Addressing Climate Change by Promoting Low Carbon Climate Resilient Development in the UK Overseas Territories

Needs Assessment: Pitcairn Islands

Department for International Development

July 2012

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Content List

Background and Purpose

Introduction

This report forms one of a suite of 16 individual needs assessments of the UK Overseas Territories (UKOTs) produced as part of the process of developing a DFID/FCO led cross HMG programme design to address climate change by promoting low carbon climate resilient development in the UKOTs. The purpose of this assignment was to identify the scope and best way to deliver an appropriate climate change programme for all UK OTs and develop a business case for it (contract duration Feb – June 2012).

The purpose of the reports was to provide a rapid synthesis of information contained within available documentation and frame this in a way which: helped to establish a clear rationale for a generic framework forming one business case for the UK OTs but not allowing this to exclude targeted and selective action to meet specific needs. They were also designed to provide an evidence base for the later comparative analysis across OTs and subsequent prioritisation of different approaches for the business case, which was going to be designed later in the consultancy

It was agreed in May 2012 by the client and the consulting team that the contract was not fully deliverable as expressed in the original Terms of Reference. Details of the full programme of work and consultation is available in the project Inception Report (29th March 2012) and End of Contract Report (11th June 2012).

These reports now form a standalone output of the abbreviated consultancy.

The Reports

The original purpose of the reports still holds and the reader should recognise that the design and level of analysis in this report was set to be achievable within the time available (2 days of evidence gathering, research and writing against over 150 specific data points) and for the original purposes specified and no other. This report provides a general overview to facilitate future potential decision making and does not constitute a comprehensive nor in-depth analytical climate change report.

In a process facilitated by the UK Overseas Territories Association, data content in most reports has been reviewed by in-country stakeholders via a nominated point of contact, with feedback incorporated if appropriate. In the case of Pitcairn the report has been reviewed but capacity constraints on island have mitigated a full response.

The report is tailored to the data points required to complete a climate change vulnerability matrix (VAM) tool. The VAM is structured around an understanding of four main issues: the exposure of an OT to climate change (threat analysis); adaptation and resilience; low carbon development and UK exposure. Each issue contains a number of subsets and indicators.

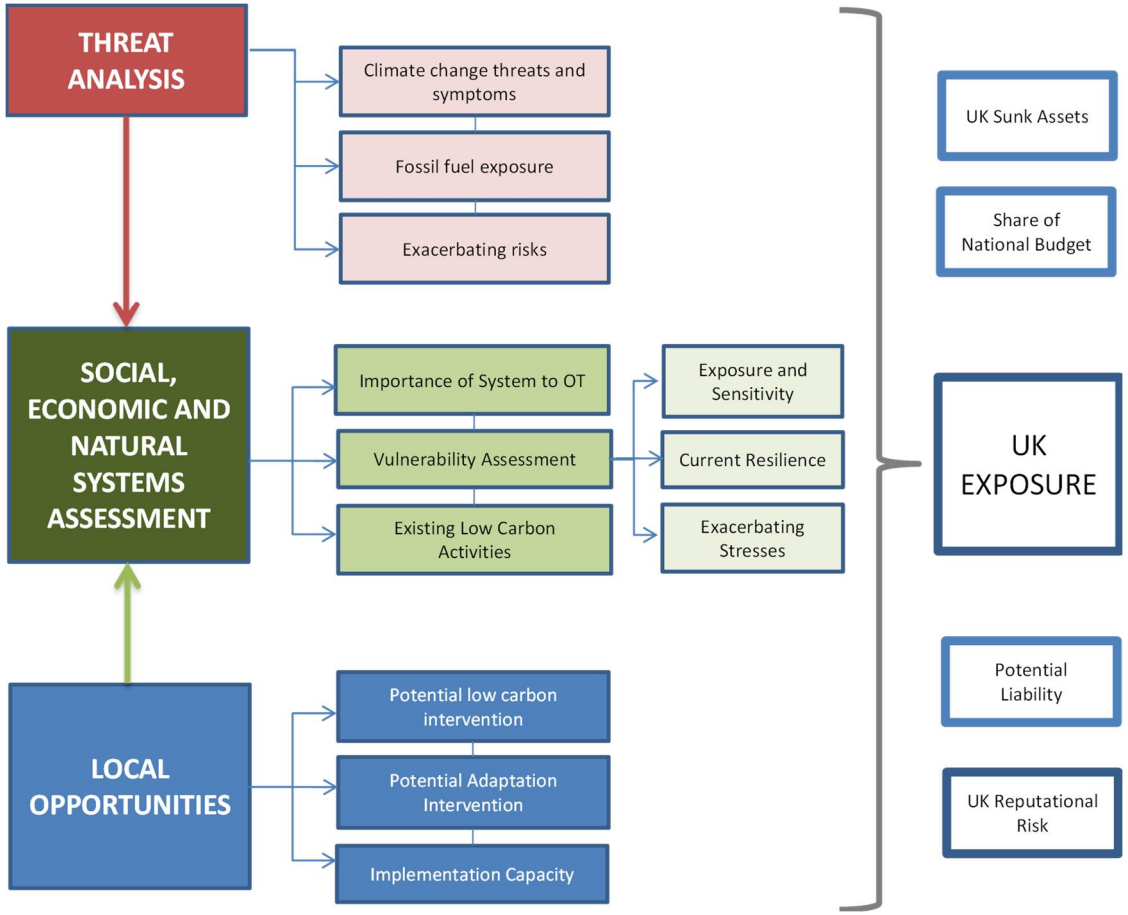
The completed VAM in this report uses a RAG colour coding system to provide a comparative analysis across all of the OTs to feed into the overall programme design. In most cases, data has been included specifically for the later appraisal and business case design process which would have followed.

Attached as annexes to this report are: an associated glossary of terms; a climate change VAM system definitions list; the VAM scoring system (which feeds into the coloured squares in the report text); the scored OT VAM; an initial programme approach table with preliminary sectoral and geographical analysis; and, if relevant, a greenhouse gas emission table.

Figure 1 overleaf illustrates how the data points in the VAM and in this report would have fed into the prioritisation process for a potential UKOT Climate Change Programme and DFID Business Case.

For a full understanding of how the data in this report and the VAM framework has been used, the reader is directed to the programme approaches which are elaborated in the programme Inception Report.

Figure 1: Prioritisation Process for the UKOT Climate Change Programme



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Needs Assessment: Pitcairn Islands

KEY INDICATORS	
Population:	Less than 50
GDP ($):	N.A.
Per Capita GDP ($):	3,385 (2005)
ODA Entitled:	No
UK Annual Budget Support:	More than £1.2 million per year
Value of UK Sunk Assets:	More than £10 million
Key Economic Sectors:	Sale of handicrafts and postage stamps and .PN domain names. Main economy is barter

Threat Exposure Analysis

Climate Change Exposure

The Pitcairn Islands comprise a group of four small, varied South Pacific islands which range from Pitcairn itself (high and of volcanic origin and 4.5km^2) to Henderson Island - a 37km^2 raised coral atoll and the largest island and the low-lying coral atolls of Oeno and Ducie. The nearest land masses are over 4,500km away, New Zealand to west south west and South America to the east. Only Pitcairn is inhabited; the small community of less than 50 lives at Adamstown, isolated by more than a day's sail from its nearest neighbours in French Polynesia, which is around 500km north west[1].

The islands have a moderate subtropical climate and lie in the path of the southeast tradewinds. There is some variation in climatic conditions between the islands; Pitcairn receives around 50% more rain than Henderson.[2] Mean annual rainfall across the islands is approximately 1716mm with distinct seasonal variation[3]. Estimates suggest maximum temperature ranges of around 29.6°C in February to 24.2°C in June and average minimum temperature ranged from 22.2°C in February to 15.7°C in June[4].

There is little specific climate trend data for the Pitcairn Islands. At a regional scale, annual and seasonal ocean surface and air temperatures have increased by between 0.6°C and 1°C in much of the Pacific since 1910. There has also been a significant decrease in the annual number of cool days and cool nights for the period 1961 to 2003. Sea level rise has been recorded across the Pacific region, ranging from 1.5mm to more than 3mm per

[1] de L Brooke, M, Hepburn, I and Trevelyan RJ, 2004: "Henderson Island World Heritage Site Management Plan 2004 – 2009" Published 2004 by the Foreign and Commonwealth Office, London, in conjunction with the Pitcairn Islands Administration and the Royal Society for the Protection of Birds [available on line at http://www.ukotcf.org/pdf/Henderson.pdf]
[2] ibid
[3] Smyth, N and Waldren, S, Perrin, P, Martin J, and Kingston N (Eds), 2008: " Pitcairn Islands Environmental Management Plan 2008" BEC consultants, 2008
[4] de L Brooke, M, Hepburn, I and Trevelyan RJ, 2004: "Henderson Island World Heritage Site Management Plan 2004 – 2009" Published 2004 by the Foreign and Commonwealth Office, London, in conjunction
with the Pitcairn Islands Administration and the Royal Society for the Protection of Birds [available on line at http://www.ukotcf.org/pdf/Henderson.pdf]

year. An increase in tropical storm intensity has also been registered[5]. Pitcairn islanders themselves have reported longer, more severe periods of drought[6].

Air temperatures in the Pitcairn Islands are projected to increase by between 1°C to 3°C and rainfall is expected to decrease by between 5% and 20% by 2100 over current levels. Changes to the surrounding Pacific Ocean by the year 2100 are expected to include an increase in sea surface temperature (SST) by 1.2°C to 2.7°C, sea level rise of between 18cm and 51cm (140cm according to empirical models) and ocean acidification (-0.3 pH units). Changes to ocean currents and reductions in nutrient supply are also expected to occur[7].

Resource Exposure

Electricity is provided by two diesel generators dependent on imported fuel oil. The UK Department for International Cooperation has recently funded a wind diesel project. Due for completion at the end of 2011 this included the construction of a new power station using the existing diesel generators and the installation of a 240 x 1700Ah, 2V battery and 60kW inverter, the installation of five 20kW wind turbines and 11kV power line from the power station to Adamstown[8].

As regards water supply and use, Pitcairn islanders are highly dependent on local water resources[9]. Rainwater is the main source of freshwater on the island and there is uncertainty as to the quantity of groundwater reserves. Population evacuations in 1831 and 1856 were due to lack of water supply[10].

Adaptation and Resilience

Importance to OT

Importance of System to OT

Natural Systems: Henderson and Pitcairn support rich biota, with more than 20 endemic plant and 6 endemic bird species and many endemic land snails and invertebrates. A number of species are of global concern; these include 7 plants, 1 turtle and 8 bird species. Both Henderson and Pitcairn are Endemic Bird Areas and the entire land area is covered by four Important Bird Areas[11]. More than 90% cent of the world's population of Murphy's petrels (*Pterodroma ultima*) nest on Ducie, and Henderson is probably the principal breeding site for the endangered Henderson petrel (*Pterodroma atrata*)[12].

The waters around the islands support significant coral reef[13]. These are well developed in Oeno and Ducie, two-thirds of Henderson Island are surrounded by coral reef, while on Pitcairn the reefs are only slightly

[5] Brown, N., 2008. *Climate change in the UK Overseas: Territories: An Overview of the Science, Policy and You*. Peterborough,UK: Joint Nature Conservation Committee.
[6] British High Commission Wellington, 2011. *SPC and Pitcairn Islands join hands to secure reliable water supplies for Pitcairn Islanders.* [Online] Available at: http://ukinnewzealand.fco.gov.uk/en/news/?view=News&id=658779282 [Accessed on 2 April 2012].
[7] Bell, D., J. et al., 2011. *Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change: Summary for Pacific Island Countries and Territories.* New Caledonia: Secretariat of the Pacific Community, pages 191-196
[8] REEEP, 2010. *Pitcairn Island Wind Diesel Grid System.* [Online] Available at: http://www.reeep.org/index.php?assetType=news&assetId=422 [Accessed on 2 April 2012].
[9] British High Commission Wellington, 2011. *SPC and Pitcairn Islands join hands to secure reliable water supplies for Pitcairn Islanders.* [Online] Available at: http://ukinnewzealand.fco.gov.uk/en/news/?view=News&id=658779282 [Accessed on 2 April 2012].
[10] Smyth, N and Waldren, S, Perrin, P, Martin J, and Kingston N (Eds), 2008: " Pitcairn Islands Environmental Management Plan 2008" BEC consultants, 2008
[11] Rayment, M., 2007. *Costing Biodiversity Priorities in the UK Overseas Territories. Final Report.* Plymouth: GHK for the RSPB
[12] Brown, N., 2008. *Climate change in the UK Overseas: Territories: An Overview of the Science, Policy and You*. Peterborough,UK: Joint Nature Conservation Committee.
[13] de L Brooke, M, Hepburn, I and Trevelyan RJ, 2004: "Henderson Island World Heritage Site Management Plan 2004 – 2009" Published 2004 by the Foreign and Commonwealth Office, London, in conjunction
with the Pitcairn Islands Administration and the Royal Society for the Protection of Birds [available on line at http://www.ukotcf.org/pdf/Henderson.pdf]

developed. Little is known about the marine biodiversity of the reef system, though Green Turtles are known to nest on Henderson Island[14].

The richness of Henderson's environment and biodiversity was recognised in 1988 when the island was designated a World Heritage Site by UNESCO and described as one of the world's least disturbed raised coral islands[15]. A Management Plan for Henderson was published in 2004 by the FCO.

Economic Systems: Until recently the population of Pitcairn lived a subsistence existence with many areas of the main island under cultivation for agriculture[16]. The economy of Pitcairn is still largely based on subsistence fishing, horticulture supplemented by the sale of handicrafts and postage stamps. Declining interest in philately, which had been the islands predominant income stream eroded government surpluses and Pitcairn went into budgetary aid in 2004. All islanders either work for Government or are self-employed.[17] More recently the Government is supplementing its income through the sale of ".pn" domain names[18]. Access to Pitcairn is very limited, via naval connections and fishing/cargo vessels.[19] Tourism is limited: only ten cruise ship per year call at Pitcairn.[20]

Social Systems: The population of Pitcairn is approximately 50, all of whom reside in the one settlement, Adamstown on Pitcairn Island – the home of the decedents of the 'Bounty mutineers.[21]' Data on per capita GDP and life expectancy were not available.

Vulnerability

Sensitivity to Climate Exposure

Increasing SST and ocean acidification are expected to affect the health of coral reefs in Pitcairn Islands and cover is projected to decrease over time[22]. A rise in sea levels could affect the coastal areas of all islands, and specifically the low lying atolls of Oeno and Dulcie, which have maximum elevations of only 1-2 metres. This would threaten the bird and turtle populations that inhabit them[2324].

Variations in rainfall may affect water supplies which are already stretched. Most domestic supply comes from water harvesting, while agricultural water is derived from natural springs.[25]

Fisheries for demersal fish and intertidal and subtidal invertebrates in Pitcairn Islands are projected to show progressive declines in productivity due to both the direct effects (e.g. increased SST) and indirect effects (changes to fish habitats) of climate change[26].

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[14] de L Brooke, M, Hepburn, I and Trevelyan RJ, 2004: "Henderson Island World Heritage Site Management Plan 2004 – 2009" Published 2004 by the Foreign and Commonwealth Office, London, in conjunctionwith the Pitcairn Islands Administration and the Royal Society for the Protection of Birds [available on line at http://www.ukotcf.org/pdf/Henderson.pdf]

[15] ibid

[16] Smyth, N and Waldren, S, Perrin, P, Martin J, and Kingston N (Eds), 2008: " Pitcairn Islands Environmental Management Plan 2008" BEC consultants, 2008

[17] Pitcairn islands and Secretariat of the Pacific Community, 2008. Joint Country Strategy 2009-2013. Available at http://www.spc.int/images/stories/SPPU/pitcairn%20islands%20spc%20jcs%20final%20august%202008.pdf

[18] See http://www.government.pn/PnRegistry/PnRegistry.htm for details

[19] European Commission, 2012. *EU Relations with Pitcairn Islands.* Available at: http://ec.europa.eu/europeaid/where/octs_and_greenland/countries/pitcairn-islands_en.htm

[20] Pitcairn islands and Secretariat of the Pacific Community, 2008. Joint Country Strategy 2009-2013. Available at http://www.spc.int/images/stories/SPPU/pitcairn%20islands%20spc%20jcs%20final%20august%202008.pdf

[21] Smyth, N and Waldren, S, Perrin, P, Martin J, and Kingston N (Eds), 2008: " Pitcairn Islands Environmental Management Plan 2008" BEC consultants, 2008

[22] Bell, D., J. et al., 2011. *Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change*: *Summary for Pacific Island Countries and Territories.* New Caledonia: Secretariat of the Pacific Community, pages 191-196

[23] Smyth, N and Waldren, S, Perrin, P, Martin J, and Kingston N (Eds), 2008: " Pitcairn Islands Environmental Management Plan 2008" BEC consultants, 2008

[24] Petit, J. and Prudent, G. (eds) 2010:." *Climate Change and Biodiversity in the European Union Overseas Entities*". Gland, Switzerland and Brussels, Belgium: IUCN. Reprint, Gland, Switzerland and Brussels, Belgium: IUCN, 2010. 192 pp.

[25] Secretariat of the Pacific Community, 2010, "SOPAC conducts water scoping mission in Pitcairn Island" available [online] at http://www.sopac.org/index.php/media-releases/1-latest-news/153-sopac-conducts-water-scoping-mission-in-pitcairn-island- accessed 30 07 2012

Diarrhoeal and vector borne diseases are expected to increase with warmer temperatures in the Pacific. The frequency, severity and distribution of dengue fever could increase, as warmer temperatures reduce the incubation period of the dengue virus and speed up the larval stage of the mosquitoes[27].

Current Resilience Activities

The Management Plan for Henderson published in 2004 by the FCO provides a framework for ecosystems based adaptation protecting the island's ecology, monitoring the stock of timber species, minimising the effects of human activities and tourism and preventing the introduction of non-native species[28].

In 2008 the Environmental Management Plan for Pitcairn was published[29]. This provides a framework for the management of all aspects of the environment on Pitcairn.

On Pitcairn there has been extensive work funded by the Darwin initiative to control invasive species and similar work on Henderson to eradicate rats[30].

Pitcairn has been included within a European Union funded project run by the Secretariat of the Pacific Community's Applied Geoscience and Technology Division (SOPAC) facilitating the exchange of ideas and experiences on issues around disaster risk management and water & sanitation among Pacific Overseas Countries[31]. In 2011 a conference on *Climate Change and Food Security* was held in New Caledonia[32]. The SPOAC are also working with Pitcairn to safeguard its water supply and meteorology arrangements.

Activities in the field of energy supply and use are reported in *Current Abatement Activities*.

Exacerbating Stresses

The low lying atolls of Oeno and Ducie are particularly vulnerable to potential sea level rise. For the resident population on Pitcairn, its remoteness and relatively limited water resources are the key stresses. On Pitcairn Island invasive species (Lantana, Roseapple and goats) have combined to seriously affect the natural habitat[33].

Future Opportunities

Potential Adaptation Interventions

On water, the modelling of future water availability and the development of baseline surveys in Pitcairn Islands are among the priorities listed under the *Training and Research Programme* of UK Overseas Territories and Crown Dependencies Project[34]and highlighted in the Pitcairn Environmental Management Plan[35]. A

[26] Bell, D., J. et al., 2011. *Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change*: *Summary for Pacific Island Countries and Territories.* New Caledonia: Secretariat of the Pacific Community, pages 191-196

[27] Brown, N., 2008. *Climate change in the UK Overseas: Territories: An Overview of the Science, Policy and You*. Peterborough,UK: Joint Nature Conservation Committee.

[28] de L Brooke, M, Hepburn, I and Trevelyan RJ, 2004: "Henderson Island World Heritage Site Management Plan 2004 – 2009" Published 2004 by the Foreign and Commonwealth Office, London, in conjunctionwith the Pitcairn Islands Administration and the Royal Society for the Protection of Birds [available on line at http://www.ukotcf.org/pdf/Henderson.pdf]

[29] Smyth, N and Waldren, S, Perrin, P, Martin J, and Kingston N (Eds), 2008: " Pitcairn Islands Environmental Management Plan 2008" BEC consultants, 2008

[30] UK Overseas Territories Conservation Forum, 2012. *Pitcairn islands – Nature's Bounty in a Remote Pacific Outpost.* Available at: http://www.ukotcf.org/territories/pitcairn.htm [Accessed on 2 April 2012].

[31] SOPAC, 2011. *Snapshots – Disaster Reduction Programme.* [Online] Available at: http://www.sopac.org/sopac/snapshot/snapshot73.pdf [Accessed on 2 April]

[32] SPC, 2011. *Pacific nations discuss climate change impact on food, drinking water.* [Online] Available at: http://www.spc.int/en/component/content/article/216-about-spc-news/808-pacific-nations-discuss-climate-change-impact-on-food-drinking-water.html [Accessed on 3 April]

[33] Smyth, N and Waldren, S, Perrin, P, Martin J, and Kingston N (Eds), 2008: " Pitcairn Islands Environmental Management Plan 2008" BEC consultants, 2008

[34] JNCC (Joint Nature Conservation Committee), 2011. *Overseas Territories and Crown Dependencies Training and Research programme – Work Plan 2010-1012* Peterborough,UK: Joint Nature Conservation Committee

[35]Smyth, N and Waldren, S, Perrin, P, Martin J, and Kingston N (Eds), 2008: " Pitcairn Islands Environmental Management Plan 2008" BEC consultants, 2008

comprehensive strategy to improve food and water security for the Pitcairn population is in place. The Secretariat of the Pacific Community through its Applied Geoscience and Technology Division (SOPAC) is also seeking to provide support on water management, providing technical expertise and funding to support the Pitcairn Island government to mitigate the risk of drought[36].

A number of ecosystem based projects have been prioritised by the RSPB which include the eradication of Rose Apple from Pitcairn and restoration of native plants, the development of species action plans and strengthening bio-security controls[37]. The Pitcairn Islands have also signed a Memorandum of Understanding for *Pacific Islands Cetacean*. It includes plans to protect and conserve Pacific cetaceans and their habitats, including the migratory corridors[38]. Continued and effective management of fish habitats and stocks for fisheries remain a priority.[39]

Implementation Capacity

The Pitcairn Islands have a small population and are highly reliant on importing staff at high cost from overseas[40]. An FCO representative is based on Pitcairn and is assisted by the Pitcairn Island Administration Office in New Zealand[41].The Pitcairn Natural Resource Department is working to ensure that sustainable development proceeds alongside environmental protection and conservation of local natural resources[42].

Other Technical Assistance resources are available through project based funding.

Low Carbon Development (Source)

Current Emissions

Share of Current Emissions

Pitcairn Islands are not covered by UK GHG Inventory.

GHG Abatement

Abatement Potential

Information on abatement potential was not available.

Current Abatement Activities

The UK Department for International Development (DFID), under the REEEP Programme, has funded a wind diesel grid system. Due for installation was due by the end of 2011 – no update has been obtained to date. The project was to comprise the construction of a new power station using the existing diesel generators and

[36] SPC, 2011. *Pacific nations discuss climate change impact on food, drinking water.* [Online] Available at: http://www.spc.int/en/component/content/article/216-about-spc-news/808-pacific-nations-discuss-climate-change-impact-on-food-drinking-water.html [Accessed on 3 April]
[37] Rayment, M., 2007. *Costing Biodiversity Priorities in the UK Overseas Territories. Final Report*. Plymouth: GHK for the RSPB
[38] DEFRA, 2012. *The Environment in the United Kingdom's Overseas Territories: UK Government and Civil Society Support*. London, UK: DEFRA
[39] Bell, D., J. et al., 2011. *Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change*: *Summary for Pacific Island Countries and Territories.* New Caledonia: Secretariat of the Pacific Community, pages 191-196
[40] Rayment, M., 2007. *Costing Biodiversity Priorities in the UK Overseas Territories. Final Report*. Plymouth: GHK for the RSPB
[41] National Audit Office, 2007. *Foreign Commonwealth Office - Managing risk in the Overseas Territories*. London: The Stationary Office
[42] UK Overseas Territories Conservation Forum, 2012. *Pitcairn islands – Nature's Bounty in a Remote Pacific Outpost*. Available at: http://www.ukotcf.org/territories/pitcairn.htm [Accessed on 2 April 2012].

installation of a 240 x 1700Ah, 2V batteries and 60kW inverter, the installation of five 20kW wind turbines and 11kV power line from the power station to Adamstown[43].

Future Opportunities

Potential LCD Intervention

Information on other activities planned to reduce greenhouse gas emissions was not available.

Implementation Capacity

Pitcairn Islands have a small population and are highly reliant on importing staff at high cost from overseas. An FCO representative is based on Pitcairn and is assisted by the Pitcairn Island Administration Office in New Zealand.[44]

UK Exposure

UK Sunk Assets

Information on UK Sunk Assets was not available.

Absolute Value of UK Transfer

Recent data has not been obtained – however, funds from both DFID and the FCO allocated to the Islands in 2005-2006, totalled £2.58 million and £127,000, respectively[45].

Share of National Budget from UK Transfer

More than 90% of the budget is provided by HMG as budgetary aid[46].

Potential Liability

A decline in stamp sales (the main source of government revenue) has meant that the Islands have received significant budget support since 2004 from HMG and without any change in levels of self-sufficiency this is unlikely to change[47]. The UK remains responsible for foreign affairs, defence and domestic security[48].

Pitcairn Islands are among the signatories of the following multilateral environmental agreements[4950]

- Convention on International Trade in Endangered Species (CITES)
- Convention on the Conservation of Migratory Species of Wild Animals (CMS)
- Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter – the London Convention

[43] REEEP, 2010. *Pitcairn Island Wind Diesel Grid System.* [Online] Available at: http://www.reeep.org/index.php?assetType=news&assetId=422 [Accessed on 2 April 2012].
[44] National Audit Office, 2007. *Foreign Commonwealth Office - Managing risk in the Overseas Territories*. London: The Stationary Office
[45] ibid
[46] National Audit Office, 2007. *Foreign Commonwealth Office - Managing risk in the Overseas Territories*. London: The Stationary Office
[47] ibid
[48] European Commission, 2012. *EU Relations with Pitcairn Islands.* Available at: http://ec.europa.eu/europeaid/where/octs_and_greenland/countries/pitcairn-islands_en.htm [Accessed on 3 April]
[49] DEFRA, 2012. *The Environment in the United Kingdom's Overseas Territories: UK Government and Civil Society Support*. London, UK: DEFRA
[50] Brooke, M, Hepburn, I. and Trevelyan, R. J., 2004. *Henderson Island. World Heritage Site. Management Plan 2004-2009.* London, UK: Foreign Commonwealth office in conjunction with the Pitcairn islands Administration and the Royal Society for the Protection of Birds.

- Ramsar Convention on Wetlands of International Importance
- Vienna Convention for the Protection of the Ozone Layer
- Montreal Protocol on Substances that Deplete the Ozone Layer
- Convention for the Protection of the Natural Resources and Environment of the South Pacific Region
- Convention concerning the protection of the World Cultural and Natural Heritage (World Heritage).

Reputational Risks

The UK remains responsible for foreign affairs, defence and domestic security. Therefore any issue arising in Pitcairn Islands in these fields can harm UK reputation. For example, a long running sexual abuses trial process, concluded in 2006, required the involvement of police Officers, judges and legal advisers from UK, New Zealand and Australia[51].

[51] National Audit Office, 2007. *Foreign Commonwealth Office - Managing risk in the Overseas Territories*. London: The Stationary Office

Annex One: UKOT Climate Change Vulnerability Analysis Matrix Glossary of Terms

UKOT Climate Change Vulnerability Analysis Matrix Glossary of Terms

Abatement Potential	(Cost effective) technical potential for reducing emissions within sector.
Absolute GHG Emissions	Annual amount of greenhouse gases (GHG) produced by an Overseas Territory. It is measured as metric tonnes of CO_2 generated per year.
Absolute Value of UK Transfer	Total amount of funding from UK to an Overseas Territory per year.
Adaptation	The extent to which existing initiatives and measures (projects and programmes) are expected to reduce the vulnerability of natural and human systems against actual or expected climate change effects.
Adaptive Capacity	The ability of a social or natural system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organisation, and the capacity to adapt to stress and change.
Carbon sink	A natural or artificial reservoir that accumulates and stores some carbon-containing chemical compound for an indefinite period. Natural: Absorption of carbon dioxide by the oceans via physicochemical and biological processes and photosynthesis by terrestrial plants. Artificial: include landfill and carbon capture and storage.
Climate Change	A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.
Climate Change Impact	Consequences of climate change on social, economic and natural systems without considering adaptation.
Climate Change Exposure	The change in climate with a potential adverse effect on social, economic and natural systems.
Current Abatement Activities	Any action that reduces the emissions or emissions intensity (per unit output) of a given sector on-going or completed in UK Overseas Territories as of March 2012.
Current Resilience Activities	Resilience activities on-going or completed in UK Overseas Territories as of March 2012.
Energy Efficiency	Ratio of energy output of a conversion process or of a system to its energy input: measures taken to reduce demand for energy for the same projected level of development.
Energy Import Dependence	Percentage of energy imported from abroad by the single Overseas Territory.
Exacerbating Stresses	Natural or human factors which in isolation or combination have the potential to lead to a change in the severity or frequency of a climate change threat. This may include inter alia a natural hazard, an extreme weather event, social tension or conflict, demographic trends and population characteristics and institutional and/or societal capacity constraints.
Exposure	The sum of the character, magnitude and rate of climate change variation to which a system is influenced by.
Fossil Fuel Dependence	The percentage of total fuel consumption derived from carbon-based fuels from fossil carbon deposits (including coal, oil, and natural gas) and the percentage of that fuel that is imported.
Frequency and Severity	Occurrence and magnitude of an event in UK Overseas Territories.
Future Opportunities	A territory's ability to reduce greenhouse gas emissions or to enhance carbon sink (Potential LCD Intervention) coupled with its potential to plan adjustment interventions in response to the effects of climate change (Potential Adaptation Intervention).
GHG Abatement (Current)	Potential for reducing emissions within sector coupled with any action already in place that reduces the emissions or emissions intensity of a given sector.

Implementation Capacity	Current (March 2012) capacity to design, implement and monitor all related low carbon / adaptive capacity activities. This includes all current resource constraints (i.e. funding, local personnel capacity, lack of personnel, supportive infrastructure etc.) and opportunities.
Importance of system to OT	The value that society and people in an UK Overseas Territory place on the significance of impacts and vulnerabilities (see Vulnerability) on social, economic and natural systems.
Low Carbon Development (Source)	Actions which include making a contribution towards stabilising levels of CO_2 and other greenhouse gases at a level that will avoid dangerous climate change, through cuts in emissions, demonstrate a high level of energy efficiency, use low-carbon energy sources and/or utilise and enhance carbon sinks.
Magnitude	The area or number of people likely to be affected as a proportion of total population or land area.
Potential Liability	Legal, Financial, Moral and Political exposure arising from the activities of the UK Overseas Territories. This includes UK commitments to legal treaties that extend to the OTs (e.g European Convention on Human Rights) and response to natural and man-made disasters and terrorist events.
Potential LCD Intervention	A territory's ability to reduce anthropogenic CO_2 and other greenhouse gas emissions or to enhance carbon sinks, where ability refers to skills, competencies, fitness and proficiencies that a territory has attained and depends on technology, institutions, wealth, equity, infrastructure and information.
Potential Adaptation Interventions	The potential for a planned intervention which constitutes or contributes to an adjustment in natural, social or economic systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
Reputational Risk	Reputation is defined as the social evaluation of the public towards HMG. Risk is the probability that a failure to act will produce harm to that reputation. This reputation may be defined in terms of the potential: loss of HMG ethical (moral) reputation for safe guardianship of its citizens) disruption or distortion of HMG relationship with its citizens in the OTs withdrawal of private sector investment in UK Overseas Territories (investor flight).
Resilience	The ability of a social or natural system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organisation, and the capacity to adapt to stress and change.
Resource Exposure	Degree at which a system is influenced by a variation in the availability or the price of resources (specifically water and energy).
Resource Use Efficiency	The effective use of energy and water resources – limiting wastage and maximising usable resources.
Sensitivity to Climate Exposure	Affects the magnitude and/or rate of a climate related perturbation or stress and is the degree to which a system [exposure unit] is affected, either adversely or beneficially, by climate variability or climate change. The effect may be direct (e.g. a change in crop yield in response to a change in the mean, range, or variability of temperature) or indirect (e.g., damages caused by an increase in the frequency of coastal flooding due to sea level rise).
Share of Current Emissions	Percentage of OT's Absolute GHG Emissions generated by each sector.
Share of National Budget from UK Transfer	Percentage and amount (at 2011 prices) of the total Overseas Territory Budget which comes from HMG budgetary support.
System (Social, Economic and Natural)	A set of functionally inter-related elements subdivided into Natural (ecosystems and bio-diversity) and Social and Economic (Human) elements.
Threat Exposure Analysis	Identification of the threats that may affect a system and evaluation of their frequency and severity.
UK Exposure	Risk to the UK arising from activities in the UK Overseas Territories. It includes UK Sunk Assets, Share of National Budget from UK Transfer, Potential Liability and Reputational Risk.

UK Sunk Assets	UK investments in physical infrastructure in the Overseas Territories which cannot be recovered.
Vulnerability	The degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity.

Key:

Voice reported in VAM

Additional voice

Annex Two: UKOT Climate Change VAM Systems Definition

SOCIAL, ECONOMIC AND NATURAL SYSTEMS DEFINITIONS	
Biodiversity and Ecosystems (Marine and terrestrial)	Ecosystems – A community of living (plants and animals) and non-living things (climate, landscape) which interact together and affect each other. Biodiversity – The variety of plant and animal life found in an ecosystem and the variation in their genetic makeup. It is a measure of the health of an ecosystem, with healthy ecosystems having greater variety and variation in plant and animal life than unhealthy ones. *Source: Brown, 2008*[i]
Hydrology and Water resources	Hydrology - The various systems that are involved in the hydrological cycle (water evaporation, atmospheric circulation of water vapour, cloud formation, precipitation, interception by plant life, land surface runoff, soil infiltrations, groundwater recharge, discharge into streams etc). Water resources – The availability of useful water, often a limiting factor for social and economic development. Sources include groundwater, rainwater and surface reservoirs or rivers. *Source: Gray, 2010*[ii]*; Parry et al., 2007*[iii]
Tourism	Comprises the activities of persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purpose *Source: UNWTO, 2011*[iv]
Transportation	A system of conveying people, goods, etc., from one place to another. The definition includes water, air, and land transport.
Agriculture and Fisheries	Agriculture- The science or practise of cultivating the soil and rearing animals Fisheries – The occupation of catching or rearing fish
Forestry	All economic activities that mostly depend on the production of goods and services from forests including commercial activities that are dependent on the production of wood fibre. It also includes activities such as the commercial production and processing of non-wood forest products and the subsistence use of forest products *Source: FAO, 2004*[v]
Energy Supply and Use	Energy supply - Extraction, conversion, and transportation of fuels and electricity to ultimate end use Energy use - The amount of fuels and electricity utilized during a period of time to provide a useful service such as heating, cooling, or transportation *Source: Wilbanks et al., 2008*[vi]
Industry and Commerce	Industry - Industry includes manufacturing, mining, construction and related informal production activities. Other categories, such as transport, energy supply & demand and processing of forest products have been included in other sectors. Commerce – Commerce is the exchange or buying and selling of commodities. In our definition it includes trade, retail and other commercial activities.
Human Health	Human health includes physical, social and psychological well-being. Society – Society includes *infrastructures*, *human settlements* and *social issues*. *Infrastructures* are systems designed to meet relatively general human needs, often through largely or entirely public utility-type institutions. Infrastructures for settlements and society include both 'physical' (sanitation and communication systems) and 'institutional' (shelter, health care, food supply, security and fire services and other forms of emergency protection). *Human settlements* comprise physical capital (buildings) where most of the world's population live. *Social issues* include all the factors relating to human society and its members, concerning the way of life of the local population (livelihoods and welfare). *Source: Parry et al., 2007*

HDI/ Livelihoods/ Poverty	HDI (Human Development Index) - A summary composite index that measures a country's average achievements in three basic aspects of human development: longevity, knowledge, and a decent standard of living. Livelihoods - A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. Poverty – A state or condition in which a person or community lacks the financial resources and essentials to enjoy a minimum standard of life and well-being that is considered acceptable in society. *Source: Chambers and Conway, 1991*[vii]

Note: The sectors considered as potential sources of greenhouse gases in the Low Carbon Development section are the ones reported by Department of Energy and Climate Change, 2009[viii].

[i] Brown, N., 2008. *Climate Change in Overseas Territories: An Overview of the Science, Policy and You,* Peterborough, UK: Joint Nature Conservation Committee

[ii] Gray, G. A. L., 2010. *Montserrat National Climate Change Issue Paper,* Montserrat: Ministry of Agriculture, Land, Housing and the Environment

[iii] Parry, M., Canziani, O. & Palutikof, J. P., 2007. *Climate Change 2007: Impacts, adaptation and Vulnerability, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernment Panel on Climate Change,* Cambridge, UK: Cambridge University Press.

[iv] UNWTO, 2011. *World Tourism Organisation UNWTO.* [Online] Available at: http://statistics.unwto.org/en. [Accessed 12 03 2012].

[v] FAO, 2004: Trends and Current Status of the Contribution of the Forestry Sector to National Economies, Rome: FAO, available on http://www.fao.org/docrep/007/ad493e/ad493e05.htm

[vi] Wilbanks T. J. et al., 2008. *Effects of Climate Change on Energy Production and Use in the United States*, Washington, US: US Climate Change Science Programme

[vii] Chambers, R., & Conway, G. (1991). *Sustainable Rural Livelihoods: Practical Concepts for the 21st Century.* Online] Available at: http://www.smallstock.info/reference/IDS/dp296.pdf [Accessed 28 03 2012].

[viii] Department of Energy and Climate Change, 2009. *5NC - The UK's Fifth National Communication under the United Nations Framework Convention On Climate Change.* London

Annex Three: UKOT Scoring Matrix

ANNEX III: RAG SCORING FOR UKOT VAM

#		Red	Red/Amber	Amber/Green	Green
Threats Exposure Analysis					
	Exposure: Frequency and Severity of climate effects	Current: High Impact 2050: Impact + Confidence	Current: Medium Impact 2050: Impact + Confidence	Current: Low Impact 2050: Impact + Confidence	Current: No impact 2050: No impact
Resource Exposure					
	Exposure: Fossil Fuel and Energy Import Dependence, Resource Use Efficiency and GHG Emission	High Dependency, Emissions and Low Resource Use Efficiency	Medium Dependency, Emissions and low Resource Use Efficiency	Low dependency, emissions and medium resource use efficiency	Low (or No) dependency, emissions, and high resource use efficiency
Importance to Overseas Territory					
1	Importance of System to OT *Natural Systems*	Bio-diversity characterised by high levels of endemic / endangered species and / or territory with internationally recognised environmental designation[1] Critical levels of water stress	Bio-diversity characterised by presence of endemic / endangered species and internationally recognised environmental designation Moderate levels of water stress	Bio-diversity characterised by low levels of endemic / endangered species and no internationally recognised environmental designation Limited levels of water stress	Bio-diversity characterised by very low levels of endemic / endangered species and no internationally recognised environmental designation No water stress
	Economic Systems	Dominant contribution to OT GDP (>20%)	Significant contribution to OT GDP (5%-20%)	Limited contribution (<5%) to OT GDP	No contribution (0%) to OT GDP

[1] As identified by IUCN redbook.

#		Red	Red/Amber	Amber/Green	Green
	Social Systems	Per capita GDP (<$6000) Low life expectancy / High infant mortality rates	Per capita GDP ($6001 - $20000) Medium life expectancy / Medium infant mortality rates	Per capita GDP ($20001 - $50000) Medium life expectancy / Low infant mortality rates	Per capita GDP ($50000 +) High life expectancy / Low infant mortality rates
Vulnerability (Current)					
2.1	Sensitivity to Climate Exposure	High sensitivity to climate change exposure/high potential for irreversible impacts	Medium sensitivity to climate change exposure/medium potential for irreversible impacts	Low sensitivity to climate change exposure/low potential for irreversible impacts	No sensitivity to climate change exposure/no potential for irreversible impacts
2.2	Current Resilience Activities	No resilience planning and/or very limited adaptive capacity	Weak resilience planning and/or adaptive capacity	Moderately effective resilience planning and/or adaptive capacity	Strong resilience planning and/or adaptive capacity
2.3	Exacerbating Stresses	Significant exacerbating stresses	Moderate exacerbating stresses	Limited exacerbating stresses	No exacerbating stresses
Future Opportunities					
3.1	Potential Adaptation Interventions	No technical/programmatic opportunities available.	Limited technical/ programmatic opportunities available, and significant work/investment required to develop bankable projects or programmes	Technical/programmatic opportunities exist, but only as pilot projects/strategies and require further investment to develop bankable projects or programmes	Technical/programmatic opportunities exist and bankable investments/projects are available for immediate funding
3.2	Implementation Capacity	No technical, political and financial capacity to	Limited technical, political and/or financial capacity to	Moderate technical, political and/or financial capacity to implement and	Strong technical, political and financial capacity to implement

#		Red	Red/Amber	Amber/Green	Green
		implement and monitor adaptation activities, with full UK input required.	implement and monitor adaptation activities, with significant UK input required.	monitor adaptation activities, with moderate UK input required.	and monitor adaptation activities, with limited UK input required
Current Emissions					
4.1	Share of Current Emissions	High (>30%)	Medium (15%-30%)	Low (5%-15%)	None/Marginal <5%.
GHG Abatement					
5.1	Abatement Potential	No abatement potential <10%	Limited abatement potential identified 10%-25%	Moderate abatement potential identified 25%-50%	Significant abatement potential identified E.g. >50% of current levels
5.2	Current Abatement Activities	No low carbon development planning or investment	Weak low carbon development planning and investment	Moderately effective low carbon development planning and investment	Strong evidence of effective low carbon development planning and investment
Future Opportunities					
6.1	Potential LCD Intervention	No technical/programmatic opportunities available.	Limited technical/ programmatic opportunities available, and significant work/investment required to develop bankable projects or programmes.	Technical/programmatic opportunities exist, but only as pilot projects/strategies and require further investment to develop bankable projects or programmes.	Technical/programmatic opportunities exist and bankable investments/ projects are available for immediate funding.
6.2	Implementation Capacity	No technical, political and financial capacity to implement and monitor low carbon activities, with full UK input required.	Limited technical, political and/or financial capacity to implement and monitor low carbon activities, with significant UK input required.	Moderate technical, political and/or financial capacity to implement and monitor low carbon activities, with moderate UK input required.	Strong technical, political and financial capacity to implement and monitor low carbon activities, with limited UK input required.

UK Exposure (2012)					
7.1	UK Sunk Assets	>£100m	£20-£100m	£5-£20m	£0-£5m
7.2	Absolute Value of UK Transfer	£500,001 - £1,000,000	£250,001 - £500,000	£100,001 - £250,000	>£100,000
7.3	Share of National Budget from UK Transfer	75%> of national budget for specific system from UK transfer	51% to 75% of national budget for specific system from UK transfer	26% to 50% of national budget for specific system from UK transfer	25%< of national budget for specific system from UK transfer
7.4	Potential Liability	Cost of honouring and implementing legal treaties and other HMG commitments (>£200m)	Cost of honouring and implementing legal treaties and other HMG commitments (>£50m)	Cost of honouring and implementing legal treaties and other HMG commitments (>£10m)	Cost of honouring and implementing legal treaties and other HMG commitments (<£10m)
7.5	Reputational Risks	Irreparable reputational risk in terms of loss of: HMG reputation for safeguarding citizens / climate change and ecosystems; HMG disruption to the relationship with its citizens; and potential to severely disrupt private sector investment in the UKOTs related to specific system.	Serious but not irreparable reputational risk in regards to loss of HMG safeguarding reputation, HMG relationship with citizens or private sector investment related to specific system.	Limited reputational risk in regards to loss of HMG safeguarding reputation, HMG relationship with citizens or private sector investment related to specific system.	No reputational risk in regards to loss of HMG safeguarding reputation, HMG relationship with citizens or private sector investment related to specific system.

Annex Four: Pitcairn Islands- Scored VAM

RED
RED/AMBER
GREEN/AMBER
GREEN

Pitcairn Islands

Threat Exposure Analysis	Frequency and Severity	
	Current	2050
Climate Change Exposure		
1 Increase in temperature		
2 Increase/decrease/variability in precipitation		
3 Decrease in snow cover and ice		
4 Heat waves		
5 Heavy precipitation events/floods		
6 Extreme storm events		
7 Rising sea levels		
8 Ocean acidification		

Resource Exposure	Current
1 Fossil Fuel Dependence	
2 Energy Import Dependence	
3 Resource use efficiency	X
4 Absolute GHG emissions	X

Low Carbon Electricity Resource Potential	Share of Current Electricity Production	Potential
1 Wind	X	High
2 Hydro	X	X
3 Solar PV	X	X
4 Geothermal	X	X
5 Biomass	X	X
6 Waste (solid, liquid)	X	X
Low Carbon Heat Potential	% of buildings	Potential
1 Solar Thermal	X	X
2 Biomass	X	X
Liquid Fuels	% of consumpti	Potential
1 Bioethanol	X	X
2 Bio diesel	X	X

Summary

GENERAL INFORMATION The Pitcairn Island group is comprised of four small islands in the South Pacific Ocean covering 4,516 ha. Population of around 50 people: who only inhabit Pitcairn Island itself. Sale of handicrafts and postage stamps among the major economic activities. Main employment of local population in government and community service sectors.

Threat Exposure Analysis
Experienced events: Annual and seasonal ocean surface and air temperatures increased by 0.6 °C to 1 °C since 1910; decrease in annual number of cool days and nights in 1961-2003; sea level rise from 1.5 mm to 3 mm per year; increase in tropical storm intensity; longer and more severe droughts. Expected events (by 2100): air temperatures to increase by 1 °C to 3 °C; rainfall to decrease by between 5% and 20%; sea surface temperatures to increase by 1.2 °C to 2.7 °C; sea level to increase by 18 cm to 51 cm; ocean acidification. Electricity produced through diesel generators dependent by imported fuel. Pitcairners highly dependent on local water resources.

Adaptation and Resilience
Presence of threatened species of flora and fauna. Henderson Island designated as World Heritage Site. Subsistence agriculture and fishery. Sale of handicrafts and postage stamps relevant. Tourism limited. Coral reefs expected to decrease due to increased sea temperature and ocean acidification. Increased droughts (and salt water intrusion) to affect ground water sources. Decrease in agriculture and fishery. Diarrhoea, water borne diseases and dengue to increase. Henderson World Heritage Site created in 1989. Other projects under Darwin Initiative and an MoU for the protection of cetaceans in place. On-going and foreseen activities to mitigate risk of drought. High reliance on imported staff.
Low Carbon Development
Pitcairn Islands not covered by UK GHG Inventory. Project to modify the existing power system using diesel, batteries and inverter power systems on-going.

UK Exposure
Pitcairn Islands on budgetary aid from UK since 2004 due to decline in stamp sales. More than £1.2 million (90% of Pitcairn budget) allocated per year: in 2005-2006 32.58 million from DFID and £127,000 from FCO. Pitcairn signatory of several multilateral environmental. UK still responsible for foreign affairs, defence and domestic security.

Exacerbating Risks
Introduction of invasive non-native species; Soil erosion; Infrastructural development; Increased tourism; Deforestation

Additional Potential Classification

High	High levels of cost effective technical potential identified, with strong evidence of associated planning and investment
Medium	Medium cost effective resource potential identified, with medium evidence of associated planning and investment
Low	Limited cost effective technical potential identified, with limited evidence of associated planning and investment
None	No cost effective technical potential identified.

Adaptation and Resilience	Importance to OT	Vulnerablity (Current)			Future Opportunities	
	Importance of System to OT	Sensitivity to Climate Exposure	Current Resilience Activities	Exacerbating Stresses	Potential Adaptation Interventions	Implementation Capacity
Natural						
Biodiversity and Ecosystems						
Hydrology and Water resources						
Economic						
Tourism						
Transportation						
Agriculture and Fisheries						
Forestry						
Energy Supply and Use						
Industry and Commerce						
Social Systems						
HDI/Livelihoods/Poverty	X					
Human Health	X					

UK Exposure (2012)				
UK Sunk Assets	Absolute Value of UK Transfer	Share of National Budget from UK Transfer	Potential Liability	Reputational Risks
X	X			
X	X			
X	X			
X	X			
X	X			
X	X			
X	X			
X	X			
X	X			
X	X			

Low Carbon Development (Source)	Current Emissions	GHG Abatement (Current)		Future Opportunities	
	Share of Current Emissions	Abatement Potential	Current Abatement Activities	Potential LCD Intervention	Implementation Capacity
Energy Supply	X	X		X	
Transport	X	X		X	
Public	X	X		X	
Business	X	X		X	
Residential	X	X		X	
Industrial Processes	X	X		X	
Agriculture	X	X		X	
Waste management	X	X		X	
Land Use, Land Use Change and Forestry	X	X		X	

Annex Five: UKOT Potential Programme Approaches – Preliminary Sectoral and Geographical Analysis

	Programme Approach	Sectoral and OT Relevance		Activities	
		Sectors	OTs	Current	Potential
1	Adaptation: Needs Focus	Energy Supply and Use	Gibraltar	Replacement of power plants with a power station powered by diesel engines.	n/a
2	Adaptation: Effectiveness Focus	Biodiversity and Ecosystems	Bermuda	Bermuda Biodiversity Action Plan - Activity report 2010; The Bermuda Plan 2008	Stringent water conservation practices; environmentally-sound desalination operations; better weather forecasting; coastal zone management plan (building on Draft Planning Statement (2008))
			Gibraltar	Management and Action Plan for the conservation of Sites of Community Importance enforced; Marine Special Area of Conservation designated; Catalogue of living resources; Habitat and Species Action Plans.	Dolphin study; climate change studies.
3	Mitigation: Needs Focus	Energy Supply	Bermuda	Electricity for the entire Island is produced at BELCO's Pembroke location.	Public land/seabed allocated for utility-scale renewable electricity generation projects; generation licences for power producers and comprehensive interconnection standards; quality standards specifically for distributed renewable energy systems included in building codes; expedited planning processes for small-scale renewable generation; efficiency standards; energy auditing.
			Gibraltar	Replacement of power plants with a power station powered by diesel engines.	The use of biofuels to be encouraged by selling at lower price in petrol stations; adopt biofuels for Govt fleet.
		Transport	Gibraltar	New bus transport system introduced; free to children.	Reduction in the energy used for road transport (9% target for 2016); Car park and park and ride bus shuttle service construction planned; Increase in public transport times/routes; More free public transport.
4	Mitigation: Emissions Reduction Potential Focus	Energy Supply	Gibraltar	New power station has the capability to run on biofuels.	Adoption of renewable energy resources: wind, energy from waste and tidal current all considered technically viable.
			Montserrat	2008 Montserrat Sustainable Development Plan; shortly be upgrading its diesel based power station to more reliable 1.5 MW source	Exploitation of geothermal energy is a stated aim of the National Energy Policy; test drilling 2012; Geothermal energy is proved to be feasible, there is potential to generate up to 50MW of energy, with export of around 40MW to a neighbouring island; potential wind turbine sites at locations within the Blakes Estate although the new National Physical Development Plan for North Montserrat 2012-2022 zones this land for residential and recreational tourism;
		Transport	Gibraltar	Use of private vehicles discouraged	Car park and park and ride bus shuttle service constructed; increase in public transport times/routes; more free public transport.
		Business	Montserrat	New port development at Carr's Bay	Development of new town at Little Bay creates potential for incorporation of passive design principles; GoM Infrastructure Plan includes suite of potential low cost measures: energy efficient fans, water pumps, cooking appliances and behavioural change.
		Land Use, Land Use Change and Forestry	Montserrat	2008 Montserrat Sustainable Development Plan; New National Physical Development Plan for North Montserrat	National Physical Development Plan for North Montserrat 2012-2022
5	Mitigation: Effectiveness Focus	Business	BVI	National Tourism Policy & Development Master Plan; strengthening Building Regulations; Climate Change risk management protocols, Disaster Relief Fund, micro insurance schemes and mutual/cooperative insurance schemes, financing options for renewable energy installations.	Climate Change Trust Fund - funds would meet costs associated with diversifying tourism product; sub-regional/domestic emissions trading scheme that will ensure benefits are flowing from the UK and European carbon trading scheme; Carbon Levy on guests of hotels and charter yachts; Climate Change Financial Risk Management Levy on foreign registered companies and ships
		Residential	BVI	A National Physical Development Plan, Local Area Plans	Medium/long term implementation A National Physical Development Plan, Local Area Plans
		Waste Management	BVI	Energy & water conservation/efficiency standards;	n/a
		Land Use, Land Use Change and Forestry	BVI	National Tourism Policy & Development Master Plan; expanded protected areas; building & disaster management criteria; National Physical Development Plan; Local Area Plans	Medium/long term implementation A National Physical Development Plan, Local Area Plans

6	Standardised Policy Focus	Relevant to all sectors	Relevant to all OTs	Possibilities are: FCO sponsored pilot on environmental mainstreaming; Scaling up of FCO approach to	Mainstream climate change into existing policies and plans
7	Capacity Building Focus	Relevant to all sectors	Relevant to all OTs	Possibilities are: BAT: provision fo staff education under the Carbon Reduction Strategy. DFID support via	Prioritise interventions in the draft climate change policy and develop programme of capacity support to take forward
8	Next Step Approach	Relevant to all sectors	Relevant to all OTs	Possibilities are: Falklands: scale up wind farm technologies; Gibraltar: renewable energy legislation.DFID support via the ECACC programme and	Prioritise interventions in the draft climate change policy and develop programme of capacity support to take forward
9	UK Exposure Approach	Biodiversity and Ecosystems	Anguilla	Designation of one nationally protected (wetland) area and allocation of 7.5acre demonstration area for Department of Environment; draft climate change policy drafted and to be adopted in 2012;	Conserve existing wetland (saltpond) ecosystems and encourage wetland migration strategies; approve and implement a National Wetlands Policy; continuous monitoring and development of comprehensive bio-diversity baseline; development of an integrated coastal zone management plan which includes understanding the risk of flooding due to sea level rise and improvements to the national coastal monitoring system and system of beach profile data collection ; implement schemes for re-vegetation and re-nourishing beaches
			BAT	26 Specially Protected Areas and Marine Protected Area designated; Penguin distribution study; Wildlife awareness manual; Toolkit for the management of Protected Areas; Identification of important bird areas; Polar Science for Planet Earth project	Proactive management of key Protected Areas; Continuation of the penguin distribution study
			Falklands	Bio-diversity strategy in place. FIG sponsored environmental research, awareness raising, conservetion and management activities. OTEP projects to conserve or collect species or restore plant habitats.	Species monitoring and species action plans in place.
			Montserrat	Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention); Vienna Convention for the Protection of the Ozone Layer;	protected areas/zoning; in situ conservation of endemic species and control of invasive species; revise port legislation re discharge; ensure protection of ghauts and vegetative strips and enforce all aspects of land use planning
			Gibraltar	Management and Action Plan for the conservation of Sites of Community Importance enforced; Marine Special Area of Conservation designated; Catalogue of living resources; Habitat and Species Action Plans.	Dolphin study; climate change studies
			SBAs	Special protection Areas designated; Turtle projects; Acacia Control Project	Designation of Special Areas of Conservation; MoU for Conservation of Migratory Birds of Prey in Africa and Eurasia
		Hydrology and Water Resources	Anguilla	New desalination water plant	Water harvesting, increased water storage and more effective maintenance of distribution network to reduce leaks; promote the use of water savings devices (low flush toilets etc); develop and implement national outreach and educational programmes; bring efficiencies to water desalination as technology improves and bring renewable energy sources on stream (wind and solar).
			BAT	Introduction of more efficient reverse osmosis plants; Introduction of water saving flow reduction valves	Implementation of a programme of water efficiency technology changes
			Falklands	n/a	Climate change modelling based on collected data.
			Gibraltar	Modernisation of fresh water distribution (saving of energy during desalinisation; seawater used for conveyance of sewage and other non-domestic purposes; Replacement of sea defences	Flood defences; Improvement of drainage infrastructure.
			Montserrat	Some adhoc water harvesting, (minidams, roof rainwater harvesting). Many assets not maintained and now in disrepair.	Protect groundwater sources from pollution; develop better water resource management and allocation systems; Opportunity for all new build at Little Bay and Carr's Bay.
			SBAs	n/a	Adoption of Concentrating Solar Power technologies for water desalination

		Tourism	BAT	n/a	Enhancement of UK expertise on tourism management
			Montserrat	Potential investments in the new town at Little Bay and the construction of a new port, if affected, would not reflect well in the international press.	Fiscal incentives to encourage sustainable tourism; integrate mainstream CC issues (impact, responses, opportunities) into tourism development strategy; recommended design speeds increased for new tourism-related structures; enhanced reef monitoring systems to provide early warning alerts of bleaching events, and; artificial reefs or fish-aggregating devices
			Gibraltar	n/a	n/a
		Transportation	SBAs	n/a	n/a
			Montserrat	Potential investments in the new town at Little Bay and the construction of a new port, if affected, would not reflect well in the international press.	Integrate CC issues into current port design and the master plan development at Little Bay and other infrastructural development projects.
			Gibraltar	New bus transport system introduced; free to children.	Car park and park and ride bus shuttle service construction planned; Increase in public transport times/routes; More free public transport.
		Energy Supply and Use	Anguilla	n/a	Enhance efficiency of diesel power generation. Link into regional sources of energy arising from potential geothermal networks on Nevis and Montserrat. Customer educational policies to encourage energy efficiency; promote energy efficient technologies such as energy efficient light fittings and solar hot water heaters.
			BAT	Solar heating systems installed at 2 stations; Introduction of sub-metering more effective monitoing of energy consumption; Introduction of LCD screens	Adoption of renewable enrgy sources: wind turbine and solar photovoltaic systems; Energy efficient rettrofits for research ships; use of unmanned aerial vehicles
			Montserrat	2008 Montserrat Sustainable Development Plan; shortly be upgrading its diesel based power station to more reliable 1.5 MW source.	Exploitation of geothermal energy is a stated aim of the National Energy Policy; test drilling 2012; Geothermal energy is proved to be feasible, there is potential to generate up to 50MW of energy, with export of around 40MW to a neighbouring island; potential wind turbine sites at locations within the Blakes Estate although the new National Physical Development Plan for North Montserrat 2012-2022 zones this land for residential and recreational tourism.
			Gibraltar	Replacement of power plants with a power station powered by diesel engines.	The use of biofuels to be encouraged by selling at lower price in petrol stations; adopt biofuels for Govt fleet; Adoption of renewable energy resources: wind, energy from waste and tidal current all considered technically viable.
		Industry and Commerce	BAT	All infrastructures constructed with best practices in low energy design.	n/a
			Montserrat	Potential investments in the new town at Little Bay and the construction of a new port, if affected, would not reflect well in the international press.	n/a
			Gibraltar	n/a	Incentives for import and use of highly efficient equipment.
		Livelihoods/Poverty	Anguilla	n/a	n/a
			Montserrat	Invested heavily in irrigation infrastructure, training of farmers, livestock production units and a farmer's resource centre.	Government is investing in improved fisheries infrastructure and training to improve the quantity, quality and presentation of produce.
			Falklands	n/a	n/a
			Gibraltar	n/a	n/a
		Human Health	Anguilla	n/a	n/a
			Montserrat	n/a	Public education and outreach; forecasting systems for Dengue Fever and other vector-borne diseases.
			Falklands	n/a	n/a
			Gibraltar	n/a	n/a
10	Do Nothing Approach	n/a	n/a	n/a	n/a