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Part 2 - Detailed Report

Section E - South Atlantic Region

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OVERSEAS COUNTRIES AND TERRITORIES

ENVIRONMENTAL PROFILE

PART 2 - Detailed Report

Section A - South Atlantic region

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LIST OF ABBREVIATIONS AND ACRONYMS USED

ACAP	Agreement on Conservation of Albatrosses and Petrels
ACOR	Association Française pour les Récifs Coralliens
ACS	Association of Caribbean States
AEPS	Arctic Environmental Protection Strategy
AFL	Aruba guilders
AI	Ascension Island
AIG	Ascension Island Government
AIWSA	Ascension Island Works & Services Agency
AMAP	Arctic Monitoring and Assessment Programme
ANG	Anguilla
ANRD	Agricultural & Natural Resources Department
AOSIS	Alliance of Small Island States
APEC	Asia–Pacific Economic Cooperation
ARU	Aruba
BAS	British Antarctic Survey
BAT	British Antarctic Territory
BIOT	British Indian Ocean Territory
BRGM	Bureau de Recherches Géologiques et Minières
BVI	British Virgin Islands
CARICOM	Caribbean Community and Common Market
CAFF	Conservation of Arctic Flora and Fauna
CAY	Cayman Islands
CCAMLR	Convention on the Conservation of Antarctic Marine Living Resources
CCC	Cod and Climate Change Programme
CDB	Caribbean Development Bank
Caribank	Caribbean Development Bank
CARICOM	Caribbean Community
CARIFORUM	Caribbean Forum
CBD	Convention on Biological Diversity
CCAMLR	Convention on the Conservation of Antarctic Marine Living Resources
CDERA	Caribbean Disaster Emergency Response Agency
CDS	Catch Documentation Scheme
CEHI	Caribbean Environmental Health Institute
CESC	Conséil Economique, Social et Culturelle (FP)
CIA	(US) Central Intelligence Agency
CITES	Convention on International Trade in Endangered Species
CMS	Convention on the Conservation of Migratory Species of Wild Animals
CNRS	Centre National de Recherche Scientifique
COLTO	Coalition of Legal Toothfish Operators
CoP	Conference of the Parties
CPA	Country Poverty Assessment
CPACC	Caribbean Planning for Adaptation to Climate Change
CR	critically endangered (IUCN classification)
CRISP	Coral Reefs in the South Pacific
CROP	Council of Regional Organizations of the Pacific
CSD	Commission on Sustainable Development
CSM	Caribbean Single Market
DAF	Direction de l'Agriculture et de la Forêt (Mayotte)
DCNA	Dutch Caribbean Nature Alliance
DEACI	Department of Economic Affairs, Commerce and Industry
DEFRA	(UK) Department of Environment, Food and Rural Affairs
DEPD	Development & Economic Planning Department (St Helena)
DfID	(UK) Department for International Development
DIP	(Aruba) Directorate of Infrastructure and PlanningDK Denmark
EC	European Community

ECE	Economic Commission for Europe
ECCB	Eastern Caribbean Central Bank
EDF	European Development Fund
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EIB	European Investment Bank
EIS	Environmental Impact Statement
EN	endangered (IUCN classification)
ENSO	El Niño Southern Oscillation
EPA	Economic Partnership Agreement
EPD	environment, planning and development
EU	European Union
F	France
FAO	Food and Agriculture Organisation
FCO	(UK) Foreign and Commonwealth Office
FDA	Aruba Development Foundation
FEA	Fonds pour l'Environnement et l'Agriculture
FI	Falkland Islands
FIG	Falkland Islands Government
FP	French Polynesia
GCRMN	Global Coral Reef Monitoring Network
GDP	gross domestic product
GEF	Global Environment Facility
GGF	Good Governance Fund
GHG	greenhouse gas(es)
GIWA	Global International Water Assessment
GoA	Government of Anguilla
GR	Greenland
GSGSSI	Government of South Georgia and South Sandwich Islands
HMS	His Majesty's Ship
IAATO	International Association of Antarctica Tour Operators
IBA	Important Bird Area
ICCAT	International Commission for the conservation of tuna-like fish in the Atlantic
ICES	International Council for the Exploration of the Sea
ICES-CCC	ICES Cod and Climate Change Programme
ICRI	International Coral Reef Initiative
IFRECOR	Initiative Française pour les Récifs Corraliens
IIED	International Institute for Environment and Development (UK)
IMF	International Monetary Fund
IPCC	International Panel on Climate Change
IRD	Institut de Recherche pour le Développement (France)
IUCN	International Union for Conservation of Nature
IUU	illegal, unregulated and unreported (fishing)
JCNB	Joint Commission on Narwhal and Beluga
JNCC	(UK) Joint Nature Conservation Committee
LPO	Ligue pour la Protection des Oiseaux
LSB	Landbased Sources of Marine Pollution (protocol of the Cartagena Convention)
MAB	Man and Biosphere (Reserve)
MACC	Mainstreaming Adaptation to Climate Change
MAHLE	(Montserrat) Ministry of Agriculture, Lands, Housing and Environment
MAY	Mayotte
MDGs	Millennium development goals
MEA	Multilateral environmental agreement
MINA	(NL Antilles) Ministry of Public Health and Social Development
MON	Montserrat
MoU	Memorandum of Understanding

MRAG	Marine Resources Assessment Group
MVO	Montserrat Volcano Observatory
n.a.	not available
NACRI	Netherlands Antilles Coral Reefs Initiative
NAFO	North Atlantic Fisheries Organisation
NAMMCO	North Atlantic Marine Mammal Commission
NC	New Caledonia
NDP	National Development Plan (St Pierre & Miquelon)
NEMS	National Environmental Management Strategy
NGO	non-governmental organisation
NL	Netherlands
NLA	Netherlands Antilles
NNR	National Nature Reserve
NT	National Trust
NZ	New Zealand
NZ$	New Zealand dollars
OECS	Organisation of Eastern Caribbean States
OCT	Overseas Countries and Territories
OCTA	Overseas Countries and Territories Association
OTCC	(UK) Overseas Territories Consultative Council
OTD	Overseas Territories Department (of UK FCO)
OTEF	(UK) Overseas Territories Environment Fund
OTEP	(UK) Overseas Territories Environment Programme
PADD	Plan d'Aménagement et de Développement Durable (Mayotte)
PAME	Protection of the Arctic Marine Environment
PEP	Poverty and Environment Partnership
PGA	Plan Général d'Aménagement
PGEM	Plan de gestion de l'Espace Maritime
PID	Pacific Islands Development Programme
PNG	Papua New Guinea
POP	persistent organic pollutant
PROE	Programme régional océanien de l'environnement
PWSD	Public Works and Services Department
RFMO	Regional Fisheries Management Organisation
RSP	Regional Seas Programme *or* Regional Strategy Paper
RSPB	(UK) Royal Society for the Protection of Birds
SAWG	South Atlantic Working Group (of the UK OTCF)
SCOR	Scientific Committee on Oceanic Research
SCP	Strategic Country Programme
SD	sustainable development
SDP	Sustainable Development Plan
SEA	Strategic Environmental Assessment
SEAFO	South-East Atlantic Fisheries Organization
SEF	Service de l'Environnement et de la Forêt (Mayotte)
SGSSI	South Georgia and South Sandwich Islands
SHI	St Helena Island
SIDS	Small Island Developing States
SIDSNet	Small Island Developing States Information Network
SITAS	Service d'Inspection du Travail et des Affaires Sociales (Wallis & Futuna)
SMOC	(NL Antilles) Stichting Schoon Milieu Curaçao
SOPAC	South Pacific Applied Geoscience Commission
SPA	Specially Protected Area
SPAW	Protocol concerning Specially Protected Areas and Wildlife
SPEM	Service de la Pêche et de l'Environnement Marin (Mayotte)
SPD	Single Programming Document
SP&M	St Pierre & Miquelon

SPREP	South Pacific Regional Environment Programme
SPT	South Pacific Tourism Organisation
STH	St Helena
TAAF	Terres Australes et Antartiques Françaises
TAC	total allowable catch
TCI	Turks & Caicos Islands
TDC	Tristan da Cunha
TEAP	Taxe pour l'environnement, l'agriculture et la pêche
TERV	taxe pour l'enlèvement et le recyclage des véhicules
UK	United Kingdom
UKOTCF	United Kingdom Overseas Territories Conservation Forum
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNECLAC	United Nations Economic Commission for Latin America and the Caribbean
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Social and Cultural Organisation
VMS	Vessel Monitoring System
VROM	Netherlands environment ministry
VU	vulnerable (IUCN classification)
W&F	Wallis & Futuna
WH	World Heritage
WRI	World Resources Institute
WTO	World Trade Organisation
WW2	second world war

Table of Contents

1. Environmental profile of South Atlantic OCTs – Regional

1.1 Introduction

This volume is part of a 6-volume report made at the request of the European Commission. It presents environmental profiles for the four overseas countries and territories (OCTs)[1] in the South Atlantic region. There are companion volumes for the OCTs in the Pacific, Caribbean, North Atlantic and Indian Ocean regions. The purpose of the environmental profiles is to feed discussions on the environment and possible consequences environmental trends may have on OCTs socio-economic development, and more specifically, to assist the EU in programming its EDF assistance to the OCTs.

This volume comprises an overall profile in which the territories are treated in the context of the South Atlantic region as a whole, followed by the environmental profiles for the individual territories (Annexes A to D).

1.2 Description of the region

We here regard the South Atlantic region as comprising the islands lying in the Atlantic ocean South of the equator, in the Atlantic sector of the Southern Ocean, and the Antarctic continent, but not the littoral states of Africa and South America. There are not many islands/territories in this region, and the territories which do occur tend to be fairly remote from one another. There are four OCTs in the South Atlantic region, namely

- St. Helena and Dependencies,
- the Falkland Islands,
- South Georgia and South Sandwich Islands (SGSSI), and
- the British Antarctic Territories.

However St. Helena and its Dependencies, Ascension Islands and Tristan da Cunha, although regarded for convenience as a single OCT, are more like three separate territories, and are treated as such where possible in this regional section.

These OCTs are all UK overseas territories.

- Apart from the OCTs dealt with in this report there are no other territories in the South Atlantic region as defined, apart from other sectors of Antarctica.

The distances between the islands are very large, for example:

Some inter-territorial distances in the South Atlantic	
Territories	**Approximate distance (km)**
St Helena - Ascension	1200
St Helena - Tristan da Cunha	4200
Ascension - Falklands	5000
Falklands - South Georgia	1300
South Georgia - BAT	1300
South Georgia - South Sandwich	800

1.3 Relevant regional organisations and programmes

There are a number of regional organisations important in a technical or financial sense for the purpose of these environmental profiles. These include:

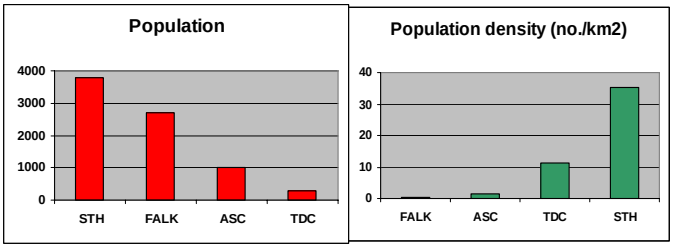
[1] The term overseas countries and territories refers to the 20 countries and territories which, although falling within the sovereignty of a member state of the European Union, are wholly or partly autonomous

Name	OCT members	Other members	Remarks
Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR)	UK on behalf of BAT and SGSSI and Falkland Islands (which have fishing interests within CCAMLR region)		Part of the Antarctic Treaty System. It was established mainly in response to concerns that an increase in krill catches in the Southern Ocean could have a serious effect on populations of krill and other marine life; particularly on birds, seals and fish, which depend mainly on krill for food. The Convention established a Commission to manage the marine living resources of the area for which it is responsible.
S. Atlantic Working Group of the UK Overseas Territories Conservation Forum (OTCF)	SHI, ASC, TDC, SGSSI, Falklands	UK govt., OTCF	The OTCF is an association whose members include all the UK overseas territories, the UK government and conservation organisations. The S. Atlantic Working Group includes the members in the S. Atlantic region, and meets twice yearly to discuss matters of mutual interest.
SE Atlantic Fishery Organisation (SEAFO)	UK for St H, ASC, TDC		Signed by the UK in April 2001 on behalf of SH & Dependencies
Legal Toothfish Operators (COLTO)			Professional association of toothfish fishers.

Of the above bodies, one (SEAFO) is a classic regional fishery management organisation (RFMO), CCAMLR is in many ways like a RFMO but has a wider brief related to more general nature conservation in the Antarctic region.

2 The territories: present situation and trends

2.1 Population



Three of the territories do not have permanent populations at all in the normal sense of the word. In the BAT and SGSSI there are only a small number of researchers, government officers, military and visitors stationed there temporarily. On Ascension only those that work on the island have the right to live there: there is no right of abode or right of property ownership for residents. The population of the islands (excluding BAT and BSSGI) ranges from 274 (Tristan da Cunha) to 3800 (St Helena), as seen on the chart on the left. The islands are all relatively sparsely populated, particularly the Falkland Islands and Tristan da Cunha, which have very low population densities.

2.2 Economic

General

There is a wide variation in mean incomes between the territories. Estimates of per capita GDP only exist for St Helena together with its Dependencies and for the Falklands Islands. These are €3500 per annum for St Helena and Dependencies (average for the three island territories) and almost €40,000 for the Falklands. The figure for St Helena of course excludes the significant British aid to St Helena Island and remittances from St Helenians working elsewhere, but the difference is considerable.

Fisheries
The fisheries have at least some importance for all the 6 territories. Fishing is the mainstay of the economies of the Falkland Islands and Tristan da Cunha, and very important on the SGSSI. On St Helena fishing is at a more moderate level, but nevertheless forms the major export of the island. Fishing is more of an incidental activity on Ascension, where most of the islanders are employed by one of the main 'users' of the island. The BAT does not itself license fishing, but as a member of the Antarctic Treaty and CCAMLR (see above) participates in enforcement activities.

The status of the fishing industry in each of the territories is summarised in the table below.

Status of the fishing industry in South Atlantic OCTs

OCT	Impor-tance	Own fleet/ licencees?	Management / enforcement	RFMO?	Comments
ASC	⭘	Own fleet	Poor, lack enforcement means	SEAFO	Little known about fishery resources in EEZ
BAT	○			CCAMLR	Fish resources are not owned by the territory, but there is an obligation to assist with enforcing the fishery regulations. Fishers should be licensed by CCAMLR
FALK	●	Mainly licences	Very good	None	Well managed fishery for illex squid and others. 25% of revenue spent on monitoring and enforcement.
SGSSI	●	Licences	Very good	CCAMLR (part)	Very well managed fishery for Patagonian toothfish and other. Emphasis on enforcement
SHI	⭘	Own fleet	Poor, lack enf. means	SEAFO	Inshore fishing only. Little known about fishery resources in EEZ
TDC	●	Mainly licences	Fair, some poaching	SEAFO	Specialised crayfish fishery

○ Unimportant
⭘ Artisanal / incidental
⭘ Moderate economic activity
● Major economic activity
RFMO - Regional fisheries management organisation

The fisheries in the Falkland Islands and SGSSI are both relatively recent, and are well managed fisheries which rely on licensing to mainly foreign fishing vessels. Strict conditions are attached to fishing licences granted, and the fisheries are reasonably well policed, applying exemplary punishments when unlicensed vessels are found fishing in their territorial waters. They have also both succeeded in minimising incidental mortality of seabirds from fishing, a major problem in many of the other fisheries in the southern hemisphere.

In addition to fisheries, the islands would all like to increase their earnings from tourism (or are subject to increasing tourism anyway). None of these territories is likely to become mass tourism destinations, but have identified niche tourist markets which they are trying to develop. With the advent of a new airport around 2010, St. Helena has a real opportunity to give its tourist industry a shot in the arm and attract a new clientele. Tristan da Cunha also sees carefully controlled tourism as a way of diversifying its vulnerable crayfish-dependent economy.

2.3 Nature of islands, habitats, wildlife

The territories span the South Atlantic region from just south of the equator to the South Pole. All except BAT are remote islands or island groups. Some (St Helena, Ascension, Tristan, South Sandwich) are of volcanic origin and indeed there is active vulcanism on the last two mentioned. Their physical remoteness is compounded by a lack of transport infrastructure. There are no airports on St Helena (although one is

planned for 2010), Tristan and SGSSI, and no public airports on Ascension or BAT. There is also a lack of deepwater landing facilities.

The territories are all rocky, rugged and mountainous, and there is little low-lying land on them. BAT and SGSSI are situated south of the Antarctic Convergence (or Polar Front), a line of discontinuity in ocean temperature in the southern hemisphere caused by the global thermohaline system which also acts as a kind of biological barrier between the Antarctic region and the rest of the planet. These territories are largely covered by snow and ice.

Only the Falklands, St. Helena and SGSSI are subject to the Ramsar Convention, and only the former has any designated Ramsar sites, although the others have proposed sites under consideration.

2.4 Flora and fauna

The territories have in common that they were all only relatively recently settled by humans (i.e. in the last 300 years). The flora and fauna are determined in large measure by their remoteness, insularity and (for seabirds) their strategic situation in the ocean. The territories are homes and/or breeding grounds to globally important seabird populations, notably albatross and petrels, many species of which are threatened and all of which are declining.

Although the seas are rich in marine mammals, there are very few native terrestrial mammals on these territories. A number of terrestrial mammals have been introduced however, either intentionally or inadvertently. These include cats, mice, rats, sheep, goats and reindeer, Many of these introduced species have had a great impact on the native flora and fauna.

Many islands exhibit high endemism[2]. The isolation conferred by their insularity favours this phenomenon and the more remote a territory, the higher its endemism often is. Endemism confers a special responsibility on the country or territory concerned since it is the sole steward of the fortunes of that species. The following are some (incomplete) statistics on endemism in the South Atlantic OCTs.

	Number of endemic species			
	Birds	**Terrestrial invertebrates**	**Insects**	**Plants**
Ascension	1	28		12
BAT	0			0
Falkland Is	17		250	14 vascular 25 mosses
St Helena	1 (5 now extinct)	400	140	49
SGSSI	1	55		49
TDC	2	22		20 ferns, 34 flowering plants

St Helena has ten endemic inshore fish, and 16 more are found only there and around Ascension. Ascension has a further 9 endemic fish species.

[2] Endemism refers to the phenomenon that a species occurs in only one country (or island or group of islands). The species is then said to be endemic to that country.

3 Issues and threats

3.1 Introduction

3.2 Climate change and energy

Antarctica is the site of an enormous concentration of ice - the Antarctic ice sheet - whose future as the earth warms is a matter of acute interest to the rest of the world. The BAT accounts for about 12% of the total area of Antarctica. In considering climate change in the South Atlantic region the impact must be considered not only on the territories, but also on the rest of the world in terms of sea-level rise. The BAT

also includes the Antarctic Peninsula, which appears to be warming rather faster than the rest of the continent.

There is considerable scientific uncertainty about the response of the Antarctic ice-sheet to climate change. It is agreed that temperatures in Antarctica are rising as in other parts of the world, although possibly more slowly, but the general consensus is that the Antarctic ice-sheet will not play a great role in climate change during the present century. Although the ice shelves on the Antarctic Peninsula may continue to melt, this will not have a major global impact since this is not grounded ice, so that its melting will not affect sea-level.

In terms of local impacts, sea-level rise will have less impact on the South Atlantic territories than on many other places in the world. Most of them are rugged and rocky, of volcanic origin, with little low-lying land.

The main concern relates to the impact of climate change on fisheries. A warming of seawater, the retreat of sea-ice and changes in marine currents may have major impacts on the local supply of nutrients and the marine habitat generally. The effect of these on food chains and population compositions and their impact on fisheries is not known. These changes may not all be negative. Warmer water may mean improved productivity in some fisheries, and there may be improved access to Antarctic regions.

These territories are windy and have high rates of solar irradiation, offering good prospects for renewable energy sources. At the same time, electricity generation using diesel engines is costly and inefficient. The Falklands is developing a system to use waste heat from power generation for space heating, and a wind farm is to be installed: both measures will further displace fossil fuel use. These two projects are expected to reduce fossil fuel imports to the islands by about 23%. Most settlements and farms elsewhere in the Falklands generate electricity from wind turbines. Typically the wind turbines in the rural areas generate about 80% of energy requirements. St Helena also has a small number of wind turbines, which in theory account for 20% of the island's electricity demand. The Falkland Islands accepted the obligations of the FCCC and the Kyoto Protocol in 2006.

3.3 Waste management

The issue of waste is not a glamorous or high-profile one, and waste is generally managed at the territorial or local level. Issues related to the Basel Convention involving illegal international movements of waste do not appear to be an issue for the OCTs. However this low profile means that it was difficult to gather comprehensive data on the state of waste management in the territories concerned.

All small island states face special problems in relation to waste management:

- lack of the critical size and therefore ability to benefit from the economies-of-scale needed to make modern waste management techniques - sanitary landfills, safe incinerators - economic;
- lack of facilities, critical size, markets to make recycling and composting feasible;
- lack of public awareness about waste, need for prevention and reduction;
- lack of facilities for dealing with hazardous waste including infectious clinical waste;
- lack of suitable space for and resistance by local residents to new landfills;
- marine debris is a particular problem in the South Atlantic.

The situation in the territories in the South Atlantic is briefly as follows:

Territory	Description
Ascension	
BAT	Relatively large volumes of waste debris
Falkland Is	Current waste management legislation and practice is inadequate, and there is no policy for recycling, although there is awareness and re-use on the islands. Few reception facilities on the islands for ship generated garbage and oily waste. Ships' waste - refuse, food waste and sewage - are often jettisoned into the sea.
St Helena	Waste tip is nearly full.
SGSSI	Marine debris, litter from tourists
TDC	Waste asbestos problem from debris left by hurricane in 2001

3.4 Illegal, unregulated and unreported (IUU) fishing

In the South Atlantic and Southern Oceans, fish are important not only as an economic resource and for their species diversity in their own right, but also because they are necessary to the survival of other species higher up the food chain, including marine mammals and the seabirds which depend on them for their food.

We distinguish between IUU fishing within territories' EEZ, in the Southern Ocean and elsewhere on the high seas.

IUU fishing within territories' EEZ
Fishing in the EEZ of another country without permission or a licence is illegal. In the Falkland Islands and SGSSI illegal fishing within territorial waters is thought to be well controlled, albeit at a cost. Surveillance and enforcement represent a significant proportion of the value of the resource: 25% in the Falkland Islands and probably even higher in SGSSI. SGSSI uses a combination of instruments including all-weather satellite observation of vessels in its territorial waters, advance documentation from shipping entering its territorial waters and patrol vessels.

In Tristan da Cunha, St Helena and Ascension, enforcement is almost non-existent, and the islands' surveillance and enforcement capacity is rather rudimentary. The fishery on Tristan de Cunha is based on the valuable Tristan crayfish. It is managed strictly so as to conserve stocks and a TAC (total allowable catch) is set each year accordingly. The fishery is subject to significant poaching. The catch is completely TAC-limited, and the TAC can be taken in a relatively small number of days per year. Illegal fishing reduces stocks, and the TAC set not only reflects past poaching, since this has depleted present stocks, but also current poaching, since the total catch includes poaching, so that the legally allowed catch must be reduced accordingly. thereby directly reducing income.

Although St. Helena enjoys a significant income from fishing (particularly tuna), the fishery is probably not fully exploited. Indeed little is known about the size of the fishery resource. Although foreign fishing vessels fish within St. Helena's EEZ, there is no effective surveillance or enforcement, and very little income from licences. St Helena simply does not know whether it would be worthwhile to try to develop its fishery, or how much licence income it is losing by failing to enforce.

Because of the nature of the economy on Ascension there is only limited interest in the fishery anyway, and little chance that the situation will change while there is no right-of-abode on the island, but in principle the same situation applies there.

IUU fishing in the Southern Ocean
In the Southern Ocean south of the Atlantic convergence, CCAMLR is the body which manages the fisheries of the different commercial fish. But CCAMLR is different from other regional fishery management organisations. It is not an association of fishing nations motivated by maintaining the economic value of a fishery but an organisation whose primary motivation is wildlife conservation in the

Antarctic. This means that in setting TACs for a given fish type it also has regard to the impact on species related to that fish type in the food chain. It takes a 'total ecosystem' approach.

CCAMLR exercises reasonably strict controls over licensed vessels. Patagonian toothfish is one of the key species because of its high value. CCAMLR has made use of an automated satellite-linked vessel monitoring system (VMS) on Patagonian Toothfish vessels mandatory, and has introduced a catch documentation scheme (CDS) and a resolution urging Members to blacklist known IUU vessels.

The trouble is that CCAMLR is a voluntary system, and its provisions only apply to the vessels, ports, etc. of participating states. There is also scope for falsification of records, false declarations etc. and implementing states have a lot of discretion.

In consequence, the problem of IUU fishing is an ongoing one, which has not yet been solved.

IUU fishing elsewhere in the South Atlantic
Most of the fish species of commercial interest in the South Atlantic, with the exception of the Tristan crayfish, are migratory species, which spend much of their time in the high seas or in other territorial waters. This applies particularly to the illex squid (Falklands). Good management of the fisheries within territorial waters is to no avail if the stocks are exposed to uncontrolled fishing in international waters. Waters south of the Antarctic Convergence are managed by CCAMLR. St Helena, Ascension and Tristan fall under SEAFO, whose main focus is much more on the waters of western Africa. The waters in the south-west Atlantic around the Falklands and some of those around SGSSI (i.e. those not within CCAMLR jurisdiction) are not subject to any RFMO at all. Although considerable efforts have been made to establish a RFMO, the poor relations between Argentina and the UK, two of the main players in this region, has been an obstacle. However these two countries are probably also amongst the main losers from the unregulated fishing and lack of a RFMO.

3.5 Incidental mortality of seabirds due to fishing bycatch

Incidental mortality of seabirds, particularly albatross and petrel, is thought to be a major if not the greatest cause of the decline in numbers of these birds, and therefore a major contributor to their threatened status. This applies to the longline, trawling and jigging fleets, all of which pose hazards to seabirds. Feasible methods exist to virtually eliminate incidental seabird mortality, as shown by the experience of the Falklands and SGSSI, where such methods have been implemented. But these methods are not adopted in all fisheries and are probably completely absent in the case of IUU fishing.

3.6 Invasive species

Predation of chicks and eggs by introduced species
This is a problem on St. Helena, Ascension, Tristan, the main islands of the Falklands and on South Georgia, although some of the smaller islands have remained rat-free. Rats introduced inadvertently, but also mice and cats, are a major problem. Populations of the endemic Falkland flightless steamer duck and Cobb's wren on the Falklands and the Ascension frigatebird and the red-footed booby on Ascension and many bird communities on Tristan have been severely reduced by rats. South Georgia pipits and smaller burrowing petrel species have been eliminated, and populations of white-chinned petrels and yellow-billed pintails have been reduced on South Georgia. Rats were also responsible for the extinction of the rail and night heron on Ascension. Rat eradication programmes have been carried out successfully on 12 islands in the Falklands and from Glass Island on South Georgia and feral cats were removed from Ascension. However eradication programmes are expensive, and not always successful.

Other invasive species
Many introduced flora species have also become invasive, and are threatening native species. On Ascension the recently introduced Mexican thorn bush provides food and cover for rats, and threatens Ascension's green turtle population, the surviving unique desert flora and fauna and some geological features.

3.7 Conserving biodiversity generally through implementing MEAs

Following UNCED in Rio de Janeiro in 1992, 188 nations ratified the Convention on the Conservation of Biological Diversity, undertaking to fight to slow the massive extinction of species of flora and fauna which the world has been witnessing for centuries. This Convention is one of a number of multilateral environmental agreements (MEAs) which are designed to protect natural habitats and threatened species. The OCTs cannot sign MEAs in their own right. But OCTs can take on the responsibilities of an MEA if the associated sovereign state (in this case the United Kingdom) has signed the MEA and asks, at the request of the OCT, that the MEA is extended to the territory of the MEA. If this happens, and if the OCT complies with the obligations of the treaties concerned and implements them fully, it can be an effective way of protecting its natural capital.

The situation with regard to some of the most relevant MEAs is as follows:

OCT	CBD	Ram-sar	CITES	CMS	ACAP	Remarks
Ascension	✓		✓	✓		Biodiversity management plan not yet prepared as required under CBD. CITES not yet fully implemented
BAT						
Falkland Is		✓	✓	✓	✓	A biodiversity action plan has not yet been adopted, though there is a draft. There are two Ramsar sites and a further 18 have been proposed. CITES is strictly applied.
St Helena	✓	✓	✓	✓		No official Ramsar site yet, but three sites have been proposed. Biodiversity management plan not yet prepared as required under CBD. CITES implementing legislation in 2003.
SGSSI		✓	✓	✓	✓	No official Ramsar site yet, but two sites have been proposed: effectively the whole of SG and the whole of SS. CITES has not yet been fully implemented.
TDC	✓		✓	✓	✓	Biodiversity management plan not yet prepared as required under CBD. ACAP effective in April 2006. CITES not yet fully implemented.

CBD = Convention on Biological Diversity
Ramsar = Ramsar Convention on Wetlands
CITES = Convention on International Trade in Endangered Species of Wild Flora and Fauna
CMS = Convention on the Conservation of Migratory Species of Wild Animals
ACAP = Agreement on the Conservation of Albatrosses and Petrels

Gough and Inaccessible islands have been declared a World Heritage site.

Although these territories have made more progress in *joining* MEAs than many other OCTs, there is still a lot to be done in properly implementing them and complying with the obligations.

3.8 Water pollution

Wastewater is generally pumped untreated directly into the sea or disposed of in septic tanks or soakaways. There is little monitoring of the impact of these discharges on the quality of the surrounding seawater or of the groundwater.

3.9 Environmental governance

The governments of the OCTs in the South Atlantic appear to recognise the importance of conserving their unique heritage of wildlife, under a number of threats. This will only happen if a number of conditions are met:

- Environmental policy has to be formulated. and this has to be translated into an action plan which sets priorities, contains a clear but realistic timetable of measures, allocates responsibilities clearly to named departments or persons.

- Appropriate legislation must be enacted which assigns responsibilities to named departments or persons for implementation and enforcement. This should include legislation providing for mandatory environmental impact assessment (EIA) which meets modern standards and legislation for designating and managing protected areas (marine and terrestrial) and protecting specific species of flora and fauna.

OCT	Policy paper?	Env. action plan?	EIA?	Protected areas?	Remarks
Ascension		✓	✗	✓	Has a Strategic Plan, the Ascension Island Management Plan, for 2003-08. This includes some of the commitments of the Environment Charter. There is not yet legislation making EIA mandatory.
BAT			✓	✓	Environmental management is provided for through the Antarctic Treaty system together with agreements ratified by its members. These have been implemented in *British* law (which applies to British nationals throughout the Antarctic continent).
Falkland Is		✓	✓		No general environmental action plan or strategy, but there is a conservation and biodiversity strategy in draft form. A 'National Plan of Action – Seabirds' has been adopted. Protected areas legislation and protected areas designated, but no requirement for active management. EIA legislation in place, particularly targeting petroleum activities.
St Helena		✓	✓	✓	Environmental management function somewhat fragmented. There is also a strategy document for implementing the Environmental Charter made with the UK government.' There is not yet legislation making EIA mandatory. Development and policy initiatives are subjected to 'environmental screening, however. Protected areas legislation in place, and there is a draft National Plan of Protected Areas, but no protected areas have yet been designated.
SGSSI	✓	✓✓	✗	✓	Environment management plan currently being updated, and will provide for protected areas. No such areas yet designated, but 13 areas designated in draft new plan. No EIA legislation, although the government is committed to requiring EIA.
TDC		✓✓	✗	✓✓	Has formulated a Biodiversity Action Plan. There is not yet legislation making EIA mandatory. 40% of the island is protected

Territories are making progress towards a sound basis for environmental management which responds to the specific needs of the territory. There is generally some way to go however before there are environmental impact assessment systems in place which conform with best practice. No territories provide for strategic environmental assessment.

4 Recommendations for cooperation in the environment between the EC and South Atlantic OCTs

The consultants were asked to make recommendations about possible areas of cooperation between the EC and the OCTs. Recommendations with regard to individual OCTs are made at the end of the individual OCT environmental profiles. Part 1 of this report looks at cooperation at the overall and interregional levels. This section considers areas which might be considered for funding at the regional level.

It should be borne in mind that two of the territories in this region - the British Antarctic Territory and South Georgia and the South Sandwich Islands - have not been recipients of Community aid, as they are self-financing territories without a permanent population.

Many of the environmental problems and challenges faced by the South Atlantic OCTs are essentially the same ones. In some cases the same solutions might apply. This being the case, it might appear sensible to set up multi-territory/country projects in the region to tackle these problems and find common solutions. However there are also certain diseconomies involved in regional projects:

- Geographical scatter means that there is a logistical and cost overhead involved in getting people together.
- Differences in political structures which then make access to common funding mechanisms difficult.
- Island to island differences, for example in legislation, in geology or in political choices may decrease the value of a regional approach.
- Lack of human resources and in some cases expertise.

Notwithstanding these difficulties, the following is a list of areas where a regional approach could produce synergies, assuming reasonably comparable countries/territories are involved. All of them should if appropriate build on existing regional initiatives.

1. On a general matter, The EU regards St Helena, Ascension and Tristan da Cunha as a single UK Overseas Territory, although they have separate Councils, legislative procedures and budgets. One consequence of this is that cooperative projects between these islands do not qualify for EU regional funding. Given the sparseness of territories in the South Atlantic, this reduces possibilities for cooperation. The EU may be able to modify its rules so that cooperative projects between these islands have access to regional EDF funding.

2. There are a number of *fishery issues*:
   - Lack of proper *enforcement* capacity in St Helena, Ascension and Tristan da Cunha to prevent illegal fishing in their EEZ represents a possible loss to those economies. The Falklands and SGSSI seem to have developed fairly effective enforcement systems in their EEZs, and have successful fisheries. There may be scope for a structured exchange of information and ideas or pooling of resources that would benefit all parties.
   - More generally, an assessment needs to be made of fishing enforcement techniques and technologies, including use of licensees to assist with enforcement, use of earth observation technologies linked with notification of entry into EEZ, catch documentation schemes, making the presence of a fishing vessel without an operating automatic transmitting positioning system an offence, rather than having to prove fishing, etc. This might be done in conjunction with CCAMLR, for whom this is an important issue.
   - Possibly prior to or in parallel with this, an assessment needs to be made of the fishery potential of the EEZs of St Helena and both of its dependencies. This would include the economic feasibility of a licensing and enforcement system similar to that developed in the Falkland Islands. In the case of Tristan da Cunha this would include the prospect of diversifying its fishery from its heavy dependency on crayfish.
   - There is no regional fishery management organisation (RFMO) in the south-west Atlantic at present. This is partly because of the poor relations between the UK and Argentina with regard to the Falkland

Islands. The EU could consider trying to broker a fishing deal which would be beneficial to a number of states and territories in the region.

3. Work tackling common problems in waste management, including:
   - what measures can be taken to reduce waste volumes, both from households and from the tourist industry?
   - for which waste streams is it realistic to attempt recycling, with which instruments?
   - devising standards which landfills should meet to ensure they are safe and do not pollute groundwater or coastal waters.

   - approaches for difficult waste streams: car wrecks, waste oils, asbestos from demolition of buildings, other hazardous or clinical waste.

4. Research into climate change, with particular reference to the role of Antarctica, for example in cooperation with European research bodies already operating in Antarctica.

5. Cooperation on the scope for wind power as a replacement to diesel for electricity generation, building on existing experience on the region.

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Wilkinson, C. (editor), 2004: Status of Coral Reefs of the World: 2004, Global Coral Reef Monitoring Network GCRMN and Australian Institute of Marine Science.

Organisation	Website address	Remarks
ACOR- French Coral Reefs Association	http://www.univ-perp.fr/ephe/acorweb/francais/menu.html	Association Française pour les Récifs Coralliens
ADEME- French energy conservation Agency	http://www2.ademe.fr/servlet/getDoc?id=11433&m=3&cid=96	Agence de l'Environnement et de la Maîtrise de l'Energie
Caribbean Development Bank	http://www.caribank.org/Publications.nsf/EReview2005_turkscaicos/$File/ECReview2005_turkscaicos.pdf?OpenElement#search=%22pier%20construction%20turks%20caicos%22	
CEDRE- French documentation centre for accidental water pollution	http://oceanprevention.free.fr/cedre2.htm	Centre de documentation, de recherche et d'expérimentations sur les pollutions accidentelles des eaux
CIA	www.cia.gov/cia/publications/factbook/index.html	Info per OCT
CITES or Washington Convention on trade in endangered species (1973)	www.cites.org	
Coalition of legal toothfish operators	http://www.colto.org	Fisheries, particularly Southern Hemisphere
CRED- Centre for Research on the Epidemiology of Disaters	http://www.em-dat.net/disasters/country.php	Interesting database on disasters
EU- Indicative programmes VIII EDF	http://ec.europa.eu/comm/development/oct/ind_prog_en.htm	
EU- on all OCTS	http://ec.europa.eu/comm/development/oct/index_en.htm	
EU- on individual OCTs	http://ec.europa.eu/comm/development/oct_new/oct_en.cfm	
EU- Regional strategy papers:	http://ec.europa.eu/comm/development/body/csp_rsp/rsp_en.cfm	
EU- Single programming documents IX E	www.ec.europa.eu/comm/development/body/csp_rsp/spd_en.cfm	

Organisation	Website address	Remarks
European Commission	http://ec.europa.eu/comm/development/body/development_policy_statement/docs/edp_summary_en.pdf (English) http://ec.europa.eu/comm/development/body/development_policy_statement/docs/edp_summary_fr.pdf (French)	Summary of EDP
FAO regional fisheries bodies	http://www.fao.org/fi/body/rfb/index.htm	
French Centre for Biodiversity Convention	http://biodiv.mnhn.fr/	Centre d'Echange français pour la Convention sur la diversité biologique.Portail de la biodiversité en France pour la Convention sur la diversité biologique
French Fund for the global environment	http://www.ffem.net/jahia/Jahia/lang/fr/pid/224	Fonds Francais pour l'environnement mondial
French Ministry Ecology and SD	www.ecologie.gouv.fr general site On overseas: http://www.ecologie.gouv.fr/rubrique.php3?id_rubrique=970	Ministere de l' Ecologie et Développement durable
French National Inventory of Species	www.inpn.mnhn.fr general site http://inpn.mnhn.fr/inpn/fr/inpn/diversity_DT.htm on biodiversity overseas	Inventaire National du patrimoine naturel (INPN)
French Overseas Ministry	http://www.outre-mer.gouv.fr/outremer/front?id=outremer/decouvrir_outre_mer http://www.outre-mer.gouv.fr/outremer/front	Ministère de l'Outre-Mer on Overseas countries and territories and 2007 budget
French Prime minister's office	http://www.premier-ministre.gouv.fr/information/actualites_20/transferts_fonds_europeens_collectivites_57080.html	Transfer of EU funds to French OCTS
Futura Sciences	http://www.futura-sciences.com/comprendre/d/index.php	Dossier on coral reefs
GIWA- Global assessment of international waters	www.giwa.net	A UNEP/ GEF / Kalmar university project
Global Ocean Ecosystem Dynamics	http://www-cger.nies.go.jp/cger-e/db/info-e/InfoDBWeb/prog/globec.htm	Global Ocean Ecosystem Dynamics
ICRI	http://www.icriforum.org	ICRI international coral reef initiative
IFEN- French institute for the environment	http://www.ifen.fr	
IFREMER Institut francais de recherche pour l'exploitation de la mer	http://www.ifremer.fr/francais/index.php http://oceanprevention.free.fr/ifremer2.htm	
Info on cities threatened by hurricanes	http://www.hurricanecity.com	Info on hurricanes by country
Innovation Centre, University of Exeter	http://www.innovation.ex.ac.uk/imm/Disaster_management.htm	Climate change and the poor
Innovation Centre, University of Exeter	http://www.innovation.ex.ac.uk/imm/PovertyAndReefsProgress.htm	Poverty and Reefs
Inventaire National du patrimoine naturel (INPN)	http://www.inpn.mnhn.fr	

Organisation	Website address	Remarks
IPIECA	www.ipieca.com	On oil spills
IRD- French research institute for development	www.ird.fr	Institut de recherche pour le developpement
Island Resources Foundation	http://www.irf.org/	Foundation is dedicated to solving the environmental problems of development in small tropical islands
Island vulnerability	http://www.islandvulnerability.org	Good data on all territories except Greenland
IUCN	www.iucn.org	International Union for the Conservation of Nature
London Convention on prevention of marine pollution by dumping of waste and other matter	http://www.londonconvention.org/	
NOAA	http://www8.nos.noaa.gov/biogeo_public/reef_photos.aspx http://www.oceanservice.noaa.gov/education/kits/corals/coral09_humanthreats.html	Centre for coastal monitoring and assessment of coral reefs
NOAA- National Oceanic and Atmospheric Administration	http://www.noaa.gov	General site
OCTA	www.octassociation.org	Organisation of OCTs
POLMAR	http://oceanprevention.free.fr/polmar2.htm www.polmar.com	French institute and rules for action in case of pollution of seas
Reefbase	On reefs in all countries: http://www.reefbase.org/global_database/default.aspx?section=s1	
Reefbase	http://www.reefbase.org/references/ref_Literature.asp?searchactive=yes&ID=13887	Search facility reefs database
Reefbase	http://www.reefbase.org http://www.reefbase.org/references/ref_Literature.asp?searchactive=yes&ID=13887	Search facility reefs database
Relief Web	www.reliefweb.int	On disasters
RFO	www.rfo.fr	Radio site for French OCTs (Reseau France Outre –mer) with info on OCTs
Scientific Committee on Oceanic Research (SCOR)	http://www.jhu.edu/%7Escor/	
Smithsonian Institute volcano site	http://www.volcano.si.edu	
UK DFID (Department for International Development)	http://www.dfid.gov.uk/countries/allcountries.asp?view=region	Country Profiles

Organisation	Website address	Remarks
UK FCO (Foreign and Commonwealth Office)	http://www.fco.gov.uk/servlet/Front?pagename=OpenMarket/Xcelerate/ShowPage&c=Page&cid=1013618138295	On overseas territories
UN Millenium Developmentt Goals	http://mdgs.un.org/unsd/mdg/Data.aspx	Situation per country and territory
UN-ECE	http://www.unece.org/	
UNEP	http://www.unep.net/profile/ http://www.un.org/esa/sustdev/natlinfo/natlinfo.htm	Country profiles (not on OCTS)
UNEP	http://www.unep.ch/	Register international environmental conventions secretariats based in Geneva
UNEP on sustainable tourism	http://www.uneptie.org/pc/tourism/policy/about_principles.htm	
UNEP on waste management	http://www.unep.fr/pc/pc/waste/waste.htm	
UNEP World Conservation Monitoring Centre	www.unep-wcmc.org	for instance on coral reefs, mangroves and sea grasses, etc.
World Resources Institute	http://reefsatrisk.wri.org/casestudy.cfm http://earthtrends.wri.org/features/view_feature.php?theme=1&fid=12	On reefs at risk- country reports
World resources institute	http://www.wri.org/	General site
World Resources Institute	http://earthtrends.wri.org/select_action.php?tool=3	Statistical data per country and territory, on biodiversity, energy, coastal and marine ecosystems, economics, population, etc.

SOUTH ATLANTIC

Organisation	Website address	Remarks
South Atlantic Remote Territories Media Association	http://www.sartma.com	Interesting World and South Atlantic News site

Falkland Islands

Environment & Resource Technology Ltd., 1997: Environmental assessment for the proposed exploration drilling operations offshore the Falkland Islands. Report no. ERT 97/061.

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Organisation	Website address	Remarks
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Falkland Islands government	http://www.falklands.gov.fk	
New Island Trust	http://www.newislandtrust.com	
Falklands Conservation	http://www.falklandsconservation.com/index2.html	
Sub-Antarctic Foundation for Ecosystem Research (SAFER)	http://www.subantarctic.com	
CIA	https://www.cia.gov/cia/publications/factbook/print/fk.html	
	http://www.subantarctic.com	

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South Georgia and the South Sandwich Islands. February 2006.

Organisation	Website address	Remarks
CIA	https://www.cia.gov/cia/publications/factbook/print/sx.html	
International Association of Antarctica Tour Operators	http://www.iaato.org	
South Georgia Island Online Environmental Resources	http://www.sgisland.org/pages/sghome.htm	

St. Helena

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http://www.sainthelena.gov.sh/government/policys/TourismMain2draftpart1.htm

Hansard, 2006: Debate on Ascension Islands in House of Commons, Wednesday, 15 February 2006.

Ryan, P. G. and J. P. Glass, 2001: Inaccessible Island Nature Reserve Management Plan, Government of Tristan da Cunha.

Organisation	Website address	Remarks
Ascension Island government	http://www.ascension-island.gov.ac/	
CIA	https://www.cia.gov/cia/publications/factbook/print/sh.html	
St Helena government	http://www.sainthelena.gov.sh/	
St Helena government	http://www.sainthelena.gov.sh/	
The Islander (on-line edition) Ascension	http://www.the-islander.org.ac	
Tristan Times Online Newspaper	http://www.tristantimes.com	All kinds of interesting articles
Tristan Times Online Newspaper	http://www.tristantimes.com	All kinds of interesting articles

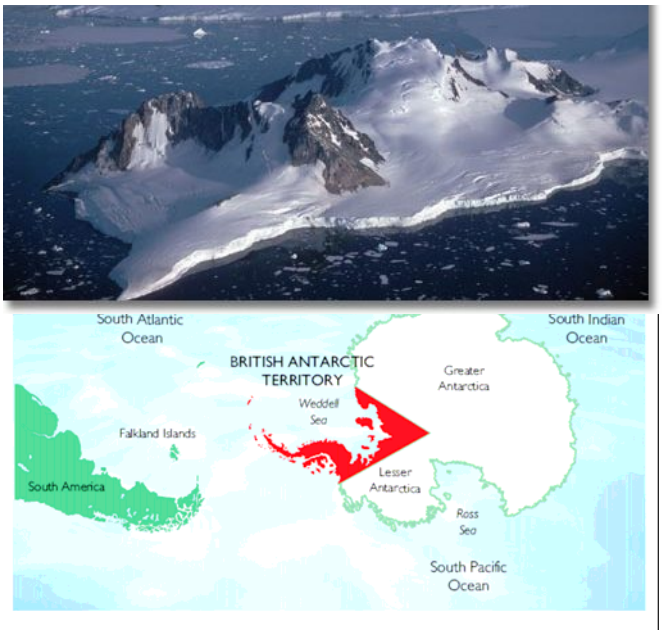
ANNEX A : ENVIRONMENTAL PROFILE -

BRITISH ANTARCTIC TERRITORY

0. Summary

The British Antarctic Territory is the second largest OCT after Greenland. In many ways it is not like an autonomous territory at all. It has no permanent population, and the UK claim to the territory is not recognised by most countries (like other nations' claims on the continent). Much of the legal regime is determined by the parties to the Antarctic Treaty. The environmental management provisions derive from the Treaty and agreements made within it. The main issues are unregulated fishing in the Southern Ocean, including the bycatch of seabirds such as albatrosses, rapidly increasing tourism, marine debris and climate change,

1. Background information



The British Antarctic Territory (BAT) is an overseas territory of the UK. The British claim to the British Antarctic Territory, like other territorial claims in Antarctica, is not generally internationally recognised, and indeed most of the BAT is counter-claimed by both Chile and Argentina. Seven countries have made territorial claims in Antarctica.

The disputes over territorial sovereignty are held in abeyance by the Antarctic Treaty (adopted 1959, entered into force 1961), which provides an internationally agreed regime for Antarctica. Article IV of the Treaty imposes a freeze on all territorial claims and disputes while the Treaty, which is of indefinite duration, remains in force. The objectives of the Treaty are to keep Antarctica demilitarised, establish it as a nuclear-free zone, ensure that it is used for peaceful purposes only, promote international scientific cooperation in Antarctica and to set aside disputes over territorial sovereignty. Five separate international agreements have been negotiated which, together with the original Treaty and the associated measures, decisions and resolutions, provide the framework governing all activities in Antarctica . They are known as the Antarctic Treaty System. By October 2002, 45 States had become members of the Antarctic Treaty System.

The UK's permanent presence in Antarctica dates from 1943 with the establishment of the wartime 'Operation Tabarin', which provided reconnaissance and meteorological information in the South Atlantic. This year-round presence was taken over at the end of the war by the Falkland Islands Dependencies Survey which subsequently became the British Antarctic Survey (BAS) in 1962.

1.1 Key facts and statistics

Name of Territory	British Antarctic territory
Region	South Atlantic
Land area	1.7 million km^2 (12% of the continent of Antarctica)
Exclusive economic zone	Australia, Chile, and Argentina claim Exclusive Economic Zone (EEZ) rights or similar over 200 nm extensions seaward from their continental claims, but like the claims themselves, these zones are not accepted by other countries.
Population	No permanent population

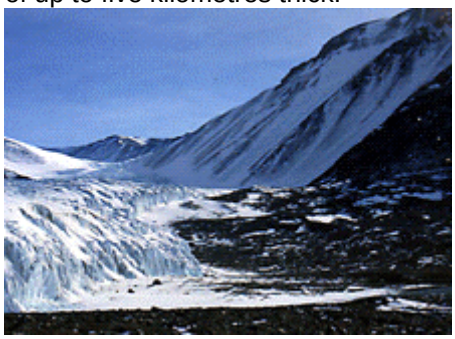
GNP/capita	Not applicable

1.2 Constitution

Originally BAT was administered as a dependency of the Falkland Islands. In March 1962 the BAT ceased to be a Dependency of the Falkland Islands and became a British Dependent Territory in its own right. However, the territory continued to be administered from the Falkland Islands until, under the British Antarctic Territory Order, 1989, responsibility for its administration was assumed by a Commissioner appointed by the Foreign Secretary. The Commissioner resides in London, is concurrently Head of the Foreign and Commonwealth Office's Overseas Territories Department (OTD) and appoints officers such as the Chief Justice, Senior Magistrate, etc. He has powers to make laws, subject to certain conditions, and the BAT has a comprehensive set of its own laws, and judicial and postal administrations. The Head of the Polar Research Section of OTD acts as Administrator. The administrative centre is at the Rothera air facility (BAS-run).

1.3 Physical geography

The BAT lies between longitudes 20º and 80º W, south of latitude 60º S. It includes Graham Land, the South Orkney Islands, the South Shetland Islands, the mountainous Antarctic Peninsula (highest point Mount Jackson, 4151 m, in Palmer Land) all adjacent islands, and the land mass extending to the South Pole. The land mass is largely ice-covered; the sea areas adjacent to Antarctica are seasonally frozen. Only 0.7 per cent of the territory's surface is ice-free. The remainder is covered by a permanent ice sheet of up to five kilometres thick.



Severe low temperatures vary with latitude, elevation, and distance from the ocean. The Antarctic Peninsula has the most moderate climate; higher temperatures occur in January along the coast and average slightly below freezing.

Antarctica is surrounded by the Southern Ocean. This ocean is clearly delimited by the Antarctic Convergence (or Polar Front), which is where cold Antarctic waters meet warmer waters to the north. The Antarctic Convergence acts as an effective biological barrier, and the Southern Ocean is therefore a largely closed ecosystem.

1.4 Flora and fauna

Although vegetation is sparse on land there are many types of lichen, moss and algae. In the surrounding seas the krill, present in large quantities, provide the basis for a rich marine life: whales, seals and large numbers of birds especially petrels and penguins on the islands and coastal areas of the Peninsula. Adélie and emperor penguins both breed on the continent itself.

Other fish in Antarctic waters include finfish, Patagonian/Antarctic toothfish, icefish, lantern fish, squid, crabs.

No endemic terrestrial species have been reported on the territory.

1.5 Demography, socio-economy

The BAT has no indigenous population and indeed no permanent residents. The UK's presence in the territory is provided primarily by the British Antarctic Survey (BAS). The BAS maintains a year-round presence at two permanent scientific research stations (Halley and Rothera) and two summer-only stations (at Fossil Bluff on Alexander Island and Signy in the South Orkney Islands). BAS carries out

scientific research in Antarctica into areas of crucial concern such as global climate change, ozone depletion and atmospheric pollution. During the austral winter, around 40 BAS personnel are present.

This figure rises to some 250 in the summer. These stations also act as post offices. The BAS is funded by the UK Department of Trade and Industry through the Office of Science and Technology.

There are no passenger airports in the BAT and no scheduled shipping services, but two research vessels supply and restaff the British scientific stations. The BAS operates five aircraft out of Rothera during the summer. An ice patrol vessel is deployed for five months per year in the BAT undertaking hydrographic surveying, assisting the BAS and carrying out inspections under the Antarctic Treaty and CCAMLR (see 3.1).

Several other nations (Argentina, Brazil, Bulgaria, Chile, Ecuador, Germany, Republic of Korea, Peru, Poland, Russia, Spain, Ukraine, United States and Uruguay) maintain stations and bases in the BAT, many on the South Shetland Islands.

The BAT is self-financing. In 1996/7 the territory's expenditure amounted to €200,000 and its revenue to nearly €300,000. The main source of revenue are the sale of postage stamps and taxes. However tourism is increasing. The BAT is the most accessible and most visited sector of the Antarctic and public interest in the continent generally is attracting well over 10,000 tourists to the Antarctic Peninsula each year. Some 97 per cent of this tourism is ship-based. Approximately 60 per cent of tourists to the BAT visit the UK restored research station of Port Lockroy which, along with three other former bases, was declared a historic site under the Antarctic Treaty in 1995. The Environmental Protocol (see 3.4) includes provisions for managing tourism to minimise environmental impact.

Fishing takes place in the Southern Ocean off BAT, but the territory does not have the fishing rights.. In 2003-04 the fisheries which fall within CCAMLR jurisdiction (see 3.1) reported a catch of 136,000 tons

2. Main environmental challenges

2.1 Overview

The terrestrial environment in the BAT is not subject to great anthropogenic pressure given the small number of people who enter the territory, and the fact that they are mostly working in government-funded research activities, There could be a waste issue in the future when the installations and buildings on the territory reach the end of their life and have to be replaced or removed.

2.2 Main challenges

The main environmental issues are therefore those that arise from activities in the Antarctic and Southern Oceans and global issues. These issues are as follows:

Challenge 1 Climate change MODERATE

Antarctica is the world's largest repository of ice. The ice sheet on Antarctica is about 25 million km^3 in volume (grounded ice only), equivalent to a rise in sea-level, if it were to melt completely, of 60 metres. The impact of climate change on the region is therefore of global as well as local interest.

Changes to date
Analysis of cross-sections of polar ice indicate that temperature change has been ongoing for centuries in Antarctica. There was a cooling period in the late 1700s and 1800s and a warming over the 19th century, During the 20^{th} century, satellite observations show no significant change in Antarctic *sea-ice* extent over the 1973-1996 period, but there is evidence of a southward retreat in Antarctic sea ice between the mid-1950s and the early 1970s. Researchers have concluded that the sea-ice extent reduced by 0.4-1.8 degrees of latitude over the 20th century as a whole (IPCC, 2001).

Surface waters of the Southern Ocean have warmed and become less saline.

There has been little change to the *Antarctic ice-sheet* in the last century (in contrast with the Arctic). This is because temperature there are so low that small changes in temperature do not lead to melting. There is also little seasonal variation, and only a few limited areas exhibit summer melting The scenario

involving the collapse of the West Antarctic ice sheet is now considered to be of lower probability than first thought.

Of special interest is the *Antarctic peninsula*, within the territory of the BAT, which has shown a consistent regional rate of warming that is more than twice the average for other Antarctic stations. There have been a number of spectacular collapses of ice-shelves[3] on the Peninsula, related to a southerly migration of the January 0°C isotherm resulting from regional warming. However few direct impacts result from the loss of these ice shelves. The ice shelves were floating, so their melting does not directly add to sea level, and they usually are replaced by sea-ice cover, so overall albedo changes very little. Because the Antarctic Peninsula is steep and rugged, there is no evidence that removal of ice shelves will cause melting of the glaciers that fed them to accelerate and add to sea-level rise (Vaughan, 1993). Terrestrial ecosystems generally will be unaffected by ice-shelf retreat. Most polar benthic organisms, especially in the Antarctic, grow extremely slowly, so colonization of exposed seabed will be slow. Ice-shelf retreat does however highlight the issue of climate change, and can have an important impact on public opinion.

Likely changes in 21st century
Estimates of the likely physical and biological impacts of climate change depend on many complex global and local factors. Predictive models are still subject to considerable uncertainty, and are not well resolved geographically, so that they cannot explore specific local effects such as on the Antarctic peninsula.

Substantial warming and increases in precipitation are projected for polar regions over the 21st century by almost all climate models. There is considered to be a small risk that the West Antarctic ice sheets will retreat in coming centuries. and if it happens, this cryospheric change may make a significant contribution to sea-level rise.

There is likely to be further break-up of ice-shelves further south on the Antarctic Peninsula, thereby exposing more bare ground, and causing changes in terrestrial biology, such as the introduction of exotic plants and animals.

Climate change is likely to produce long-term—perhaps irreversible—changes in the physical oceanography and ecology of the Southern Ocean. Projected reductions in sea-ice extent will alter under-ice biota and spring bloom in the sea-ice marginal zone and will cause profound impacts at all levels in the food chain, from algae to krill to the great whales. Marine mammals and birds, which have life histories that tie them to specific breeding sites, will be affected by shifts in their foraging habitats and migration of prey species. Warmer water will potentially intensify biological activity and growth rates of fish. Ultimately, this could lead to an increase in the catch of marketable fish, and retreat of sea ice will provide easier access to southern fisheries (IPCC, 2001).

Overall the Antarctic and the Southern Ocean are likely to respond relatively slowly to climate change, so there will be less impact in this region compared with elsewhere by 2100. Nevertheless, climate change in the Antarctic will initiate processes that could last for millennia—long after greenhouse emissions have stabilized—and these changes will cause irreversible impacts on ice sheets, oceanic circulation of water, and sea-level rise.

The direct effect of a change in temperature is known for very few Antarctic organisms. But an increase in temperature is likely to lead to ecosystem shifts. Organisms that are unable to tolerate the present low-

[3] An ice-shelf is a mass of ice and snow which has slid down from the land into the sea and which, while still hinged to the land, floats in the sea. Ice-shelves are found around much of the coast of Antarctica and account for some 10% of the surface area of the continent.

temperature regime will invade the Southern Ocean. Some that already are there will exhibit increased rates of growth. Predicted reductions in the extent and thickness of sea ice will have ramifications not only for the organisms directly associated with sea ice but also for those that rely on oceanographic processes that are driven by sea-ice production.

Stratospheric ozone depletion

in 1998, NASA satellite data showed that the Antarctic ozone hole was the largest on record, covering 27 million square kilometres; researchers in 1997 found that increased ultraviolet light passing through the hole damages the DNA of icefish, an Antarctic fish lacking haemoglobin; ozone depletion earlier was shown to harm one-celled Antarctic marine plants. Changes in organisms at the bottom of the Antarctic marine food chain can have major knock-on effects up the chain and therefore on all marine life.

Challenge 2 Unregulated fishing and seabird bycatch MODERATE

In recent years there is thought to have been a considerable increase in illegal, unregulated and unreported fishing (IUU fishing) in the Southern Ocean. Substantial catches of toothfish have been taken by longline fishing well in excess of allowable catches agreed by CCAMLR, both in national and international waters. The high incidence of IUU fishing has had a detrimental effect not only on toothfish stocks, but also on populations of sea birds which may be caught inadvertently in such fishing operations. The lack of information on IUU fisheries undermines CCAMLR's conservation measures and severely complicates efforts to determine future toothfish stock trends in certain areas with any level of certainty.

There have been major reductions in the populations albatrosses and petrels in the Southern Ocean in the last 20 yrs. Trawl and longline fisheries are believed to be the major cause of this mortality. Experience has shown that in relatively intensively policed and managed fisheries such as in the Falkland Islands, seabird bycatch can be reduced to almost nil by adoption of appropriate measures. But mitigation measures are difficult to police and enforce in the huge and hostile Southern Ocean environment. The lack of seabird bycatch mitigation measures by many fishing vessels fishing in these waters is thought to be a major factor in the current 4% annual decline in the breeding populations of these seabirds.

CCAMLR has been taking a number of measures including at-sea and port vessel inspections and the requirement for the continuous monitoring of vessels position in the Convention Area using automated satellite-linked monitoring systems (VMS). For a number of fisheries in the Convention Area, Flag States are required to transmit real-time vessel position information to the centralised VMS database located at the CCAMLR Headquarters. It has also published and distributed an educational book for fishers which promotes practical ways in which longline fishers can reduce incidental catches of seabirds in bottom longline operations.

Challenge 3 Pressures on Antarctic system due to increased tourism ATTENTION REQUIRED

Tourism to Antarctica has been rising rapidly in recent years, and much of this tourism is to the BAT territory. A total of 23,175 tourists visited Antarctica in the 2004-05 summer, up 20% from the previous year. Nearly all of them were passengers on commercial ships and several yachts that make trips during the summer. Most tourist trips last approximately two weeks.

While most of this tourism has been ship-based, there may well be increasing pressures to extend the experience onshore. The challenges which this will pose need to be anticipated and planned for, with clear criteria and allocation of responsibilities.

Challenge 4 Marine debris MODERATE

Large amounts of debris are washed up onto the shores of the islands and mainland of the territory. This comes from vessels at sea which dump their waste and from fishing tackle lost at sea. This waste can adversely affect marine life.

CCAMLR has adopted and implemented measures to monitor marine debris and to mitigate its impact on marine biota in the Convention Area. A set of standard forms, methods and instructions has been developed for the collection and submission of data from these monitoring programs. CCAMLR members monitor beached marine debris at several locations, and long-term monitoring programs have been established by Australia, Brazil, Chile, Norway, South Africa, the UK, Uruguay and the USA.

CCAMLR has also instituted a number of initiatives to educate fishers and fishing vessel operators about pollution from marine debris, its impact on marine animals and about appropriate procedures for avoiding discharge of harmful debris at sea. Since 1989, fishing and fishing research vessels operating in CCAMLR waters have been required to display a marine debris placard which outlines procedures for the handling, storing and discarding of different types of refuse.

3. Environmental policies and institutions

3.1 Institutional structure, manpower and budgets

The preservation of the Antarctic environment is one of the main objectives of the administration, and much of its expenditure in the territory is for environmental research and management. Recent figures do not appear to be available, but in 1997/98, the BAT funded environment related projects in the territory to the sum of £115,000 out of a total estimated revenue of £200,000. This excludes general scientific research carried out by the BAS, which is separately funded.

Annual meetings of the Treaty and CCAMLR provide a forum for monitoring environmental activities and fishing. CCAMLR has established an Executive Commission and an Advisory Scientific Committee which meet annually at their headquarters in Hobart, Tasmania, Australia. CCAMLR also has a Scientific Committee to provide scientific advice and a Secretariat to provide administrative support. The Arctic Convention has a Commission to manage the marine living resources of the area for which it is responsible.

3.2 Mechanisms for integrating environment into development

At present, development is not yet on the Antarctic agenda, with the exception of the establishment of research and minimal administrative facilities. In the case of activities likely to impact the environment the Arctic Treaty system makes provision for EIA.

3.3 Environmental strategy and policy

3.4 Policy instruments

Antarctic Treaty
The key instrument for environmental protection in the BAT, and indeed throughout Antarctica, is the Antarctic Treaty. The main provisions of this Treaty are shown in the box below.

THE ANTARCTIC TREATY
• The Antarctic Treaty, signed on 1 December 1959 and entered into force on 23 June 1961, establishes a legal framework for the management of Antarctica. • The objectives of the Antarctic Treaty are to "ensure that Antarctica is used for peaceful purposes, for international cooperation in scientific research, and does not become the scene or object of international discord." • There are currently 45 member nations, 28 consultative and 17 non-consultative; consultative (decision-making) members include the seven nations that claim portions of Antarctica as national territory (claimant nations are - Argentina, Australia, Chile, France, NZ, Norway, and the UK; some claims overlap) and 21 non-claimant nations; the US and Russia have reserved the right to make claims; the US does not recognize the claims of others. • Antarctica is administered through meetings of the consultative member nations. Members meet periodically. Decisions are made by consensus (not by vote) of all consultative member nations, and are carried out by these member nations (with respect to their own nationals and operations) in accordance with their own national laws. The main provisions and principles are: • to be used for peaceful purposes only; • freedom of scientific investigation and cooperation; • free exchange of information and personnel; • neither recognises nor disputes existing territorial claims; no new claims shall be asserted while the treaty is in force; • no nuclear explosions or disposal of nuclear waste; • Antarctica includes all land and ice shelves south of 60°S and reserves high seas rights; • free access, including aerial observation, to treaty-state observers to all stations, installations, and equipment; • member states have jurisdiction over their observers and scientists; • treaty states will discourage activities by any country in Antarctica that are contrary to the treaty

Agreements ratified by members include:

Agreement	Remarks
Convention for the Conservation of Antarctic Seals, 1972	Six Sealing Zones and three Seal Reserves have been established under the Convention for the Conservation of Antarctic Seals.
Convention on the Conservation of Antarctic Marine Living Resources, 1980	Provides a legal framework for the management of fisheries south of the Antarctic Convergence. Management follows an 'ecosystem' approach. This means that account is taken not only of the impact of fisheries on the target species, but also on other species in the food chain: its predators and prey. For example, while krill harvesting is regulated and monitored directly, CCAMLR also endeavours to monitor the effect which harvesting may exert on species that eat krill or which are themselves eaten by krill predators.

Agreement	Remarks
Protocol on Environmental Protection, 1991	Entered into force 14 January 1998. Parties to the Protocol are committed to the comprehensive protection of the Antarctic environment and dependent and associated ecosystems. The Protocol also designates Antarctica as a natural reserve, devoted to peace and science. The Protocol has five annexes: 1. Environmental Impact Assessment 2. Conservation of Antarctic Fauna and Flora include prohibitions on the killing, wounding, capturing or molesting of any native mammal or native bird except in accordance with a permit; and regulations on the importation of non-indigenous species, parasites, and diseases. Permits may be issued only by persons authorised by a participating Government. Certain species can be designated 'Specially Protected Species'. 3. Waste Disposal and Waste Management 4. Prevention of Marine Pollution 5. Annex V Area Protection and Management. Annex V has yet to be approved by all Parties, and is therefore not in force, although its provisions are in de facto operation. The UK enacted domestic legislation to enforce the provisions of the Protocol through the Antarctic Act 1994 and Antarctic Regulations 1995. 6. Liability arising from environmental emergencies; mining activities prohibited.

The earlier Agreed Measures for the Conservation of Antarctic Flora and Fauna 1964, though legally still in force, have been superseded by Annex II to the Environmental Protocol.

Legislation
These obligations of the Protocol on Environmental Protection 1991 have been implemented in British law by means of the Antarctic Act 1994, which entered into force in January 1998. The purview of this law is not restricted to the British sector of the continent, but applies to all of Antarctica (effectively all land and sea south of 60°C), but only to British nationals (in keeping with the spirit of the Treaty). The Antarctic Act 1994 also provides a licensing regime for all activities in the Territory by British nationals. This legislation also covers environmental monitoring and impact assessment, waste management, oil spills and protected areas and species.

Protected areas
Specially Protected Areas (SPAs) were designated under the 'Agreed Measures'; special protection is given to preserve unique natural ecological systems or those of outstanding scientific interest. Sites of Special Scientific Interest (SSSIs) provide protection for sites which are important for scientific research. Access and types of activity permitted are regulated according to management plans.

Further categories agreed, but not yet in force, include Specially Reserved Areas (SRAs) and Multiple Use Planning Areas (MPAs). SRAs are designated for the protection of representative examples of areas of outstanding aesthetic, scenic and wilderness value. MPAs cover high-use areas where cooperative planning of human activities is necessary to minimise harmful environmental impacts.

When ratified, Annex V to the Protocol on Environmental Protection to the Antarctic Treaty, Area Protection and Management, will rationalise the protected area system by allowing for the designation of two categories of protected areas: Antarctic Specially Protected Areas and Antarctic Specially Managed Areas.

3.5 Monitoring

Both fish stocks and fishing activity are closely monitored by CCAMLR. Catch and effort data, along with biologically related data, are reported in quasi real-time at 5-day, 10-day or monthly intervals to the Secretariat on an individual fishery basis.

Two sites, Seal Islands and Cape Shirreff, have been designated as CCAMLR Eco-system Monitoring Programme sites under the CCAMLR Conservation Measure.

3.6 Enforcement

As resources assume growing economic importance, the temptation to work outside conservation or regulatory measures increases, leading to 'illegal, unregulated and unreported (IUU) fishing'.

Obviously, this is a difficult task, which is compounded by the Southern Ocean's size – approximately 35 million square kilometres. The vast size and inhospitable conditions of the Southern Ocean make it extremely difficult for Member States to enforce or police CCAMLR measures to combat IUU fishing.

4. International cooperation

4.1 MEAs

The BAT participates in the following MEAs:

MEA	Remarks
Protocol on Environmental Protection to the Antarctic Treaty	
The Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR)	Came into force in 1982.
The Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA)	Not ratified. This Convention has not come into force yet, and is largely superseded by the Environmental Protection Protocol.
CMS - Agreement on the Conservation of Albatrosses and Petrels (ACAP)	Extended to BAT in April 2004
Basel Convention	Extended to BAT in February 1994
Convention for the Conservation of Antarctic Seals (CCAS)	The Convention for the Conservation of Antarctic Seals (CCAS): the objective is to "promote and achieve the protection, scientific study and rational use of Antarctic seals, and to maintain a satisfactory balance within the ecological system of the Antarctic." The 1972 Convention for the Conservation of Antarctic Seals: this entered into force in 1978. The Convention contains comprehensive measures to regulate any taking of seals, including specifying permissible catch levels, protected species, and the opening and closure of sealing seasons and zones, and it establishes three Seal Reserves. The Convention is subject to regular review and has been used as a conservation, rather than resource utilisation, instrument.

In addition to the legal instruments and measures of the Antarctic Treaty System, activities in Antarctica are also subject to a variety of legal obligations that stem from treaties that are more broadly applicable, such as the International Convention for the Regulation of Whaling.

4.2 Access to funding by the international community for environmental and environment-related projects

None known.

4.3 Other international cooperation, membership of networks, etc. related to the environment (or environmentally sensitive sectors)

None known

5. Recommendations for future cooperation between EC and British Antarctic Territory

The British Antarctic territory is hardly an integral political territory at all in the usual sense of the word: it has no population, British (or other) sovereignty is not generally recognised and in many ways Antarctica is managed at the continental level by Treaty member states as a whole. The European Union has not provided aid to the territory in the past.

Nevertheless BAT and the other Antarctic OCT (French Antarctic and Austral Territories could provide an opportunity for the European Commission to get involved, either in global climate research of great importance (Antarctica is the major part of the Earth's cryosphere, crucial in the climate change equation), or in conservation of the important Antarctic fishery.

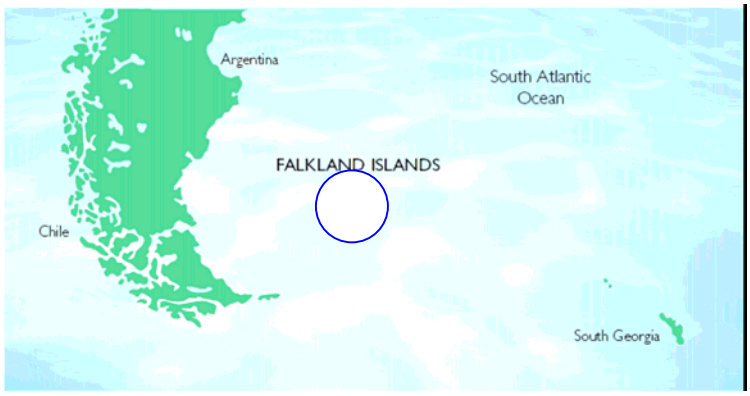
ANNEX B : ENVIRONMENTAL PROFILE -

THE FALKLAND ISLANDS

0. Summary

The Falkland Islands are a remote archipelago of low- and sparsely-populated islands in the South Atlantic lying 500 km off the coast of South America, just north of the Antarctic convergence, with a significant numbers of endemic invertebrates and plants. The main environmental issues in the Falkland Islands derive from (a) their importance as a breeding ground for marine birds, particularly albatross, petrels and penguins, (b) the importance of the fishing industry and (c) the likely future development and extraction of hydrocarbon resources offshore and possibly also onshore.

1. Background information



1.1 Key facts and statistics

Name of Territory	Falkland Islands
Region	South Atlantic Ocean
Land area	12,200 km^2
Exclusive economic zone	200 nm
Population	2700
GDP/capita	€39760 (SPD)
Literacy rate	100%
Unemployment rate	0%
% below poverty line	n.a.

1.2 Constitution

The Falkland Islands (FI) are an Overseas Territory of the United Kingdom. The constitution provides for a governor who represents and is appointed by the UK crown. There is a Legislative Council which comprises 8 Councillors, elected every 4 years, and 2 *ex officio* members, the Chief Executive and Financial Secretary. The Speaker of the Legislative Council is appointed by the Councillors. Some laws passed by this Council must be approved by the UK Secretary of State for Foreign Affairs.

The Executive Council advises and is presided over by the Governor. It comprises 3 Councillors, elected each year by the Legislative Council, and the same two *ex officio* members as in the Legislative Council. The Governor is obliged to consult the Executive Council in the exercise of his functions except on defence and security issues, where he must consult and follow the advice of the Commander of the British Forces in the Islands.

Argentina asserts a claim to sovereignty over the Falklands. The Falklands were invaded and occupied by Argentine military forces in April 1982, but surrendered to a British task force two months later.

1.3 Physical geography

The Falkland Islands lie in the South Atlantic about 500 km off the coast of South America and 1600 km from Antarctica. The archipelago comprises two main islands, East and West Falkland, and about 750 smaller islands and islets. The islands are composed of sedimentary rocks: the landscape is generally rugged and hilly, with the highest peaks being Mount Adam (700 m) on West Falkland and Mount Usborne (705 m) on East Falkland. The coastline of the two main islands is deeply indented. Most of the uplands are comparatively bare, comprising eroded peat, scree and stone runs ('rivers' of angular quartzite boulders). There are many wetland sites. The capital city is Stanley.

The islands have a cold, marine climate. They are subject to strong westerly winds and rain occurs on more than half of the days in the year.

1.4 Flora and fauna

The distinctive coastal and inland habitats of the Falklands support a wide variety of flora and fauna. In particular, the waters of the surrounding South Atlantic are rich in marine life, encouraging predators at the top of the food web such as albatrosses, penguins and seals. Over half the Islands' 64 breeding species are dependent on the sea for food. In international terms, the Falkland Islands are very important for their seabird and marine mammal populations. Colonies of nocturnal burrowing petrels exist on a few islands. More than 70% of the world's black-browed albatrosses (globally endangered) and 75% of the southern form of rockhopper penguins (vulnerable) breed in the Falklands. Another 8 bird species which nest on the island are of global conservation concern, including the Macaroni Penguin, the southern giant and white-chinned petrels and the Cobb's wren. The Islands are home to 17 endemic species of bird.

Between 1995 and 2000, the population of black-browed albatrosses is estimated to have fallen by about 18%. It is thought that this is due in large part to longline fishing and trawling in the south-west Atlantic, although climatic factors may also be playing a role. The population has fallen by 70% since the 1930s. Petrels are also vulnerable to longline fishing and the Cobb's wren is predated by the alien brown rat. Islands that have not been infested by rats support good populations of this bird.

In addition to breeding populations, the offshore waters support large numbers of migrant seabirds which move north at the start of the winter.

The Falkland flightless steamer duck or logger duck can be found in coastal areas along with kelp geese and crested duck; Oystercatchers, night herons and three species of gulls feed along the shore. Terns, white-rumped sandpipers and skuas are summer visitors. In places where there are freshwater ponds, especially near the coast, the upland goose and ruddy-headed Brent goose have contributed to the formation of fine green grass by continued cropping. Teal, widgeon, grebe and other species frequent such areas. Many species of bird are also found inland. Some offshore islands are the home of a rare bird of prey, the Striated Caracara or "Johnny Rook", found only on the Falkland Islands and some islands off Cape Horn. 22 Important Bird Areas have been designated.

There are few trees on the Falklands. The natural vegetation consists of coastal fringes of tussac grass, oceanic heath, acid grassland, peat bog and upland feldmark communities. Tussac is the tallest native plant and originally formed stands around the coasts, extending at least 200 m and sometimes 800 m inland, and covering small islands. On the main islands and many of those offshore the vegetation has been degraded by accidental or agricultural burning and grazing by sheep, cattle, pigs, horses and, more recently, guanaco, reindeer and goats. Tussac has almost disappeared from the coasts, and only survives in its original state on some relatively remote offshore islands. The vascular plant flora comprise some 170 native taxa, of which 14 are considered endemic. 25 endemic mosses have also been identified. There are 180 recorded introduced plant species. 23 plants on FI were included in the 2003 IUCN Red List of Threatened Species. Populations are being threatened by invasive alien species, grazing animals and habitat destruction.

No native land mammals are left on the Falklands. Around the coasts, southern sea lions and southern elephant seals breed in colonies of up to 300 pairs, and at a few remote rocky sites there are colonies of up to several thousand South American fur seals. Three species of seal breed on the Islands, elephant seal, sea lion and fur seal. Dolphins are often seen. Fifteen species of whale and dolphin occur in the surrounding seas.

Only two native species of freshwater fish are widely known on FI: the zebra trout and Falklands minnow. The latter is abundant, and there appears to be little reason for serious concern for its survival. By contrast the zebra trout is regarded as seriously threatened. Brown trout, first introduced to the Falklands in the 1940s, have thrived and become abundant.

In a land without native trees, reptiles, amphibians or surviving terrestrial mammals, the insect life forms a very important part of the islands' ecology. About 350 insect species have been recorded, of which a large percentage are endemic, with new species continuing to be discovered.

1.5 Demography, socio-economy

The permanent population of about 2700 has been boosted by a temporary British garrison which has been on the island since the Argentine invasion. The population is currently growing at about 2½% yearly.

In the past economic development was hindered by a lack of natural resources, the small size of the population, and the remoteness of external markets. Wool was the traditional mainstay of the economy and principal export. Since 1982 the pace of economic development has accelerated. This rapid growth resulted initially from the influx of aid from Britain but more recently from the development of fisheries. The size of the fisheries revenues and their subsequent investment has enabled improvements to be made in infrastructure. Since 1987 the primary source of income has been the sale of fishing licences to foreign squid and finfish fleets operating within the Falkland Islands' exclusive fishing zone. License fees are variable, but can exceed €35 million per year. The fisheries generate roughly half of the government's revenue. Squid accounts for 75% of the fish taken.

The fishing potential of the waters around the islands is considerable. Commercial fishing in the south-west Atlantic commenced in the early 1970s, but did not have much impact on the Falkland Islands until the introduction of the Falklands Interim Conservation and Management Zone in October 1986 and of licences in February 1987, in response to concern about the increasing levels of uncontrolled fishing close to the islands. This reduced the number of vessels fishing in FI waters from 600 to around 200.

The main resources which occur in the fishery are illex squid, fished principally by specialised squid jigging vessels from the Far East, and the loligo squid, fished mainly by FI trawlers. In addition the fishery has a number of finfish including blue whiting, hake and hoki.

The fisheries are managed by the Fisheries Department. Catch data is collected on a daily basis and passed to Imperial College in London, which helps the government monitor stocks accurately. The fishing effort is controlled by limiting the number of vessels licensed to fish within the zone. The illex squid poses serious conservation problems as it is a migratory species with a one-year lifespan. Illex spend part of their life cycle on the high seas where they are subject to a largely uncontrolled fishing effort. There is no international body which manages the fisheries in the south-west Atlantic.

A South Atlantic Fisheries Commission has been set up by Britain and Argentina to explore ways of improving conservation of migratory and straddling stocks, but in recent years (2005/2006) Argentina has reduced co-operation with the SAFC and attempts to promote a RFMO have stalled. In recent years both Argentina and the Falkland Islands have closed their respective fisheries for illex earlier than the scheduled end to the season in order to conserve stocks.

The fishery presents commercial opportunities for Falklands companies to provide support services to the fishing fleets, and to become increasingly involved in the fishery themselves.

A dramatic reduction in the illex catches in recent years underlines the precarious nature of this resource: average catches in the FI zones reduced from over 100,000 tonnes per year to less than 10,000 tonnes per year in 2003/ 2004 (1800 tons in 2004, some recovery in 2005). Catches in the Southwest Atlantic generally were higher. This decrease is thought to be due to a combination of non-regulated fishing on the high seas and poor recruitment due to changing oceanographic conditions.

The shelf around the Falkland Islands may contain hydrocarbon resources. The FIG announced a 200-mile oil exploration zone around the islands in 1993, and early seismic surveys suggest substantial reserves capable of producing 500,000 barrels per day. Exploratory drilling is expected in the North Falkland basin in 2007. Exploration for gold is also ongoing.

Tourism is increasing rapidly. A basic infrastructure exists to support land tourism. The Islands attract birdwatchers, wildlife enthusiasts, photographers and anglers. Cruise ship visits have increased from 5000 passengers in 1995/96 to over 40,000 in 2005/06. This rise in numbers is mostly due to an increase in the worldwide cruise industry.

Sheep farming makes up 95% of the Islands' agricultural activity. The Department of Agriculture is seeking to increase the profitability of the Islands' 90 farms.

Another large source of income is interest paid on government bank deposits. The British military presence also provides a sizeable economic boost.

Economic challenges faced by the Falkland Islands include:
- economy heavily dependent on one source of income: fishing licence revenue;
- limited technical and professional skills;
- economy with considerable central control;
- restricted private capital for investment;
- limited internal and external transport facilities.

2. Main environmental challenges

2.1 Overview

With their low population density and rugged topography, the FI do not suffer from the severe pressures due to development, and are less vulnerable to climate change, than some peers. The major challenge is to conserve the rich wildlife resources, particularly seabirds, which inhabit and breed on the islands and which are exposed to multiple threats. The territory has achieved a lot in terms of building up and policing its fishery, and ensuring that threats posed by fishing to local birdlife are minimised, but because of their heavy dependence on fishing the islands must ensure that their fisheries continue to be managed sustainably.

2.2 Main challenges

Challenge 1 Threats to the Falklands' biodiversity MODERATE

It was seen in section 1 that the FI are particularly important for their seabird and marine mammal populations, as well as other fauna and flora, and are home to a number of endemic species. The wildlife of the islands, including a number of species of global conservation concern, are being exposed to a range of threats. The main such threats are:
- bird mortality due to fishing bycatch;
- possible competition between seabirds and fisheries;
- invasive species which predate upon or overwhelm local species;
- disturbance;
- habitat loss;.
- livestock grazing;

- marine pollution
- oceanic changes.

Some examples are considered below.

Albatrosses and petrels
Populations of a number of species of seabird which nest on the FI, including a number of endangered and vulnerable species, are continuing a long trend decline which has been ongoing for many decades. Falklands Conservation estimates that over the period 1995 to 2000, the population of black-browed albatross was reducing by 4% per year.

The main cause of this reduction appears to be longline and trawling activities. Albatross and petrels are attracted to fishing vessels during setting of the longlines to forage on the baited hooks, become hooked or entangled and drown. In relation to trawling, mortality is caused by collision and entanglement with trawl warps, netsonde cables (not permitted or used in the FI fishery) and the net itself as the birds forage in the vessel discharge.

There has been a significant effort in the Falklands to try and halt the decline. National Plans of Action written under FAO guidelines have been adopted by the Falkland Islands Government (FIG) for both the longline and trawl fisheries. The longline vessels now adopt a range of mitigation measures and carry a dedicated seabird observer, and the finfish trawl fleet adopted the use of bird scaring lines in 2004. The UK government recently ratified the Agreement on the Conservation of Albatross and Petrels, and funds were made available by the FCO to conduct further census work and formulate management plans for breeding sites. Management plans and advisory guidance to landowners have been drafted for a number of key breeding sites.

But these measures apply only to licensed vessels fishing within the Falklands fisheries. Albatrosses forage over long distances in the South Atlantic, and there are many other fisheries which are not regulated. There is no effective regional fisheries management organisation in the south-west Atlantic.


Rockhopper Penguin, Seal Bay

Rockhopper penguins
The FI are home to the largest global concentration of Rockhopper penguins in the world, but the population is declining. The reasons for this decline are not fully understood.

Competition between fisheries and wildlife
In theory at least there is competition between the fishing industry and some wildlife, particularly albatrosses and penguins. The diet of the Black-browed Albatross, which feeds predominantly on large fish and squid notably during the chick-rearing season, overlaps extensively with commercial catches. Although gentoo, macaroni and rockhopper penguins take many fish other than the commercially exploited species - and usually smaller fish than those caught by the fishery - there is significant potential for their food supply to be affected by the commercial fishery. This is a controversial subject, and little is known at present about whether this is really a significant issue.

Livestock farming
The introduction of sheep, pigs, goats, cattle and horses in the 18th and 19th centuries onto the two main islands and several other islands for husbandry has led to considerable reductions in the abundance of native plants such as the giant tussac grass. Felton's flower, until recently thought to be endemic, has almost disappeared in the wild through overgrazing. Efforts to replant tussac grass have begun. Practices such as the burning of whitegrass to improve pasture and other pasture improvement programmes have affected the native vegetation over an increasing area of the islands. Agricultural practices of this kind are not regulated by the environmental impact assessment regulations, although restrictions do apply and

burning can only be conducted at certain times in the year. Overstocking and burning of natural habitats for grazing has reduced Tussac Grass (a vital habitat for many species) by 80%. The offshore islands

where tussac remains are crucial to the survival of many species. Grazing has altered the entire Falklands ecosystem since human occupation. Loss of tussac grass cover, changes in the spread of whitegrass and the reduction in many species of native herbs and small flowering plants over the last 200 years are all attributable to agriculture. There is also a constant threat of fires, accidental or from lightning strikes, on islands with tussac and/or thick peat cover. Recent pasture improvement programmes have also impacted the flora both positively and negatively.

All the livestock have been removed from some islands, and here the vegetation is slowly recovering. Landowners, government departments and non-governmental conservation groups are all working towards best environmental practices, having conservation agreements and on-ground works like tussac grass replanting schemes.

Rats

Rats, mice and cats introduced accidentally or intentionally to the islands as a result of human settlement, are major predators of birds and their eggs, including the Cobb's wren, and have greatly reduced populations. The accidental introduction of rodents is likely to continue as much of the freight is shipped from Stanley to remote islands and farmsteads. There are some pest-prevention measures. Cargo vessels use rat guards, and visitors are asked to check for rodents, seeds etc.

Rat eradication programmes were successful on 19 islands between the winter of 2001 and 2006.

Brown trout

Brown trout were introduced half a century ago, and are thought to have harmed native Falklands fish populations, particularly the zebra trout. Zebra trout only exist in certain waters where brown trout have not yet established themselves, or in systems where they are physically separated from other water systems (e.g. landlocked). More information is needed about the reasons why brown trout appear to supplant zebra trout, and what measures could be taken to protect the latter.

Source: Falkland Conservation. An unwelcome visitor to Falkland

Patagonian foxes

The presence of Patagonian foxes on five islands, introduced in the 1930s for trading in furs, has a significant negative effect on the resident birds and probably explains the absence of breeding upland geese. Some eradication efforts have been under way since 1997.

Introduced plants

More than one third of plants growing in the Falklands have been introduced by humans since their arrival. These introduced species all affect the native vegetation to a greater or lesser degree, and many of them have benefited agriculture and rural development. Plants such as European gorse and spear thistle are beginning to take a firm hold in the islands: gorse hedges around settlements are often difficult to control, and thistles are being found in more remote and wild sites. Where possible these species are being controlled. Thistles are very vigorous, and alter the structure of the natural vegetation and reduce the grazing quality of pastures. The insects that control them elsewhere are absent in the Falklands. The prickles get caught in sheep fleeces and make them difficult to handle. There is also evidence that thistles can spread a viral disease that affects sheep's ability to graze (Prickly plants such as thistles and gorse puncture the lips and feet during grazing and these puncture points allow entry of a viral pox.). Compared with other countries the spread of thistle in the Falklands is relatively limited, but total eradication is likely to be problematic.

Challenge 2 Unregulated fishing Moderate

The FIG, and therefore the citizens of the islands, are heavily dependent economically on the fisheries within the Falklands EEZ. The islands therefore need to ensure that they are managed well and sustainably. A lot of progress has been made in recent years in assessing fishery resources, setting and reviewing appropriate limits on fishing effort, developing a well regulated and enforced licensing system and virtually eliminating the damage to albatross and petrel populations by adopting and enforcing

various mitigation measures and ensuring that almost all longline vessels have observers on board to monitor bycatch.

However all the main commercial fish involved are migratory, and therefore spend much of their lives outside Falklands waters. There is no effective regional fisheries management organisation in the southwest Atlantic, so that fishing in international waters is completely unregulated, and within other national jurisdictions is less well regulated. The continuing poor political relations between Argentina and the UK are an obstacle in this regard.

Challenge 3 Possible impacts from future oil industry Moderate

Although commercial oil drilling in Falklands waters has been very limited to date, and oil has not yet been found in commercial quantities, a significant oil industry may develop around the islands in the coming years, with potentially serious impacts on an area of exceptional marine life. Penguins, which cannot fly, are especially vulnerable to oil pollution. While there are many examples worldwide of responsible offshore (and onshore) drilling industry, the Department of Mineral Resources which will regulate the industry is small and lacks experience. However the Department is supported by the British Geological Survey, which acts as consultant on a fee paying annual basis, and the UK Department of Trade and Industry. It will be important that environmental impact assessments meet modern standards of good practice and are carefully reviewed by independent assessors and by government, and that full consultative procedures are followed. It is also important that the licences are carefully drawn up with appropriate environmental conditions, and that the licence conditions are properly enforced.

Other environmental concerns in the Falkland Islands are as follows:

Marine litter and pollution Despite their remoteness, the Falkland Islands have a major problem with marine litter, and measures are needed. Marine litter is thought to have a role in the falling populations of rockhopper penguins, southern elephant seals and southern sea lions, all of which are of vulnerable status. The threats posed include entanglement, ingestion and toxicity, each of which can harm or kill. The main sources of marine garbage in the Falklands are from sewage, fisheries and shipping, although the profile is location-dependent.

Most vessels operating in Falkland waters do not have a waste disposal facility (although some do have rudimentary incinerators). There are few reception facilities on the islands for ship generated garbage and oily waste. Refuse, food waste and sewage often tend to be jettisoned into the sea, some of this in contravention of MARPOL. Regulations can only be enforced effectively for vessels bearing the Falklands flag. If a foreign vessel is seen polluting, FIG can only write to the relevant country to inform it. International cruise ships have a waste management policy and an International Oil Pollution Prevention Certificate, which requires a separator for oily wastes. Wider application of these measures would prevent much pollution from shipping. Oil collection facilities using a tug and barge, or a road tanker for collection for vessels which come alongside, would reduce the problem of oily wastes. Compulsory slop tanks, incinerators or compactors on board vessels would reduce pollution by other materials.

Waste disposal. Consulting engineers Halcrow conducted a complete review of current waste handling practices in 1997, identifying shortfalls and suggesting solutions with costs and recommended timetables. Current waste management legislation and practice is inadequate, and there is little policy for recycling. The review considered health and safety issues, responsibilities, economics, environmental risks and environmental monitoring procedures. To date few of the recommendations have been adopted. However a trial of composters and glass imploders has been approved and should commence in 2007.

Sewage. Until recently all the sewage waste from Stanley was pumped out into the harbour without primary screening treatment. However FIG is currently re-routing one-third of the sewage away from Stanley Harbour to the open sea on the other side of Stanley. The environmental impact of the sewage depends on the capacity of the waters to degenerate and recycle waste and nutrients. No monitoring is currently performed on a regular basis, though faecal coliform levels were monitored in Stanley Harbour regularly between 1990 and 2004.

3. Environmental policies and institutions

3.1 Institutional structure, manpower and budgets

Most government environmental matters are considered by the Environment Committee, comprising two Councillors and a range of other stakeholders including: the Rural Business Association, Falklands Conservation, New Island South Conservation Trust and other conservation-minded persons. Other government departments are also represented, including Agriculture, Fisheries and Public Works.

There is an Environmental Planning Department comprising an Environmental Planning Officer (EPO) and an Environmental Officer. The EPO is the lead officer for this Committee and deals with any environmental matters, within government and externally. She is part of the Management Team, and reports directly to the Chief Executive. The EPO also deals with all development in the Territory up to 12 nautical miles out to sea. The Environment Committee's decisions are passed to the Executive Council for final approval. All research permits and scientific requests are handled in this way. The Environmental Officer deals with environmental matters and is progressing the draft Conservation and Biodiversity Plan.

The Fisheries Department has a chief scientist, data analyst and three stock assessment scientists.

Falklands Conservation was established in 1979. It promotes nature conservation in the islands, provides support to external researchers and landowners, undertakes research and surveys and owns 18 offshore island nature reserves, and gives specialist conservation advice to the FIG. An office in the UK seeks out funds worldwide to support project work. Falklands Conservation has a particular interest in seabird research. The organisation now employs 10 full time staff and has over 600 members and a thriving junior group. It has employed an education officer in the islands (until January 2007), has produced packs for schools, a series of booklets and a video, a country code and a manual for tourist guides.

The New Island Conservation Trust is an active organisation, which owns and manages New Island. Its main mission is to conserve the island in perpetuity. 8 international scientists have been conducting research there during the last five years. The Reserve has, amongst other outstanding values, the largest colony of thin-billed prions in the world, numbering around one million pairs. Other important species include the rockhopper penguin and black-browed albatross, which nest there in large numbers. The Reserve has done pioneering work on eradicating sheep and cattle, allowing a spectacular recovery of the vegetation. It has also developed controlled ecotourism, and is a favoured stop for Antarctic cruise ships. Recently, detailed research has been carried out on introduced rodents, satellite-tracking of penguins, skua migration, prion ecology and behaviour and the population dynamics of albatrosses.

Other conservation NGOs include the Italian based Elephant Seal Research Group, the Sub-Antarctic Foundation for Ecosystem Research (SAFER) and Antarctic Research Trust.

The Department of Mineral Resources is responsible for overseeing the exploration and extraction of hydrocarbons and other minerals, and the Fisheries Department is responsible for administering the islands' fisheries.

Planning matters are the role of the Environmental Planning Department. There is a Planning Ordinance which is based on British Planning legislation. This provides for the creation of development plans. There

are two plans: one for Stanley (Stanley Town Plan) and the Structure Plan (Falkland Islands Structure Plan), adopted in 2004. These plans are very much based on the British Town Planning system.

3.2 Mechanisms for integrating environment into development

On 26 Sept 2001 the Falkland Islands, like other UK overseas territories, signed with the UK government an Environment Charter which includes statements of principles and undertakings by both parties on integrating environmental protection into all sectors of policy planning and implementation.

The cross-sectoral nature of the Environment Committee (see 3.1) is an important mechanism by which environmental considerations can be integrated into other policy areas.

Environmental impact assessment can be required for major development projects, for example hydrocarbon drilling operations (see 3.4). Environmental impact statements (EIS) are reviewed by government and its advisors, and are also made available to local environmental NGOs. Developers are expected to take account of the findings of any such reviews, and make any changes considered appropriate by government. An EIS contains a plan for minimising environmental threats and dealing with adverse environmental impacts.

3.3 Environmental strategy and policy

The islands have not yet developed a general environmental action plan or strategy, but there is a conservation and biodiversity strategy in draft form which identifies and prioritises conservation work on the islands. The Falkland Islands Plan 2002/2006 contains a specific environment chapter, reflecting the aims of the Environment Charter. This includes the commitment “the unspoiled nature of our environment will be treasured and protected. We aim to achieve long-term environmental sustainability”, and contains specific commitments:

- to protect wildlife habitats and promote research;
- to introduce wind-power to Stanley, thereby reducing the government’s energy bill by 10%;
- to improve waste water and waste disposal; and
- to promote environmental awareness education in schools.

The Environment Charter contains statements by the governments of the FI and the UK of their commitments with regard to the environment. The FCO-funded Environment Charter pilot study, involving the recruitment of a Conservation Strategy Officer, was a step towards the development of a conservation strategy and biodiversity action plan. The post of Environmental Officer follows on with work started by the Conservation Strategy Officer.

The FIG recently adopted a ‘National Plan of Action – Seabirds’, written by Falklands Conservation with funding and technical support from the RSPB. These plans address the issues of incidental seabird mortality in fisheries. The Falklands broke new ground by developing a plan that addresses the problems relating to the trawling and longlining fleets..

3.4 Policy instruments

The legislation most relevant to environmental protection in the FI is indicated in the table below.

Item of legislation	Comments / detail
National Parks Ordinance 1998	Provides public access to areas of natural beauty and cultural heritage. Conservation is not the primary aim of the National Parks Ordinance, but the designation of National Park status allows certain controls to be implemented that may benefit conservation both directly and indirectly.

Item of legislation	Comments / detail
Conservation of Wildlife and Nature Ordinance 1999	Prohibits the taking of birds (except named gamebirds), eggs or other animals, although the collection of certain eggs can be carried out under licence. Protects certain animals and plants. Prohibits the introduction of new species. It also provides for the designation of National Nature Reserves both terrestrial and marine (NNRs).
Environmental Impact Assessment regulations: amendment to Planning Ordinance 1991	Introduced EIA based on the current EC Directive as adopted in the UK. EIA is required for many operations and projects, notably drilling, but remains discretionary.
Marine Mammals Ordinance 1992.	Provides protection to all marine mammals
The Offshore Minerals Ordinance 1994	Designed to provide protection from impacts of offshore exploration and production of hydrocarbons. Provides notably for liability for damage to the environment, the decommissioning of installations and pipelines and with requirements for environmental impact assessments to accompany applications for licences. The Offshore Petroleum (Licensing) Regulations 1995 were made under section 7 of the Offshore Minerals Ordinance and contain, in Schedule 2, a set of "model clauses" for inclusion in licences.
Marine Environment (Protection) Ordinance 1995	Implements London Dumping Convention in Falkland Island Waters. The Deposits in the Sea (Exemptions) Order 1995 exempts certain waste streams, including sewage, domestic waste originating on vessels, drill cuttings and muds.
Endangered Species Protection Ordinance 2003	Controls the trade of endangered species in the Falkland Islands.
Fisheries (Conservation and Management) Ordinance 2005	Makes comprehensive provision for the regulation, conservation and management of fisheries around the Falkland Islands. It also introduces property rights to the fishery in the form of Individual Transferable Quotas which may be specified either in terms of catch or effort.

At present 27 islands/coastal regions have been designated NNRs, covering a total area of about 400 km^2. No marine NNRs have been designated. Falklands Conservation owns 18 islands and associated islets (7.5 km^2), which are nature reserves, and about 45 other islands (65 km^2) are treated as reserves by their owners though they have no official status. In all, some measure of protection for wildlife is given in 476 km^2 or about 4% of the FI. There is no requirement for NNRs to be actively managed. Some privately owned islands have management programmes, There are draft management plans for the two Ramsar sites at Bertha's Beach and Sea Lion Island.

The draft Conservation and Biodiversity Strategy provides for the government to review the protected areas system.

There is an environmental education programme. Environmental awareness is promoted by the local press and radio stations in the islands.

Incidental mortality of seabirds from fishing (longlining, trawling, jigging) has been almost eliminated in the Falklands through a series of measures, implemented through conditions in the fishing licences and voluntary measures.

In relation to the oil industry, the licence system will be theoretically available to regulate discharges. But monitoring licences may not be practical, and in practice regulation will place more emphasis on the screening of applicants and the strict liability regime on environmental damage.

3.5 Monitoring

There is a variety of "monitoring" systems on the islands. The Department of Agriculture monitors habitats, rainfall, pastures, and livestock effects, Falklands Conservation, seabirds. A regular census is

conducted at selected seabird colonies. Specific monitoring is carried out relating to the Plan of Action - Seabirds. The Fisheries Department monitors fish stocks, oceanographic conditions etc. Scientists on New Island monitor invasive species, prion, penguin, albatross populations, etc. The Italian team of scientists monitor elephant seals on Sea Lion Island. A New Zealand scientist monitors invasive species and habitats on his islands off West Falklands.

Imperial College London assists FIG in ensuring that fish stocks are accurately monitored. The British Antarctic Survey has also been involved in fish monitoring. To ensure that conservation targets are achieved, fishing effort is controlled by limiting the number of vessels licensed to fish within the zone. Catch data is collected on a daily basis.

3.6 Enforcement

The government spends about one quarter of its €35 million revenue from fishing licences on surveillance and enforcement of the fisheries. This relies on two aircraft operated by the Government Air Service and one ocean-going patrol vessel. 8 fisheries observers on vessels monitor all licence conditions including waste and Fisheries Officer make wharf inspections and random at-sea checks. Additional information may also be obtained from both the Royal Air Force and the Falkland Islands Government Air Service which regularly overfly Falkland Island waters.

Whilst not comprehensive there is some monitoring of pollution beyond 12 miles, and practices for waste handling has been monitored on a sub-sample of fishing vessels. Prosecutions for oil pollution have been limited, but have taken place in some cases.

4. International cooperation

4.1 MEAs

The Falkland Islands participate in the following MEAs:

MEA	Remarks
Ramsar Convention	Extended to Falkland Islands in 1991. 2 sites, further 18 proposed. In 2002 two sites, Bertha's Beach and Sea Lion Island were formally classified as Ramsar sites. A further 18 sites were recently proposed for classification.
Convention on International Trade in Endangered Species (CITES)	Became effective in August 1976. The FI have strict Customs controls on biological exports from the islands. Several requests are received each year for penguin eggs or live specimens for collections and captive breeding programmes, but a moratorium since 2001 has prevented any export of penguins or eggs for breeding purposes.
Convention on the Conservation of Migratory Species of Wild Animals (CMS)	In 2004 the UK Government recently ratified the Agreement on the Conservation of Albatrosses and Petrels (ACAP) on behalf of the FI. Steps have been taken to reduce the level of incidental mortality from fisheries, protect terrestrial breeding sites and to assess the risks by fire, tourism, disturbance, introduced predators and disease. Management plans are being drawn up. Changes in legislation may be needed however. Falklands Conservation ran an OTEP-funded Albatross and Petrel Conservation Programme, which was completed in June 2006. Most the projects initiated during this programme were completed or are on-going.
London Convention	Became effective in December 1975.
International Convention on the Regulation of Whaling	
World Heritage Convention	No sites yet designated. FI is interested in having sites designated but no progress made because of ongoing sovereignty disputes.

The Falkland Islands accepted the obligations of the FCCC and the Kyoto Protocol in 2006.

Although work was undertaken with legal advisers of the UK Foreign and Commonwealth Office to put appropriate legislation in place in order to enable the Convention on Biological Diversity to be extended to the Falklands Islands, this has not yet happened.

4.2 Access to funding by the international community for environmental and environment-related projects

British government
The Islands have received no budgetary aid from the UK since 1992 and are self-sufficient in all areas except defence. In recent years, the British government has funded / provided:

- advice on the extension of ACAP to the FI (funded by FCO and JNCC);
- a boat for environmental project work;
- recruitment of a Conservation Strategy Officer, funded by the FCO;
- JNCC is providing technical support for the Seabirds at Sea project around the Falkland Islands (and also South Georgia) and sits on the project steering group;
- Falklands Conservation was granted €225,000 by the UK OTEP for albatross and petrel conservation;
- Falklands Conservation was granted £115,173 from the Darwin Initiative to undertake a Falkland Islands Invertebrates Conservation Project;
- Falklands Conservation was granted £94,820 by the UK OTEP for an Education and Citizen Science Project;
- Falklands Conservation was granted £19,535 for conservation initiatives on Key Sites, including production of an Important Bird Areas Directory.

European Union
Community Aid from the 6-8th EDF amounted to €1.1 million, and will be €3 million under the 9th EDF. Activities will aim at building capacity for trade development and export. The government has requested that EDF9 funds are applied as budget support. A public finance assessment was conducted, and the European Commission has made a positive recommendation with regard to this request.

The European Commission is currently funding a regional project “Increasing regional capacity to reduce the impacts of invasive species on the South Atlantic UK overseas territories”.

4.3 Other international cooperation, membership of networks, etc. related to the environment

Most of the environmental research programmes in the Falkland Islands are supported by or undertaken by scientists based in EU countries such as Britain (e.g. through British Antarctic Survey, Sea Mammal Research Unit, RSPB), Portugal and Germany, and also other countries such as USA, Australia and New Zealand. The Falklands rely heavily on the technical support of such institutions.

5. Recommendations on future cooperation between EC and Falkland Islands

- There is an urgent need for an effective regional fisheries management organisation to manage the fisheries of the south-west Atlantic, including prevention of overfishing, regulation of the longline and trawling industries to prevent incidental seabird mortality.
- The control of invasive species, particularly rats, mice and cats which prey on the chicks and eggs of seabirds of international importance, is an important priority, but is expensive and often beyond the means of the FIG. The present EU project in invasive species in the South Atlantic is concentrating on capacity-building.
- The Department of Mineral Resources would benefit from support in building its capacity to supervise an offshore minerals industry if this develops as expected.

ANNEX C : ENVIRONMENTAL PROFILE -

SOUTH GEORGIA AND SANDWICH ISLANDS

0. Summary

South Georgia and the South Sandwich Islands are two geographically distinct groups of islands in the South Atlantic Ocean. South Georgia has no permanent population, but houses a government administrator, research scientists and some other workers. The islands are very important to South Atlantic seabirds, many of which are of global conservation concern. Some bird communities are declining as a result of fishing activities, mainly outside territorial waters, and predation by rats. The South Sandwich Islands represent a maritime ecosystem scarcely modified by human activities, their only inhabitants being millions of breeding penguins and other seabirds.

1. Background information

1.1 Key facts and statistics

Name of Territory	South Georgia and South Sandwich Islands
Region	South Atlantic Ocean
Land area	3750 km^2
Exclusive economic zone	200 nm
Population	No permanent inhabitants
GNP/capita	Not applicable
Literacy rate	Not applicable
Employment rate	Not applicable
% below poverty line	Not applicable

1.2 Constitution

South Georgia and the South Sandwich Islands (SGSSI) is a UK overseas territory administered by a Commissioner, resident on the Falkland Islands who is concurrently governor of the Falkland Islands, and represents the British sovereign. The laws of the UK apply where applicable. The Commissioner consults the Executive Council of the Falkland Islands on matters which (s)he believes will affect the Falkland Islands. The First Secretary at Government House on the Falklands is the assistant to the Commissioner. At Government House there are also an Operations Manager and an Assistant Operations Manager for SGSSI, and there is also a Marine Officer based in South Georgia who is also the Fisheries Officer. The British Forces (South Atlantic Islands) advise the Commissioner on matters concerning defence or internal security of the Islands.
Argentina asserts a claim to sovereignty over South Georgia and the South Sandwich Islands, and briefly occupied the islands by force in 1982.

1.3 Physical geography

South Georgia and the South Sandwich Islands (SGSSI) are two geographically distinct groups of islands in the South Atlantic Ocean. South Georgia lies 1290 km east-south-east of the Falkland Islands. It is

some 160 km long with a maximum width of 32 km. The land is rugged and mountainous, the valleys being filled with glaciers. More than 75% of the island is covered by permanent ice. The highest point is Mount Paget, rising to 2933 m, but there are at least 20 peaks over 2000 m. The climate is severe. There

is no indigenous population. The main island is surrounded by over 70 islands, islets, stacks and rocks, including the outliers Shag Rocks, 250 km to the west, and Clerke Rocks, 75 km to the east. South Georgia lies in the Scotia Sea within the Antarctic Zone of the Antarctic Circumpolar Current, and about 350 km south of the Arctic Convergence.

The South Sandwich Islands lie some 760 km south-east of South Georgia and consist of a chain some 240 km long of volcanic islands origin, including some active volcanoes. The islands are bounded by a deep sea trench, up to 8,265 m deep, on its eastern side. The climate is Antarctic. In the late winter the Islands may be surrounded by pack ice. These islands are completely unpopulated.

There is no airfield on the islands, and they are accessible only by sea. The prevalent westerly storms and lack of sheltered anchorages make landing difficult. The islands are visited infrequently by fisheries protection vessels, military vessels, cruise ships, yachts and research vessels during the summer months, with occasional brief landings and some camping by scientific and film expeditions. Adverse weather and sea conditions usually limit tourist activities to ship-based inshore viewing of the penguin colonies. In March 2001 the small military garrison withdrew from South Georgia and was replaced by a permanent group of British Antarctic Survey (BAS) scientists. These carry out a programme of scientific research under a contract to the Government of South Georgia and the South Sandwich Islands (GSGSSI) to support it in its environmental management and sustainable development of the territory. South Georgia's administrative centre and two British research stations are manned year-round by a small number of government officers and scientists. The administrative centre is King Edward Point.

1.4 Flora and fauna

General
The territory is of great importance for sub-Antarctic flora and fauna. The islands have large bird and seal populations. South Georgia is the breeding ground for some 85 per cent of the world's Southern Fur Seal population as well as globally significant populations of albatrosses, petrels and penguins. The South Sandwich Islands represent a maritime ecosystem scarcely modified by human activities.

South Georgia holds one of the world's most abundant and diverse *seabird* communities. There are an estimated 50 million birds on South Georgia: a total of 31 bird taxa breed there, and there are 17 resident seabird species. The most numerous bird is the Antarctic prion (Pachyptila desolata), circa 22 million pairs. The macaroni penguin is also abundant, with more than two million breeding pairs. It is an important nesting site for the largest seabird in the world, the wandering albatross. The South Georgia pipit is unique to the island. There are six species of penguin, four species of albatross and 13 species of smaller petrel and related species, including nine burrow-nesting petrels. There is one landbird, the endemic South Georgia Pipit, and five waterbird species: the yellow-billed (South Georgia) pintail and the speckled teal.


Source: BAS website. A wandering albatross off Bird Island with mainland South Georgia in the background.

Ten species of global conservation concern breed at South Georgia, including the endangered black-browed albatross, vulnerable wandering albatross, grey-headed albatross, macaroni penguin, southern giant-petrel and white-chinned petrel.

In global terms, South Georgia is the most important breeding site for grey-headed albatrosses and white-chinned petrels, the second most important site for king penguins and the third most important site for wandering albatrosses and black-browed albatrosses (Falklands are the first).

There are further large seabird colonies in the South Sandwich Islands, with chinstrap penguins in vast numbers. In total 16 bird species – 13 seabirds and three waterbirds – breed at the South Sandwich Islands, including an endemic sub-species of the imperial (South Georgia) shag, which is thought to be confined to the island group, and three species of global conservation concern: the near-threatened gentoo penguin, the vulnerable macaroni penguin and southern giant-petrel.

Human activity has had an adverse influence on South Georgia's *marine eco-systems*. Overfishing of the mackerel ice-fish in the 1960s led to the collapse of the stock. Ice-fish feed on krill. Seals, penguins and seabirds eat ice-fish. The collapse of the stock had a direct impact on the marine eco-system. South Georgia's fishing industry is now strictly regulated by the Convention on Marine Living Resources, agreed under the Antarctic Treaty. Catch levels are controlled to sustain the stock and to minimize the impact of fishing on dependent species. Recognizing the importance of preserving the fish stocks in adjacent waters, the UK, in 1993, extended the exclusive fishing zone from 12 nm to 200 nm around each island.

There are no indigenous *terrestrial mammals, reptiles, amphibians or freshwater fish* on the territory. Reindeer were introduced in about 1910 by Norwegian whaling companies.

Several *seal* species breed on the two island groups, and whales are frequently seen offshore.
The coastal waters are inhabited by at least 13 species of *whale, dolphin and porpoise*. There has been an explosion in the *fur seal* population in South Georgia. This may be related to the decimation of the whale population that occurred in these waters until the whaling embargo in 1965.

The terrestrial and freshwater *invertebrate* fauna are limited in terms of numbers and species diversity, and include flies, mites, ticks, springtails, diving beetles, spiders, annelid worms and molluscs. About one-third of the 230 species of arthropod fauna are endemic. All insects are at risk of predation by rats and mice. There are 70 species of freshwater invertebrate and six species of spider.

Despite a very limited number of *flowering plants*, there is great diversity in the *mosses and lichens*, many found nowhere else in the world. There are 25 species of *vascular plant* native to South Georgia, over 50 introduced vascular species, which mostly occur around the old whaling stations, and about 125 species of moss, 80 of liverwort and 150 of lichen. There are no known endemic vascular plant species. There are no trees or shrubs, and only mosses and lichens survive in the inland rock and ice environment. Of the vascular plants, the most important is tussac Grass. The South Sandwich Islands are poor in species composition, due to the islands' extreme isolation and volcanic activity. There is only one species of vascular plant, Antarctic hairgrass.

Both South Georgia and the South Sandwich Islands, including their islets and stacks and maritime zones have been classified in their entirety as Important Bird Areas.

1.5 Demography, socio-economy

There are three centres of human population on the island, at Bird Island, Grytviken and King Edward Point. Government Officers appointed by the Commissioner are resident at the island's administrative centre at King Edward Point. Although there is no permanent human population, four long-term residents in the employ of the government live at King Edward Point and nearby Grytviken. With the exception of the Post Office at King Edward Point, there are no public service facilities, nor are there any land-based manufacturing industries. User organisations include the British Antarctic Survey, the South Georgia Museum, an international fishing fleet and the Armed Forces of the United Kingdom. Non-resident British Antarctic Survey research and support personnel are present year-round at the applied fisheries research station at King Edward Point. The South Sandwich Islands are uninhabited.

Government revenue, dominated by the sale of fisheries licences, is quite variable, but currently averages about €6 million. Other revenues are generated from the sale of stamps and commemorative coins, customs and harbour dues, and landing and trans-shipment fees. Main items of expenditure are fisheries administration costs and research, fisheries protection (this amounts to 50% of fisheries revenues),

conservation projects, the production of stamps and support for the South Georgia Museum. Much of the fishery licence income is reinvested in the administration of the fishery, including the provision of fishery

protection patrols to ensure illegal fishing does not take place, together with scientific research to inform the sustainable management of the fishery. The need to make the whaling station at Grytviken safe for visitors and residents by the removal of hazardous materials and unsafe structures represented a one-off cost of around €10 m.

A 200 nautical mile Maritime Zone was declared around SGSSI in 1993 to provide for the management and conservation of fisheries, mineral resources and control of whaling activities.

A substantial area of the Maritime Zone to the south of the South Sandwich Islands extends beyond 60ºS and therefore into the Antarctic Treaty Area. It is therefore subject to the regime of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). The island's commercial fishery, based on Patagonian toothfish, ice-fish and Antarctic krill, is managed by the Government in close conjunction with CCAMLR. Fishing companies work with the Government of South Georgia and South Sandwich Islands to conduct fisheries research during the fishing season. Research has included stock surveys, ground surveys and migratory surveys. Each fishing vessel must be licensed, and carries an observer provided by Marine Resources Assessment Group Ltd to not only ensure the regulations are followed but also to conduct fisheries research. These observers are paid from the revenue generated by the sale of fishing licences to fishing companies. The fishery has been awarded the prestigious Marine Stewardship Council Accreditation as a safe fishery, a testament to the GSGSSI's policy of sustainable management of the resource.

Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)

Scientific concerns that overfishing of krill would adversely effect dependent species led to negotiation, by Antarctic Treaty Parties, of the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) to which the UK is a signatory. The Convention came into force in 1982. CCAMLR regulates fisheries activities in Antarctic waters including waters around South Georgia and the South Sandwich Islands, by means of conservation measures agreed by all Member States, including:

- prohibitions on fishing certain species;
- prohibitions on the use of certain types of gear (such as banning commercial bottom trawling);
- regulations on catch levels and fishing seasons for krill, crab, and finfish); and
- measures to protect by-catch species.

CCAMLR's framework also includes requirements for Contracting Parties to report on catch and effort to the CCAMLR Commission; inspection and observation activities; and from 1 March 1999, compulsory use of vessel monitoring systems on licensed vessels to improve surveillance of fishing activities.

CCAMLR reviews most of these measures on an annual basis. One of the key conservation measures is the setting of total annual catch (TAC) for each of the target species in the Southern Ocean; TACs are set annually for each of the designated ocean blocks. The relevant block for South Georgia is sub-area 48.3, a large proportion of which is the SGSSI Maritime Zone. TACs are conservative for several reasons: incomplete knowledge of Southern Ocean ecosystems; to conserve fish stocks in the region; and to minimise impacts on dependent species such as seabirds, seals and whales.

The South Georgia fishery follows CCAMLR conservation measures such as fishing at night, weighting lines so they sink immediately on entering the water, deploying streamers and discharging offal on the opposite side of the fishing vessel to the longline deployment, the incidence of seabird drownings on longline hooks while taking the bait has ceased.

Tourism has gained importance in recent years, with many cruise ships visiting the islands. The territory gains income from landing charges. Annually, about 6,000 people visit South Georgia. Ship-based tourist activities include shore landings with occasional sub-aqua diving, camping, mountaineering and kayaking

excursions. The only land-based tourism facility on the island is the South Georgia Museum at Grytviken. There are no accommodation facilities for tourists the island, although climbing and scientific expeditions are permitted to camp, and both day and longer-term visitors occasionally occupy the six field huts on the central north coast. Two areas, King Edward Point and Bay of Isles, are designated Areas of Special

Tourist Interest and are open for tourism and recreation. All other parts of South Georgia are closed to access other than by permit.

A significant source of income comes from the issue by SGSSI of *postage stamps* produced in the UK. A reasonable policy (few sets of stamps are issued each year) along with attractive subject matter (especially whales) makes them popular with stamp collectors.

2. Main environmental challenges

2.1 Overview

The main issue in SGSSI, which has no permanent population, but is of great importance to seabirds in the South Atlantic and has rich fisheries, is to conserve the wildlife and natural environment in a pristine state. While the fisheries within the EEZ are very well managed, the islands birdlife is threatened by illegal and unregulated fishing outside SGSSI waters, where measures are generally not taken to minimise seabird bycatch. Predation of seabird chicks and eggs by rats is also a problem.

2.2 Main challenges

Challenge 1 Introduced species SEVERE

Introduced species on the island have affected the balance of the island's eco-systems. Predation on seabirds by rats, overgrazing of native vegetation by reindeer, degradation of vegetation and soil erosion caused by fur seals, and the introduction of alien plants and insects are altering the native flora and fauna of large areas of the site.

The greatest threat to the terrestrial environment on South Georgia is the *Norway rat*. Rats are thought to have been introduced by sealing vessels in the late 1700s, and now occupy virtually the entire north-east coastline and the northern quarter of the south-west coast of the main island, as well as some of the smaller islands. They have had a profound effect on ground burrowing birds. In rat-infested coastal areas, South Georgia Pipits and smaller burrowing petrel species have been eliminated, and populations of white-chinned petrels and yellow-billed pintails have been reduced. Most species of petrels are confined virtually exclusively to rat-free areas. Glacial retreat as a result of global warming may present additional threats if the ice barriers that currently isolate rat-free areas disappear.

Rats were successfully eradicated from Grass Island (30 ha) in 2000 and the government has expressed an intention to support further eradication programmes,

Reindeer are present on the central north coast region and have overgrazed significant areas of tussac grass, greater burnet and various species of lichen; their selective grazing habits have encouraged the spread of introduced meadow-grass, thus reducing habitat for insects and limit the growth of indigenous flora. Government intends to eradicate at least one of the two herds of introduced reindeer.

The explosion of the *fur seal* population on South Georgia has significantly modified the plant species composition of large areas of tussac grassland in north-west South Georgia, thereby reducing the area of suitable breeding habitat for certain tussac-nesting bird species.

Many higher *plants* have been introduced, mostly accidentally with livestock fodder. Introduced flora (such as the dandelion and common grass) are spreading, taking over from indigenous plants.

GSGSSI is currently working with the South Georgia Heritage Trust, HMS Endurance and others on a programme to eradicate all rats from South Georgia.

Challenge 2 Illegal fishing and seabird bycatch MODERATE

The populations of white-chinned petrels, black-browed, grey-headed and wandering albatrosses have declined by up to 30% in the last 20 yrs. Trawl and longline fisheries are believed to be a major cause of mortality of South Georgia's wandering, black-browed and grey-headed albatrosses, and white-chinned

petrels. Fishing activity within the Maritime Zone around South Georgia is regulated by internationally adopted measures agreed by the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR). Measures taken to reduce the number of birds killed within the Zone have proved to be extremely effective, and regular fisheries surveillance ensures there are no illegal or unregulated fishing activities. However, the lack of seabird bycatch mitigation measures on fishing vessels outside the Zone is thought to be a major factor in the current 4% annual decline in the breeding populations of these seabirds.

Source: BAS website. Black-browed albatross

In recent years there is thought to have been a considerable increase in illegal, unregulated and unreported fishing (IUU fishing) in the CCAMLR area and adjacent areas. Substantial catches of toothfish have been taken by longline fishing well in excess of allowable catches agreed by CCAMLR, both in national and international waters. The high incidence of IUU fishing has had a detrimental effect not only on toothfish stocks, but also on populations of sea birds which may be caught inadvertently in such fishing operations. The lack of information on IUU fisheries undermines CCAMLR's conservation measures and severely complicates efforts to determine future toothfish stock trends in certain areas with any level of certainty.

The introduction of the CDS by CCAMLR in 2000 to monitor landings of, as well as global trade in, toothfish constituted an unprecedented initiative aimed at combating and assessing IUU fishing for those species. The CDS is one of a suite of CCAMLR measures aimed at eliminating IUU fishing in the Convention Area. Such measures include strict vessel licensing requirements, at-sea and port vessel inspections and the requirement for the continuous monitoring of vessels position in the Convention Area using automated satellite-linked monitoring systems (VMS). For a number of fisheries in the Convention Area, Flag States are required to transmit real-time vessel position information to the centralised VMS database located at the CCAMLR Headquarters.

Other challenges include:

- many buildings of former whaling stations, abandoned BAS and other structures are in a dangerous state of disrepair and wind-blown debris including asbestos dust presents a significant health risk. Some of these have been dealt with: the GSGSSI recently spent over €10 million on cleaning thoroughly the former whaling station at Grytviken of Asbestos, waste oils and other hazards. Asbestos was buried to best UK Environment Agency Standards on site. Oils were removed from the island as a recyclable commodity. But others buildings still remain to be cleared;
- more generally waste is a potential issue because of there are obviously no significant waste disposal facilities on the islands. Those working there try to ensure that as little waste as is feasible is produced;
- pollutants emitted by vessels wrecked on the islands' shores, vessels passing through territorial waters and abandoned whaling stations;
- the indiscriminate use of deck and ice lights on vessels within the Zone, resulting in mortality of burrowing petrels in particular;
- the expansion of the fur seal population on South Georgia, although not directly related to human activity, is significantly impacting seabirds. The seals destroy breeding habitat in tussac grassland. Yellow-billed pintails and pipits are affected. Loss of protective foliage cover leads to increased skua predation; burrow entrances may be blocked or damaged by seals, and courting wandering albatrosses may abandon traditional display sites. The disturbance from the repeated passage of seals has resulted

in a redistribution of nest sites for this species and for giant petrels in certain areas, and the disappearance of breeding populations of Antarctic prions and blue petrels from others;
- volcanic activity such as recent eruptions at Montagu Island presents a natural threat to seabird colonies where lava flows, ash deposits and earth tremors significantly modify seabird breeding habitat;

- the number of tourists visited South Georgia is increasing. Despite exacting standards promoted by International Association of Antarctica Tour Operators IAATO, potential impacts include disturbance of wildlife, oil pollution, trampling of moss banks, removal of historic artefacts and disruption to scientific research. The individual responsibility of tourists and their guides, together with careful management by government is minimising these influences, however.

3. Environmental policies and institutions

3.1 Institutional structure, manpower and budgets

The GSGSSI is based at Government House in Stanley, Falkland Islands. Management of all aspects of the SGSSI environment and of all human activities there is the responsibility of the Commissioner for the SGSSI. Three of the four present full-time members of the Government are environmental graduates / post-graduates. Advice on environmental matters is provided by the British Antarctic Survey (BAS) and by professional consultants (for EIA work).

The Director of Fisheries for South Georgia and the South Sandwich Islands is based in Government House in the Falkland Islands. However there is worldwide involvement in running the fishery. Scientific support and management advice is provides by the Marine Resources Assessment Group (MRAG) in London. The British Antarctic Survey and MRAG conducts applied fisheries research in Cambridge and at King Edward Point. Conservation Measures are set by CCAMLR. Day-to-day administration is the responsibility of the Falkland Islands Fisheries Department and of course inspections, licensing and catch monitoring by the Government Officer at King Edward Point and Surveillance and patrolling are carried out by the Fishery Officers on patrol vessels.

Decisions relating to international treaties and the obligation to ensure that relevant international law is implemented are the responsibility of the Commissioner in conjunction with the UK FCO.

Government income is insufficient to address the range of challenges confronting South Georgia's unique environmental and historical resources. For this reason, a private charity, the South Georgia Heritage Trust, was formed in 2005. The Trust, registered in Scotland, has a board of seven international trustees from various countries. It will undertake projects to conserve the island’s important natural habitat and eradicate the rats which prevent birds from breeding. This will widen international awareness of these threatened species and their breeding sites.

3.2 Mechanisms for integrating environment into development

In Sept 2001 SGSSI, like other UK overseas territories, signed with the UK government an Environment Charter which includes statements of principles and undertakings by both parties on integrating environmental protection into all sectors of policy planning and implementation. The Government is also committed under the Environmental Charter to ensure that environmental impact assessments is undertaken before approving major projects. This is not backed up by legislation, however.

3.3 Environmental strategy and policy

The framework for managing the SGSSI environment was set out in the 2000 South Georgia Environmental Management Plan. A draft update is currently in consultation and will be published shortly (BAS, 2005). GSGSSI Environmental Policy is laid out in a ‘Plan for Progress’ which together with the original Environmental Management Plan provides a clear statement of government policy and

management methods. The government's approach is to provide a sustainable policy framework which conserves, manages and protects the Islands' rich natural environment, whilst allowing for human activities and for the generation of revenue which allows this to be achieved.

The Environmental Management Plan for South Georgia provides a framework for waste management and the control of alien species. It also provides for a system of 'Specially Protected Areas' (SPAs) and 'Specially Protected Species'.

An 'Environmental Baseline Survey', a three-year project, has been completed, but the final report is still awaited.

3.4 Policy instruments

Legislation for South Georgia is the responsibility of the Commissioner. The GSHSSI recently conducted a review to identify the key areas which require new legislation. The legislation most relevant to environmental protection in the GSHSSI is indicated in the table below.

Item of legislation	Comments / detail
Falkland Islands Dependencies Conservation Ordinance 1975	The primary instrument for environmental protection. Makes it an offence to kill, wound, capture, molest or export any native mammal or native bird; or collect or destroy any native plant, except under permit. Under the 1975 Ordinance, three categories of managed area were created at South Georgia: Specially Protected Areas (SPAs), Sites of Special Scientific Interest (SSSIs) and Areas of Special Tourist Interest (ASTIs). However new legislation will recognise only SPAs. No SPAs have been designated on the South Sandwich Islands.
Wild Mammals and Birds (Export) Regulations	These provide for the designation of Protected Areas and visitor areas in the territory, for regulations to protect fauna and flora, including the prohibition of the introduction of non-indigenous species, and for the export under licence of wild animals and birds. Under the current provisions of the Ordinance, all native plants, birds and mammals (except whales and dolphins) are protected, as are the introduced Reindeer.
Fisheries (Conservation and Management) Ordinance, 2000	Provides for the regulation, conservation and management of the fishing waters around the islands. Contains provisions licensing and enforcement of fishing, and the penalties for illegal fishing. Licence fees cover the costs of monitoring and research control and surveillance, administration and analysis of data from the fishery. Unlimited fines can be levied on fishing operators if vessels are caught fishing without the appropriate licence, and for vessel, catch and fishing gear can be seized if the fishing operator is found to have committed an offence.

The GSGSSI has recently conducted a review to identify the key areas which require new legislation.

The draft *South Georgia* Environmental Management Plan 2005 provides for new categories of 'Specially Protected Areas' (SPAs) and 'Specially Protected Species'. 13 SPAs are designated, including "all rat-free areas". For 7 SPAs, permission to visit will only be given under exceptional circumstances. Management plans are being prepared for SPAs, and will be prepared for specially protected species when they have been designated. Legislation is being drafted to support these measures. The Government is also considering declaring the whole area within 12 nm of the coastline of South Georgia a Marine Protected Area; commercial fishing is already prohibited in this zone.

There is no environmental management plan for the *South Sandwich Islands* and no areas have been designated for conservation.

3.5 Monitoring

- The colonies of a range of designated species are monitored annually on Bird Island as part of the CCAMLR Ecosystem Monitoring Programme.
- Various other bird monitoring programmes and censuses have been and are being undertaken on the islands.
- The Government of SGSSI has commissioned an environmental baseline survey of South Georgia. This includes a rat survey to determine population density and distribution in a selected area (Greene Peninsula) ahead of a feasibility study for rat eradication.
- A detailed visitor reporting system is maintained.

3.6 Enforcement

The GSGSSI places great importance on enforcing the rules in the SGSSI fisheries. The SGSSI spends half its fisheries income on fisheries protection. Regular surveillance of the Zone is maintained by fisheries protection vessels, and a rigorous framework of licensing ensures that the government's conservation and management obligations under the Convention on the Conservation of Antarctic Marine Living Resources are respected. A satellite system is also used which is able to track all ships within the SGSSI Maritime Zone at any time. All fishing vessels in the zone, cruise ships etc. report their positions at certain times. These reports are collated and compared with the satellite pictures This allows patrol vessel to be deployed much more effectively. It also allows a better idea to be gained of what, if any, illegal fishing is going on, so that it can be allowed for in the stock assessment.

The waters around South Georgia are regularly patrolled by fishery protection vessels.

The picture on the left shows a Guinean fishing vessel, which was found fishing without a licence for Patagonian toothfish in the South Georgia maritime zone in March 2005, being blown up and sunk. The owners were prosecuted in the Falkland Islands' courts. When the owners failed to pay the total fines of £250,000, the ship and her catch of Patagonian toothfish were awarded to the South Georgia Government by the court.

4. International cooperation

4.1 MEAs

The SGSSI participate in the following MEAs:

MEA	Remarks
Convention on the Conservation of Migratory Species of Wild Animals (CMS)	The CMS was extended to cover SGSSI in July 1985. In April 2004 the UK Government ratified the Agreement on the Conservation of Albatrosses and Petrels (ACAP) on behalf of the SGSSI.
Convention on Biological Diversity	
Convention for the Conservation of Antarctic Seals (CCAS)	
Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR 1980)	

CITES has not yet been extended to SGSSI, although GSGSSI is looking into resolving this. The territory is fully CITES compliant however.

Ramsar sites have been proposed, one on S. Georgia (375,500 ha) and one on South Sandwich Island (27,760 ha). But GSGSSI does not believe that RAMSAR is useful to conservation management on its Territory and does not intend to implement the independent recommendations made, as it does not believe this would provide added conservation value relative to measures already in place.

4.2 Access to funding by the international community for environmental and environment-related projects

European Union
South Georgia and the South Sandwich Islands do not receive any Community aid under the EDF. However a feasibility study on invasive species in the South Atlantic territories is being undertaken with EU funding.

British government
The Islands do not receive budgetary aid from the UK. A number of projects have been funded under the OTEF and OTEP programmes and the Good Governance Fund (GGF), including:

- Advice given on updating legislation, including to meet the requirements of CITES (FCO)
- Advice given on extension of ACAP to SGSSI (FCO and JNCC).
- The revision of the South Georgia Environmental Management Plan was part financed by the FCO and DfID under OTEP.
- Organisation of a conference: Future of South Georgia. A Sense of Direction.

4.3 Other international cooperation, membership of networks, etc. related to the environment (or environmentally sensitive sectors)

None known

5. Recommendations for future cooperation between EC and SGSSI

- Despite the global importance of South Georgia and the South Sandwich Islands as major seabird breeding locations, there are no internationally recognised sites such as world heritage sites or biosphere reserves on these islands. Consideration might be given to preparing an application for such a designation.
- Tourism to the islands is increasing inexorably, but there appears to be no clear policy with regard to tourism or its likely impacts. Assistance is needed in devising such a plan and ensuring that it is consistent with the conservation objectives of the islands.
- The control of invasive species, particularly rats, which prey on the chicks and eggs of seabirds is an important priority, but is expensive. The EU project on invasive species in the South Atlantic should provide a good basis for identifying priorities for the eradication of invasive species.
- Although the Grytviken whaling station has now been removed, there are a number of other installations from the whaling era which are becoming dilapidated, contain dangerous substances (oils, asbestos) and pose a threat to the environment. Funding could be made available to support their environmentally sound demolition and safe removal of the resulting waste.

ANNEX D : ENVIRONMENTAL PROFILE -

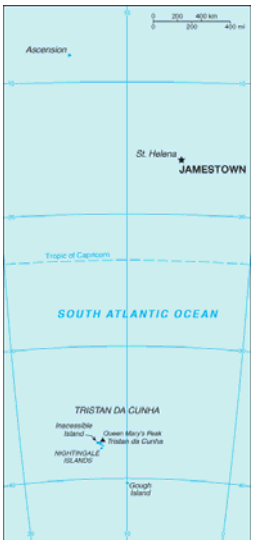
ST HELENA AND DEPENDANCIES

0. Summary

St Helena & Dependencies is a grouping of three largely separate and disparate territories (SH, Ascension Island, Tristan da Cunha) which because of their remoteness are rich in biodiversity and high in endemism. This biodiversity has been under severe stress since the historically recent human settlement of the islands, as a result of direct disturbance by man and disruption caused by introduced species. While much has been done to rebuild communities and provide protection, ongoing effort will be needed to ensure that these islands retain their natural and historic capital on which they can build a successful tourist industry needed to ensure their viability (St Helena) or ensure the ongoing health of the crayfish fishery (Tristan da Cunha).

1. Background information

Source: AIG. St Helena & dependencies



Source: CIA - World Factbook

1.1 Key facts and statistics

Name of Territory	St. Helena and Dependencies	St. Helena	Ascension Island	Tristan de Cunha
Region	South Atlantic			
Land area (km^2)		122	90	201
Exclusive economic zone	200 nm			
Population	5600 (2005)	4300	1000	300
GDP/capita	€3500 (2001)			
Literacy rate	97%			
Unemployment rate		11.8% (2000/01)	3%	0%
% below poverty line	0%			

1.2 Constitution

St Helena, Ascension Island (AI) and Tristan da Cunha (TDC) are three UK Overseas Territories which together form a single territorial group under British sovereignty known as 'St Helena and Dependencies'. The three territories are administered separately although the laws of St Helena apply to AI and TDC,

except where otherwise provided by specific laws made by the Governor. St Helena's constitution came into force in 1989. The Governor, appointed by the UK monarch, exercises executive authority. The

Governor is advised by an Executive Council and an elected, unicameral Legislative Council. The Executive Council consists of the Governor, three *ex officio* officers, and six elected members of the

Legislative Council. A proposed change to the constitution was recently rejected in a consultative poll. The Governor of St Helena is also the Governor of *Ascension Island*. The Governor is represented on AI by an Administrator who is advised on an informal basis by the Island Council. The Island Council consists of seven elected and three *ex officio* members. There is no indigenous population. The people on the island comprise the employees and families of the organisations working on the island. These include the US Air Force, which has a base on the island, Cable and Wireless, the BBC and the Composite Signals Organisation. Only employees of the user organisations and their families have right to work and live on Ascension Island.

Tristan de Cunha is also headed by an Administrator appointed by the Governor of St Helena. It is administered by an Island Council. The Administrator must act in accordance with advice from the Island Council, which is composed of eight elected members and three appointed members. A general election is held every three years and the Councillor who receives the most votes in the election is also appointed Chief Islander.

British common law and statutes apply, supplemented by local statutes.

1.3 Physical geography

St. Helena is a remote island situated at latitude 16˚S, between Africa and South America. it forms the rugged deeply eroded summit of an extinct composite volcano rising from the sea floor at a depth of 4,224m. The highest point, Diana's Peak, is 820m above sea level. The small size of the visible island belies the true dimensions of this massive volcano; it is a major feature on the earth's surface. Natural standing water is rare, due to the porosity of the rocks, pyroclastic deposits and high rates of evapotranspiration.

Ascension island lies in the South Atlantic some 1200 km north-west of St Helena. Ascension is a rocky peak of purely volcanic origin (44 distinct dormant craters) with its base just west of the mid-Atlantic ridge. Much of the island is covered by basalt lava flows and cinder cones. The last major volcanic eruption took place about 600 years ago. The highest point (Green Mountain) is 850m, and is covered with lush vegetation which is increasingly spreading throughout the island. The water supply in Ascension has been limited. The climate on Ascension Island is subtropical.

Source: TDC government website

The dependency of *Tristan da Cunha* is a group of four islands in the South Atlantic 4200 km SW of Saint Helena and 2300 km west of Cape Town. Tristan da Cunha (TDC), Inaccessible, and Nightingale are grouped together, while Gough Island lies about 350 km of TDC. This group is one of the most isolated inhabited islands in the world, over 1,900 km from St Helena and 2,400 km west of Cape Town. Only TDC is inhabited. Queen Mary's Peak on Tristan da Cunha, at 2,062 m, is the highest island mountain in the South Atlantic. Gough Island, rising to 910m, is the mountainous summit of a Tertiary volcanic mass. It has dramatically steep cliffs forming much of the coastline, and an undulating plateau rising to 910m above sea level. There is active volcanism on TDC, the last eruption was in 1961.

1.4 Flora and fauna

Saint Helena's isolated position has given rise to an unusual and remarkable land and marine flora and fauna. Of the 60 known native species of plant, 49 are endemic. Of 1100 land invertebrates, 400 are unique to St Helena. At least six unique land birds once occurred on St Helena, but only one of these (the wirebird) survives today. Ten inshore fish are found only around the island, and 16 more are found only there and on Ascension.

Much of *Ascension*'s global conservation importance comes from the island's remoteness. It has one of the most remarkable island floras and faunas in the world. It is of world significance for its 11 species of breeding seabird (especially on Boatswain Bird Island), the most renowned of which is the unique Ascension Island Frigatebird. It has also one of the most important breeding green turtle populations in

the world. There are 6 unique species of land plant, 9 of marine fish and shellfish and over 20 of land invertebrates.

Currently, populations of two globally endangered birds, the Ascension frigatebird and the red-footed booby, are threatened. The recently introduced Mexican thorn bush provides food and cover for rats, and threatens Ascension's Green Turtle population, the surviving unique desert flora and fauna and some geological features.

The isolation of *Tristan da Cunha* and the fact that it was devoid of all living organisms at its volcanic origin, mean that the evolving flora and fauna of the island hold a special interest for scientists and visitors. There are no indigenous terrestrial mammals but the introduction of rats and mice in the 1880s destroyed much of Tristan Island's indigenous bird life. The islands of Nightingale and Inaccessible are rodent-free and are home to several unique indigenous land birds, such as the Tristan thrush and the rare Inaccessible rail, the smallest flightless bird in the world. Millions of seabirds, such as the yellow-beaked albatross and the greater shearwater, breed there, as do fur seals and elephant seals, now recovering from the overhunting of the 19th century.

Gough Island was designated a Wildlife Reserve under the Tristan da Cunha Conservation Ordinance, and is a Natural World Heritage Site, as is Inaccessible Island. Over 40% of Tristan de Cunha's territory is a declared nature reserve. The 200 nm EEZ is a whale sanctuary. On Gough Island there are 36 flowering species of which 21 are endemic to the Tristan-Gough Island group and four are restricted to Gough. 27 species of fern are known from the island of which 15 are endemic to the Tristan–Gough group. On **Inaccessible Island** there are 213 native species of plants, eight being endemic to the island.

Gough Island is the least disturbed major cool-temperate island ecosystem in the South Atlantic Ocean, and one of the most important sea-bird colonies in the world, with 54 bird species recorded in total, of which 22 species breed on the island, 20 being seabirds. Four species are threatened. One-half of the world's population of northern rockhopper penguin breed on Gough. Atlantic petrel is endemic to Gough and the Tristan group of islands. Gough is also a major breeding site of the great shearwater with up to three million pairs breeding on the island. Subantarctic fur seal and southern elephant seal are the only two native breeding mammals. Two endemic landbirds are found: the Gough moorhen and the Gough finch. The undisturbed nature of Gough makes it particularly valuable for biological research which, with meteorological monitoring, are the only activities permitted on the island.

1.5 Demography, socio-economy

The resident population of St Helena Island fell rapidly from 5157 in 1998 to 4186 in 2003. Fertility is low, and there was extensive emigration reflecting the lack of employment on the islands, and the granting of a right of abode in the UK in 2002. This trend is leading to a contracting and ageing population. The population on the other islands is stable.

Given the remoteness of the islands, access is a major issue. Ascension is the only of the islands with an airport. St Helena can only be reached by the passenger and supply ship ' RMS St Helena' which calls on average 25 times a year. Access is from Capetown (several days voyage), Ascension or Walvis Bay. TDC also depends entirely on shipping for physical contact with the outside world. A fishing company provides a cargo and passenger service between the island and Capetown. TDC access to the sea is only possible for around 60 days per annum.

The 'RMS St Helena' will be withdrawn from scheduled service in or around 2010. The UK government announced in 2005 that it would provide funding for an airport on St Helena, so that the sea voyages would be replaced by air transport. Increased tourism and inward investment are expected to follow this

improved access. The airport on Ascension is operated by the US government, and is a military airport. Until recently civil aviation into the island was restricted. However, an agreement between the UK and US Governments in October 2003 allows for increased civilian air traffic.

St. Helena's economy depends substantially on financial assistance from the UK, currently about € 20 million per year. The local population earns income from fishing, livestock-rearing and the sales of handicrafts. A system of agricultural subsidies is currently in place. Because of a lack of employment, 25% of the work force has left to seek employment on Ascension Island, in the Falklands, and in the UK.

At present St Helena owns no offshore fishing vessels so is not exploiting its fishing rights within its EEZ.

The island hopes that the new airport will reverse the spiral of decline in the St Helena economy. There is general agreement that St Helena could benefit from increased tourism, targeted at high-value, low-volume specialist tourism, based on its unique wildlife and cultural heritage. The government recently published a tourist plan (SHG, 2005)

Tristan da Cunha's economy is based on traditional subsistence farming and fishing. Foreign earnings come from the royalties from the commercial fishing of Tristan crayfish, under the terms of an exclusive concession granted by the Island, and the sale of postage stamps and coins. There is limited revenue from tourism. TDC is largely self-financing and is not in receipt of budgetary aid from the UK. There is a crayfish factory that provides some employment on fishing days when 20 small island boats catch crayfish for processing. There is some revenue from interest on a reserve fund. In recent years, strict quotas imposed on crayfish catches to ensure sustainability of the resource have reduced the total income available to the TDC Government.

Like TDC, *Ascension* is largely self-financing. When employees' contracts of employment end they must leave. Hence there is no unemployment on Ascension. However the economy is fragile because it depends heavily on a small number of employers on the island. If any of these were to pull out, economic viability could be compromised. The UK government announced in January 2006 that, despite recent constitutional changes, it does not intend to grant right-of-abode or property ownership rights to those working there. This means that activities such as tourism and fishing are unlikely to develop greatly.

2. Main environmental challenges

2.1 Overview

None of the islands has any major polluting industries. Apart from efforts to conserve their rich heritage of birdlife and fauna (see section 2.2), the main environmental issues relate to the disposal of solid and liquid waste. The islands are all of volcanic origin, and are prone to a number of natural hazards.

SHI has three 80 kW wind turbines which can in principle generate 20 percent of the island's electricity demand, thereby reducing the amount which has to be raised by diesel generators. Consideration is being given to expanding the wind capacity.

Source: SHG. Waste dump on St Helena

On St Helena, domestic and commercial waste is collected regularly and disposed of in the municipal waste tip. This tip is not far from the end of its lifetime. A project on waste disposal, including waste minimisation, better management of the tip, the safe disposal of methane gas by-product and recycling and composting is being drawn up. Clinical waste is collected separately and incinerated. Dangerous waste is sent for processing to the UK. Plans are in hand to afforest the land fill site. This is important for aesthetic and safety reasons, as it lies close to and alongside a potential route to the airport.

Nearly 1 ton of asbestos waste was exported to the UK from

Ascension in 2004. This waste arose from the demolition of military installations.

There is no treatment of sewage on any of the islands: Raw sewage is pumped out to sea, and there is a need for a sewage treatment facility, at least on St Helena. A five year project to address drainage and sewage disposal issues and a wastewater strategy for St Helena started in 2005. DFID has stated that it will fund an adequate sewage disposal system only if full cost recovery is incorporated.

The islands of SH&D are all of volcanic origin. Tristan da Cunha is still active. The last eruption was in 1961 when lava flow destroyed the old crayfish canning factory, and forced the entire evacuation of the island. There have been at least five significant earthquakes on Ascension in the last 15 years, one in 1992 of approximately Richter 7.0. In May 2001 Tristan suffered a severe hurricane when every building on the Island except the catholic church was damaged. St Helena is not very prone to natural disasters.

Several contingency plans are in place: bulk fuel spillage, marine pollution, explosion, rock fall. These are coordinated by the Disaster Management Committee, chaired by the Chief of Police, and supported by British government advice. Not all equipment needed is in place.

2.2 Main challenges

Challenge 1 Pressures on biodiversity from introduced species and other threats MODERATE

As was seen on section 1.4, St Helena and Dependencies are host to an enormous wealth of flora and fauna, much of which occurs nowhere else in the world. But these resources have been greatly depleted since the islands were settled by man, and many species are under pressure from a number of threats. The greatest threat come from a variety of alien species introduced by man, some deliberately, others inadvertently. While some introduced species are benign, many are threatening endemic and/or vulnerable species of flora and fauna. Efforts have been ongoing in recent years to control the invasive species. The islands need to make efforts to preserve their wildlife and native plants because:

1. it is an obligation of the territories concerned under the Convention on Biodiversity, and
2. the rich diversity of bird and plant life will be one of the major assets of the territory in expanding tourism to the islands (SHG, 2005).

Albatrosses and petrels are also falling victim to the longline fishing industry. The baited hooks of international fishing vessels are fatally attractive to these birds, which become hooked and drown in large numbers - an estimated 100,000 albatrosses, of 21 species, have been dying on longlines every year.

St. Helena
Large-scale destruction of native plants and animals followed the Island's discovery in 1502. Deliberate introduction of alien plants and animals caused further declines of habitats and species. The remaining patches of native vegetation are small. Six species have become extinct, and several survive only in cultivation. Small population sizes and alien species threaten the survival of St Helena's land plants and animals. There are several ongoing projects to re-establish endangered / critically endangered fauna of St Helena, and to increase the habitat for the wirebird.

Predation by non-native mice on Gough Island, TDC

Gough Island is the most southerly of the Tristan da Cunha group. There are 22 bird species nesting on the island of which 20 are seabirds. The island hosts 99 per cent of the world's populations – the birds most often attacked. Just 2,000 Tristan albatross pairs remain.

Seabird chicks, particularly Tristan albatross and Atlantic petrel, are being eaten alive by non-native mice after hatching. The house mice, three times the size of European mice, attack at night and are devouring more than a million petrel, shearwater and albatross chicks on the island every year. The albatross chicks spend eight months sitting waiting for food from their parents. They are nearly a metre tall and weigh up to 10 kg, 250 times the weight of the mice but are largely immobile and cannot defend themselves. Albatrosses evolved to nest on Gough because it had no mammal predators.

Source: TDC Govt. website
Albatross chick

be about 700,000 mice on the island. Scientists suspect that the mice are also hicks of the rare, ground-nesting Gough bunting, a small finch found no-where earchers think the finch has been forced from the best nesting sites into less suitable upland areas (http://www.rspb.org.uk/international/science/miceeatchicks.asp).

Tristan da Cunha

A number of alien species are widespread on Gough island. Seabird populations are being threatened by house mice (see box below), which have become abundant. The mice originally arrived on ships bringing settlers, and later on supply ships, and in some cases arrived from shipwrecked vessels. Conservation guidelines introduced for all visits to Inaccessible and Nightingale Islands by the Tristan community have succeeded in keeping these islands free of rats and mice. A grant of €330K was announced in 2006 for a feasibility study to eliminate mice on Gough and rats and mice on Tristan da Cunha.

Ascension:

Before the arrival of people, Ascension was home to an estimated 20 million seabirds. However, rats soon arrived by ship, and donkeys and cats were also deliberately introduced. In an effort to beautify the island, many tropical flowers were planted. The result of all these introductions was the rapid decline in seabird numbers so that, today, most can nest only on smaller islets off-shore. The two native landbird species - a rail and a night heron - are both extinct. Today, the seabird population is about 400,000. Over the last few years a major project has been carried out to increase areas where the island's seabirds nest. This project, funded by the UK Foreign & Commonwealth Office with support from the Ascension Island Government and the Royal Society for the Protection of Birds, focused on the eradication of feral cats which were predating on the nesting birds. The eradication programme has been successful and more seabird nest are being observed. A domestic cat population still exists but there are strict controls on imports of cats to the island. The Ascension Island Government Conservation Department is also using some land near the peak of Green Mountain as a nursery to promote the development of endemic species of flora.

Source: Govt. of Ascension: remains of frigatebirds killed by cats on Letterbox, Ascension Island

Challenge 2 Climate change MODERATE

St Helena, Ascension Island and Tristan da Cunha with their rocky shorelines and rugged mountainous terrains are less vulnerable to climate change than many of their fellow-OCTs. Nevertheless the rise in mean temperature and its attendant climatic changes could cause difficulties to the islands, including:

1. Changes to fisheries. Many fish species are very sensitive to water temperature. Warmer water and changes in the oceans' currents will mean changes in flows of nutrients and species composition in ways which cannot be predicted. In particular it is not clear how the crayfish fishery of Tristan de Cunha, critical to its economy, will be affected. And although the fish industry in St Helena is not presently of great importance, it does provide livelihoods to some and the coastal waters and marine life which they support will be important to the tourist industry as it develops in the future.

2. An expected increase in the frequency of storms and rough seas is a concern for the islands. At present harbour facilities are lacking, there is an absence of breakwaters and mooring facilities. These difficulties are already deterring cruisers from including St Helena on their itineraries, and interfering with fishing and commerce on TDC. Increased incidence of rough weather would therefore be a cause for concern, at least until port facilities are substantially upgraded.

Challenge 3 Illegal unregulated and unmonitored fishing MODERATE

There is significant poaching by illegal fishing vessels in the exclusive economic zones of the three territories. These have both economic and conservation consequences.

In economic terms illegal fishing has either a direct or an indirect impact on revenues. Tristan da Cunha is at pains to exploit its valuable crayfish fishery in a sustainable way, and sticks rigorously to a self-imposed quota (total allowable catch, TAC), which it can take very quickly. The fishing industry, and the revenues and exports generated are therefore completely quota-limited. Any illegal fishing reduces stocks, and is therefore directly reflected in the TAC set. It is known that illegal fishing takes place, but the scale of the illegal fishing is not known. Fishery patrol is expensive, and the means available to the islands are very limited. Patrol vessels are often idle because they are in need of repair for which there is no budget. There is also illegal fishing within the EEZ of St Helena and Ascension Island. Here the poachers are not competing with local fishers, but the activity represents forgone revenue in the form of fishing permit fees.

Illegal fishers represent a double threat, not only depriving the territories of income, but also because being illegal they do not stick to rules and agreements. They may take fish of species which are not permitted or use illegal methods which threaten fish stocks or kill seabirds.

Other environmental issues in St. Helena and Dependencies

1. There is no waste water treatment on any of the islands. Industrial installations are very small and generate only small amounts of waste water. This is usually disposed of through the sewage system which is either a communal system or septic tanks and soakaways. It is not known whether the discharge of untreated sewage is causing water quality or other environmental problems.

2. It is known that there are problems with solid waste on both St Helena and Ascension, related to the limited capacity and inadequate methods used at both waste dumps. Locating and financing new waste disposal facilities are likely to be problematic given that the critical mass needed to make a sound modern disposal facility is lacking. A strategy is needed for the sustainable management of solid waste, including prevention and recycling.

3. Environmental policies and institutions

3.1 Institutional structure, manpower and budgets

On *St Helena* the environmental protection function is rather fragmented. Environment planning and development (EPD) is carried out by a team of 3 within the Development & Economic Planning Department (DEPD). Environmental conservation is a responsibility shared between the Conservation Officer, with an Assistant and several field staff (who sits in the Forestry Division of the Agricultural & Natural Resources Department (ANRD)), the EPD and the National Trust (see below). The ANRD also

has a group responsible for fisheries, including a Marine Scientific Officer who works on marine conservation.

The Environmental Health section is part of the Department of Health, and is responsible for pest control, sanitation, waste, etc., and includes 4 environmental health officers, 11 pest control operatives and 16 sanitary services orderlies. Within the Public Works and Services Department (PWSD) the Water Division is responsible for water issues and the Energy Division is part responsible for sustainable energy.

Agriculture and fishing fall under the remit of the ANRD; energy falls within the Public Works and Services Department; and Tourism is dealt with by the Office of the Chief Secretary. The Planning Section of the Legal, Lands and Planning Department has overall responsibility for spatial planning. A Disaster Management Committee involves various relevant departments and is chaired by the Chief of Police.

The ECS has an annual budget of some €125 K, and the EPD some €45 K. Funding for environmental and conservation projects has to be sought from external donors.

The St Helena National Trust, a non-profit, statutory body encompassing all environmental conservation NGOs, was launched in 2002. Its mission is to preserve natural environments and historical monuments. It is also active in education and information, awareness-building and school campaigns. After a start-up grant the NT will be subsidised by the SHG. Other NGOs, the St Helena Nature Conservation Group and the Sandy Bay Environmental Centre are increasingly active in the development of conservation and education on the island.

The Environmental Advisory Consultative Forum, made up of key stakeholders, serves as a steering group for the implementation of the Environment Charter.

On *Tristan da Cunha* the Department of Natural Resources is responsible for administering the Island's environmental policies. Its activities are led by the Conservation Officer, appointed in September 2005. The Conservation Officer is responsible for conservation projects on the islands, wildlife monitoring, providing information to visitors and educating residents about the importance of their wildlife heritage.

The administration on *Ascension* has undergone major reorganisations is recent years. The main services used to be provide by Ascension Island Services (set up in 1984) on behalf of the island user organisations. In 2000 this was replaced by the Ascension Island Government (AIG) and a statutory body, the Ascension Island Works & Services Agency (AIWSA). In April 2004 the Works & Services Agency was closed down and its functions were taken over by the Public Works and Commercial Services Department within the administrative arm of government.

The Ascension Heritage Society is an informal cross-sectoral environmental forum and local voluntary conservation organisation. A new body will be set up by the government to formulate an environmental action plan.

Ascension Island Works & Services Agency (AIWSA), is a statutory body owned by and operationally responsible to the Ascension Island Government (AIG) to provide a range of services on the island. In 2004 the AIWSA became part of AIG. Environmental matters fall within the remit of the AIG Conservation Department. Projects undertaken in the past and ongoing include:

- Monitoring of and research on green turtles;
- Sea bird restoration project (in conjunction with the UK RSPB and Foreign and Colonial Office);
- Waste management consultancy and implementation;
- Monitoring and reintroduction of endemic plant species.

3.2 Mechanisms for integrating environment into development

For specific projects/ policies the *St Helena* Government has adopted a participatory stakeholder approach, inviting representatives from all key relevant sectors onto core working groups or committees.

This approach will be formalised in the Sustainable Development Plan which is being drawn up to show how St Helena can achieve its strategic objectives.

SHG is committed to the sustainable development of the island. In September 2001 St Helena signed up to an Environment Charter in conjunction with the UK Foreign and Commonwealth Office. Implementation of the Charter is driven by the Environmental Advisory Consultative Forum, a body made up of key stakeholders, and this will lead to the formulation of St Helena's Environment Conservation Strategy
There is not yet a statutory requirement for EIA on any of the islands. But the EPD is expected to screen and assess the environmental impacts of development and policy initiatives. Use is currently made of the DFID procedures as set out in the DFID Environment Guide (A guide to Environmental Screening), which is adapted to suit local circumstances. As there is not yet EIA legislation in place, there is no statutory requirement for consultation. As a matter of course however relevant stakeholders are approached for their views during the production of the screenings.

The UK DfID has commissioned consultants to undertake an EIA for the proposed new airport, and to provide support to environmental monitoring over the five year implementation period.

A Land Development Control Plan for SHI has been adopted. It specifies permitted uses for all land in the island, and specifies all protected areas. It stresses that permission should not be given to a development judged inconsistent with its policies. The LDCP was intended to strike a balance between conservation and development, allowing the latter to go ahead while preserving St Helena's environment, in order to improve the economic, social and environmental well-being of the island and its people. However it gives the Land Planning and Development Control Agency power to relax any planning requirements if it believes this is "in the public interest ".

3.3 Environmental strategy and policy

The *St Helena* government has drawn up *St Helena Strategy: Our Vision for the Future*, which sets out the priorities for the island, and how its objectives will be achieved. A cornerstone of the strategy is improved access to the island and the commitment to strengthen tourism, and it aims for 20,000 tourists by 2020/2025. The Office of the Chief Secretary monitors the attainment of the objectives. A Sustainable Development Plan (SDP) detailing how the objectives in the Strategy can be reached is being drawn up. The SDP will become the overarching strategic level plan for St Helena's development and will give details on how the objectives within the Strategy can be reached. It will contain quantitative targets.

There is also a Land Development Control Plan, currently awaiting endorsement by the Governor in Council, and a Renewable Natural Resources Strategy 2004-2007. Currently fishery policies are based on The Fisheries Limits Ordinance, 2002.

The key strategy document for environmental protection, nature and wildlife conservation is the *Strategy for Action to Implement St Helena's Commitments under the Environment Charter (GSH, 2004)*. Some aspects of natural resource management are also included in this strategy. This document was drawn up in a series of workshops. Basic contingency plans are also available for disaster management.

Ascension Island has a Strategic Plan, the Ascension Island Management Plan, for 2003-08. This includes some of the commitments of the Environment Charter. *Tristan da Cunha* has formulated a Biodiversity Action Plan.

3.4 Policy instruments

The key environmental legislation on *St Helena* are the following:

Item of legislation	Comments or details
National Parks Ordinance, 2003	Provides for the establishment of parks, nature reserves, sanctuaries and areas of historical interest. To date no areas have been designated under this Ordinance, but there is a draft National Plan of Protected Areas.
Land Planning and Development Control Ordinance, 1998	An Ordinance to provide for the planning and control of the development of land and buildings.
High Seas Fishing Ordinance 2001 Conservation and Management of Fishery Ordinance 2003 Fishery Limits Ordinance Spear Gun Control	To ensure that St Helena and registered fishing vessels comply with International Conservation and Management Measures by Fishing Vessels on the High Seas, adopted by the United Nations in November 1993, and the United Nations Convention on the Law of the Sea, adopted in 1982, relating to the Conservation of Straddling Fish Stocks and Highly Migratory Fish Stocks)
St Helena's National Trust Ordinance, 2001	To establish the St Helena National Trust.
Endangered Species Protection Ordinance, 2003	Provides for the protection of and regulation of endangered, endemic and indigenous species of animal and plant thereby implementing CITES
Birds Protection Ordinance, 1996	An Ordinance to protect game birds.

Fishing is only permitted with a licence. The licence may include quotas. Sand pumping and stone quarrying also require a permit, to which conditions may be attached

In *Ascension Island*, five ordinances exist on the protection of species and habitats. The Ascension National Protected Areas Bill, allows for the development of marine and terrestrial protected areas and national parks.

Legislative instruments in *Tristan da Cunha* include:

Item of legislation	Comments or details
The TDC Fisheries Limits Ordinance 1968	Defines the fishery limits of TDC and regulates fishing within them.
The TDC Conservation Ordinance 1976	Protects native plants on Inaccessible and Gough Islands and listed birds and mammals on the main island. On the other islands, all native birds and mammals are protected from capture, molestation and killing by non-residents, except under permit and controls commercial sealing.
Conservation of Native Organisms and Natural Habitats (Tristan da Cunha) Ordinance 2006	Creates seven new reserves for rockhopper penguins on the main island. This legislation allows TDC to implement the CBD and the Agreement on the Conservation of Albatrosses and Petrels

Information instruments
The Education Department on *SHI* has for many years been very committed to promoting the natural environment. School curricula include environmental health, waste management and recycling, marine conservation (mostly dolphins and whales), including dolphin-watching trips. Literature is published on local flora & fauna; The Conservation Section arranges visits on request to Diana's Peak National Park.

Environmental awareness is actively promoted on Ascension through the local media and by production and distribution of several publications, leaflets, a video and the creation and development of a conservation visitors centre.

3.5 Monitoring

On *St Helena* most of the monitoring carried out is for conservation purposes. Water from the distribution system is tested regularly for bacteriological contamination, and also for chlorine and pH. There is no

formal monitoring of waste water. If it constitutes a health hazard and this is reported, the Environmental Health Section will monitor.

The Conservation Section carries out bi-annual monitoring on the Peaks (cloud forest habitat) of the condition and numbers of specific endemic, indigenous and invasive plants, and the wirebird population. The Forestry Section monitors the number of trees planted in Crown Forests, the land cleared and timber sales. Statistics are published in the Statistical Year Book. The Marine Section monitors seabird species in specific areas, with counts every 2nd week. Fish species are counted in specific areas twice per year.

Under the current OTEP Wirebird Project the National Trust monitors key wirebird sites weekly or twice weekly. In October 2004 a monitoring and awareness programme for seabirds and turtles on St Helena was started. Island-wide surveys and a public sightings programme were conducted. This will continue until October 2006, and will allow the population status and breeding seasons of SH seabirds to be determined.

Ascension has monitoring programmes for green turtles and endemic plant species.
The *TDC* Natural Resources Department runs several monitoring programmes for seabird and seal habitats, and programmes will also be developed to monitor other marine life and plant.

3.6 Enforcement
There is generally a lack of resources for enforcement. However in relation to fishing the governments sometimes make agreements where vessels licensed to fish within their EZ double as surveillance vessels.

4. International cooperation

4.1 MEAs

St Helena and Dependencies participates in the following MEAs (all 3 territories unless stated otherwise):

MEA	Remarks
Ramsar Convention on Wetlands[1]	Extended to St Helena January 1976. No suitable wetlands for inclusion in the List of Wetlands of International Importance have yet been designated (to fulfil Article 2.1 of the Convention). Sites have been proposed and are being considered, however.
Convention on Biological Diversity (CBD)	The CBD was extended to St Helena and Dependencies in June 1994. Some progress has been made, for example with the designation of protected areas. Management plans will then need to be made.
Bonn Convention on Migratory Species (CMS)	Extended to St Helena and Dependencies in July 1985. The Marine Scientific Officer of St Helena is mostly responsible for the work that goes towards implementing the commitments of the Convention. So far she has set up a sightings programme for the seabirds and turtles of St Helena (under a recent OTEP-funded project), and also regularly monitors the dolphins and whales around St Helena. (Currently all mammals are protected under the Wildlife Protection Ordinance)
CITES	CITES was extended to St Helena and Dependencies in August 1976. St Helena enacted implementing legislation in 2003. Export permits have been drafted and the Management and Scientific Authorities have been appointed.
Agreement on the Conservation of Albatrosses and Petrels2 (ACAP)	The Agreement became effective in Tristan da Cunha in April 2006.
London Convention	Extended to St Helena and Dependencies in November 1975

MEA	Remarks
World Heritage Convention	Gough Island has been declared a WH Site and has a wildlife management plan. Inaccessible has a similar designation.
South-East Atlantic Fisheries Organisation (SEAFO) Convention	Signed by the UK in April 2001 on behalf of SH & Dependencies

[1] Applies to St Helena only
[2] Applies to Tristan da Cunha only

4.2 Access to funding by the international community for environmental and environment-related projects

EU
Community aid to St Helena and dependencies from the 6th to the 8th EDF amounts to € 9.7 million, of which € 7.1 million has not yet been disbursed. The EU has committed to contributing €8.6 million in aid under the 9th EDF. The support is aimed to improve access to the island by improving port infrastructure and facilities, and promoting economic development. The St Helena Government applied for budgetary support in respect of its initial indicative allocation from EDF9 and the public finance management assessment indicated that it is eligible for this.

Funding has just been secured from the EU for a project to increase the capacity of the South Atlantic UK overseas territories (St Helena, Ascension, Falklands and Tristan) to reduce the impacts of invasive species.

The EU regards St Helena, Ascension and Tristan da Cunha as a single UK Overseas Territory, although they have separate Councils, legislative procedures and budgets. One consequence of this is that cooperative projects between these islands do not qualify for EU regional funding.

UK Government
Grants are available from the Overseas Territories Environment Programme (OTEP) funded jointly by FCO and DFID. This fund was established in December 2003 to assist the UK Overseas Territories to implement their environment charters. €400,000 has been received by St Helena for 8 projects. Funding is also available under the Darwin Initiative, a programme funded by DEFRA, the UK environment ministry, to fund projects for protecting biodiversity around the world.

Other
Over the last 10 years small amounts of funding have been provided for environmental projects by Flora and Fauna International, WWF, RSPB, UNDP and the Eden Project.

Quotation from questionnaire received from St Helena government

"Over the years St Helena has tried to secure funding from various international and UK based funding bodies. Unfortunately for international funding, we are told that as St Helena is a United Kingdom. Overseas Territory in receipt of DfID aid we are not considered eligible for such funding. On the other hand when applying to some UK funding bodies, we are not considered eligible because we are so isolated geographically from the mainland and do not pay taxes there"..

It is difficult to find sources of funding for the conservation of monuments and the built environment.

The table below shows aid to St Helena over the period 1996/97-2003/04.

Table: Aid to St Helena 1999/2000 - 2003/04 (€ 000s)

Year	UK Aid						UNDP	EDF	Total Aid
	Budgetary Aid	Shipping	DevAid	TC	Dev Asst.**	Total			
1999/00	4,553	4,390	1,547	3,356		13,847	166		14,012
2000/01	6,150	2,761	2,318	3,105		14,334	228		14,562
2001/02	5,720	2,754			6,136	14,610	271		14,881
2002/03	6,492	2,262			5,217	13,917	246	122	14,339
2003/04*	7,327	3,609			4,833	15,769	358		16,127

*Estimate as at February 2004 ** From 2001/02 Development Aid and TC were combined under the heading Development Assistance.
Source: Development & Economic Planning Department

4.3 Other international cooperation, membership of networks, etc. related to the environment (or environmentally sensitive sectors)

For all matters pertaining to the environment and conservation in the UK Overseas Territories, the UK Overseas Territories Conservation Forum (OTCF) networks regularly. Within the OTCF there is a South Atlantic Working Group (SAWG) covering SH & Dependencies, the Falklands and South Georgia.

There are informal links between St Helena and Ascension whereby information is exchanged, for example on seabird and turtle issues. The two islands are also collaborating with the Falklands and the British Virgin Islands on seed conservation.

The Overseas Territories Consultative Council (OTCC) meets annually for an exchange of views.

5. Recommendations for future cooperation between the EC and St Helena and Dependencies

- St Helena and its two dependencies (Ascension Island, Tristan da Cunha) are physically remote territories, and this remoteness is compounded by poor transport facilities and infrastructure. This is an important limiting factor in the development of their economies. This fact has been recognised by the European Commission, which has said it will make transport infrastructure a priority in its EDF programmes. Some progress is being made (future airport on St Helena, less restrictive policy by US military to civil flights to Ascension) and this can provide new opportunities for galvanising these economies. But there are still bottlenecks, mainly related to the harbour facilities, which are interfering with, for example, cruise tourism in St. Helena, the fishing industry in TDC.
- The development of tourism on St. Helena will pose major challenges to the island. If handled well there could be major synergies between tourism and the territory's conservation goals, if not there could be conflicts. Assistance and capacity-building in many relevant areas is desirable, including for example:
- defining the tourist target group, what their needs are and how tourism should be promoted;
- determining the relationship between tourism and protected areas;
- determining how tourism can be used to advance conservation and vice versa;
- deciding how to stimulate small environment-friendly tourism businesses: tour guides (terrestrial and marine), local crafts, diving, fishing;
- etc., etc.
- Ways of affordably improving the enforcement of fishery rules need to be considered. This will have a pay-off in both economic and conservation terms. This could involve collaboration with other South
- Atlantic territories which face and are dealing with similar issues, further agreements with licensed fishers to assist with surveillance and possible legislation (for example by making the presence of a fishing vessel without an operating automatic transmitting positioning system an offence, rather than having to prove fishing).