

Darwin Plus: Overseas Territories Environment and Climate Fund Annual Report

Important note *To be completed with reference to the Reporting Guidance Notes for Project Leaders:
it is expected that this report will be about 10 pages in length, excluding annexes*

Submission Deadline: 30 April

Darwin Plus Project Information

Project Ref Number	DPLUS025
Project Title	Conservation of the spiky yellow woodlouse and black cabbage tree woodland on St Helena
Territory(ies)	St Helena
Contract Holder Institution	St Helena National Trust
Partner Institutions	Environmental Management Division - St Helena Government (EMD), St Helena Nature Conservation Group (SNCG), Zoological Society of London (ZSL), Royal Society for the Protection of Birds (RSPB)
Grant Value	£37,090
Start/end date of project	Start: 01/04/14 End: 31/03/17
Reporting period (e.g., Apr 2015-Mar 2016) and number (e.g., AR 1,2)	AR 2
Project Leader	Jeremy Harris
Project website	http://www.nationaltrust.org.sh/shnt-conservation-programmes/natural-heritage/spiky-yellow-woodlouse/
Report author and date	Rebecca Cairns-Wicks

1. Project Overview

Black cabbage tree woodland is a unique cloud forest habitat now almost extinct on St Helena. It's dark, humid conditions support a unique community of highly threatened species. Habitat fragmentation has reduced the stronghold at High Peak to scattered vestiges, the largest remaining of which, known as 'The Dell', is now no more than 250 m² and is further threatened by strong winds. The threat is particularly critical because The Dell is home to the largest sub-population of St Helena's flagship invertebrate, the spiky yellow woodlouse, SYW, (*Pseudolaureolaatlantica*)(Appendix Doc 1 Status Review). Urgent measures are needed to secure the future of this ecosystem.

The aim of the project is to initiate a long-term recovery programme for black cabbage tree woodland, focusing first on saving the fragments at High Peak. Following the construction of carefully-prepared wind shelters, 0.1 Ha of pasture will be re-forested (see Appendix Doc 2: Change Request Table), acting as a habitat corridor to link The Dell with other isolated black cabbage trees (*Melanodrendronintegrifolium*) and areas of tree fern thicket. Building on research carried out under a previous project (FFI), this current project and the survey work undertaken by Lourens Malan (DPLUS Securing St Helena's rare Cloud Forest trees and

associated invertebrates) into the ecology of the spiky yellow woodlouse, the project will also lead on activities identified in the SYW Action Plan (2016-2021) timetabled for 2016-2017 to support the long term conservation of the Spiky Yellow Woodlouse. Activities include: site character assessments and establish monitoring programmes to gather relevant species and microhabitat attributes at the Dell and at other accessible sub-population sites; production of a risk assessment (including Population Viability Analysis) for ex-situ breeding and population genetic research by securing expert opinions and examples and collating and analysing research data and producing a report on conservation needs of the SYW including recommendations into options to study the impacts of invasive animals. In consultation with key local stakeholders, a habitat action plan for the SYW at the Dell with recommendations for the management of the other sub-populations will be developed as a basis for long-term continuation of the efforts.

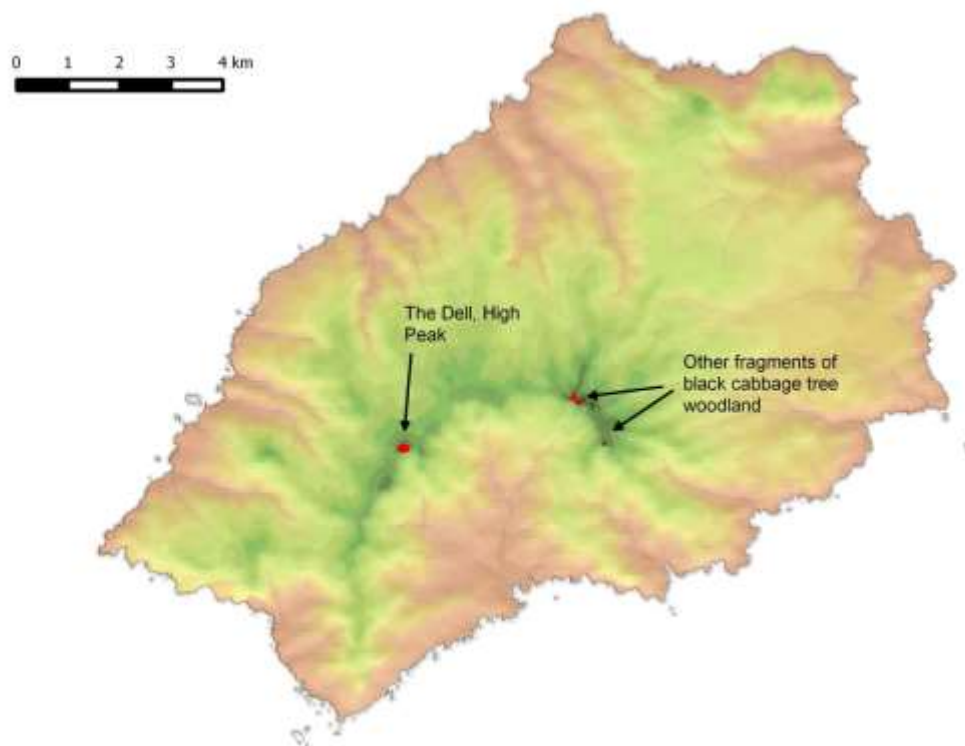


Figure 1. Location of study site on St Helena and remaining distribution of black cabbage tree woodland

2. Project Progress

2.1 Progress in carrying out project activities

The project was originally intended to run over a continuous two year time-scale, finishing on 31st March 2016. The total budget was £37,090. The timeline and budget for the project were adjusted in November 2014 and only basic project activities were planned to be carried out between December 2014 to December 2015 whilst Phil Lambdon the Project Manager was in Oman and extending the project end date to March 2017 (Change request 2; November 2014).

The Project Manager resigned in January 2016. This was an identified risk. In attempting to address that risk, Phil had made a personal commitment to return regardless, but without the financial means to do this, this simply was not feasible or practical to enforce.

Consequently we undertook an assessment of project priorities through a workshop based approach and the development of an agreed action plan involving all relevant stakeholders. The workshop took place concurrently on St Helena and in the UK on the 22nd January 2016 hosted by SHNT (St Helena) and RSPB and Buglife (UK).

The workshop outcome was the SYW Action Plan (2016 – 2021) working document, overviewed by the IUCN SSC Invertebrate Conservation Sub-Committee (Appendix Doc 3). A change request (31/03/16) set out changes to the project outputs to align them with the activities identified in the SYW Action Plan (2016 – 2021) (Appendix Doc 2: change request table).

Significant stakeholder engagement and support has been received which enabled us to offer a full time post for the Project Manager, overcoming the difficulties previously experienced with the part time post and provide capital equipment without affecting the overall project budget from Darwin. RSPB has made £5,500 available to support the salary of the Project Manager and a further £4,385.80 of staff time in supporting the project, shipping of climate monitoring equipment and travel costs (see Appendix Doc 4). ZSL has donated climate monitoring equipment valued at £6,985.20 (Appendix Doc 5). Other UK based stakeholders have made a significant contribution of their time to provide technical advice to the Phil Lambdon and to attend and contribute expertise to the SYW workshop. We are very grateful to Sarah Havery, RSPB and Vicky Kindemba, Buglife who co-ordinated and led the UK based workshop and to Paul Pearce-Kelly, ZSL, Tim Woodfine, Marwell Zoo, Mark Bushnell, Bristol Zoo, Mark Stanley Price IUCN SSC Invertebrate Conservation Sub-Committee Invertebrate, Roger Key (Independent Consultant) and Alan Grey (Centre for Ecology and Hydrology) who provided advice and support to Phil with regards the proposed captive breeding programme and made significant contributions to the workshop. Sarah Havery, RSPB and Vicky Kindemba, Buglife, also supported the recruitment process for the new Project Manager, providing technical input into the TORs and hosting the UK based interviews (held at the RSPB headquarters, Sandy)

An international recruitment process began in March to recruit the new SYW Project Manager (Appendix Doc 6& 7: job description and advert). Nineteen applications were received from a strong field of candidates and after a rigorous recruitment process the post was offered to Amy-Jayne Dutton in May. The new Project Manager started work on the 23rd May 2016 and will arrive in St Helena on the 28th June.

Between December 2014 and December 2015 only basic field based project activities took place to keep the project 'ticking-over' and these have continued through this reporting year (see Appendix Doc 8: work plan and Doc 9: work record). The Environmental Management Division grew some plants for the habitat restoration as part of their on-going work programme (see table 1 below), provided support for planting and watering (in May following planting in April) and spraying of kikuyu. Rebecca Cairns-Wicks provided oversight to the two man team who carried out routine site maintenance on one or two days every 2-4 weeks to maintain the habitat restoration site at The Dell in favourable condition and plant endemics as and when available.

During 2015, the current Darwin Plus funded "Securing St Helena's rare Cloud forest trees & associated invertebrates" project led by the St Helena Government Environment and Natural Resources Division (ENRD), has been surveying the endemic hardwood trees and has found SYW in new locations for this species over the southern side of Diana's Peak. There are currently twelve known sites supporting SYW, nine of which are in Diana's Peak and three in High Peak.

In response to the new data we have been working with our colleagues at ENRD, RSPB and Buglife to re-assess project priorities through a workshop based approach and the development of an agreed action plan involving all relevant stakeholders. The workshop outcome was the SYW Action Plan (2016 – 2021) working document, overviewed by the IUCN SSC Invertebrate Conservation Sub-Committee. The SYW Action Plan (2016-2021) sets out the agreed actions by all stakeholders to achieve the Vision: The Central Peaks cloud forest ecosystem is a unique habitat whose biodiversity value will be restored and expanded to create high quality well-connected cloud forest, such that it will sustainably support a viable population of the spiky yellow woodlouse *Pseudolaureola atlantica*, which are found only in this ecosystem. The species will be a flagship for the conservation of the Central Peaks and all invertebrates on St Helena.

Output 1. 1,000 square metres of new black cabbage tree woodland created around the Dell.

Output 1.1 Clearance of at least 0.05 ha (500 sq metres) of pasture grasses outside the Dell regular weeding.

The area within the new windbreak and within and around the border of the two areas of rebony (*Trochetiopsis x benjaminii*, a man-made hybrid of two endemic species not native to the area) have been regularly weeded to prevent the re-growth of pasture grasses, predominantly kikuyu (*Pennisetum clandestinum*) and other invasive weeds (including whiteweed, Mexican creeper, blue weed, bull grass). Kikuyu is incredibly vigorous in growth particularly in the summer months when it has both warmth and water, it quickly overpowers vegetation, producing long stolons that can 'climb' through the low canopy of hybrids.

Three small areas have been sprayed as a trial to kill of kikuyu by Neil Henry of the Environmental Management Division (EMD) of ENRD. Spraying the kikuyu and leaving the dead matt of grass on top of the ground to rot, acting as a mulch has been successfully used as a technique to remove the kikuyu without reducing soil moisture or structure and successfully establish new plantings, reducing weed load as a restoration technique by the Darwin Initiative Community Forests Project (20-005) at the Ginger Patch.

Output 1.2 Creation of windbreaks to protect plantings.

The wind-breaks have now been in place for over a year - constructed across the front of the Dell, providing protection for the area under restoration. (Appendix Doc 10)

Output 1.3 Seed collection and rearing of at least 5,000 appropriate endemic ground cover plants and 600 endemic trees (assuming 40% survival)

We are trialling new techniques to increase and speed up the production of endemic plants for the project. Black cabbage seedlings (*Melanodendrum integrifolium*) take over a year from germination to be large enough for planting. We have been working with the Terrestrial Conservation officer, Mike Jervis and the Nursery Officer, Vanessa Thomas, at EMD and their teams to harvest seedlings of this species and endemic ferns from the wild and pot them up at the Scotland nursery. The first batch (178 Black cabbage and ferns c.200) didn't do well, in part due to a problem with the soil (which had too high a percentage of fish compost) and the conditions (not humid enough after transplanting) and we will be trying again working with different potting soil and based at the Peaks nursery where we hope ambient conditions will be more conducive to establishment.

Peak grass will be produced in a similar way, by division of established plants.

Output 1.4 Dependent on the success of the windbreaks, construction of further sections to protect plantings in open areas within the site

It is possible that additional windbreaks could be constructed to extend the amount of protection in parallel with the control in pasture grasses and expansion of the restoration planting and this will be reviewed with the new PM when she arrives.

Output 1.5 Planting and performance monitoring of established cloud forest species.

During the reporting year c. 471 endemic trees and flowering plants have been planted at the Dell as follows:

Species /planted by	Black cabbage	Dogwood	Dwarf jellico	Peak grass
EMD	20	30	100	
Colin & Donald	88	60	90	83

All the plants have been produced and grown at the EMD nursery with the help and support of EMD Nursery Officer Vanessa Thomas and Nursery charge hand Daryl Leo. .

In the first year of the project 620 endemics were planted (300 dwarf Jellico, 200 peak grass and 120 black cabbages).

Plantings amongst the sheltered by plantations of rebony continues to provide favourable conditions for good development of dense ground cover and good tree establishment.

Output 2. *Assessment of effectiveness of restoration techniques in the re-establishment of cloud forest on open ground*

No progress has been made on these outputs over the reporting year.

Output 2.1 Design of protocols for regular monitoring of the micro-climate

Output 2.2 Undertake planned monitoring protocols

Output 2.3 Using data in conjunction with plant monitoring results, analyse and compile report on performance of the shade canopy as a cloud forest restoration tool

Output 3. *Assessment of the number and location of existing SYW sub-populations, habitat specifications and spatial extent*

The outputs 3.1-3.4 will be undertaken in the year April 2016-March 2017

Output 3.1. Define the key variables to be monitored at SYW sites and establish monitoring methodology. Make detailed observations of wild individual behaviour

Output 3.2 Obtain data on micro-habitat specifications (plant community structure, humidity, light, temperature, mist levels etc.) of each sub-population

Output 3.3 Monitor and complete baseline assessment of the health and value of the habitat at each sub-population (site character assessment)

Output 3.4

Obtain information on analogue species (if any)

Define a specimen collection methodology, protocol and effective preservation

Output 4 *Complete a risk analysis of establishing an ex situ population including an evidence base of analysed research data, examples and expert opinions*

Output 4.1 As part of the monitoring methodology at SYW sites, conduct observations on feeding behaviour

Output 4.2 Compile findings into a report or scientific paper

Output 5. *Biodiversity inventory and Habitat Action Plan produced for the Dell*

Output 5. 1 Conduct surveys of plant and invertebrate species within the Dell

The plant survey was conducted before the official start of the project, and the data were also used to inform the Endemic Plant Survey of St Helena under another Darwin Plus project (DPLUS008). No further survey work has been conducted yet.

Output 5.2 Compile species inventory and Habitat Action Plan to be disseminated to stakeholders. Agree with stakeholders on best approach to incorporate findings into policy.

An updated project workplan and timeline will be produced by the new Project Manager within six weeks of their arrival on St Helena.

2.2 Project support to environmental and/or climate outcomes in the UKOT's

Despite the break in progress, the project has already initiated a conservation programme for St Helena's most threatened habitat. Work to buffer the last remaining 'extensive' fragment of black cabbage tree woodland is now under way, and the trees established thus far will already prove to be vital to ensure the continuity of the habitat, provided they survive to maturity. Moreover, by engaging with local stakeholders, we have raised the profile of black cabbage tree woodland and SYW so that it has now become a wider consideration in the island's conservation planning. Data acquired during the work have also fed in to revised red-list assessments of the island's vascular plants and bryophytes, which will contribute to the longer term basis for action. The SYW was classified as Critically Endangered (under criteria B1ab(i,ii,iii,iv,v); B2(i,ii,iii,iv,v); C2a(ii); (Lambdon, P.W. 2015). *Pseudolaureola atlantica*. The IUCN Red List of Threatened Species 2015: e.T67368866A67368879. <http://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T67368866A67368879.en>. Downloaded on 05 January 2016.

By strengthening partnerships with RSPB, ZSL, and developing relationships with Marwell Wildlife Park and Bristol Zoo, the island will also hopefully benefit from improved logistical support and knowledge sharing.

2.3 Progress towards project outputs

With the support of our stakeholders, the SYW Action Plan (2016-2021) provides us with a strong mandate and clear goals to move forward with the delivery of the final year of this project. Priority agreed actions set out within the Action Plan to be taken forward in the first year have been adopted by this project. The appointment of a new Project Manager who starts work on the 23rd May 2016 gives us confidence that the project can be brought back on track and deliver the outputs:

2.4 Progress towards the project outcome

There is no reason to suspect that any of the project outcomes will not be fulfilled:

Habitat restoration work will (in subsequent years) increase the area and connectivity of the surviving black cabbage tree woodland, stabilizing the existing fragment and creating conditions for rare specialist inhabitants to expand.

The habitat restoration work is currently progressing. We have a large number of plants to produce in the final year but this is still feasible and the area cleared of invasive weeds is also on schedule.

A Habitat Management Plan will provide guidance for efforts to be continued into the future.

The Habitat Management Plan will not be released for some time.

Spiky yellow woodlouse numbers will be increased ex situ, saving them from extinction and providing potential for reintroduction at a future date.

The development of a captive breeding facility will not take place within the timeframe of this project instead further research will be carried out in order to produce a risk assessment and Population Viability Analysis in line with the SYW Action Plan. This will take place in 2016-2017.

Lessons learned (e.g. the value of the wind break technique) will be well documented so that others can benefit from our experiences.

Data collection is proceeding in parallel with the habitat restoration work. Some of the knowledge gained regarding conservation of black cabbage tree woodland has been disseminated in red list accounts for St Helena's endemic and threatened native plant species.

2.5 Monitoring of risks

Risks identified in the original project proposal were as follows:

1. Core personnel leaving

The project has faced a considerable challenge in the 2nd year due to continued staffing problems. By acting swiftly to re-consider project priorities, secure a change request and secure a new Project Manager with the valuable help and cooperation from RSPB and the Darwin Plus management, it is hoped that this will not have an impact on the ultimate delivery.

2. Failure of breeding in captive woodlice

The risks currently remain the same but will not be considered within the project. Instead a re-assessment of priorities has been carried out and agreed that further information is needed to inform the decision to progress the captive breeding programme and secure long term commitment for it. This reduces the risk to the project, but there remains a risk to the SYW if the research supports the decision to establish a captive breeding facility.

3. Infection of plants or woodlice in the captive facility by fungal or other pathogens

This risk is no longer applicable, however there is a risk of introducing or spreading potential pathogens and pests to SYW sub-populations through the field based activities of this project and the "Securing St Helena's rare Cloud Forest trees and associated invertebrates" and appropriate safety measures will be in place.

3. Project Stakeholders

There have been no particular challenges with any stakeholders, who have all contributed importantly to the project:

EMD have provided logistical help from the start. They have played a major role in almost exclusively growing plants for the project, and assisted with conveying these to the site and watering during the dry month of May following planting in April. They have also provided extra man power to help with planting and spraying during times when capacity was stretched.

RSPB have provided significant support during the year, they have been available for advice and support for the PM in the lead up to his return to St Helena and prior to his resignation in January, forging links with other institutes to share information on woodlouse ecology. RSPB provided support and advice on the budget and change request and drove the development of the SYW Strategy, co-ordinating with support from Buglife stakeholder engagement, preparing papers (ref) and producing the final document.

ZSL have participated extensively in discussions over logistics of managing a captive breeding effort for the spiky yellow woodlouse, and have helped establish further contacts with a network of experts. They participated in the SYW strategy workshop and have donated valuable climate monitoring equipment which will be installed by the project.

4. Monitoring and evaluation

As the project is relatively small, the monitoring was always envisaged to be fairly low-key and informal. Since progress was largely curtailed after the first six months, there has been less to report than would otherwise have been the case. Rebecca Cairns-Wicks circulated a brief monthly report on project progress to stakeholders (See Appendix Doc 11 & 12) and other interested parties on St Helena. Rebecca Cairns-Wicks was overseas on Medical in July to 24th August when she started full time work at the SHNT as Head of Operations and reporting in that format stopped. Various members of the local conservation network (St Helena Government and SHNT staff) have also visited the Dell to view progress. Between August 2015 and January 2016 the focus of attention was to get the PM back to St Helena and get the project back on track and involved considerable engagement and communication between the PM, RSPB and SHNT as well as advice sought from other stakeholders (Marwell Zoo, ZSL). The review of the status of the SYW (Appendix Doc 1) provided all stakeholders with a current assessment and evaluation of the experience gained from this project and DPLUS

Cloud forest & associated invertebrates project led by the St Helena Government Environment and Natural Resources Division (ENRD).

Slow progress has been made whilst the project has been effectively on-hold and only low key field based activities have taken place. Despite this progress has been made (Appendix Doc 10) in the establishment and aftercare of plantings and these will be quantifiable indicators of success in the final year of the project.

5. Lessons learnt

It was disappointing to have lost the PM despite having secured additional financial support from RSPB for salary costs. The need for major project restructuring in the face of information gained from the Cloud Forest trees and invertebrates project, the lack of SHG support for the captive breeding programme and confidence about the follow-on support for the project were contributory factors.

Phil Lambdon has made a considerable contribution to the conservation on St Helena having amassed invaluable experience through some key projects over the last five years (including South Atlantic Invasive Species Plant Survey for Ascension and St Helena; Guide book to the Flowering Plants of St Helena, Endemic Plants survey for the IUCN Red listing). Losing an experienced botanist and ecologist of his calibre was not only a loss for the project, but also for the island. We therefore worked hard to try and retain his services to the project. This perhaps delayed decision making and progress to re-start the project after the year's pause, but was unavoidable and it was important that we explored all options that would secure the successful delivery of the project.

A huge amount of goodwill, support and advice has been raised for the through the active engagement of RSPB and the co-ordinated efforts with SHNT and Buglife to host and produce an Action Plan for the SYW with local and international stakeholders. These efforts have built up a positive spirit of co-operation and collaboration between local and international stakeholders and together with the recruitment of a new Project Manager we hope to maintain the energy and commitments given to drive the project to a successful conclusion.

6. Actions taken in response to previous reviews (if applicable)

We have not yet received comments from previous reviews.

7. Other comments on progress not covered elsewhere

None

8. Sustainability

The project has had a high profile amongst the local conservation network and off-island stakeholders through their direct engagement in project activities both on St Helena and in the UK and by bringing all stakeholders together for the SYW Strategy Workshop and subsequent publication of the SYW Strategy (2016-2021). We will seek to capitalise upon the strong stakeholder interest in the SYW which has developed over the course of the last year and the momentum gained through the process to achieve this project and work with the strategy and stakeholders to lever support and funding to continue to invest in the long term conservation strategy.

The SYW was classified as Critically Endangered (under criteria B1ab(i,ii,iii,iv,v); B2(i,ii,iii,iv,v); C2a(ii); (Lambdon, P.W. 2015). *Pseudolaureolaatlantica*. The IUCN Red List of Threatened Species 2015: e.T67368866A67368879. <http://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T67368866A67368879.en>. Downloaded on 05 January 2016. It is hoped that the publication of red list accounts covering both the spiky yellow woodlouse and St Helena's threatened plant species, will continue to highlight the problems beyond St Helena.

Collaboration with St Helena's 'Community Forest' Darwin Project, which is also working in the High Peak area and with EMD on the Peaks, together with increasing realisation of the urgent plight of the island's cloud forest habitats, has strengthened the drive to secure long-term 'investment' in High Peak beyond the project's end. SHNT will work with EMD and RSPB to develop a BEST bid in 2016 for cloud forest habitat restoration to support key activities identified through this project, the Community Forests Project, Bugs on the Brink, and the Cloud Forest trees and associated endemic invertebrates projects.

9. Darwin Identity

The Darwin Initiative logo was included on the front cover of the SYW Strategy (2016-2021) confirming the involvement of the Darwin Initiative in this key conservation document.

A very high proportion of all conservation funding on St Helena now comes from Darwin and Darwin Plus projects. Within conservation circles, the importance of this is already well-embedded. Amongst the general public there is, unsurprisingly, less awareness. Although the name "Darwin" is regularly mentioned, communicating a more detailed message can only come in reasonably extensive pieces, and more will be delivered towards the end of project when there are substantial achievements to discuss.

10. Project Expenditure

Table 1 Project expenditure during the reporting period (1 April 2015 – 31 March 2016)

Project spend (indicative) in this financial year	2015/16 Grant (£)	2015/16 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs				See sections 2.5.1 and 5, along with change request for impact on staff and other costs Appendix Doc 13: budget
Consultancy costs	0			
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items				
Others (Please specify)				
TOTAL				

A restructuring of the project and budget has been agreed with Darwin (Change Request 3Appendix Doc 13: budget)

11. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes

I agree for the Darwin Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here)

