DP\100026

Soil map and online database as climate change mitigation tools

Marengo, iLaria | South Atlantic Environmental Research Institute

Funding sought **£265,612.00**
Project start/end **2 Apr 2018 - 31 Jul 2020**

1. Contact Details

Q1. Lead applicant contact details

Please enter the contact details for the lead application. The lead applicant is the same as the Flexi-Grant account holder. Please note that the Flexi-Grant account holder will be the only contact point for the application.
Additionally, please add contact details for the Project Leader if this is different from the lead applicant.

Dr iLaria Marengo

writer of the application
Sout Atlantic Environmental Reseaerch Institute

Primary Applicant

4 James Street, Stanley , , Falkland Islands (Malvinas) (Home)

Mrs Tara Pelembe

Project Leader
Sout Atlantic Environmental Reseaerch Institute

http://www.south-atlantic-research.org/

Stanley Cottage, Stanley, , Falkland Islands (Malvinas)

Q2. Lead organisation contact details

Please enter the applicant organisation details

South Atlantic Environmental Research Institute

PO609, Stanley Cottage, Stanley, , Falkland Islands (Malvinas)

Q3. Lead organisation type

Please select one of the below options.

Other (e.g. Academic)

Please add any 'Committee Feedback' to the field below:

Please add any 'Specific Ineligibility' feedback to the field below:

Please add any 'Conditions' to the field below:

Please add any 'Positive Feedback to the field below:

2. Title, Dates & Budget Summary

Q4. Project title

Soil map and online database as climate change mitigation tools

Q5. Project dates

Start date:	End date:	Duration (e.g. 2 years, 3 months):
02/04/2018	31/07/2020	2 years and 4 months

Q6. UKOT(s)

(See Guidance Notes)
Which UK Overseas Territory(ies) will your project be working in? You may select more than one UKOT from the options below.

Falkland Islands (FI)

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

In addition to the UKOTs you have indicated above, will your project directly benefit any other country(ies)? If so, list here.

Q7. Budget summary

Year:	2018/19	2019/20	2020/21	Total request
Amount:	£103,634.00	£117,564.00	£44,414.00	£265,612.00

Q7b. Proposed (confirmed and unconfirmed) co-financing as % of total project cost	31%

3. Lead Organisation Summary

Q8. Lead organisation summary

Please provide the following information on the lead organisation

What year was your organisation established/ incorporated/ registered?	Established in March 2012 by the Falkland Islands Government. Incorporated and registered in July 2017 as a Charitable Incorporated Organisation
What is the legal status of your organisation?	◉ Other (if selected, please explain below)
Other explained	Research organisation which was established in March 2012 by the Falkland Islands Government (FIG). The organisation incorporated and registered in July 2017 as a Charitable Incorporated Organisation in England and Wales and in the Falkland Islands (Charity No. C47).
How is your organisation currently funded?	SAERI still receives a subvention from FIG every year. The remainder of SAERI's funding comes from granting opportunities. Revenues from commercial opportunities like Environmental Impact Assessment and Fisheries Assessment generated by SAERI (Falklands) Limited are gift aided to SAERI Charitable Incorporated Organisation.
Have you provided the requested signed audited/independently examined accounts? If you select "yes" you will be able to upload these. Note that this is not required from Government Agencies.	◉ Yes

Please attach the requested signed audited/independently examined accounts. The limit for any single file uploaded as supporting materials with your application

is 6MB. Please ensure documents are saved in PDF form where possible in order to minimise size.

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Q9. Has your organisation been awarded Darwin Initiative funding before (for the purposes of this question, being a partner does not count)?

Yes

If yes, please provide details of the most recent awards (up to 6 examples)

Reference no.	Project leader	Title
DPLUS065	Dr Paul Brickle	Mapping Falklands and South Georgia coastal margins for Spatial Planning
DPLUS042	Dr Paul Brickle	Dolphins of the kelp: Data priorities for Falkland's inshore cetaceans
DPLUS027	Dr Paul Brickle	Marine spatial planning in the Falkland Islands
EIDCF012	Dr Paul Brickle	Assessing Ascension Island's Shallow Marine Biodiversity

4. Project Partners

Q10. Project partners

Please list all the partners involved (including the Lead Organisation) and explain their roles and responsibilities in the project. Describe the extent of their involvement at all stages, including project development. This section should illustrate the capacity of partners to be involved in the project, and how local institutions, local communities, and technical specialists are involved as appropriate.
Please provide written evidence of partnerships. Please add fields for more partnerships, if required. Details on roles and responsibilities in this project must be given for the Lead Organisation and all project partners.

Lead Organisation name:	South Atlantic Environmental Research Institute (SAERI)

Details (including roles and responsibilities and capacity to engage with the project):	SAERI staff involved in the project comprises of: Tara Pelembe will oversee the project in her role of Project Leader while the Director of Science (To be recruited) will provide scientific support to the Project Manager (to be recruited). The responsibility of Tara Pelembe and the Director of Science is to look after the project to ensure that its overall deliveries are met successfully. Dr iLaria Marengo will be in charge of the development and implementation of the soil spatial database and online information tool (webGIS). The main role is to liaise with stakeholders and all the project partners and her responsibility is to assist the latter in managing the project's data. Sammy Hirtle, who is the logistic officer and co-ordinator, plays a pivotal role in the preparation of the soil campaign. Her responsibility is to contact land owners for accessing the land and for finding accommodation outside Stanley. Teresa Bowers, SAERI Deputy-Director Business and Programmes who has significant experience in financial and budget control including a previous Darwin Initiative project (DPLUS042). Teresa's main responsibility is to guide and ensure that the Project Manager keeps the expenditure within the budget limits.

Do you have partners involved in the Project?

Yes

The limit for any single file uploaded as supporting materials with your application is 6MB. Please ensure documents are saved in PDF form where possible in order to minimise size.

1. Partner Name:	THE JAMES HUTTON INSTITUTE (JHI)
Website address:	http://www.hutton.ac.uk/

Details (including roles and responsibilities and capacity to engage with the project):	Dr Matt Aitkenhead has more than ten years expertise on soils, which ranges across soil modelling, land cover mapping, remote sensing interpretation, environmental modelling, soil formation, land use and land use change, artificial intelligence and computer programming. A key aspect of his work is the development of novel modelling and classification methods and software packages that utilise spatial remote sensing and environmental data in a wide range of environmental applications. His role in the project is paramount as he will be in charge of defining the digital soil model that is most appropriate for the Falkland Islands and that delivers the best soil map. He has got various responsibilities: first of all the identification and processing of the most suitable satellite imagery, followed by their analyses which will be supported by some ancillary data and ground truthing data collected by the Project Manager and the soil surveyor. Matt will be one of the project partners helping in identifying the most effective sampling and survey strategy. His more than 50 publications include refereed papers, conference proceedings, technical reports and popular articles on soil and environmental topics; these provide a solid and sound starting point on which to build the project.
Would you like to include a letter of support from this organisation?	◉ Yes
Letter of Support:	**The limit for any single file uploaded as supporting materials with your application is 6MB. Please ensure documents are saved in PDF form where possible in order to minimise size.**

Do you have more than one partner involved in the Project?

Yes

2. Partner Name:	FALKLAND ISLANDS GOVERNMENT (FIG) DEPARTMENT OF AGRICULTURE (DOA)
Website address:	http://www.fig.gov.fk/agriculture/
Details (including roles and responsibilities and capacity to engage with the project):	Mr Lennie has been working as a laboratory technician at the department of Agriculture (FIG) since 1991 and his high level of competence in laboratory techniques and practice and expertise in analysing samples of plants and soils from the Falklands ensures a high quality of delivery in sample storage , processing and chemical analysis. His main role is to supervise and assist the Project Manager in the lab analyses and provide him/her with the guidance and tools necessary to accomplish successful analyses. Gordon's main responsibility is to ensure that the laboratory has all the equipment needed for the analyses and storage of samples. Over the years, Gordon has built up a sound and productive working relationship with Dr Jim McAdam and Dr Sergio Radic. This long term working collaboration will be the backbone of the delivery of several key elements of the project.
Would you like to include a letter of support from this organisation?	Yes
Letter of Support:	Date uploaded SAERI DPlus soil and climate change project.doc — 02/10/2017 17:29:22

3. Partner Name:	UK FALKLAND ISLANDS TRUST (UKFIT)
Website address:	http://www.ukfit.org/
Details (including roles and responsibilities and capacity to engage with the project):	Dr Jim McAdam is well known and respected agricultural scientist in the Falkland Islands, where he has been living and working for many years. Currently he is based in Northern Ireland as head the Grassland and Plant Science branch in the Agri–Food and Biosciences Institute. However, he has kept a working interest in agricultural research and farming practices in the Falklands and he makes an annual visit to the islands on behalf of the UK Falkland Islands Trust. His role in the project is highly important as it leads on from a previous successful project (TEFRA) funded by EU-BEST III initiative. In this, Jim was investigating the effects of potential climate change on ecosystem services delivery from soils, agriculture, flora and fauna in the Falklands. His role in this project will be to transfer the outcomes from the TEFRA project and put them into practice in the current project, in particular towards the assessment of erosion extent and risk and mitigation measures. Given his local knowledge his main responsibility will be engaging the local farmers and helping the Project Manager to verify and refine the erosion risk maps for the sample farms.
Would you like to include a letter of support from this organisation?	◉ Yes
Letter of Support:	_____

4. Partner Name:	NATURAL HISTORY MUSEUM (NHM)
Website address:	http://www.nhm.ac.uk/

Details (including roles and responsibilities and capacity to engage with the project):	Dr Anne Jungblut is a researcher in the Life Sciences Department at the Natural History Museum (London). Her research interest focuses on diversity, evolution and ecology of polar cyanobacteria, microbial mats, toxic cyanobacteria and polar soils. Her current projects include the next generation sequencing analysis of microbial soil biogeography in the Southern Atlantic, specifically South Georgia and the Falkland Islands. A big advantage of having Anne as project staff is that she knows already the Falkland Islands thanks to the Shackleton Scholarship Fund awarded in 2015. Her role is to work with local stakeholders to identify the best sites for sampling soils for further microbiology analyses and DNA sequencing. Additionally, she will provide the local laboratory technician, the Project Manager and the soil surveyor with standard procedures for collecting and storing the samples prior their analyses. Anne will also be in the Falklands to deliver a workshop to explain to a wider audience the results from the analyses and how microbial communities could be monitored in the long term. The responsibilities are numerous and will range in supervising and directing the samples collection, engaging with stakeholders to make the results clear and understandable, and leading the complex DNA sequencing work.
Would you like to include a letter of support from this organisation?	◉ Yes
Letter of Support:	_____ _____

5. Partner Name:	UNIVERSIDAD DE MAGALLANES (UMAG)
Website address:	https://www.umag.cl/

Details (including roles and responsibilities and capacity to engage with the project):	Dr. Sergio Radic has more than 10 year experience in the area of soil-plant relationship. Currently Dr Radic is working at the University of Magallanes on remote sensing applications to grassland management and on the investigation of soil chemical properties, particularly nitrogen fixation. He has been working on soil chemical analyses in the Falkland Islands together with Dr. Jim McAdam and Mr Gordon Lennie. Sergio's knowledge of the islands and his current understanding of the soils in the Magallanes region in Chile (which is not very different from the Falklands) is highly beneficial for the project. Sergio's role is to provide an interpretation and explanation of the chemical properties of the soils analysed in the lab. He will help the Project Manager in understanding how the chemical properties relate to the current land management and how this knowledge should be used to allow land owners, land managers and conservationists to retain, improve or restore the Falklands' soils.
Would you like to include a letter of support from this organisation?	◉ Yes
Letter of Support:	_____

6. Partner Name:	CENTRE FOR ECOLOGY AND HYDROLOGY (CEH)
Website address:	https://www.ceh.ac.uk/

Details (including roles and responsibilities and capacity to engage with the project):	Professor Chris Evans is a terrestrial and aquatic ecosystem biogeochemist with two decades of experience in peatland biogeochemistry, including carbon and nitrogen cycling, greenhouse gases and water quality, process modelling, long-term and large-scale data analysis. His role in the project is to advise on the methods and approaches to the assessment and quantification of status of the peatlands identified in the Falklands and the relationship between peat condition, carbon balance and greenhouse gas fluxes. His responsibility is to provide guidance for both the Project Manager and the soil surveyor who will be carrying out the fieldwork. Guidance will be given on site selection (from remote sensing imagery and other baseline data e.g. habitat map), tools for large scale peat depth measurement, sample collection and sample analyses.
Would you like to include a letter of support from this organisation?	◉ Yes
Letter of Support:	_____ _____

If you require more space to enter details regarding Partners involved in the Project, please use the text field below.

5. Project Staff

Q11. Project staff

Please identify the core staff on this project, their role and what % of their time they will be working on the project.
These should match the names and roles in the budget spreadsheet.
Please provide 1 page CVs for these staff.

Name (First name, Surname)	Role	% time on project	CV attached below?
Tara Pelembe	Project Leader	10	☑
To Be Recruited	Project Manager	100	☑
iLaria Marengo	GIS specialist and data manager	9	☑
Anne Jungblut	Microbiologist	8	☑

Do you require more fields?

Yes

Name (First name, Surname)	Role	% time on project	CV attached below?
Matthew Aitkenhead	Specialist remote sensing and digital soil mapping	6	☑
To Be Recruited	Soil surveyor	20	☑
Jim McAdam	Agricultural Advisor	9	☑

Sergio Radic	Soil advisor	5	☑

Please provide 1 page CVs (or job description if yet to be recruited) for the Project staff listed above. Ensure the file is named clearly, consistent with the named individual and role above.
The limit for any single file uploaded as supporting materials with your application is 6MB. Please ensure documents are saved in PDF form where possible in order to minimise size.

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Have you attached all Project staff CVs?

Yes

6. Background & Methodology

Q12. Summary of Project

Please provide a brief summary of your project, its aims, and the key activities you to undertake. Please note that if you are successful, this wording may be used by Defra in communications e.g. as a short description of the project on GOV.UK. Please bear this in mind, and write this summary for a non-technical audience.

> The Falkland Islands prioritised climate change mitigation action plan considers soil erosion, soil carbon content vulnerability and climate change assessments at policy level as high to medium priorities. To support these mitigation policies a baseline survey of soils, peatlands and erosion extent/risk will be undertaken and the results conveyed on an online data system to assist policy makers, conservation officers and land managers in deciding which actions are needed for long term mitigation measures against climate change effects.

Q13. Background

What is the current situation and the problem that the project will address? How will it address this problem? What key OT Government priorities and themes will it address?

> Soil erosion due to dry and windy conditions, past uncontrolled grazing and sporadic fires is a widespread, unevenly distributed and dynamic process on the Falklands. Climate change predictions show a rise in temperature and an increased soil moisture deficit through increased seasonal evapotranspiration which could alter soil organic matter content with knock-on effects on soil biological, physical and chemical properties. This would further increase the risk of erosion and some of the shallow soils with high organic matter could change from carbon sinks to carbon sources. The Falklands have neither a soil map nor an accurate understanding of the extent and the state of the peatlands.
>
> This project will address the lack of evidence through undertaking a baseline survey of soils, peatlands and erosion extent/risk. It will provide an online data system for viewing the maps, interpreting the chemical/microbiological aspects of the soils and will assist policy makers, conservationists and land managers in minimising erosion risk, greenhouse gas emissions and maximising conservation of peatlands.
>
> The amendment of agricultural land improvement policy and the conservation of the carbon store in fragile soils are medium/high priorities of the Islands' climate change mitigation action plan and align with the FI Biodiversity Framework.

Q14. Methodology

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

Work Package (WP) 1. Mapping soils, peatlands and erosion extent/risk

1. A desk-based study, led by a remote sensing specialist, based on the selection of available satellite imagery and Google Earth scenes to link soil types to tones, colours and landscape elements. The processing and analysis of the images will delineate map soil units using Digital Soil Mapping methods including neural networks with spline curve fitting at multiple depths. Existing ancillary data will be incorporated into the model. Appropriate Earth Observation techniques (e.g. vegetation and soil moisture indices) will be determined to identify and quantify peatlands and eroded areas according to their hydrological status, mineral or organic composition and terrain driving factors. Historical aerial photography will help assess the rate of erosion processes at sample locations.

2. Reconnaissance field surveys, of four weeks' duration each, will be undertaken over two years by experienced surveyors. Soil profiles will be sampled and recorded from soil cores and exposed sections. Target areas for fieldwork will be identified from imagery interpretations, adjusted during the actual field survey, allowing extrapolation of results to a wider area. The soil campaign will also provide ground truth points for the remote sensing analyses, information on soil properties for determining erosion risks and samples for laboratory analyses.

3. An erosion risk map will be generated for and tested on selected farms by overlapping farm and field boundaries with rainfall, wind, soil properties, cultivation feasibility and digital terrain data. Their impact will be tested on landowners attitude and economic performance of the farms and the results used in a policy feedback loop to modify the data system

WP 2. Soil health and sustainability

Soil health will be measured using standard indicators including bulk density, soil organic carbon, pH, Phosphorus, Nitrate, Potassium, Magnesium and Aluminium by the Agriculture Laboratory in the Falklands and sustainability of soil management practices will also be assessed by next generation high throughput sequencing analysis for soil microorganisms carried out at the Life Sciences Department at NHM.

WP3. Interactive spatial database

The soil map will be accessible through the internet. There will be a full technical version to satisfy international standards, and a series of simple, user-friendly interpretative maps to provide more information on soil properties, agro-climatic data, peatland distribution and peat thickness, surface cover and characteristics, extent and risk factors of eroded areas, soil capacity and suitability for plant species.

WP4. Knowledge transfer

A series of workshops will be held with stakeholders during the project to ensure that objectives and activities carried out by overseas specialists are linked to FI requirements. Skills and knowledge will be transferred and shared through practical training sessions with those who will maintain and use the data system and will be carrying out laboratory analyses.

Overall Project Management

A representative of each partner organisation will be on the Project Management Group (PMG) to oversee project implementation, provide advice, monitoring and evaluation. Wider stakeholders will form part of the Project Stakeholder Group (PSG) which will be a core element of project communications.

If necessary, please provide supporting documentation e.g. maps, diagrams etc., using the File Upload below.
The limit for any single file uploaded as supporting materials with your application is 6MB. Please ensure documents are saved in PDF form where possible in order to minimise size.

File name	Date uploaded

7. Objectives, Stakeholders & Sustainability

Q15. Project Objectives

How does this project:

- Deliver against the priority issues identified in the assessment criteria
- Demonstrate technical excellence in its delivery
- Demonstrate a clear pathway to impact in the OT(s)

Priority issues

"2.Developing approaches to deal…" Overall in the Falklands, policy makers, habitat restoration officers, landowners and agricultural advisors need science-based information to underpin cost-effective strategies for erosion limitation and climate change resilience. This project aims at filling the knowledge gap about the national soils which show structure, properties and responses to environmental change remarkably different from those that are, often incorrectly, compared with. The project will provide quantitative information on the extent and rate of erosion, inform on the causing factors and support the development of effective mitigation plans.

"8.Developing data systems…" The data will be shared and made publicly accessible through a system infrastructure built on a spatial database and GIS/webGIS services. The data will be obtained from the soil campaign, the remote sensing analyses and the laboratory tests. Overall the data generated will help quantifying national carbon stocks (believed significant if compared to UK’s territorial area), assess the risk of carbon emission in case of peatland degradation and overall allow the assessment and economic evaluation of soil as natural capital.

Technical excellence

Latest Earth Observation analytical techniques will be applied during the desk study and accurate descriptions of soil properties will be ensured during the fieldwork.
To generate the distribution map of soil, peatlands and erosion (extent and risk), the project will require thorough data collection, remote sensing analyses and database development which will be carried out by local and overseas experts who have detailed knowledge of, and a track record of delivery in the Falklands.

The information and monitoring tool will be user-friendly and purpose-built to meet the needs of the stakeholders through a feedback loop. The local data management and GIS specialist has a proven record of functional tools for data discovery, dissemination and accessibility.
Chemical laboratory analyses for soil organic carbon, pH, bulk density, Al, Mg, N and high throughput DNA sequencing for microorganisms identification will be carried out in the Falklands and overseas using established standard protocols.

Impact

The project will deliver an online data system which will be an innovative and unique decision tool based on the integration of agriculture and restoration priorities for sustainable farming, reducing erosion, assessing GHG emissions from peatlands and mitigating climate change effects across the Falklands. Information on soil physical, chemical and biological properties, spatial distribution of peatlands and erosion risks will be delivered from local farm regions to national level.

The local Habitat Restoration and Agricultural officers will liaise with the scientists and the landowners facilitating knowledge exchange and collaborations. The group of selected farmers will provide the nucleus for a knowledge transfer campaign across the islands and enable local government to best target its resources. Fieldwork will be open and landowners can join and follow the progress of the soil campaign though the various stages of analysis and contribution to the risk map.

As well as being of fundamental importance to the Falklands, this will be a unique model which will be applicable in small island states and could readily be implemented across other OTs.

Q16. Project Stakeholders

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

The main stakeholders are:

FIG: Department of Agriculture (DoA) and Environmental and Planning Department (EPD) strategic goals include improving sustainable farming and mitigating climate change effects on terrestrial natural resources. DoA is a project partner and participant of the PMG. EPD fully supports the project and will be part of the PSG.

Falklands Conservation (FC) has current and future involvement in habitat restoration projects, and confirmed support of the project. The habitat restoration officer is part of the PSG and along with DoA, will assist in the identification of landowners to use the interactive mapping tool to facilitate better design and implementation of sustainable land management and restoration practices.

Landowners/Land managers are key stakeholders being the key users of the data system tool. Landowner representatives will be part of the PSG and will test the utility and assess the clarity of the tool for farming processes to better sustain long term growth of plants and pasture, reducing erosion risk as well as improving soil resilience capacity.

FIG and FC were consulted through a concept note highlighting data gaps, issues and solutions, while in 2017 a scoping soil survey was carried which contributed to increased interest in the role of soils among the landowners.

All parties and the wider community will be regularly updated on the progress of the project by direct stakeholder meetings, local and online media such as Wool Press (the bimonthly publication to farmers), SAERI quarterly newsletter, FI community Facebook and the project webpage.

Q17. Institutional Capacity

Describe the lead organisation's capacity (and that of partner organisations where relevant) to deliver the project.

SAERI aspires to be a world renowned, environmental research institute. SAERI has the infrastructure and capacity to conduct environmental research throughout the South Atlantic. It has significant grant and project management and delivery experience which includes several previous Darwin Initiative projects. The development and implementation of the soil spatial database and information tool will be carried out by SAERI's data manager/GIS specialist who has worked in the Falklands for four years and provided webGIS and tools for data discovery, dissemination and accessibility.

The DOA is an FIG department with 15 members of staff. The laboratory technician has expertise in soil identification and characterisation. Sampled soils will be analysed in a well-equipped local laboratory. The Agriculture officers have long experience of working with local farmers in tailored extension programmes.

JAMES HUTTON INSTITUTE is a well-respected and globally recognised research organisation delivering fundamental and applied science to drive the sustainable use of land and natural resources. They will field a remote sensing specialist who will be using the latest digital soil mapping techniques to link field observations and remote sensing data and derive a map of soils, peatlands distribution and erosion extent and transfer knowledge to local partners.

UKFIT was formed in 1981 and aims to assist the Islands' population by providing specialist advice and contacts to assist in the economic and social development of the Islands. The UKFIT specialist has over 40 years of experience in agricultural and environmental research in the Falkland Islands and has particular expertise in working with farmers in the practical application of sustainable farming systems. He has been a partner in a project to investigate the potential impact of climate change on ecosystem services delivery in the Falklands and will work closely with the local habitat restoration officer and land manager advisor who have great skill in habitat management to meet specific environmental objectives.

NATURAL HISTORY MUSEUM is a leading international authority on the natural world with excellence in research, curation and public engagement. NHM has state-of-the-art molecular laboratory including Illumina Miseq sequencing platform, sample preparation and clean-room facilities with expertise in a wide range of environmental samples (e.g. soil, water and plant specimens) and sequencing template generation using

established protocols for environmental and soil microbiology. An expert microbiology in microbial diversity and ecology, with previous works in the Falklands and South Georgia, will lead the identification and DNA analyses of soil microorganisms.

UMAG is a university in the southern Chilean city of Punta Arenas, established in 1981. UMAG has an established institutional partnership with SAERI and brings expertise in soils and land use of the region and in the use of satellite imagery in land management studies in the Falklands and Tierra del Fuego.

CENTRE FOR ECOLOGY AND HYDROLOGY (CEH) is a world-class research organisation focusing on land and freshwater ecosystems and their interaction with the atmosphere. The centre is committed to delivery research, reliable soils data, models and applications for use in scientific, management and policy activities.

Q18. Sustainability

How will the project ensure benefits are sustained after the project has come to a close? If the project requires ongoing maintenance or monitoring, who will do this and how will it be funded?

The interactive spatial database on national soil types and characteristics, extent of peatlands and quantification of GHG emissions, distribution and risk of erosion processes is built on an open source platform that implies no licencing costs and therefore ensures longevity. Additionally, the long term management of the spatial database is ensured by having it embedded in the Falkland Islands IMS-GIS data centre, managed by a full time and skilled data manager already employed by SAERI.

Training is a key element of the project and as such has been given its own work package to ensure that it maintains profile through project delivery. The knowledge transfer and training will ensure that awareness and confidence in using the tools produced by the project are firmly established before the project ends.

The establishment of a monitoring programme also ensures that there is a legacy beyond a ‘one off’ baseline. Earth Observation techniques will offer a valid support for monitoring changes across the Falklands and the projects provision of basic laboratory facilities and equipment set up at the DOA will also support monitoring

Finally, the spatial database is built to allow easy updates.

8. Funding and Budget

Q19. Budget

Please complete the appropriate Excel spreadsheet linked below, which provides the Budget for this application. Some of the questions earlier and below refer to the information in this spreadsheet. Note that there are different templates for projects requesting over and under £100,000 Darwin Plus budget.
R6 D+ Budget form for projects under £100,000
R6 D+ Budget form for projects over £100,000
Please refer to the Finance Guidance for more information.
N.B.: Please state all costs by financial year (1 April to 31 March) and in GBP. Budgets submitted in other currencies will not be accepted. Use current prices – and include anticipated inflation, as appropriate, up to 3% per annum. The Darwin Initiative cannot agree any increase in grants once awarded.
Please upload your completed Darwin Plus Budget Form Excel spreadsheet using the field below.

_____	
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Q20. Co-financing

Are you proposing co-financing?

> Yes

Secured
Provide details of all funding successfully levered (and identified in the Budget) towards the costs of the project, including any income from other public bodies, private sponsorship, donations, trusts, fees or trading activity, as well as any your own organisation(s) will be committing.
(See “Finance for Darwin & IWT” and the "Guidance for Applicants" documents)

> The project managed to raise a 31% of match funding from the project partners. The percentage corresponds to the in-kind work that the various partners have decided to provide for allowing the project to be carried out.

Unsecured
Provide details of any co-financing where an application has been submitted, or that you intend applying for during the course of the project. This could include

co-financing from the private sector, charitable organisations or other public sector schemes.

Date applied for	Donor Organisation	Amount	Currency code	Comments

Please give brief details including when you expect to hear the result. Please ensure you include the figures requested in the Budget Spreadsheet as Unconfirmed funding.

N/A

Do you require more fields?

No

9. Financial Controls, Value for Money & Open Access

Q21. Financial Controls

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

SAERI is a Charitable Incorporated Organisation, registered in the UK and recognised in the Falkland Islands. Grant payments will be administered by SAERI Deputy Directory – Business & Programmes (DD-B&P) who has donor fund management, charity CEO and investment fund management experience. Thanks to this background the SAERI DD-B&P will ensure good financial governance which includes creating a ring-fenced and project specific account in which movements of funds will occur and overseeing the financial aspects of the project income and expenditure and .

SAERI accounts will be independently audited on an annual basis. The accountancy system and management controls have been proven through previous grant and funding awards of similar magnitude.

The Project Manager, with supervision of SAERI DD-B&P, will present a quarterly budget for approval to the PMG and submit quarterly financial reports to the funding organisation as tracking performance against those budgets.

Q22. Financial Management Risks

Explain how you have considered the risks and threats that may be relevant to the success of this project, including the risks of fraud or bribery.

SAERI has standardised financial policies and procedures which have clear checks and balances for managing all of the organisations finances. It manages multiple projects from multiple funding sources and strict financial reporting procedures are adhered to.

The financial controls outlined in the section above form an integral part of the systems in place to mitigate against any threats or risks of fraud or bribery.

Furthermore the organisation is developing its anti-corruption and bribery policy to further mitigate the potential of any risk in this area.

Q23. Value for money

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

SAERI has secured 31% match funding for the project, a significant proportion of which is a commitment for additional time from project partners to be contributed at zero cost to Darwin.
SAERI staff members providing their time to the project do so at a matched in-kind contribution. The project has benefited from important match funding from the project partners' institutions, and the Falkland Islands Government Department of Agriculture which provided the use of laboratory facilities.

These contributions represent significant value for money for the project.

SAERI is a territory-based organisation and therefore its full-time project manager will be on island for the duration of the project at a cost that is significantly less than short-term visits by offshore contractors.

The budget was calculated from actual costs incurred by SAERI in managing similar fieldwork-based projects. Emphasis has been given to provide the project with the necessary equipment and expertise for success although, as many of the project partners come from overseas, travel costs are necessarily high.

These international project partners will however make a significant contribution towards skills development and capacity building on the Falklands, skills that would cost significantly more to be developed if different mechanisms for training were used

Q24. Outputs of the project and Open Access

All outputs from Darwin Plus projects should be made available on-line and free to users whenever possible. Please outline how you will achieve this and detail any specific costs you are seeking from Darwin Plus to fund this.

Since 2014 the Falkland Islands have taken advantage of the IMS-GIS data centre, which was built and developed on the concepts and philosophy of open access data, data sharing, accessibility, discovery and documentation. One of the main services of the data centre is the online metadata catalogue http://www.south-atlantic-research.org/metadata-catalogue.
Data from this project will be documented using the standard metadata form required by the Falkland Islands data management policy (http://www.south-atlantic-research.org/guide-for-researchers/guide-for-researchers-coming-to-the-territories) and uploaded to the above mentioned online metadata catalogue to be in the public domain.

Additionally, the data will be accessible online to everyone through the project-based webGIS service. Previous Darwin projects (DPLUS027, DPLUS063) and future ones (DPLUS052, DPLUS042) have already and will be published online. The data manager in charge of building the spatial database and the interactive tool will be responsible for the online publication of the Darwin project and its documentation (metadata) for the online catalogue. All publications will be available as open access. Molecular sequence data will be deposited in GenBank (http://www.ncbi.nlm.nih.gov

/genbank/).

Making the data free and available to all users will be an easy task since the entire information system of the data centre is based on open source software, the majority of the data are open access, without licence constraint and there is local expertise in building webGIS service.

10. Logical Framework

Q25. Logical Framework

Darwin Plus projects will be required to report against their progress towards their expected outputs and outcome if funded. This section sets out the expected outputs and outcome of your project, how you expect to measure progress against these and how we can verify this.
Annex D and Annex E in the Guidance Notes provides helpful guidance on completing a logical framework, including definitions of the key terms used below.

Impact:

> Science-based evidence on soils, peatlands and erosion extent/risk will allow policy makers, conservationists and land managers/owners to implement priority actions mentioned in the national climate change mitigation action plan.

Project Summary	Measurable Indicators	Means of Verification	Important Assumptions

Outcome: Improved evidence-base for mitigating climate change through new decision-support tools: online maps and database of soil types, peatlands and erosion extent/risk integrated with physical, chemical and micro-biological analyses of soils	0.1 A distribution map of soils, peatlands and erosion extent for the Falkland Islands to fill a knowledge gap and provide information on a fundamental natural resource which needs sustainable management. 0.2 An online tool for interpreting the chemical and microbiological aspects of the soils to help habitat restoration and land managers to more effectively mitigate against erosion, soil degradation and carbon loss.	0.1. A tailored WebGIS portal for accessing the distribution map and all project data will be designed and published online. The metadata catalogue (Falkland Islands IMS-GIS data centre) will host the metadata of the data gathered throughout the project. 0.2 The tool for interpreting the national soils, their characteristics and the erosion risk will be published on FIG DoA webpage.	0.1 SAERI continue to retain relevant skilled staff and the Falkland Islands IMS-GIS data centre will be sustained by the government in the future years 0.2 The tool for monitoring erosion risk will be simple enough to be maintained in the long term by the stakeholders

Output 1: 1. Project Management structure, monitoring, evaluation and communications tools established	1.1 A Memorandum of Understanding (MoU) agreed and signed by all partners by May 2018 1.2 Project Manager recruited by August 2018 1.3 A Project Management Group (PMG) meeting held every 3 months starting May 2018 1.4 A Project Stakeholders group (PSG) meeting held every 6 months starting May 2018 1.5 At least 1 project webpage created by April 2018, and at least 1 update to the page made every 3 months. 1.6 1 Monitoring and evaluation plan created by	1.1 MoU signed by all parties 1.2 Project Manager employment contract signed 1.3 PMG meeting notes available online 1.4 PSG meeting notes available online. 1.5 Project webpage available for viewing online 1.6 Monitoring and evaluation plan available online 1.7 Final project report available online.	1.1 Project partners agree to sign the MoU 1.2 PM with the relevant skills is able to be recruited. 1.3 and 1.4 PMG and PSG can meet without delays 1.5 PM will be trained on how to use and update the project webpage on SAERI website 1.6 The monitoring and evaluation plan has been written and implemented 1.7 PM to be on time with his/her tasks and able to write the final report

	October2018 1.7 Final project report produced by July 2020		

Output 2: 2. WP1: National Soil Map, peatland distribution and soil erosion extent/risk (scale 1:250,000)	2.1 Meeting in the UK (Cambridge – British Antarctic Survey - BAS) amongst overseas partners (UMAG via Skype) to define the strategy for the soil survey by May 2018 2.2 Desk study for assessing satellite imagery availability and identification of digital soil mapping methods by June 2018 2.3 Remote Sensing analyses and first soil map by October 2018 to be used by surveyors 2.4 Iteration of Remote Sensing analyses using data from soil campaign to originate new soil, peatlands and soil erosion (extent/risk) maps by April 2019	2.1 Meeting notes and survey strategy design available online. Data Management Plan initialised 2.2 Desk study report available online 2.3 Processed satellite imagery available online through the project specific webGIS service and by November 2018. Soil map given to the surveyors for ground truthing. 2.4 First validated soil, peatlands and erosion extent/risk maps available to other project participants and stakeholders by April 2019. Remote sensing interpretation methods documented and shared amongst project	2.1 All overseas project partners available for the meeting and BAS agreeing to provide a meeting room 2.2 Availability of cloud-free Sentinel 2 imagery across multiple years (from 2015) and for more than one season. If Sentinel 2 is not available, then Landsat will be the substitute for analyses 2.3 Images will have been processed and the model shown to be successful 2.4 Soil surveyors were able to provide ground truthing points and soil descriptions for remote sensing analyses. Digital Soil model is proving good. 2.5 There is good

	2.5 Soil survey methodology ready by October 2018 2.6 Soil surveyor is identified and will participate to the meeting in Cambridge (2.1) to plan the soil campaign methodology 2.7 Soil Campaign to be conducted in November 2018, February and November 2019. 2.8 Desk-based analysis of soil data collected in the Falklands following each soil sampling campaign 2.9 Remote sensing analyses consisting in iterations of soil/peatlands and erosion risk maps on the basis of the data coming from soil campaigns and laboratory analyses (completion the first quarter of year	partners to allow evaluation of derived maps 2.5 Publication online of the soil survey methodology 2.6 Soil surveyor contract of employment 2.7 Brief soil survey reports generated at the end of each soil campaign 2.8 Soil type descriptions available as GIS layer and tables (excel or comma delimited files) at the beginning of each new campaign 2.9 Maps of soil, peatlands and erosion extent/risk published online through the webGIS service and stored on the Falkland Islands data centre repository. All datasets will have been documented with standard metadata form and metadata logged in	collaboration between project partners and the PM is already in post 2.6 Experienced soil surveyor is available to take the job 2.7. Good weather to allow fieldwork during the various soil campaigns in order to provide ground truthing points for remote sensing analyses. It is assumed that there will not be problems with the logistics (e.g. flight disruptions and lack of accommodations in rural locations) All soil surveyors will be fit and healthy enough to carry out fieldwork for the planned periods 2.8 At the end of each soil campaign the majority of the data are already in

	3)	IMS-GIS data centre metadata catalogue online by July2020	digital form to allow time for soil descriptions between consecutive campaigns 2.9 Soil survey campaigns feed the model used by the remote sensing analyses with useful data. No assumption on the data centre as it exists already and provides the type of services needed tor publishing data.

Output 3: 3.WP2: Assessment of the sustainability of soil management practices and of soils physical, chemical and microbiological properties	3.1 Chemical analyses of soil sampled during the fieldwork (November 2018, February and November 2019) 3.2 DNA sequencing of soil samples collected at locations chosen by stakeholders and agricultural advisors 3.3 Map the results against other data collected or used by the project to identify patterns in the soil physical, chemical and biological properties across the islands 3.4 Identify a sustainable and long term manageable monitoring programme for assessing soil health by the end of July 2020	3.1 Report on methods, types and results from the chemical properties are analysed and published on a pdf and csv file. 3.2 Report on methods, and results from DNA sequencing analyses will be available as pdf file and on a csv file 3.3 Interpretation of the results (physical, chemical and biological) for each sampled location and extrapolation to the entire islands. Data to be added to the interactive soil properties and erosion risk tool and scientific evaluation published in open access international journal. 3.4 Documentation of approaches used for sample analysis, for	3.1 Soil samples are collected according to standards and received by the laboratory technician in a well preserved way. 3.2 No delays in shipping equipment for laboratory analyses 3.3 The laboratory tests were successful and the interactive tool is ready 3.4 The results obtained from the laboratory analyses will be available for publication

		comparison/standardisation and to facilitate project reporting and publication development	

Output 4: 4. WP3: Development of soil spatial database and interactive tool for interpreting and describing soils properties and health, displaying soil erosion risk on selected farms. The tool supports stakeholders' actions for mitigating with climate change effects	4.1 Meeting with stakeholders to present examples of designs of the online data system tool and obtain feedback on which format works better. Updates on the development of the tool will be provided at each PSG meeting. 4.2 Data sharing procedures to allow access to the data for all project participants. By June 2018 4.3 SAERI server to be set up in order to store database in PostgreSQL and datasets collected throughout the project by June 2018 4.4 Online interactive soil database on soil properties and erosion risk by July 2020 4.5 Database of the national soils,	4.1 Summary document from meeting with stakeholders to decide how the interactive tool should look and what it should contain in order to be useful and usable. To be updated after every meeting (at least every 6 months) by reporting on interactions with stakeholders throughout online tool development, to provide evidence of feedback and tool design adjustments 4.2 Report on data sharing agreement published online 4.3 Ensure that the server in SAERI has prepared for the new database. 4.4 Delivery of the tool and publication online. Additionally, a step by step guide on how	4.1 All stakeholders are available for the meeting and show interest in helping in outlining and testing the interactive tool 4.2 and 4.3 no assumption as the data manager has been working for the last 4 years at SAERI using the server and creating databases. 4.4 Free or low charge internet connection for the interactive soil properties and erosion risk tool (to be negotiated with SURE, the local telecommunication provider) 4.5 the server used for storing the database is accessible to authorised users (stakeholders and project partners) 4.6 the webGIS service will be ready by the

	peatlands and eroded areas and erosion risk in PostgreSQL (open source database engine) accessible by stakeholders and project partners. Continuous work from November 2018 until July 2020 4.6 Preparation and publication of webGIS services to make results available to the wider public by July 2020	the interactive tool works and instruction on its long term maintenance will be provided. 4.5 Data on national soils/peatland distribution, carbon storage, soil erosion extent and risk layers which populate the database are made available to the stakeholders and project partners 4.6 Publication of the maps through project specific webGIS service	last quarter of year 2

Output 5: 5.WP4: Knowledge transfer workshops and training courses	5.1 At maximum of 8 workshops (split into 4 in West and 4 in East Falkland) will be run on farms and in Stanley to landowners and to the general public to describe and explain in simple words the use of the tools employed throughout the project and to ensure the people are informed and can appreciate their practical applications to land management. The workshops will be running in the last quarter of year 2 5.2 At least two local stakeholders trained in fieldwork to learn what the soil survey is about and how a better knowledge of the soils and their properties helps in	5.1 Workshop reports will be available online and the workshop will be followed up by articles in the local newspaper 5.2 Stakeholder feedback forms completed. 5.3: Training course material available online; training participant feedback forms completed.	5.1, 5.2, 5.3, 5.4 Interest from stakeholders, above all landowners 5.1 Venues for hosting the workshops in rural areas will be available and people can travel to them without disruptions 5.2 Local stakeholders' available time and scheduled fieldwork coincide 5.3 Overseas project partners can reach the Falklands without travel disruptions and local participants are on the islands and available for training

	managing this natural resource in relation to farm business and conservation plans. Monthly fieldwork campaigns will occur 3 times in spring and summer 2018/2019 and in spring 2019 5.3 A training course to be delivered by micro-biology specialists to local scientists, interested stakeholders and to the DoA laboratory technician. The training course will take place indicatively in the last quarter of year 2		

Do you require more Output fields?
It is advised to have less than 6 Outputs since this level of detail can be provided at the Activity level.

> No

Activities
Each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1. Each new activity should start on a new line.

Output 1 - Project Management Structure

1.1 Write the MoU, circulate it among the project partners and have it signed
1.2 Prepare the contract for the PM role, advertise the job, recruit and have the contract signed by August 2018
1.3 Arrange quarterly PMG meetings
1.4 Arrange PSG meetings every six months
1.5 Set up the project webpage at the main SAERI website and keep it updated once every three months
1.6 Write the monitoring and evaluation plan by October 2018
1.7 Write and submit the final project report by July 2020 and prepare scientific papers by July 2020

Output 2 - Work Package 1

2.1 Recruit the soil surveyor and define the date and meet in Cambridge to draw an action plan for the desk-based data analyses, the soil campaign and laboratory works (in London and Falklands)
2.2 Acquire necessary field equipment and ship it to the Falklands if not bought on the islands
2.3 Plan soil campaign in the Falkland Islands and liaise with SAERI logistic officer for the preparation of the fieldwork on farms and in Stanley
2.4 Identify suitable satellite imagery (Sentinel 2) across years and seasons and source other datasets and data sources (Google Earth) which can contribute to the identification of soils, peatlands and areas affected by erosion. Investigate and decide which Digital Soil Mapping methods are the most appropriate for the Falkland Islands. Prepare a report
2.5 Carry out the pre-processing and processing of the identified satellite imagery and incorporate the other ancillary data. Issue the first soil map by the end of October 2018 as it will be used by surveyors in the soil campaign
2.6 Prepare new versions of the maps (soil/peatlands/erosion) on the basis of the ground truthed points collected by the soil surveyors. Make the maps available to the stakeholders by end of April 2019
2.7 Write the soil survey methodology to be followed during the soil campaign and make it available online
2.8 Carry out the soil campaign in the Falkland Islands and write a short fieldwork report at the end of each campaign
2.9 Process and analyse the data collected during the soil campaign and make them available to the other project partners. The activity will take place between each campaign.
2.10 Combine ancillary data (elevation, habitat and weather) and soil physical properties to estimate erosion risk and generate a map
2.11 Remote sensing analyses continue to be updated and iterated in order to include data coming from then soil campaign. The final maps of soil, peatlands, erosion extent and risk are delivered to the stakeholders by June 2020

Output 3 - Work Package 2

3.1 Check which equipment is needed to carry out laboratory analyses in the

Falklands and subsequently buy and ship what is missing
3.2 Identify with stakeholders, soil surveyors and agricultural advisors how many soil samples should be collected for DNA sequencing and from which areas
3.3 Adopt current accepted metrics and standards to measure soil health and DNA sequencing. Write a report and make it available online
3.4 Define with the soil surveyors and the laboratory technician the standard methods of soil collection and storage. If necessary run a training course
3.5 Assess the sustainability of soil management practices by sequencing analysis for soil microorganisms carried out at the Life Sciences Department, NHM, London
3.6 Provide interpretation of the results from analyses so that they can be explained in a way that is accessible to local stakeholders and all users of the interpretative soil database tool
3.7 Carry out the chemical analyses of soils sampled during the campaigns. The lab analyses will take place in both Falklands and the UK (NHM)
3.8 Identify and document which laboratory analyses approaches, used throughout the project, can support a long term monitoring program for quantifying chemical and biological soil properties and for assessing soil health
3.9 Pull out the main outcomes from the laboratory analyses (chemical and biological) and plan for publishing them on a scientific paper

Output 4 - Work package 3

4.1 Liaise with other project participant to ensure that the data management plan is adopted, filled in and kept up-to-date. Include the data management plan to the report to be submitted to the funding organisation
4.2 Talk to project partners to understand and define how they need to access and share the data collected and analysed and in which form. Write the methodology and make it available online.
4.3 Design the spatial database for the national soil map and the interpretative tool on soil properties, carbon storage and erosion risk in PostgreSQL and link it to QGIS and a to the project based webGIS service
4.4 Check that data are documented, open access, quality checked, stored and backed-up in the secure server at the local data centre in the Falkland Islands and on a cloud server for the overseas project partners
4.5 Engage the stakeholders to identify which information requirements are needed for the online and freely available interpretative soil and erosion risk tool. Write a short report to describe the outcomes of the stakeholders engagement
4.6 Use stakeholders' feedbacks to ensure that the interpretative tool can be simply accessed and understandable by them and easily managed by SAERI data manager. Write a short report to describe the various steps made to generate the interactive tool
4.7 Test and assess the interactive tool on farmer attitude and economic performance of the farms. Use the results in a feedback loop to modify the tool and make it more efficient and valuable and more able to be adopted into policy decisions
4.8 Publish the final maps online through webGIS service
4.9 Publish the interactive tool online at the Department of Agriculture webpage

Output 5 - Work Package 4

5.1 Run 2 workshops on farms and in Stanley (one each) on soil health and training

agricultural advisors and habitat restoration officer on how to collect soil samples for future chemical/biological analyses and for soil properties monitoring
5.2 Prepare 2 workshops on farms and in Stanley (one each) on what the Earth Observation techniques can tell about soils, erosion and peatlands.
5.3 Deliver 2 workshops on farms and in Stanley on how to use the interactive tool, how to keep it up-to-date and how to monitor soil health/erosion/greenhouse gases emission in the long term
5.4 Deliver 2 workshops on farms and in Stanley (one each) to describe the soils of the Falklands and how the soil campaign took place
5.5 Present the results at the annual winter meeting for rural landowners - Farmers' Week
5.6 Promote the project by allowing volunteers, including interested high school students, to join the PM and the project partners on fieldwork and laboratory analyses (in the Falklands)
5.7 Promote the Falkland Islands soil work to other UKOTs

11. Implementation Timetable

Q26. Provide a project implementation timetable that shows the key milestones in project activities

Please complete the Excel spreadsheet linked below to describe the intended workplan for your project.
Darwin Plus Implementation Timetable XLS
Please add columns to reflect the length of your project.
For each activity (add/remove rows as appropriate) indicate the number of months it will last, and fill/shade only the quarters in which an activity will be carried out.

_____	

12. Monitoring and Evaluation

Q27. Monitoring and evaluation (M&E) plan

Describe, referring to the Indicators above, how the progress of the project will be monitored and evaluated, making reference to who is responsible for the project's M&E.
Darwin Initiative projects are expected to be adaptive and you should detail how the monitoring and evaluation will feed into the delivery of the project including its management. M&E is expected to be built into the project and not an 'add' on. It is as important to measure for negative impacts as it is for positive impact.

The project will be implemented as a partnership among SAERI, FIG, the James Hutton Institute, the Natural History Museum, the UK Falkland Islands Trust, the UK Centre for Ecology and Hydrology, independent surveyors and the University of Magallanes. These organisations and the leader of the soil surveyor team will be members of the Project Management Group (PMG) whose main commitment and task is to monitor and steer the project.

The PMG will have equal membership of science focussed organisations, which will audit the scientific integrity of the work and resource/climate change management oriented organisations, which will ensure that local needs and aims are met.

A Memorandum of Understanding (MoU) between all of the project partners will be established at the start of the project and will articulate the roles and responsibilities of all parties in the delivery of the project

Additionally, as part of the Project management Structure, in the first three months of his/her appointment, the PM will prepare a detailed Monitoring and Evaluation (M&E) plan in which a set of evaluation questions will used to assess the effectiveness of the project's outcomes as practical and useful support tools for managing climate change effects in the Falkland Islands. Specific monitoring questions will be used to answer the evaluation questions and will be checked through indicators, data sources/ method to obtain the data, and the responsibilities for data collection (as mentioned in the MoU).

The M&E plan will be then submitted to the PMG for sign off. Oversight of the delivery of the M&E plan will be the responsibility of the PM, signing off of the implementation of the M&E plan will be the responsibility of the PMG.

The PM will present a quarterly report on progress against deliverables, M&E and a quarterly financial report to the PMG which will check that the project delivers its outputs on time, within the proposed budget, and that the quality of the outputs is high standard. A component of the M&E budget allocation will be used to bring in specialist, independent review if identified as required by the PMG during and/or at the end of the project process.

A Project Stakeholder Group (PSG) will also be created as a formal approach to

include the stakeholders on the Falklands. The six monthly meetings of this group will also provide an opportunity for a wider and more mixed audience to review and comment on the outputs of the project.

Summary reports of the project's outcomes will also be provided to the FIG Environmental Committee through the FIG Environment and Planning department and to the Darwin Initiative as required by the donors reporting requirements.

An online project management and file-sharing system will be established to ensure all partners have access to relevant documents, targets, etc. irrespective of geographic location.

Number of days planned for M&E	25
Total project budget for M&E (this may include Staff and Travel and Subsistence Costs)	£22,500.00
Percentage of total project budget set aside for M&E (%)	8.47

13. Certification

Q28. Certification

On behalf of the

company

of

South Atlantic Environmental Research Institute

I apply for a grant of

£265,613.00

in respect of all expenditure to be incurred during the lifetime of this project based on the activities and dates specified in the above application.

I certify that, to the best of our knowledge and belief, the statements made by us in this application are true and the information provided is correct. I am aware that this application form will form the basis of the project schedule should this application be successful.
(*This form should be signed by an individual authorised by the applicant institution to submit applications and sign contracts on their behalf.)*

- I have uploaded CVs for project principals and letters of support.
- I have uploaded our most recent signed audited/independently verified accounts and annual report (if appropriate).

☑

Name	Teresa Bowers
Position in the organisation	Deputy Director - Business and Programmes

Signature (please upload e-signature)	_____
Date	04/10/2017

If this section is incomplete the entire application will be rejected.

14. Submission Checklist

Checklist for submission

	Check
Have you read the Guidance documents, including the 'Guidance Notes for Applicants' and 'Finance Guidance'?	☑
Have you read, and can you meet, the current Terms and Conditions for this fund?	☑
Have you provided actual start and end dates for your project?	☑
Have you provided your budget based on UK government financial years i.e. 1 April – 31 March and in GBP?	☑
Have you checked that your budget is complete, correctly adds up and that you have included the correct final total at Q7?	☑
Has your application been signed by a suitably authorised individual?	☑
Have you uploaded a 1 page CV for all the Project Staff (listed at Q11) on this project, including the Project Leader?	☑
Have you included a letter of support from the applicant organisation, main partner(s) organisations and the relevant OT Government?	☑
Have you uploaded a signed copy of the last 2 years annual report and accounts for the lead organisation, or provided an explanation if not?	☑
Have you checked the Darwin Plus website to ensure there are no late updates?	☑