. Given the

reputations of the partner organisations and the relative simplicity of the budget for this 2-year project, we consider the risk of fraud or corruption to be low.

Risk register – see attached.

16. Sustainability and legacy

What evidence is there of increasing interest and capacity resulting from the project?

(i) During meetings with staff of the HL Stoutt Community College (the BVI's main higher education centre), the President of the College confirmed that they would be expanding the curriculum to include more teaching of soil science via the development of new courses in Agriculture and Horticulture, as well as Food Science. Land adjacent to the College will be developed for the teaching of farming and horticulture, with the soil properties of those new fields determined via analyses in the Soil Laboratory established by this project.

(ii) Requests from BVI secondary schools for visits and soil science awareness training sessions. Two outreach sessions were run this year (on 30th January and 3rd February 2023) within the HL Stoutt Community College campus, with students given introductory fieldwork sessions on soil survey and sampling, followed by an introduction to laboratory analysis of soils (evidenced in Annex 3: Table 1). A visit to the Claudia Creque Secondary School in Anegada was conducted on June 7 with an introductory presentation on soil science and soil sampling. Cedar International School participated a fieldwork session along with a microbiota and biodiversity lab session on June 26 2023. A visit to the Ciboney School in Virgin Gorda was conducted on April 8 2024. Students from the Agriculture class attended a soil science presentation that was then followed by a field session on the school compound. The students also participated in soil sieving and chemical analysis on April 12 at the HLSCC lab.

(iii) BVI public interest in the project Facebook posts (see below) has led to the initiation of an outreach programme involving local schools, raising awareness about the importance of soils within a key age group.

The project is generating interest from other organisations and institutions, notably:

PI Teeuw has also been liaising with BVI farmers, notably Mr Aragorn Dick-Read (manager of Good Moon Organic Farm Ltd: http://www.goodmoonfarm.com/) and Mr William Georges (retired BVI agronomist and member of the project Steering Committee) regarding optimal pricing for soil nutrient analyses, should the BVI Soil Lab offer that as a service to BVI farmers.

The project is adding to a growing awareness in the BVI that there are more potential projects for which Darwin Plus funding could be requested. That is evidenced by one of this project's trainees, Mr Aragorn Dick-Read (Good Moon Organic Farm Ltd) being awarded a 2023-2024 Darwin Local funding grant for a study of vermiculture applied to the production of compost from Sargassum seaweed, with Teeuw assisting with the drafting of that proposal and taking on an advisory role for that project.

PI Teeuw has been liaising with researchers on another BVI Darwin Plus project (DP-180), who are examining climate change resilience in protected areas. The DP-180 project's lead organisation for geospatial analysis, Environmental Systems Ltd, organised an online meeting on August 23rd 2023 to discuss their research on 'BVI Climate Change Modelling', which the geoinformatics experts from this project (Argyriou & Teeuw) participated in. Consequently, some of the GIS-generated BVI terrain datasets from this project, derived from GIS geomorphometric analysis of the Lidar DEM (e.g. Topographic Wetness Index, Stream Power Ratio) have been shared with the researchers of DP-180.

The intended sustainable benefits post-project are still valid and the project is likely to deliver an Outcome with sustained legacy (social, technical, economic and ecological).

The major direct beneficiaries are the Virgin Islands government departments that are partners in the project: Environmental Health, Agriculture, Town & Country Planning and Disaster Management, as well as the he Ministry of Natural Resources and the National Parks Trust.

Those six BVI stakeholder organisations – and the BVI inhabitants that they serve - will benefit from provision of soil maps and data. Those soil datasets will provide the BVI with previously unavailable information for environmental management: from land suitability for agriculture, mitigation of pollution, stabilisation of erosion or landslides, to biodiversity conservation and modelling impacts of climate change.

Those BVI Government partner organisations, as well as the Lavity Stoutt Community College, will also directly benefit from Capacity building. We have established a soil laboratory within the College, with training of at least 2 staff from each of the 7 BVI partner organisations. The College will be adding soil science to its teaching curriculum, so BVI students will be benefiting. Central to the BVI having a long-term capability for soil survey and analysis, is: (i) the availability of soil technicians, which should be secure because the project will be training-up two staff from each of the 7 stakeholder organisations; (ii) commitment of Lavity Stoutt Community College to host and maintain the soil analysis equipment provided by this project.

The commitment from the College is strong: it has added soil science to its curriculum, using training materials provided by this DPlus project. The soil laboratory will add a practical dimension to teaching of applied soil science. The College is also aiming to develop soil laboratory usage for summer school field-based research, with visiting students paying a user-fee to use the lab. Beyond soil science per se, there is topical research potential in biodiversity studies and micro-plastic pollution (via mangrove soils). UoP will be advertising to its students these BVI field-study opportunities.

The College is considering further developing the lab's analytical capabilities, by offering soil analyses on a commercial basis. Prof John Williams, who runs a commercialised analytical laboratory at the University of Portsmouth, discussed ways of commercialising BVI Soil Laboratory analyses in a meeting with the project Steering Committtee, on February 7th 2023. From his review of the current BVI waste management situation, Prof Williams concluded that there is potential to commercialise aspects of the BVI Soil Laboratory, in conjunction with some forthcoming EU-funded BVI waste management and water quality projects. See the DDM webpage for slides summarising the workshop findings: https://www.bviddm.com/publications/

17. Darwin Plus identity

The Darwin Plus scheme and its logo have been promoted though the BVI soil survey project on several media platforms, through the Department of Disaster Management's Facebook page, Government of the Virgin Islands media page, a soil survey initiative press release on November 8th 2022, the H. Lavity Stout Community College webpage, and National Park Trust of the Virgin Islands webpage. The Darwin Plus scheme has also been promoted during the project's technical training workshops, in November 2022 and January 2023.

Recognition of the UK Government's contribution to the project's work:
All Darwin Plus, DEFRA and UK Aid logos on title slide for all of the training courses, press briefings and Steering Committee meetings. For this multi-purpose soil survey of the British Virgin Islands, the Darwin Plus funding was recognised as enabling a distinct project with a clear BVI-focused identity. Via the BVI multi-purpose soil survey initiative, many BVI organisations – particularly the 7 that are partners in the project - have can become more familiar with the Darwin Plus funding programme.

The Darwin Plus programme can be linked back through the BVI soil survey project media sources. Facebook has been our most effective way of publicising the project and its Darwin Plus funding, e.g. via the BVI Soils Facebook posts, DDM Facebook posts and HLSCC Facebook posts (see list provided below).

DATE	ITEM
May 31 2023	Press release about sister island fieldwork and outreach with Seventh-day Adventist School secondary students
May 31 2023	DDM web post about sister island fieldwork and outreach with Seventh-day Adventist School secondary students
May 31 2023	284 Media post about sister island fieldwork and outreach with Seventh-day Adventist School secondary students
April 9 2024	DDM web post about VG fieldwork and outreach with Ciboney School
June 13 2023	*BVI Beacon* newspaper article about the VG fieldwork and outreach with Ciboney School
Sept 21 2023	Contributing researcher Dr. Heather Rumble's UWE Bristol blog post on BVI soil biodiversity
Dec 12 2023	News article on the Soils Laboratory and HLSCC's MOU with Portsmouth University website
April 9 2024	DDM web post about VG fieldwork and outreach with Ciboney School
April 9 2024	Ciboney School social post about Dr. Teeuw's visit to their campus
April 30 2024	Presentation slides for Waste Management Workshop
April 30 2024	Presentation slides for Soil Engineering and Geo-technics Workshop
April 30 2024	Presentation slides for Dr. Rumble's workshop on Soil Microbiota and Soil Biodiversity
April 30 2024	Dr. Heather Rumble's report on field research and training on BVI soil microbiome and soil biodiversity.
April 30 2024	Press release on the April 2024 fieldwork and workshops
April 30 2024	Web post regarding April 2024 fieldwork and workshops

18. Safeguarding

The BVI's H.Lavity Stoutt Community College has an extensive set of safeguarding policies, such as on ethics, health and safety or sexual harassment [redacted]), and the project staff will abide by those policies while working within that college, which will be hosting the soil laboratory and hosting the training workshops. However, none of our BVI Government partner organisations currently has a specific safeguarding policy.
For all the fieldwork activities within the BVI territory, all of the project members are expected to adhere to the University of Portsmouth (UoP) safeguarding policies, following a briefing at the start of the project. The UoP guidelines on health & safety, particularly fieldwork risk management, are particularly important for the soil survey component of the project, which involves boat travel between islands and fieldwork in often difficult terrain, under hot tropical conditions. UoP Risk Assessment forms (which include identifying the risks associated with each task, then mitigating and managing those risks) for fieldwork and laboratory work, have been completed and approved by the relevant UoP Health & Safety officer.

Has your Safeguarding Policy been updated in the past 12 months?		No
Have any concerns been reported in the past 12 months		No
Does your project have a Safeguarding focal point?	Yes, for the soil science training hosted by the H. Lavety Stoutt Community College (HLSCC) we are following their safeguarding policy (see: [redacted]. Our BVI focal point is Dr Susan Zaluski of the HLSCC: [redacted] Our focal point for the UK team is Prof Richard Teeuw: [redacted]	
Has the focal point attended any formal training in the last 12 months?	No	
What proportion (and number) of project staff have received formal training on Safeguarding?		Past: 20% [2/10] Planned: 50% [5/10]
Has there been any lessons learnt or challenges on Safeguarding in the past 12 months? Please ensure no sensitive data is included within responses. - No		
Does the project have any developments or activities planned around Safeguarding in the coming 12 months? - No		
Please describe any community sensitisation that has taken place over the past 12 months; include topics covered and number of participants.		
Have there been any concerns around Health, Safety and Security of your project over the past year? - No		

19. Project expenditure

Table 1: Project expenditure <u>during the reporting period</u> (1 April 2023 – 31 March 2024)

Project spend (indicative) in this financial year	**2023/24 D+ Grant (£)**	**2024/25 Total actual D+ Costs (£)**	**Variance %**	**Comments (please explain significant variances)**
Staff costs	[redacted]			Academic staff changed on project and was less costs
Consultancy costs				No payment made
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items				
Others (Please specify)				Payment made to BVI in year 1, no payments year 2
TOTAL	**68,145.32**	**50,784.33**		

Table 2: Project mobilised or matched funding during the reporting period (1 April 2023 – 31 March 2024)

	Secured to date	Expected by end of project	Sources
Matched funding leveraged by the partners to deliver the project (£)	0	0	0
Total additional finance mobilised for new activities occurring outside of the project, building on evidence, best practices and the project (£)	[redacted]		University of Portsmouth (departmental research support funding): clay mineral analysis of 150 soil samples collected in the BVI survey.

20. Other comments on progress not covered elsewhere

Has the design of the project been enhanced over the last year? e.g. exit strategy

Yes: the post-project sustainability has been enhanced by the decision of the HL Stout Community College to expand its curriculum to include agriculture and food processing, with fallow land adjacent to the college being developed for farming and horticulture. The physical and chemical analysis of the soils in those new farming areas will be carried out by the Soil Laboratory, with soils science also having a bigger role in the teaching provided by the college.

Discuss any significant difficulties encountered during the year and steps taken to overcome these if not already discussed elsewhere. - There was one unexpected project staffing development, with one of the UoP team (Dr Heather Rumble) taking up a new job at the University of the West of England (UWE). A Change Request form was duly completed and approved, with the funding for Dr Rumble's project time transferred from UoP to UWE. Dr Rumble's move from UoP to UWE had no impact on the project: she joined Prof Teeuw for the June 2023 BVI visit, running the soil microbiota and soil biodiversity component of the project.

21. Outstanding achievements or progress of your project so far

I agree for the Biodiversity Challenge Funds to edit and use the following for various promotional purposes.

1. **Training** in soil survey methods, soil chemical analysis, soil physical analysis, soil microbiota & biodiversity, and in uses of the BVI Soil Geographical Information System (GIS), have been conducted at HLSDCC. Training has been provided to staff from BVI Government agencies, businesses, farmers and teachers. The 2023-2024 photos show some of those training workshops. Six workshops have been conducted in Soil sampling/collecting, soil chemistry and analysis, soil microbiota and biodiversity, soil engineering and geotechnics, GIS applications in geohazards, civil engineering, farming, biodiversity and conservation. **Fifty-four (54) local individuals have been trained** in in the workshops, including technical officers, students and farmers.
2. **All of the 10 main soil types of the BVI have been mapped and sampled** between 2022 and 2024. Across the BVI, 62 sites were sampled, yielding 216 soil samples for analysis. The BVI Soil Laboratory has been used to analyse the physical and chemical properties of those soil samples, with the ensuing database containing over 11,000 items. That dataset forms the basis of the BVI Soil Geographical Information System (GIS), enabling knowledge-based guidance for the BVI's environmental management and providing a baseline against which climate change impacts can be assessed.
3. **The project's outreach programme** has visited secondary schools on all of the BVI' s main populated islands, with talks given on soil science and practical demonstrations of soil properties. The outreach has also involved visits by secondary schools to the Soil Lab and nearby soil sampling sites on the HLSCC campus. The 2023-2024 photos show outreach visits to secondary schools on Anegada and Virgin Gorda islands, as well as students from Virgin Gorda and Tortola visiting the Soil Laboratory and receiving training in chemical analysis and soil microbiota analysis. Students from 5 BVI schools were trained in soil analysis: the Seventh-day Adventist School, Cedar International

School, Claudia Creque Secondary School and Ciboney School. Four of the schools were trained by the local BVI soils science team within the Soil Lab at HLSCC

4. **Other BVI projects have benefited** from the soil study, notably:
    a) Another Darwin Plus project, led by the National Parks Trust (DP-180), “Integrating climate change resilience into protected area design and management” has been provided with soil data and GIS data layers.
    b) For the project: “Integrated Landscape Approaches and Investments in Sustainable Land Management in the OECS”: the soil laboratory in HLSCC was used to carry out chemical analyses for specific sites, to assist that project.
    c) A Darwin Local funding grant has been awarded to one of the trainees of this project. Mr Aragorn Dick-Read (Good Moon Organic Farm Ltd) was awarded funding for a study of vermiculture applied to the production of compost from Sargassum seaweed, with PI Teeuw assisting with the drafting of that proposal and taking on an advisory role for that project.

Image, Video or Graphic Information:

File Type (Image / Video / Graphic)	File Name / Location / Website Link	Caption, country date and credit	Consent of subjects received
		Soil sampling and topsoil permeability testing at Fresh Water Pond, Anegada, BVI. June 2023; Credit: BVI DDM (Nehassie Chalwell)	Yes
		Dr Alireza Tatari (UoP), in the Soils & Civil Engineering training workshop at HLSCC Tortola, BVI June 2023; Credit: BVI DDM (Nehassie Chalwell)	Yes
		Soil microbiota sampling at Great Tobago Island National Park, BVI June 2023; Credit: BVI NPT (Nancy Pascoe)	Yes

		Soil Biodiversity outreach with school students; Dr Heather Rumble (UoP/UWE) teaching in the Soil Lab at the H L Stoutt Community College, Tortola, BVI June 2023; Credit: BVI DDM (Nehassie Chalwell)	Yes
		Soil Engineering Testing (cone penetrometer test of soil strength), in the Soil Lab at HLSCC Tortola, BVI June 2023; Credit: BVI DDM (Nehassie Chalwell)	Yes
		Dr Alireza Tatari and Prof Richard Teeuw (UoP) collecting soil samples. Cox's Heath farm, Tortola, BVI June 2023; Credit: BVI DDM (Nehassie Chalwell)	Yes
	.	Prof Richard Teeuw (UoP) and Ms Melanie Daway (BVI DDM) in an outreach visit and Soil Interaction session with students at Anegada's secondary school. June 2023. Credit: BVI DDM (Nehassie Chalwell)	Yes
		Outreach Visit and Soil Science teaching by Prof Teeuw (UoP) and Ms Melanie Daway (BVI DDM) at Ciboney School. The Interaction session with the students involved soil sampling, determining soil colour and testing of topsoil permeability. Virgin Gorda, BVI April 2024; Credit: BVI DDM (Nehassie Chalwell)	Yes

		Soil sampling from Little Dix resort; carried out by Prof Richard Teeuw and Dr Nasos Argyriou (UoP). Virgin Gorda, BVI April 2024; Credit: BVI DDM (Nehassie Chalwell)	
		School visit to the Soil Lab at HLSCC: students learning how to carry our soil chemical analyses, with training provided by Ms Melanie Daway of DDM. Tortola, BVI April 2024; Credit: BVI DDM (Nehassie Chalwell)	Yes
		Training workshop: Soil GIS Applications: for Geohazards & civil engineering. HLSCC computer lab, Tortola, BVI April 10th 2024; Credit: BVI DDM (Nehassie Chalwell)	Yes
		Dr Argyriou lecturing about BVI Soil GIS Applications in geohazards and civil engineering. HLSCC computer lab, Tortola, BVI April 10th 2024. Credit: BVI DDM (Nehassie Chalwell)	Yes

Annex 1: Report of progress and achievements against logframe for Financial Year 2023-2024 (changes agreed in Change Request of 22.2.2024)

Project summary	SMART Indicators	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
Impact BVI soil types and soil biodiversity surveyed and mapped, with self-sufficiency in soil survey and analysis capabilities, enabling improved management of land and waste, with better risk management and climate change preparedness .		BVI moving towards self-sufficiency in soil survey and soil analysis: BVI Soil Laboratory now established and operating, with 4 of the technical staff trained by the project able to train other BVI technical staff. Most of the BVI soil types and sub-types have now been sampled and analysed.	
Outcome BVI soil maps and information on soil suitability for Farming, Waste Management and Construction, leads to better-informed land management, with increased risk awareness, and climate change preparedness.	0.1. Soil survey and soil analysis for the 4 main islands, with baseline BVI geospatial datasets produced for: BVI Soil Types & Biodiversity; and Soil Suitability for: Farming, Construction, and Waste Management, by Dec 2023; 0.2. For the BVI partner organisations: technical training on soil survey and sampling, soil laboratory analyses, Soil GIS mapping and soil map interpretation, by Jan 2024. 0.3. Partner organisations use soil suitability maps and guidelines in their activities (ie, for farming, construction, waste management and biodiversity conservation), as well as for soil-related risk management and preparedness for climate change, by Q3 of 2024. 0.4. Partner organisations' documentation and guidelines for the public, include land use soil suitability information, soil risk management for new developments and soil-related preparedness for climate change, by Q3 of 2024.	0.1. Completed: Soil survey and soil analysis carried out all 4 of the main islands (and also 2 National Park islands), with baseline BVI geospatial datasets produced for BVI Soil Types. 0.2. Completed: technical training provided during Oct/Nov 2022, Jan/Feb 2023 and June 2023 for soil survey and sampling, soil laboratory analyses. GIS training was postponed until April 2024 but that has now been completed. 0.3. Pending: due in Q3 of 2024. 0.4. Pending: due in Q3 of 2024.	0.2..Technical training was provided on Soil GIS mapping and soil map interpretation, during April 2024. 0.3. Soil suitability maps and guidelines produced by Q3 of 2024. 0.4.. Partner organisations' documentation and guidelines for the public, produced by Q3 of 2024.
Output 1. BVI self-sufficiency in soil survey and soil	1.1 BVI Soil Lab established, by November 2022.	Output 1.1 completed. A Soil Laboratory for the BVI has been established within the Marine Research Centre of the H.Lavety Stoutt Community College, Tortola. The BVI Soil Laboratory has been equipped with soil particle size analysis equipment (sieve	

Project summary	SMART Indicators	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
laboratory analysis, with an associated BVI Soil GIS inventory, mapping and analysis system.	1.2. Survey and sampling of BVI soils, focusing on the 4 largest islands, with analysis of collected soils, by Nov 2023 1.3 Soil inventory, GIS database and maps of the estimated 10 main Soil Types, by March 2024 1.4 Review of predictive accuracy: relative variance of each mapped soil type, by Jan 2024. 1.5. Four soil-based thematic maps, with explanatory documents: BVI Soil Types, and Soil Suitability for: (i) Farming, (ii) Construction, and (iii) Waste Management, by January 2024. 1.6. Soil Laboratory and Soil Sampling equipment used by the Lavity Stoutt Community College for teaching of Soil science and its applications, by March 2024. 1.7. Workshop on ways of commercialising BVI Soil Laboratory analyses, involving UoP project staff who manage soil, geotechnics and waste treatment labs, Lavity Stoutt Community College managers & other BVI partners, by Feb 2023.	shaker, sieve set, with pipette and hydrometer equipment for clay analysis) and a soil chemistry analyser (Palintest S500). Output 1.2. Completed. - The 10 main soil types of the BVI have all been sampled and logged, with particle size analysis carried out for each soil horizon and chemical analysis of the topsoil: ca.160 soil samples have been processed. Output 1.3. Completed. – The BVI soil inventory and Soil GIS database is now operational. Output 1.4. – *pending: for completion by Q3 2024* – this will be done during the further analysis of the BVI Soil GIS map outputs and drafting of the project final report. Output 1.5. – *pending: for completion by Q3 2024* – the thematic maps and user documents will be produced alongside development of the BVI Soil GIS. Output 1.6. Completed - the BVI Soil Laboratory has already been used for Soil science teaching, and will be further developed into a regular part of the curriculum of the Lavity Stoutt Community College. Output 1.7. Completed – in February 2023, Prof John Williams of UoP (Civil Engineering & Waste Management) met with staff from all of our our BVI partner organisations, to consider ways of commercialising the BVI Soil Laboratory.	
Activity 1.1. Soil laboratory established.		Completed: BVI Soil Laboratory established in the Marine Centre of the HL Stoutt Community College, Tortola, with equipment installed for soil physical analysis and soil chemical analysis. Additional equipment for analysis of soil microbiota and biodiversity were added to the laboratory in June 2023.	
Activity 1.2. Soil survey, sampling and soil lab analyses.		Completed:: all 10 major soil types of the BVI sampled, along with their sub-types, on all 4 main islands. 200 soil samples collected from 65 soil sample sites. Particle size distribution analysis	. . .

Project summary	SMART Indicators	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
		carried out on all samples, with chemical analysis carried out on all of the 65 the topsoil samples. Civil engineering properties of the main BVI soil Types and sub-types surveyed during June 2023. At UoP, the % clay was determined via automated laser diffraction and the clay mineralogy was determined by spectroscopy	
Activity 1.3. Soil inventory, Soil GIS database and maps		Completed in March 2024.	
Activity 1.4. Review of predictive accuracy for each soil type.		Pending: due by Q3 of 2024.	Predictive accuracy for each mapped soil type to be evaluated by Q3 of 2024.
Activity 1.5. Thematic soil suitability maps and soil management guidelines.		Pending: due by Q3 of 2024.	Maps & guidelines to be produced by Q3 of 2024.
Activity 1.6. Soil Laboratory and Soil Sampling equipment used by the Lavity Stoutt Community College for teaching of Soil science		Completed: HLSCC is now using the Soil Lab in its teaching, with their students getting introductions to soil science with guided tours of the Soil Lab facilities. The Soil Lab is being used by students carrying out research projects.	
Activity 1.7. Workshop on ways of commercialising BVI Soil Laboratory analyses.		Completed: Prof John Williams met with all of the project partners in Feb 2023.	
2. Training provided to BVI Government staff and to the BVI's main higher education institution.	Target audience of 20 trainees (14 from project partners; 6 from BVI businesses or NGOs) will benefit from: 2.1. Training: soil survey, soil sampling & analysis: two 'hands-on'; workshops, with supporting online training materials, by February 2023. 2.2 Training in soil database management and GIS usage for mapping and climate change impact assessment: an online 'hands-on';	Output 2.1.Completed., via workshop on Soil Science & Soil Description (Oct 2022) and Soil Chemistry training in Jan 2023). Evidenced by the training materials and attendee statistics provided in Annex 3, Tables 1 and 2. Output 2.2. – postponed until April 2024 (now completed).	

Project summary	SMART Indicators	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
	workshop, augmented by online training materials, by December 2023. 2.3 Training on analysis-ready soil maps & briefing documents, for environmental managers and policy makers: two online workshops, by January 2024. *2.4. Learning outcomes from each technical training workshop applied within the participating organisations, by March 2024.*	Output 2.3. - Pending: due by Q3 of 2024. Output 2.4. - Pending: due by Q3 of 2024.	
Activity 2.1. Training in soil survey and soil analysis.		Completed	
Activity 2.2. Training in GIS-based soil mapping.		postponed until April 2024 (now completed).	
Activity 2.3. Training on soil maps and briefing documents, for environmental managers and policy makers.		postponed until April 2024 (now completed).	
Activity 2.4. Learning outcomes from each technical training workshop applied within the participating organisations.		Pending: due by Q3 of 2024.	Questionnaires to be sent to training workshop participants, to determine take-up of learning outcomes within participating organisations.
Output 3. BVI soil survey results inform government departments, and raise public awareness, regarding soil applications, associated risks and climate change preparedness.	3.1 Key soil survey findings used to inform policy: for each of the project partners, the project will produce a briefing document, by January 2024. 3.2 Report on BVI Soils, their land use suitability, the risks associated with each soil type and recommendations for climate change adaptation, by Feb 2024 3.3. The BVI procedures for risk assessment of new developments will be adjusted to include inputs from the soil survey guidelines on land use suitability and the Soil GIS maps, by March 2024. 3.4. Public-access version of the Soil GIS and user guides, hosted by the BVI Government NGIS website and the Lavetty Stoutt Community College, by March 2024.	Most of the activities for Output 3 will be carried out during the 3nd year of the project. The one completed activity for Output 3 is 3.3: Press releases, to raise public awareness about the importance of soils: (i) Sept 2022; (ii) March 2023; (iii) Sept 2023; (iv) March 2024 (postponed to April 2024, now completed). *However, because of the extension of this project into 2024-2023, an additional Press Release with be produced when the project final report is published, by Q3 of 2024.*	

Project summary	SMART Indicators	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
	3.5. Press releases, to raise public awareness about the importance of soils: (i) Sept 2022; (ii) March 2023; (iii) Sept 2023; (iv) March 2024. 3.6 Scientific articles, about: (i) BVI soil types; (ii) multi-purpose thematic soil maps; (iii) links between geodiversity, soil types & biodiversity, submitted to Open Access, peer-reviewed journals by March 2024		
Activity 3.1. Report on BVI Soils, highlighting the value of soil data.		Pending: due by Q3 of 2024.	Drafting of report on the BVI's soils.
Activity 3.2. Briefing documents on soil applications and soil sensitivity.		Pending: due by Q3 of 2024.	Drafting of briefing documents
Activity 3.3. BVI Hazard Vulnerability Assessment (HVA) form modified to include Soil GIS inputs and soil-based land use suitability guidance.		Pending: due by Q3 of 2024.	Adjustment of the HVA methodology currently used by the DDM and Town & Country Planning Dept, to utilise the soil maps in the BVI planning system.
Activity 3.4. Public-access version, BVI Soil GIS and documentation.		Pending: due by Q3 of 2024.	Preparing of GIS maps and documentation suitable for public access.
Activity 3.5. Press releases on project findings.		Completed	
Activity 3.6. Scientific articles published.		Pending: due by Q3 of 2024.	Journal articles are currently being drafted.

Annex 2: Project's full current logframe as presented in the application form (changes agreed in Change Request of 22.2.2024)

Title: Multi-Purpose Soil Survey: informing biodiversity management and climate change mitigation

Project Summary	SMART Indicators	Means of Verification	Important Assumptions
Impact: BVI soil types and soil biodiversity surveyed and mapped, with self-sufficiency in soil survey and analysis capabilities, enabling improved management of land and waste, with better risk management and climate change preparedness . Highlighted deadlines: green: delivered; *yellow italics, delayed, with September 2024 delivery date.* .			
Outcome: BVI soil maps and information on soil suitability for Farming, Waste Management and Construction, leads to better-informed land management, with increased risk awareness, and climate change preparedness	0.1 Soil survey and soil analysis for the 4 main islands, with baseline BVI geospatial datasets produced for: BVI Soil Types & Biodiversity; and Soil Suitability for: Farming, Construction, and Waste Management, by Dec 2023 0.2 For the BVI partner organisations: technical training on soil survey and sampling, soil laboratory analyses, Soil GIS mapping and soil map interpretation, ~~by Jan-February~~ by April 2024. 0.3 Partner organisations use soil suitability maps and guidelines in their activities (farming, construction, waste management and biodiversity conservation), as well as for soil-related risk management and preparedness for climate change, ~~*by Q1 2024.*~~ *by Q3 2024.* 0.4. Partner organisations' documentation and guidelines for the public, include land use soil suitability information, soil risk	0.1 Report on BVI Soil Survey, with geospatial datasets, augmented by maps and explanatory documents on: BVI Soil Types & Biodiversity; and Soil Suitability for: Farming, Construction, and Waste Management. 0.2. Questionnaire survey results of the BVI partner organisations, show increased awareness of soil types, their land use suitability and risk management issues, as well as soil-focused recommendations for climate change preparedness. 0.3 User data from the partner organisations on their activities involving soil maps and guidelines on soil suitability (e.g., number of times per month that BVI Soil Survey webpages are accessed). 0.4a. BVI Hazard Vulnerability Assessment application form for new developments is modified to include inputs from the soil survey guidelines on land use suitability and the Soil GIS maps.	New BVI soil maps and associated reports will be easily accessible to government agencies, NGOs and the public. Training and access to the soil map sets will lead to changes in behaviour and better land/soil management. Project partner organisations have the ability to intervene on environmental issues.

	management for new developments and preparedness for climate change, ~~*by Q1 2024.*~~ *by Q3 2024*	0.4b.. Guidance documents prepared by BVI partners on land use suitability of soils, or soil-related risk management , or soil-focused preparedness for climate change.	

Outputs: **1**. BVI self-sufficiency in soil survey and soil laboratory analysis, with an associated BVI Soil GIS inventory, mapping and analysis system.	1.1 BVI Soil Lab established, by November 2022. 1.2. Survey and sampling of BVI soils, focusing on the 4 largest islands, with analysis of collected soils, by Nov 2023 1.3 Soil inventory, GIS database and maps of the estimated 10 main Soil Types, by ~~Dec 2023~~, April 2024. 1.4 Review of predictive accuracy: relative variance of each mapped soil type, ~~*by Q1 2024.*~~ *by Q3 2024* 1.5. Four soil-based thematic maps, with explanatory documents: BVI Soil Types, and Soil Suitability for: (i) Farming, (ii) Construction, and (iii) Waste Management, ~~*by Q1 2024.*~~ *by Q3 2024.* 1.6. Soil Laboratory and Soil Sampling equipment used by the Lavity Stoutt Community College for teaching of Soil science and its applications, by January 2024. 1.7. Workshop on ways of commercialising BVI Soil Laboratory analyses, involving UoP project staff who manage	1.1 BVI Soil Lab equipment installed and operational 1.2 Field data and soil lab analysis data available to partners, with fieldwork reports available on ResearchGate. 1.3 Soil inventory, GIS database and maps uploaded to the BVI Government NGIS website. 1.4 Results of predictive accuracy review for each mapped soil type uploaded to the BVI Government NGIS website. 1.5 Four soil-based thematic maps, with explanatory documents uploaded to the BVI Government NGIS website. 1.6. Soil Science included in the teaching curriculum of the Lavity Stoutt Community College. 1.7a. Workshop attendee list provides gender disaggregated data. 1.7b. Questionnaire to project partner organisations at the end of the workshop, to gain ideas on possible BVI Soil Laboratory commercial activities, with recommendations on a business development strategy.	The Lavity Stoutt Community College maintains its agreement to host the BVI Soil Laboratory. Representative samples collected and analysed for all main soil types. BVI Government NGIS website operates effectively.

	soil, geotechnics and waste treatment labs, Lavity Stoutt Community College managers & other BVI partners, by February 2023.		
2. Training provided to BVI Government staff and to the BVI's main higher education institution (Lavity Stoutt Community College, which will host the laboratory and the workshop training). Aiming for 20 trainees, we already have 16 places requested from these BVI Government agencies: - Disaster Management (2) - Environmental Health (2) - Natural Resources (2) - Agriculture (2) -Town & Country Planning (2) - National Parks (2) Places for 2 staff and 2 final-year students have been requested by the Community College. The training will also be available to BVI-based businesses and NGOs.	Target audience of 20 trainees (14 from project partners; 6 from BVI businesses or NGOs) will benefit from: 2.1. Training in soil survey, soil sampling and soil analysis: two 'hands-on'; workshops, with supporting online training materials, by February 2023. 2.2 Training in soil database management and GIS usage for mapping and climate change impact assessment: two workshops, by ~~Dec 2023, February~~ by April 2024. 2.3 Training on analysis-ready soil maps & briefing documents, for environmental managers and policy makers: two online workshops, by ~~February~~ April 2024. *2.4. Learning outcomes from each technical training workshop applied within the participating organisations, ~~by Q1 2024.~~ by Q3 2024.*	2.1, 2.2 and 2.3. Evidenced via training materials, attendance records and participant contact details, disaggregated by gender. *2.4. Uptake and application of learning outcomes for each technical training workshop (Outputs 2.1, 2.22.3), assessed via a set of questionnaire surveys: (i) pre-workshop, to determine initial levels of knowledge and understanding;* *(ii) at the end of each workshop, to determine take-away lessons learnt;* *(iii) two months after each workshop, to see how the learning outcomes have been used by the partner organisations.*	Staff of our BVI partner organisations will be available for the training sessions Facilities will be available for the soil analysis training and GIS training, at our Community College partner. Should a pandemic curtail travel between the UK & BVI, then alternative online training materials will be provided, paid for by reallocation of the un-used travel funding.
3. BVI soil survey results inform government departments, and raise public awareness, regarding soil applications, associated risks	3.1 Key soil survey findings used to inform policy: for each of the project partners, the project will produce a briefing document, ~~by Q1 2024.~~ by Q3 2024.	3.1. Briefing documents, informed by the BVI soil survey, for the government project partners, on soil applications, soil risks and climate change preparedness, published and available online, via by BVI	BVI Government NGIS website operates effectively and allows public access, as well as

and climate change preparedness.	3.2 Report on BVI Soils, their land use suitability, the risks associated with each soil type and recommendations for climate change adaptation, ~~*by Q1 2024.*~~ *by Q3 2024.* 3.3. The BVI procedures for risk assessment of new developments will be adjusted to include inputs from the soil survey guidelines on land use suitability and the Soil GIS maps, ~~*by Q1 2024.*~~ *by Q3 2024* 3.4. Public-access version of the Soil GIS and user guides, hosted by the BVI Government NGIS website and the Lavetty Stoutt Community College, ~~*by Q1 2024.*~~ *by Q3 2024* 3.5. Press releases, to raise public awareness about the importance of soils: (i) Sept 2022; (ii) March 2023; (iii) Sept 2023; (iv) ~~March~~ April 2024. 3.6 Scientific articles, about: (i) BVI soil types; (ii) multi-purpose thematic soil maps; (iii) links between geodiversity, soil types & biodiversity, submitted to Open Access, peer-reviewed journals , ~~*by Q1 2024.*~~ *by Q3 2024.*	Government NGIS website. 3.2a. BVI soil survey report shared publicly via the Virgin Islands Government website and via ResearchGate, by March 2024. 3.2b. Monitor the number of people accessing the BVI Soil Report via the Virgin Islands Government website and via ResearchGate. 3.3. BVI Hazard Vulnerability Assessment application form (https://bvi.gov.vg/sites/default/files/forms/2016_revisd_hva_form_fillable.pdf) modified to include inputs from the Soil GIS maps and soil survey guidelines on land use suitability. 3.4a.. Public Soil GIS data, analysis-ready maps and user guides posted on the BVI Department for Disaster Management website and the Lavetty Stoutt Community College website. 3.4b. Monitor access to the BVI Public Soils webpages by members of the public, NGOs, businesses and the education sector. 3.4c. Questionnaire surveys of BVI NGO and education sector partner organisations show increased awareness of soil types, their land use suitability and risk management issues, as well as soil-focused recommendations for climate change preparedness. 3.5. Press releases about the soil survey findings: (i) Sept 2022; (ii) March 2023; (iii) Sept 2023; (iv) March 2024. 3.6. Articles for Open Access, peer-reviewed journals (3), submitted by March 2024.	monitoring the number of people accessing the website. ResearchGate continues to be freely accessible to public use.

Activities

Highlighted deadlines: green: delivered; *yellow italics, delayed, with September 2024 delivery date.*

1.1 Soil laboratory established.
1.2. Soil survey, sampling and soil lab analyses.
1.3 Soil inventory, Soil GIS database and maps.
1.4 Review of predictive accuracy for each soil type.
1.5 Thematic soil suitability maps and soil management guidelines.
1.6. Soil Laboratory and Soil Sampling equipment used by the Lavity Stoutt Community College for teaching of Soil science
1.7. Workshop on ways of commercialising BVI Soil Laboratory analyses

2.1. Training in soil survey and soil analysis.
2.2 Training in GIS-based soil mapping.
2.3 Training on soil maps and briefing documents, for environmental managers and policy makers.
2.4. Learning outcomes from each technical training workshop applied within the participating organisations.

3.1 Report on BVI Soils, highlighting the value of soil data.
3.2. Briefing documents on soil applications and soil sensitivity.
3.3. BVI Hazard Vulnerability Assessment form modified to include Soil GIS inputs and soil-based land use suitability guidance.
3.4. Public-access version, BVI Soil GIS and documentation.
3.5. Press releases on project findings, *with concluding press release in Sept 2024.*
3.6 Open Access journal articles on key project findings.

Multi-Purpose Soil Survey: informing biodiversity management and climate change mitigation

Table 1 Project Standard Indicators

DPLUS Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DPLUS Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
DPLUS-A01	2.1. Training in soil survey, soil sampling and soil analysis: two 'hands-on'; workshops, with supporting online training materials, by February 2024.	Number of people from key national stakeholders completing soil survey physical, chemical, engineering and microbiota soil analysis training.	No. of People	Gender: 24 females, 16 males Age group: 18 to 65 Stakeholder group: 7	40	40	20 (April 2024)	100	100
DPLUS-A03	2.4. Uptake and application of learning outcomes for each technical training workshop (Outputs 2.1, 2.2, 2.3), assessed via a set of questionnaire surveys	Number of local/national organisations with improved capability and capacity as a result of project.	No. of organisations	Government department: 5 NGO/para-government: 1 College/school: 1	7	1		8	8
DPLUS-A04	2.4. Learning outcomes from each technical training workshop applied within the participating organisations, by March 2024.	Number of people reporting that they are applying new capabilities 6 months after training.	No. of People	Gender: 3 Females Age group: 30 to 50 Stakeholder group: 3	3				20
DPLUS-A05 (y1)	2.4. Learning outcomes from each technical training workshop applied within the participating organisations, by March 2024.	Number of trainers trained reporting to have delivered further training by the end of Year-2 of the project	No. of Trainers	Gender: Female (3); Male (1) Age group:18-30 Stakeholder group: Community College (2); Government Dept (2)	4				8
DPLUS-A07	2.4. Uptake and application of learning outcomes for each technical training workshop (Outputs 2.1, 2.2, 2.3), assessed via a set of questionnaire surveys	Number of government departments with enhanced awareness and understanding of soils and associated biodiversity and climate change issues	No. of depts.	No. of government departments: 6	6				6
Extra A07 for Schools	This is within *Output 3: BVI soil survey results inform government departments, and raise public awareness, regarding soil applications, associated risks and climate change preparedness.* This is an unexpected extra indicator, following requests from	Number of school/college students with enhanced awareness and understanding of soils and associated biodiversity and climate change issues	No.of students	Age group: 15-20 Female: 9 Male: 28 No. of schools: 4 Seventh Day Adventist School and the H. Lavity	37	18	15 (April 2024)	70	80

DPLUS Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DPLUS Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
	BVI schools for awareness training.			Stoutt Community College, Tortola. Anegada main school; Cibony School, Virgin Gorda					
DPLUS-C12	3.5. Press releases, to raise public awareness about the importance of soils: (i) Sept 2022; (ii) March 2023; (iii) Sept 2023; (iv) March 2024.	Social Media presence	Number (by a relevant metric)	By month/year: February 2023 Platform: Facebook, DDM website, newspaper, news site, government webpage Metric: 5	12	7	8 (May 2024)	27	24
DPLUS-C14	This is not directly covered, but relates to *3.1: Key soil survey findings used to inform policy: for each of the project partners, the project will produce a briefing document, by January 2024.*	Number of decision-makers attending briefing events (via press conferences and project steering committee meetings).	Number	Attendee gender balance: 8 women to 7 men Types of decision-makers: Govt (73), NGO (6%), farmers (21%) Number of events: 6	15			15	15
DPLUS-C15	3.5. Press releases, to raise public awareness about the importance of soils: (i) Sept 2022; (ii) March 2023; (iii) Sept 2023; (iv) March 2024.	Number of Media related activities.	Number	Internet/ Print/ and sub-national / national / international	2	5		7	4
DPLUS-C19	2.1. Training in soil survey, soil sampling and soil analysis: two 'hands-on'; workshops, with supporting online training materials, by February 2023.	Number of other publications produced.	Number	Training manuals (6) Review of BVI waste management (1); report on BVI soil microbiota & biodiversity sampling (1)	4	4		8	9

Annex 4: Onwards – supplementary material (optional but encouraged as evidence of project achievement)

4.1. Project management documentation

- Minutes of Steering Committee meetings
- Summaries of Workshop participant feedback sheets
- Risk Register

4.2. Project reports

- Preliminary study of BVI Soil Biodiversity: Dr Heather Rumble (2023)

4.3. Conference presentations

- UK Remote Sensing Society (Sept 2023)
- Cranfield (March 2024)

4.3. BVI Soil Database

Checklist for submission

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the **correct template** (checking fund, type of report (i.e. Annual or Final), and year) and **deleted the blue guidance text** before submission?	Y
Is the report less than 10MB? If so, please email to BCF-Reports@niras.com putting the project number in the Subject line.	Y
Is your report more than 10MB? If so, please discuss with BCF-Reports@niras.com about the best way to deliver the report, putting the project number in the Subject line.	
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Y
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 15)?	Y
Have you involved your partners in preparation of the report and named the main contributors	Y
Have you completed the Project Expenditure table fully?	Y