



Overseas Countries and Territories: **ENVIRONMENTAL PROFILES**

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INTRODUCTION

This booklet contains summaries of the environmental profiles for the 25 Overseas Countries and Territories (OCTs), linked to four Member States of the European Union (namely Denmark, France, the Netherlands and the United Kingdom).

The OCTs have a long-standing association with the European Union, which is established in the Treaty on the Functioning of the European Union and elaborated in detail in the Overseas Association Decision (OAD) adopted in November 2013¹. The European Union supports the sustainable development of OCTs, including through funding made available from the European Development Fund and the General Budget which aims to help them develop and implement their policies.

The full profiles were set in a sustainable development perspective so that the findings can be used to assist in programming projects in the framework of the EU 2014-2020 cooperation. The work was conducted primarily by means of desk research, drawing on data from the public domain, supplemented by feedback from the administrations of the OCTs, Member States, Commission services, and NGOs. Given their nature, the profiles should be considered as a snapshot, or a summary of currently published information, hence are not exhaustive.

The OCTs are situated in 5 distinct regions². They extend from the tropics to the polar regions, include the world's largest island (Greenland) and the tiny Dutch special municipality of Saba (13 km²), have populations ranging from over a quarter of a million down to around 50; and a wide range of incomes, from Bermuda which occupies the 6th worldwide place to islands with a barter

economy (Pitcairn, Tristan da Cunha). All OCTs are economically vulnerable as they are dependent on a small number of sectors (e.g. tourism, financial services, fishing, and mining). Their small size results in diseconomies of scale and limited human resources. Their often remote location, insularity and fragmentation mean high transport costs, making imports expensive and exports uncompetitive.

The OCTs host huge biodiversity and a strong level of endemism³, higher than the entire European Union. Many OCTs are important hotspots for flora, birds and seabirds, sea turtles, reptiles and other species, some of which are endangered. The economic exclusive zone (EEZ) of the OCTs is over 20 million km², an important potential source of wealth, largely contributing to the EEZ of the Member States (MS) to which they are linked. OCTs contain an estimated 16% of the world's freshwater, most of it locked up in the ice-sheets of Greenland and the Antarctic OCTs, and which will play a pivotal role with respect to sea-level over the next century and beyond.



Fishery on frozen sea. © Government of Greenland

¹ Council Decision 2013/755/EU of November 2013 on the association of the Overseas Countries and Territories with the European Union, Official Journal of the European Union, L 344, Volume 56, 19 December 2013.

² Caribbean, Pacific, North Atlantic, South Atlantic and Indian Ocean.

³ Species found on that territory only.

Several OCTs host coral reefs. The most pristine coral reefs are found in the British Indian Ocean Territory (BIOT), while parts of Bonaire and Oostpunt in Curaçao have the best-preserved coral reefs of the Caribbean region. New Caledonia has the largest lagoon of the world and the second longest barrier reef. French Polynesia and BIOT both have atolls amongst the largest globally.

OCTs are championing numerous remarkable environmental management initiatives worldwide. The largest mostly land-based protected area in the world is the Northeast Greenland National Park (927 thousand km²). The Coral Sea marine protected area of New Caledonia (2014) may currently hold the title of the world's largest protected marine area, covering 1.3 million km². Besides, BIOT is one of the largest marine no-take protected areas (640,000 km²) and South Georgia and South Sandwich Islands have one of the largest sustainable fisheries marine protected areas (1 million km²). In several other OCTs' EEZ, sustainable fisheries MSC⁴ certificates were obtained.

The natural capital of the OCTs may be important for the whole world but many OCTs lie in areas which make them vulnerable to natural disasters - cyclones, hurricanes and tropical storms, earthquakes, volcanic activity and tsunamis – and to climate change effects – namely sea level rise and temperature change, as well as increase of frequency and strength of storms. This stresses the importance of *Resilient and healthy ecosystems, which are a cost-effective way of managing some of the adverse impacts* (CBD Secretary General).

For OCTs, ecosystems often serve as assets to tourism (touristic activities depend on the quality of the natural environment), fisheries (fisheries are usually an important source of income for population and governments and a source of protein for the population), coastal protection (reefs and mangroves buffer impacts of extreme natural events and sea level rise, avoiding further losses) and culture and recreation (important for the well-being and health of the population). Forests also protect watersheds and prevent land erosion.

In many OCTs the level of awareness of decision makers regarding the importance of physical planning and preservation of the environment and ecosystem services, for example through adequate environmental impact assessment procedures, remains limited. In several OCTs, issues related to land ownership prevent the establishment of protected areas. Challenges are noted in the establishment of environmental standards, legislation and regulations as well as in their implementation. The least populous OCTs experience a lack of human resources in terms of numbers of qualified staff, which poses difficulties in thoroughly established decision-making.



Island overview. © Government of Pitcairn

Locally available long-term financing is often unavailable. Foreign aid is usually geared towards developing modern infrastructure and setting up processes, but cost recovery – at least of operating and maintenance costs – is necessary for long-term viability. Services need to be paid for but in many cases there is a lack of willingness or possibility to pay. The involvement of the private sector in environmental management (even regarding the provision of services) is still limited.

The main issues at stake related with sustainable development are many and interconnected.

Climate change – Effects and impacts are different at different latitudes and different oceans. Some OCTs such as Aruba, New Caledonia and Greenland are among the countries with larger CO₂ emissions per capita, due to inter alia small populations and infrastructural challenges, while most OCTs are especially vulnerable to climate change. The OCTs span from the tropics to the poles and occur in all oceans. They thus jointly have a comparative advantage in studying these phenomena first hand and testing adaptation and mitigation measures that can then be transferred to other neighbouring countries in line with the OAD.

Biodiversity and ecosystems services – Threats include: economic development without respect to the environment, land erosion and siltation of rivers due to clearing of land for development or agricultural purposes, pollution of soil and water due to limited management of waste and wastewater, seabird by-catch and in-

juries from fishing and the introduction of invasive species, notably rats, rabbits, goats, some flora species and the lionfish (the latter particularly in Caribbean and Bermuda waters). As the EU and MS commit to support the achievement of international (namely Aichi targets⁵) and EU biodiversity targets⁶ (namely target 6), the conservation and sustainable use of the biodiversity in the OCTs is key for compliance with international obligations.

Waste and wastewater management - Most OCTs face challenges regarding solid waste management, such as: solid waste dumps (with some degree of protection) full or nearly full, there are often difficulties in finding suitable sites for waste disposal; many unauthorized waste dumps; waste separation and modern technologies and methods are rarely used in waste management; in some OCTs the elimination of waste from cruise ships and yachts can be an issue (Caribbean, Pacific, Falkland Islands). There is too much waste to be dealt with but not enough volume to justify investments in certain types of waste valorisation equipment. There is further a lack of agreements with other countries to receive the waste streams that cannot be locally managed as well as a lack of joint waste management initiatives between neighbouring OCTs and/or OCTs and neighbouring regions/countries. Similarly, many OCTs consider a priority to be addressed the contamination caused by release of untreated wastewater effluent into groundwater aquifers or directly to surface water bodies due to poorly designed sanitation facilities or to insufficient sanitation systems. The consequences of these situations are pollution of rivers and coastal waters and eutrophication.

5 <http://www.cbd.int/sp/targets/>

6 EU 2020 Biodiversity Strategy, <http://ec.europa.eu/environment/nature/biodiversity/comm2006/2020.htm>

The above-mentioned pressures have a special impact on Coastal zones. There is a need to strengthen integrated **coastal zone** management. Besides, many OCTs are increasingly placing emphasis on the sea as a driver of the economy (the so-called Blue economy), and there is a shift towards an **integrated maritime approach** considering fisheries, tourism, mineral and hydro-carbon exploration and transport and logistics.

Dependency on fossil fuels - over the last 5 years there has been an increase of 57% in installed Renewable Energy capacity (+121 MW) in the OCTs, while the installed conventional electricity capacity increased by 27% (+283 MW). There is a need to establish a holistic approach to energy (electricity and transportation), to assess the renewable energy resource potential, to find the adequate renewable energy source mix, solving technical issues linked to limitation and confinement of the grids, establishing agreements with neighbouring territories/countries for interconnectivity, enabling and promoting private sector involvement, establishing the cost recovery framework, and promoting energy efficiency.

The environmental challenges can be tackled at the global, regional or territorial level. The report includes recommendations for each of these different levels. Common to all levels is the need to further increase private sector and civil society participation in sustainable development and environment management.

With respect to biodiversity, a global action to build capacity for invasive species control, in particular as far as flora and the marine environ-

ment are concerned, starting by supporting an increased knowledge base is advisable⁷. In addition, issues of increased controls on high-sea fisheries and the debate on large marine protected areas and their surveillance are prone to be tackled at a global level, as they require action at international fora where OCTs can make a strong case. Regarding climate change, seed funding to enable baseline activities would be beneficial.

The Union can also be a catalyst of *Green Growth and Blue Economy*⁸ development in the OCTs through global coordinated action. The OCTs would benefit from shared debate on issues and possible solutions; training and distance learning; sharing of knowhow and experience between regions through visits and technical assistance between OCTs, and twinning.

Regional and territorial recommendations are provided below in the respective sections. Regional cooperation, where possible and appropriate, should not be restricted to the OCTs. Where problems are shared with other territories in their respective regions African, Caribbean and Pacific (ACP) countries or Outermost Regions (ORs), consideration should be given to include them in programmes and projects. This is particularly the case for the Caribbean and Pacific regions. One example is regional articulation to achieve scale on investments benefiting several OCTs, which would not be bankable in a single OCT. Some of these initiatives can result in solutions of interest to neighbouring ACP countries and Outermost Regions. It is therefore important to involve them.

7 To promote the involvement of the regional research institutions existing in some OCTs, working together with the territorial bodies and promoting their interaction with EU research centres (and advocating for a special fund on Horizon 2020) could also be of advantage.

8 The EU and MS have experience on the implementation of the Marine Strategy Framework Directive 2008/56/EC.

Map with the overseas countries and territories of the European Union:



The information and views set out in this map are those of the authors and do not necessarily reflect the official opinion of the European Union. Neither the European Union institutions and bodies nor any person acting on their behalf may be held responsible for the use which may be made of the information contained therein.

CARIBBEAN

The Caribbean region includes 9 OCTs: 6 part of the Kingdom of the Netherlands; 5 linked to the UK; and 1 linked to France. The Caribbean region also comprises: 16 independent nations, 4 French outermost regions and 2 US Commonwealth territories.

In their geology and biology the Caribbean OCTs have many common features. The Caribbean Sea region is active tectonically and seismically, and many islands are exposed to strong storms such as hurricanes. Most of the Caribbean OCTs are generally low-lying, i.e. either all low or mostly low, the exception being Montserrat (Soufrière volcano has been active since 1995), the British Virgin Islands¹, Saba and Curaçao as they are volcanic islands with rough topography. The latter, although less exposed to sea level rise and beach erosion, are exposed to heavy rains, floods and landslides. The Caribbean OCTs are all fringed by mangroves, sea grass and coral reefs. These habitat types form an interrelated ecosystem which is important to the economic and physical well-being of the islands. Both coral and mangrove provide protection against

rough waves and storm surges during tropical storms. Sea grass provides a very important settlement and sedimentation function for the particulate matter that runs off or is discharged from land.

All the Caribbean OCTs are currently subject to rapid development, and in particular a fast growing tourist industry that forms the backbone of their economy. In the case of Montserrat, port and airport access infrastructure and housing stock has increased significantly in the past five years (reconstruction and relocation of population after the eruption). To varying degrees all OCTs are facing the dilemma of reconciling rapid development with preserving the pristine beauty, natural resources and wildlife both terrestrial and marine, which are key tourism assets.

Climate change adaptation and Natural Disasters preparedness are constant concerns, as the cost of inaction has been estimated to be high (5% of GDP for the whole Caribbean, in 2025)². There are several regional initiatives in the Caribbean, which also include OCTs, addressing these topics. More coordination would be useful.

Besides, the OCTs identified the following issues as environmental concerns:

ISSUES	OCCURENCE
CLIMATE CHANGE AND DISASTER RISK MANAGEMENT	All OCTs are concerned with climate change, and all are integrated in regional initiatives
COASTAL ZONE ISSUES CAUSING LOSS OF BIODIVERSITY AND OTHER HAZARDS	10 OCTs state this is their number one priority. Problems are related to lack of appropriate physical development plans and regulations. Impacts from diffuse and point source land based pollution (mostly related with wastewater and solid waste limited management) are also considerable.
WASTE	9 OCTs mention lack of adequate waste management as one of their top priorities. Problems are linked to the lack of infrastructure, management processes and governance instruments.
WATER AND WASTEWATER	5 OCTs mention water shortages and lack of adequate management as severe problems. Wastewater problems include groundwater contamination, coastal waters contamination and impact on corals.
INVASIVE SPECIES	4 OCTs place the issue of invasive species as a top priority. The problem exists in other OCTs, particularly in the case of the lionfish in the marine environment and the destruction of birds and endemic lizards or plants.



Wades Green Great House © Government of the Turks and Caicos Islands



Man of War Shoal National Marine Park, Sint Maarten © www.dcnanature.org

Other issues such as oil spills, overfishing or heavy pressures on forest were also mentioned as priorities by one or two OCTs.

Some OCTs are implementing reforms or remarkable actions that have the potential to be expanded or replicated in other OCTs in the region:

ACTIONS	COMMENT
INCREASE PROTECTED AREAS (TERRESTRIAL AND MARINE)	The British Virgin Islands and Turks and Caicos Islands have well established protected areas networks. The OCTs linked to the Netherlands all have protected areas/ parks and the foundation DCNA coordinates and supports them all.
WASTEWATER	Turks and Caicos Islands have established and maintain eco-marinas designed to protect the water resources and the coral living waters – this programme makes local communities and tourism operators work together and build mutual trust.
SOLID WASTE COLLECTION AND (RE)USE	In some of the islands the Hotel Operator Associations have a role in waste management, namely in recycling and elimination without hazards. Sint Maarten is building a waste to energy power plant, it would seem possible that all nearby OCTs and ACPs would be able to ship their waste to this facility.
REDUCE ENERGY DEPENDENCY	Anguilla and Aruba are making efforts to promote renewable energy as well as green growth.

Recommendations: strengthen regional initiatives to address issues such as climate change - increase cooperation and synergies between OCTs and between OCTs and neighbouring ACP countries and ORs regarding common issues; re-

gional action on controlling lion fish – some OCTs have already implemented successful strategies and can support others; develop and implement coastal zone management plans and harmonize legislation among OCTs and neighbouring countries as much as possible; develop waste management systems within each territory and in the region and Promote regional agreements (OCTs, ACP countries, ORs) on different waste streams in order to achieve valorisation of waste, and to manage more efficiently some sorts of hazardous waste; establish conditions for the penetration of renewable energies and promotion of energy efficiency, scale up market jointly with neighbouring countries, OCTs, and ORs.



1 Island of Anegada is the exception in BVI, being a very low-lying atoll.

2 "The Caribbean and Climate change, the cost of inaction", 2008.

ANGUILLA



Anguilla hosts natural beauty and high diversity of marine and terrestrial habitats and life, which attract many tourists. Anguilla has seven marine protected areas managed by the Department of Fisheries and Marine Resources, and two land protected areas managed by Anguilla National Trust. Anguilla has two endemic lizards species, and is important for seabirds in a regional context, namely for waterfowl and migratory shorebirds.

The National Environmental Management Strategy and Action Plan has been pivotal between 2005-2009 and a new version is being elaborated. Specific biodiversity management tools include Native Plant and Animal Habitat Conservation Policy, NBSAP, and Lionfish Response Plan, legislation covering species and habitats protection, and the following extended conventions World Heritage Convention; Ramsar Convention; CITES Convention and the International Convention on the Regulation of Whaling. Other legislation covers physical planning, beach control, water, and fisheries.

Anguilla is particularly vulnerable to climate change (erosion, sea level rise, storms), and is facing challenges as loss of habitats and biodiversity, and invasive species. Part of the pressures are imposed by development due to the rapid growth of tourist industry, limited water and waste utility infrastructures, weak coastal zone management, lack of EIA procedures and of an effective protected areas network management system.

However, Anguilla has recently implemented the Greening the Economy study to identify short, medium and long term actions necessary to promote and establish a common understanding of what is needed to integrate environmental issues into the planning processes and promote green economic growth. Similarly, the recent Anguilla's Climate change, and the Comprehensive Disaster Management Policy have many recommendations. Implementation should start after a prioritisation and action plan is performed.



Inspection of sunn hemp cover crop by local farmer. © Government of Anguilla

Other recommendations comprise a water, wastewater and solid waste reform (including technical and business development), invest on integrated coastal zone management and combat invasive lionfish and *Iguana iguana*.



LOCATION	Eastern Caribbean 1 main Island and 22 cays.
LAND AREA /EEZ	100 km ² / 92,178 km ²
POPULATION	15,754 and 157.5 inhab/km ² (2013 est.)
TOPOGRAPHY	Main island is relatively flat and undulating. Highest point 70m.

ARUBA



Situated in the South Caribbean, Aruba is a small, dry, and windy autonomous country within the Kingdom of the Netherlands. The south and west coastlines are sheltered from fierce ocean currents, and present long white sand beaches. The northern and eastern coasts, are exposed and considerably more battered by the sea and have been left largely untouched by humans.

Coral is found in most parts along the coastline and there are extensive sea grass beds. About 352 registered flora species live in a semi-desert landscape, of which nine are endemic. A number of bird species have gone extinct and there is a real threat for other species to follow. The Aruban Island rattlesnake is in threat of extinction. Only Arikok National Park is protected, other nature important sites and species are partially protected or not protected.

Aruba has a prosperous economy based on tourism, off-shore financial services, oil refining and shipping. In the oil refinery, which has been a major employer for almost 100 years but also a source of pollution, the refining process has been suspended and further activities will be confined to storage and fuel transshipment. Private and public companies, as well as several NGOs and foundations are active on environmental protection issues.

A long term National Integrated Strategic Plan was launched in 2010 in a participatory manner. A draft nature and environment policy note, with a chapter on solid waste is being prepared. New

plans are being made and implemented in favour of renewable energy (wind mills) but climate change risks are not being properly addressed. Legislation covers nature protection and pollution, but it is limited regarding the implementation of spatial plans and waste management. Aruba has extended the Cartagena Convention on Protection and Development of Marine environment.

Main challenges are climate change and nature/biodiversity conservation.



Aruban Island rattlesnake. © Wikimedia Commons

Recommendations: generate more knowledge on nature and the environment (namely baseline studies, monitoring and sharing experience with CARICOM countries); develop and implement a network of protected areas; improve population's behaviour towards environment and efficient use of resources; strengthen legislation and law enforcement; improve waste management.



LOCATION	Leeward South Caribbean
LAND AREA /EEZ	180 km ² / part of the Dutch Caribbean EEZ of 81,000 km ²
POPULATION	109,153 and 590 hab/ km ² (2013 est.)
TOPOGRAPHY	Relatively flat and undulating and slightly tilted along its length at the northeast coast. Highest point 189 m.

BONAIRE



Bonaire is a municipality of the Netherlands with a special status since October 2010 when the Netherlands Antilles were dissolved.

Nature conservation is high on Bonaire's agenda: more than 20% of the total land area of Bonaire and 100% of the waters surrounding Bonaire and Klein Bonaire are protected as parks since 1977 and 1979 respectively. Bonaire has 5 internationally recognised Ramsar sites. Bonaire has over two hundred endemic species and sub-species of beetle, spider (incl. scorpion), snake, snail, bat, lizard, crab and sea snail. Bonaire's coral reefs are healthy.

The economy is largely dependent on tourism (80% of GDP) with 70,000 stay-over visitors arriving each year. An economic study assesses the value of nature in Bonaire at US\$ 105 million per year¹.

According to Dutch legislation, special municipalities have to make policy plans each 5 years, concerning environmental management and nature protection. There is an Environment Policy Plan for Bonaire 2013-2017 and a draft (new) plan 2014-2018 is being prepared. The plan focuses on: wastewater, waste, water and soil, businesses, external security and dangerous substances, physical plans and EIAs. A separate policy plan is in preparation, for a vital and sustainable soil and water system. The Physical Policy plan adopted in 2010 details regions and describes activities that are allowed or not in these areas, sets conditions for construction permits, for large projects and EIAs.

Having most land below 2 meters, Bonaire is vulnerable to climate change. Besides, overgrazing by goats and donkeys and insufficient forests management have had a major negative impact on the terrestrial vegetation. The natural marine environment is under pressure from water pollution, sedimentation and from coastal construction.



Diving in Bonaire. © www.tourismbonaire.com

Recommendations: Protect coasts from unregulated development and artificial beaches; elaborate and implement recovery and management plans for dry forests, mangroves, wetlands and salinas; control invasive and free roaming species - monitor and control the populations of *Trididemnum* and *Lobophora*; set up and sustain water quality monitoring program; continue to invest in appropriate wastewater sewage and treatment facilities to refrain pollution.



LOCATION	Leeward South Caribbean; includes main island and Klein Bonaire
LAND AREA /EEZ	180 km ² / part of the Dutch Caribbean EEZ of 81,000 km ²
POPULATION	18,250 and 62 hab/ km ² (2013 est.)
TOPOGRAPHY	Southern part of the island of Bonaire is relatively flat and the middle and northern parts are mountainous. Highest point 238 m.

¹ TEEB study: www.ivm.vu.nl/en/Images/2001_TEEB_Bonaire%20total_tcm53-310328.pdf

BRITISH VIRGIN ISLANDS



The British Virgin Islands comprise different types of habitat: rain forests, mangroves, coral reefs, seagrass beds, sandy flats, trenches and sea mounts. A quarter of the land area is forest, and the waters around the archipelago average depths of 10 to 30m over an extension of 2,000 km² (Puerto Rican Bank). The territory hosts large biological diversity of fish, invertebrates and plants, seasonally migrating marine mammals, and plant, reptiles and amphibians endemism.

Managed by various governmental organisations, a protected areas network system extends throughout the 60 islands and cays, representing a total land area of 153,67 km², and total marine area of 82,759 km².

Sixteen of the islands are inhabited. The British Virgin Islands economy is based on financial services and tourism; the latter has grown rapidly and adequate facilities for wastewater treatment and sewage disposal are lacking. Given the topography of the islands, most of the environmental pressures (habitat loss and pollution) occur within the coastal zone, increasing vulnerability to climate change. Watershed areas have been degraded through the removal of vegetation to facilitate construction, mainly tourism related. Erosion results in excessive siltation of watercourses, beaches, and coral reefs. The introduction of the invasive lionfish has led to a decline and transition of fish populations (which has ultimately affected the reef system), adding to the existing land invasive species problem.

Signatory to biodiversity conventions, UNCLOS and Waste Dumping at Sea, BVI has been recently strengthening legislation (namely on environmental requirements in development) and enforcement practices, implementing programmes (such as CFD's Green pledge initiative) to foster environmental stewardship from public and private sectors. Efforts within the climate change policy include fund mobilization to achieve self-sufficiency of the Climate Change Trust Fund in 5 years, the expansion of protected areas network, a sustainable yachting initiative, and increase of renewable energy use.



West End, Tortola. © Government of British Virgin Islands

Recommendations: Improve physical planning; improve wastewater and solid waste management and utilities; continue efforts to green the tourism industry and increase renewable energy; strengthen the management of protected areas and species; and combat invasive species.



LOCATION	North-east Caribbean comprise over 60 islands, islets and cays
LAND AREA / EEZ	153 km ² / 80,117 km ²
POPULATION	28,280 and 184.8 inhab/km ² (2012 est.)
TOPOGRAPHY	The islands are volcanic with rugged topographic features and little flat land, except the limestone island of Aneгада. The highest point is Mount Sage, 521 m.

CAYMAN ISLANDS



Cayman Islands are characterised by lowland mangrove swamps, dry sub-tropical forests and coral reefs. It has relatively large tracts of old-growth forest left in any of the UK OCTs, and the largest contiguous mangrove wetland remaining in the Caribbean (the Central Mangrove Wetland). It is home to the rare blue iguanas and critically endangered ghost orchid, and has considerable endemism namely plants, birds, reptiles and snails.

Only 4% of the land is arable and about 90% of the islands' food and consumer goods are imported. Although overall imports outstrip exports by about 100:1, the visible trade gap is more than offset by earnings from financial services and tourism (about 1.5 million cruise arrivals per year and > 300 thousand stay-over).

Several Conventions on biodiversity, climate change and pollution prevention at sea are extended to the Cayman Islands, complementing existing territorial legislation on those topics and on water, wastewater and waste. There have been efforts to develop crucial policies such as climate change, energy and coastal works (seabed). However, policies tend to operate in isolation, there are delays enacting legislation and integration of environmental and climate change concerns in economic development is limited. The absence of a long term planning strategy, the lack of formal project appraisal/evaluation process (cost benefit analysis, strategic environmental assessment and environmental impact assessment) associated

with weak conservation legislation has resulted in development and tourist related practices not aligned with the Tourism management policy, and straining the habitats and biodiversity by fragmentation and pollution of water and soil, and facilitated the introduction of invasive species. Solid waste is also a major concern, the highest point in Grand Cayman being the landfill pile.



Central Mangrove Wetland. © www.caymanreporter.com

Recommendations: Increase environmental awareness; Continue the process started with the publication of the National Conservation Law in 2014 by enacting the required regulations, such as Environmental Impact Assessment process, and biodiversity action plans; Develop and implement National Physical Development Plan, watershed plans and forests plans, coastal zone management plans. Enact and implement climate change policy, energy policy and solid waste management plan.



LOCATION	Western Caribbean, composed of three islands
LAND AREA /EEZ	262 km ² / 119,137 km ²
POPULATION	55,036 and 210 inhab/km ² (2012 est.)
TOPOGRAPHY	Generally low-lying and undulating. Highest point 43 m, on Cayman Brac

CURAÇAO



Curaçao is an autonomous country in the Kingdom of the Netherlands. Before October 10, 2010, it was part of the Netherlands Antilles, which was dissolved at that moment. Among the Caribbean OCTs, it has the largest population.

Offshore finance, tourism (440,000 stay-over arrivals in 2013), oil refining are the main economic activities. Services (including the former two) are responsible for 80% of GDP. A spaceport is being set up to fly the Lynx rocketplane on suborbital space for tourism and scientific research missions. Prosperity is relatively high in the regional context even though growth has been slow in recent years.

The island lies outside of the Hurricane belt. The extensive mangroves and sea grass beds are important for fish breeding and salinas are feeding habitats for the West Indian flamingo and migratory shore birds. While coral reefs are still abundant and in some areas in pristine condition as in Oostpunt, there has been a 20% decrease in the last 25 years due to coastal development, tourism and pollution from untreated sewage, nutrients, oil spills and chemicals.

A large proportion of the island's nature (32%) is protected. There are 2 terrestrial nature parks (Shete Boka, Christoffel), 1 UNESCO site, 4 Ramsar sites. The areas are fragmented. The Curaçao Marine Park was established in 1983 and has limited legal protection status, but a new marine protection law is in the making. A non-govern-

mental organisation (Carmabi Foundation- Caribbean Marine Biological Institute) manages nine protected areas and is the largest field station for ecological research in the Southern Caribbean. Other NGOs are active: Reef Care Curaçao (reef monitoring) and SMOC (air pollution monitoring).

The Ministry of Public Health, Environment and Nature in Curaçao is responsible for the environment and nature management. A review of existing policies is announced in the 2013–2016 Government Programme. Curaçao wishes to be the Caribbean's leader in terms of wind energy, aiming to achieve wind-sourced goals of 30% by the year 2020 and 40% of generation capacity by the year 2030 (30MW are installed and 15MW more are expected in 2015). Main challenges are climate change as the island is low lying, safeguarding air and water quality and protecting coral reefs and marine habitats.



Wind turbines. © www.eventscuraçao.com

Recommendations: strengthen monitoring systems; strengthen and implement a spatial legal framework; improve the quality of bathing water; improve waste and wastewater management.



LOCATION	Leeward South Caribbean
LAND AREA /EEZ	443 km ² / part of the Dutch Caribbean EEZ of 81,000 km ²
POPULATION	150,563 and 340 hab/ km ² (2013)
TOPOGRAPHY	Flat, most of the territory is less than 1 m above sea level. Highest point 372 m.

MONTSERRAT



Montserrat, dubbed as “Emerald Isle of the Caribbean” and is one of the richest UK OCTs in terms of biodiversity. The island is covered in lush, green rain-forest trimmed by streams that descend to a rugged coast intermittently interspersed by exotic black and silver grey sand beaches. Montserrat had 11 distinct vegetation types, rich biota and high endemism (studies are required to address the current situation).

Due to volcanic eruptions, which began in 1995, 45% of the forest was lost, an exclusion zone covering two thirds of the island from the south coast and a marine exclusion zone were imposed, 62.5% of the population emigrated and tourist arrivals dropped three-fold. The capital city was destroyed. Although enormous progress has been made in recovering from volcanic activity and in learning to live with its ongoing activity, the volcano continues to be a dominant factor in relation to Montserrat’s environment.

The volcano caused extensive damage to biodiversity and associated ecosystems (including the island’s first proposed Ramsar sites, coral reefs, terrestrial protected areas – currently there are three terrestrial protected areas covering 11% of the total land area and 30% of the safe zone - and some species of flora and fauna); intensified the threats faced by endemic and restricted-range species of global conservation value. Other environmental challenges are invasive alien species such as rats, feral pigs, goats, sheep and cattle affecting endemic species. As development of new settlements and other major infrastructure occur, there is also need to create new utilities and in particular to develop a sound waste management system.

Recruitment and training of staff for environmental management has been difficult due to a lack of adequate financial resources. One of the benefits resulting from volcanic eruptions is the significant accretion of most beaches due to the deposition of volcanic sand; this serves as a barrier to sea level rise.



Little Bay © Government of Montserrat

Montserrat’s Sustainable Development Plan (SDP) 2008-2020 includes environmental management and disaster mitigation. A comprehensive Conservation and Environmental Management Act (CEMA) was drafted and submitted to Cabinet in 2013. The existing environmental law and international obligations ensures adequate environmental protection. Montserrat is member of a number of regional organizations, more than other UK OCTs.

Recommendations: set high-end sustainable tourism, sustainable fisheries and renewable energies as drivers of development; increase control of invasive species including chytrid, rats, feral pigs and goats and the lionfish; improve waste and wastewater management through planning and legislation; establish private sector services to promote cost recovery and valorisation and continued construction/refurbishing of the infrastructure.



LOCATION	Leeward Islands of the Caribbean
LAND AREA /EEZ	102.6 km ² , habitable 44 km ² / 7,582 km ²
POPULATION	4,959 and 112.7 inhab/km ² in the habitable part (2013 est.)
TOPOGRAPHY	Mountainous, with three main areas of highland. The coastline is rugged. Highest point: 1,236 m

SABA



Saba was part of the Netherlands Antilles until October 2010 but is now a municipality of the Netherlands with a special status, like Bonaire and Sint Eustatius.

Saba has six distinctive vegetation zones including very exceptional wet forests at the highest elevations. The cloud or elfin forest is unique in the region, home to a large number of species of mosses, liverworts, bromeliads, orchids and ferns. The *Anolis sabanus* lizard is endemic and one scorpion is believed to be endemic. The marine environment is the habitat of some of the most beautiful and relatively intact coral reef areas in the Caribbean.

There are no recent nature or environmental policy plans for Saba, only an overarching policy plan for the 3 Dutch special municipalities. However, two marine parks have been established by law: the Saba National Marine Park (managed by the Saba Conservation Foundation SCF) and the Saba Bank National Park. The latter is the largest actively growing underwater atoll in the Caribbean and possibly the third largest in the world. The area has been recognised by the International Maritime Organisation (IMO) as a particularly Sensitive Sea Area (PSSA).

Free roaming goats, rats and feral cats are a threat to terrestrial nature and to Saba's iconic red-billed tropicbird. A Lionfish Response Plan was needed for combatting this invasive species in the Saba

National Marine Park, with success as population did not explode.

The economy is dependent on tourism and the School of Medicine attracts students from abroad. Steep slopes make water collection and distribution difficult and expensive. Rain water is collected in cisterns. Two desalination plants supply the hospital and old age homes and sell water for private consumption. Waste disposal is a problem.



Island overview © Government of Saba

Recommendations: Make own Nature and Environmental Policy Plans, based on the guidelines of the overarching Nature Policy Plan for the 3 Dutch special municipalities; Protect nature from invasive species (including better waste management); Promote sustainable tourism as there are no non-nature resources on the island (making and implementing physical planning to safeguard valuable nature areas).



LOCATION	Leeward North Caribbean
LAND AREA /EEZ	13 km ² / part of the Dutch Caribbean EEZ of 81,000 km ²
POPULATION	1,990 and 153 hab/ km ² (2013 est.)
TOPOGRAPHY	The island has a dormant volcano and steep slopes. Highest point 877 m.

SAINT-BARTHÉLEMY



Saint-Barthélemy became an OCT as from January 2012. Despite its small size, Saint-Barthélemy has a diverse flora. A marine nature reserve of 1,200 ha was created in 1996.

With no own energy resources, little fresh water and no agricultural production, the island depends heavily on imports and the standard of living is quite high. The promotion of high-end tourism allowed Saint-Barthélemy to become a highly economically developed island. Its free port status and tailored taxation system have allowed and encouraged the development of an economically viable commercial activity.

All the international conventions and protocols ratified by France prior to 2007 remain applicable to Saint-Barthélemy. Since 2007, the collectivity sets the environmental regulations applicable in its territory by analogy with French national regulations. This is also the case for its environmental code, adopted in 2009. Significant investments have been made in the area of wastewater treatment, waste management and energy saving. Preservation, prevention and control programs, implemented by the marine reserve and by the Territorial Environment Agency, had positive impacts such as the decrease of coral reef degradation.

In 1998, Saint-Barthélemy was the first island in the Caribbean to establish selective sorting of household waste. There is a daily collection of

household refuse, recycling and thermal recovery, which fuels a desalination plant to produce drinking water.



Gustavia © Government of Saint-Barthélemy

The main environmental challenges are climate change, the degradation of biodiversity, in particular coral reef degradation, the overexploitation and degradation of the marine environment and the arrival of exotic and invasive flora and fauna (with imports of plants and topsoil), for instance *Iguana iguana*, which hybridises with *Iguana delicatissima*, classified as an endangered species by the IUCN.

Recommendations: conduct researches in the field of climate change; promote renewable energies and energy efficiency; establish local rules and a regulatory framework at the regional level on the exploitation of the sea; optimise the waste management.



LOCATION	Lesser Antilles
LAND AREA / EEZ	25 km ² / 4,000 km ²
POPULATION	9,171 (2014), 436 inhab/km ²
TOPOGRAPHY	Mountainous main island of volcanic origin

SINT EUSTATIUS



Sint Eustatius was part of the Netherlands Antilles until October 2010 but is now a municipality of the Netherlands with a special status, like Bonaire and Saba.

The northern part of the island is arid and provides a habitat to a number of endangered (but protected) species like the Lesser Antillean Iguana and an endemic ground lizard. Many varieties of orchids and the endemic Statia Morning Glory are also found there. Endangered sea turtles have a nesting ground on the beaches, and the cliffs on the south side are a nesting site for the red-billed tropicbird. In the southern part, the national park contains the only “semi-evergreen seasonal forest” of the Dutch Caribbean islands, with lush vegetation composed of mosses, ferns, arum, bromeliads and orchids.

There are two national parks: the St Eustatius National Marine Park created in 1996 and St Eustatius Quill / Boven National Park, created in 1997, listed under the Specially Protected Areas and Wildlife Protocol (SPAW), and declared an Important Bird Area (IBA) in 2008. There is also a botanical garden. The St Eustatius National Parks Foundation has been mandated by the island’s government to manage these areas.

The economy is dependent on tourism (11,000 visitors per year, mostly divers). A major part of the inhabitants work for the government and the oil

terminal (Nustar). The island is proposing a Master Plan for its integrated development, including policies for access to nature areas and on dealing with waste issues. There is however no Nature Protection Plan. All plans will have to comply with the overarching Nature Policy Plan Caribbean Netherlands 2013-2017.



F.D. Roosevelt Airport, Oranjestad © Government of Sint Eustatius

Climate change is a threat to the partly low lying capital and some of the oil related installations. Free roaming livestock damages the vegetation even in the area of the National Park.

Recommendations: make an island specific Nature and Environmental Policy Plans; protect nature from invasive species (including the implementation of the “Roaming Animals for Sustainable Animal Husbandry” plan); improve waste management.



LOCATION	Leeward North Caribbean
LAND AREA/EEZ	21 km ² / 1,107 km ²
POPULATION	3,900 and 186 hab/ km ² (2013 est.)
TOPOGRAPHY	A range of dormant volcanos on the north side and a younger dormant one on its south side. Highest point 600m.

SINT MAARTEN



Sint Maarten is an autonomous country in the Kingdom of the Netherlands, which before October 10, 2010 was part of the Netherlands Antilles. It covers the southern third of the island of Saint Martin, while the northern two-thirds constitutes the French overseas collectivity of Saint-Martin. It has by far the highest population density among the Caribbean OCTs.

Physically, it has many bays, a large salt pond and salt water lakes and lagoons. There are a few endemic species and plans are underway to establish a terrestrial park. The Man of War Shoal Marine Park, managed by the Nature Foundation Sint Maarten, is home or migratory stopover for whales, dolphins, numerous species of shark, sea turtles and hundreds of fish species and for many, endangered species (3 from the IUCN red list and respectively 10 and 89 species listed in Appendix I and II of the CITES convention). New reefs are being formed made by wrecks, old coral reefs, and encrusted rocks.

Tourism (over 2 million cruise passenger arrivals and 467,259 stop-over arrivals in 2014) and the oil terminal are the main economic activities. With no significant agriculture and limited local fishing, almost all food is imported. Energy resources and manufactured goods are also imported.

The ministry of VROMI is dealing with Spatial Planning, Environment and Infrastructure with policy advisors for nature and environmental policy making. A new Nature Policy Plan is currently being drafted. Also a new Energy Policy has been approved by

the council of ministers in 2014, with great emphasis on renewable energy, like solar and wind. A “Structure Vision” is near completion. Zoning plans are in the process of public review and political decision making. A waste-to-energy plant is being planned. However, enforcement of existing policy plans and laws is limited by institutional capacity and expertise.

High population density and mass tourism, together with environmental inconsiderate construction exert pressures on the environment. The Landfill, very close to the center of the capital, is growing way beyond its capacity and is posing potential environmental and health risks to all. There is major traffic congestion. All that leads to excessive impacts on Nature and Environment and leads to –among others– coastal degradation, and disappearance of mangroves and sea grass beds, resulting in a high carbon footprint. Besides all this, there are challenges related to climate change particularly in low lying areas, and coral bleaching due to warmer waters and runoff.

Recommendations: build the planned waste-to-energy facility; promote energy savings and the use of renewable energy; draft and adopt legislation for nature and environment in general, and more specifically for water and air quality, solid and liquid waste, soil pollution, noise pollution, renewable energy; engage in environmental awareness campaigns at different levels (decision makers, judicial system, private sector, population) in order to valorise ecosystem services and diminish the ecological footprint.



LOCATION	Leeward North Caribbean
LAND AREA /EEZ	34 km ² / part of the Dutch Caribbean EEZ of 81,000 km ²
POPULATION	37,000 and 1088 hab/km ² (2014)
TOPOGRAPHY	Low lying in the West and hilly in the East. Highest point 386 m.

TURKS AND CAICOS ISLANDS



The Turks and Caicos Islands (TCI) form a complex of natural coral reefs, tidal flats, mangroves and marshlands which provide a haven for wildlife. The East, Middle and North Caicos wetland complex is unique in the Caribbean and is a Ramsar site. TCI possesses some of the least adversely affected coral reefs in the Caribbean region. Vast areas of the Caicos Bank are covered by bare sand, fleshy and calcareous algae, and sea-grass important as nursery grounds for conch and lobster. The land is home for at least 20 endemic plants, reptiles and insects. TCI has a network of 11 national parks and 15 nature reserves.

Population is growing 5% per year, mostly due to immigrants working on construction of tourism infrastructures. Limited rainfall, coupled with poor soils and a limestone base, restrict the possibilities for agricultural development, which is most at the subsistence level. Most food for domestic consumption is imported.

The lack of a National Physical Development Plan led to unplanned and haphazard development throughout the country. There is limited planning and management capacity on forest and water resources. Deforestation to clear site for settlements and for charcoal as well as poaching on reefs has been associated with immigrant influx. Despite progress achieved on solid waste management, the two main landfills have no lining hence imposing contamination risks, and there is no recycling or waste valorisation policy. Poor fishing practices and hurricane events of 2008 have resulted in 50% declines

in stocks for conch and lobster (main export and tourist sought commodities). Declines are also noted in reef fish stocks and some fin fish populations, such as pot snapper and grunt. Measures are being taken to improve controls. Climate change is a concern given the prevailing topography of the islands.

There are some mechanisms in place to ensure that development takes place sustainably, such as a comprehensive protected areas system, environmental legislation on key issues, and guidelines for environmental impact assessment, but there is limited enforcement capacity. Furthermore, the recent political upheaval associated with the dissolution of the Constitution, coupled with economic downturn has resulted in a scarcity of resources to manage environment (loss of the Conservation Fund and reduction of department of environmental and marine affairs staff by a factor of 50%).

Recommendations: develop and implement National Physical Development Plan, watershed plans and forest plans; promote green growth and blue growth – namely establish a roadmap of priority issues to be addressed: governance (improve physical planning, EIA and SEA, standards for wastewater and waste, enforcement, integration of environment, climate change, green growth and integrated resource management into policies and strategies); renewable energies and energy efficiency; water and waste management dealing with economic instruments (cost recovery, incentives to recycling, taxes on imported items that became waste) and valuation of waste; agro-ecology (increase food independency level and international valuation of certified niche products).



LOCATION	Northern Caribbean; 2 archipelagos, over 40 islands, 8 inhabited
LAND AREA / EEZ	500 km ² / 154,069 km ²
POPULATION	31,458 and 62.9 inhab/km ² (census 2012)
TOPOGRAPHY	Mostly low, flat limestone formations with extensive marshes and mangrove swamps. Highest point: 46m

INDIAN OCEAN



Plaine Ampère, Kerguelen © F. Lepage

Indian Ocean is considered in the present work as the area bounded to the north by the Asian continent, to the west by Africa, to the east by the Malay Peninsula and Australia, but including a part of Antarctica (Adelie Land). There are 2 OCTs in the Indian Ocean region, namely: French Southern and Antarctic Territories (TAAF) linked to France, and British Indian Ocean Territory (BIOT) linked to the UK. The Indian Ocean region also comprises 6 independent countries and 2 Outermost Regions of France (Mayotte and La Réunion).

BIOT is located in the middle of the Indian Ocean, on the Chagos-Maldives-Laccadive ridge. The TAAF consist of Adelie Land (Antarctica), as well as islands in the subantarctic zone, and in the tropics up to 11.3°S. The two OCTs have no permanent population. BIOT has a UK/USA naval support facility on Diego Garcia, hosting temporary military personnel. In TAAF, Scattered islands host military

garrisons, while in Adelie Land and in the sub-Antarctic islands there are scientific bases hosting up to 300 scientists and technical staff.

Most coralline islands of BIOT are low-lying with elevations of no more than 2-3 meters. Terrestrial biodiversity is not high because of the relatively young age of the islands but each scientific expeditions often find new species. In 2010 the 640,000km² BIOT Marine Protected Area was established as a no-take¹ marine reserve. It contains one of the world's largest coral atoll (the Great Chagos Bank), healthiest reef systems in what many scientists consider to be the cleanest waters, supporting nearly half the area of good quality reefs in the Indian Ocean². The reefs have managed a rapid recovery from large-scale coral reefs bleaching events, which contrasts markedly with many other locations in the region. As besides the entire land territory of BIOT requires visiting permits to set foot on, the whole territory is de facto a protected area.

As most TAAF islands are old (Kerguelen is 40-million years old), remote and have never been attached to a continent, they host many endemic species, among which the Amsterdam albatross, the Kerguelen cormorant and the Eaton duck. It is estimated that some 40 million seabirds breed there. Some areas of TAAF have the highest bird biomass in the world with 60 T/km². TAAF is also a restricted area: a large nature reserve was established on the southern territories in 2006 and a marine park in the Glorieuses Islands in 2012 (43,614 km²).

The following multilateral environmental agreements are extended to these OCTs.

OCT	PARTY TO MEAS	REMARKS
BIOT	CITES, CMS, London, Ramsar	Designated Ramsar site; the Indian Ocean Turtle MoU ³ was signed in 2002.
TAAF	CBD, CITES, CMS, Ramsar, ACAP, Antarctic Treaty, CCAMLR	All French OCTs report on their biodiversity, as part of France's implementation plan under CBD. Antarctica areas are protected under the Antarctic Treaty; the Southern Islands are designated Ramsar site as well as Europa Island; the Indian Ocean Turtle MoU was signed in 2002 and Europa was designated in 2014 as part of the 'Network of Sites of Importance for Marine Turtles'.

France is also a Party of the Nairobi Convention for the Protection, Management, and Development of the Marine and Coastal Environment in Eastern Africa; the UK is not.

Given their characteristics and governance, environmental cooperation between the Indian Ocean OCTs is difficult. TAAF authorities are based in La Réunion, BIOT is administered by a Commissioner based at the Foreign and Commonwealth Office in London, and is represented by a senior British naval officer stationed on Diego Garcia.

Despite their remoteness, there are several environmental pressures. Regional challenges include IUU fisheries and high-seas fisheries, plas-

tic waste in the ocean, climate change and coral bleaching, and invasive species. GIWA estimates that a total of 1.26 million tonnes of waste from Comoros, Madagascar, Mauritius and Seychelles is likely to end up in the Indian Ocean, as only 660,000 T of domestic waste is collected. Both France and the UK have been using the navy to help to control IUU fisheries, but constant attention is required. Extensive bleaching has occurred in the Indian Ocean in 1998 and 2004 due to increased sea temperature. Climate change will potentially increase the frequency of these events. Besides, sea level rise may have significant impacts in BIOT. Although the situation has improved greatly in the last decades, human presence is a potential for the introduction of invasive species.

The OCTs are addressing the challenges by implementing actions on:

ACTIONS	COMMENT
ACTION AGAINST INVASIVE SPECIES	TAAF and BIOT control the entrance of invasive species into the islands. TAAF and BIOT have implemented several actions to fight some invasive species.
SOLID WASTE MANAGEMENT	Good efforts in TAAF. Diego Garcia has just completed a new landfill facility with leachate collection and disposal system, an incinerator facility and a recycling facility, a US\$ 15 million project.
REDUCE ENERGY DEPENDENCY	TAAF is stimulating energy saving and looking into introducing renewable energies. US Personnel in Diego Garcia in BIOT have carried out some analysis of solar and wind energy potential.

Recommendations: Increase research cooperation on status, historic evolution and resilience to climate change and anthropogenic pressures of the territories, including invasive species on small islands; establish concerted action, involving the coastal and island states, on combating IUU fish-

eries and establishing and enforcing (when they are enacted) high seas fisheries regulations in the Indian Ocean; devise locally adapted solutions of renewable energies and energy efficiency for small isolated islands.

1 No-take marine reserves are areas of the sea in which there is no fishing allowed and as little other disturbance as can be reasonably arranged.
 2 Reefs and islands of the Chagos Archipelago, Indian Ocean: why it is the world's largest no-take marine protected area Issue, Aquatic Conservation: Marine and Freshwater Ecosystems, Volume 22, Issue 2, pages 232–261, March 2012
 3 Marine Turtle Memorandum of Understanding (MoU) is a non-binding intergovernmental agreement that aims to protect, conserve, and recover marine turtles and their habitats in the Indian Ocean and South-East Asia region.

BRITISH INDIAN OCEAN TERRITORY



The British Indian Ocean Territory is located in the middle of the Indian Ocean, between Indonesia and Africa. BIOT includes the Great Chagos Bank, the world's largest atoll. BIOT provides a nursery habitat for fish larvae transported by currents from the reefs in the Indo-Pacific basin and then further west. Marine biodiversity is very large and well preserved. The islands are also a breeding ground for numerous seabird species, many in globally important numbers.

The whole territory is treated as if it were a World Heritage Site. In 2010 BIOT declared a "no take" Marine Protected area covering about 640,000 km². In the Northern Atolls there are some islands that are strict nature reserves. There is limited knowledge on BIOT land and marine territory. Expeditions have taken place to assess the state of, in particular, the bird colonies and coral reefs. Scientific expeditions often find new ecosystems, as is the recent case of mangroves or seagrass. Being very low lying islands BIOT is susceptible to sea level rise as a result of climate change. Besides, fauna and flora invasive species are a problem in some islands, as is poaching of sharks and sea cucumbers and anchor damage in the northern islands.

Diego Garcia is not included within the BIOT marine protected area. It has its own Natural Resources Management Plan prepared by the US Navy (last version dates 2005 and is being updated) and has a comprehensive network of Nature Re-

serves and Strict Nature Reserves. The US Navy Officer in command of the Facility is responsible for the implementation of the plan.

Since 2003, a Conservation Management Plan has been implemented. About 12 multilateral environmental agreements (MEAs) are extended to BIOT, and there are numerous pieces of territorial legislation relevant to biodiversity conservation. Following the recent establishment of the BIOT MPA, new legislation is being prepared to be enacted shortly.

Enforcement of conservation measures, such as for the existing bird sanctuaries, is the responsibility of the senior BIOT Administration representative stationed on Diego Garcia. The BIOT fisheries patrol vessel controls the Marine Protected Area and arrests vessels caught there.

In 2012, the outline a new plan was prepared, addressing research needs and management updates.



Diego Garcia - aerial view. © www.airports-worldwide.com



LOCATION	Southern end of the 2,500 km long Chagos-Maldives-Laccadives ridge. 5 groups of islanded atolls, 58 islands
LAND AREA / EEZ	60 km ² / 638,568 km ²
POPULATION	There is no permanent population. USA-UK military facility
TOPOGRAPHY	Limestone cap 1 - 2 km thick, resting on volcanic rock. Elevations generally not greater than 3m, ranging 1 - 6 m

FRENCH SOUTHERN AND ANTARCTIC TERRITORIES



The French Southern and Antarctic Territories (Terres australes et antarctiques françaises, TAAF) form an overseas French collectivity, which is administered from La Réunion Island. Approximately 300 researchers work temporarily in this territory.

The TAAF comprise the following territories:

- The Austral Islands, which are located in the South of the Indian Ocean (two archipelagos, Crozet and Kerguelen, and two volcanic isles, Amsterdam and Saint Paul)
- The Scattered Islands, disseminated in the South-West of the Indian Ocean: the Glorieuses Islands, Juan de Nova, Bassas da India and Europa in the Mozambique Channel, and Tromelin Island, located North of Reunion Island.
- Adélie Land, an area on the Antarctic continent, claimed by France.

Environmental protection receives special attention (specific policies and adherence to the French and international legislation). October 2006 saw the creation of a national nature reserve, which includes all the Austral Islands and covers a land and marine area of around respectively 700,000

ha and 1,570,000 ha. The Scattered Islands are protected as a nature reserve under a prefectural decree since 1975. Since 2011, the isle of Europa is classified as a Ramsar site and a marine nature park covers the whole EEZ of the Glorieuses Islands since 2012 (43,614 km²).

However, specific problems are related to the dangers of illegal, undeclared and unregulated (IUU) fishing and the preservation of the original biodiversity, which is threatened by introduced species. The implementation of strict regulations in the context of combatting IUU fishing led to a considerable reduction of the mortality of albatrosses and petrels. The total allowable catches are determined on a yearly basis by the Prefect, the chief administrator of the TAAF (after scientific advice and from relevant ministries). These management measures have allowed to obtain the MSC certification for the French toothfish fishing in Kerguelen.

Recommendations: protect species and their habitat; improve waste and energy management; increase knowledge on tropical, austral and Antarctic ecosystems.

CROZET AND KERGUELEN	The terrestrial wildlife is not hugely varied, but a large number of penguins (who can reach populations of more than a million) and other birds live in the Austral Islands: albatrosses, petrels, cormorants. Thirty bird species in Kerguelen.
THE ISLE OF AMSTERDAM	The population of the albatross of Amsterdam, endemic, is reduced to 30 breeding pairs and is considered to be critically endangered by the IUCN. Several dolphin and whale species and high concentrations of sea lions and elephant seals come each year to land to breed.
ADÉLIE LAND	High concentration of protected bird, marine mammal and cetacean species.
SCATTERED ISLANDS	These islands provide secure reproduction areas for internationally protected and/or endangered marine birds and turtles, such as sooty terns, green turtles and hawksbill turtles as well as several shark species.



LOCATION	Austral Indian Ocean and Antarctic
SURFACE AREA/ EEZ	440,000 km ² / 2,500,000 km ²
POPULATION	no permanent population
TOPOGRAPHY	Diversified

PACIFIC

The Pacific region includes 4 OCTs, 3 linked to France and 1 linked to the UK. The Pacific region also comprises: 13 independent nations, 6 USA territories and 3 self-governing territories linked to New Zealand.

The islands in the Pacific are generally low-lying coral limestone islands or low-lying atolls, or else rugged islands. The OCTs mirror these characteristics. French Polynesia (FP) includes five archipelagos with four volcanic, and one low-lying coral-limestone. Wallis is low lying, while steep slopes characterize Futuna. The uninhabited islands of Henderson and Oeno, both part of the Pitcairn group, are an unusual elevated and a very low-lying undisturbed atoll respectively. New Caledonia (NC) has mountains, a 1,600 km long barrier reef and 40,000 km² of lagoons. Coral and barrier reefs, lagoons, mangroves, rocky and sandy beaches and humid and dry forests are the Pacific OCTs most common habitats. These islands are home to a large number of species of fauna, terrestrial and marine invertebrates and

vertebrates, and flora. New Caledonia is a biodiversity hotspot. The 2012 PECCO states that the percentage of endemic species amongst the IUCN Red List of endangered species listed is the highest for French Polynesia (45%), followed by New Caledonia (33%).

In differing degrees, the four OCTs have a number of common environmental issues such as lack of fresh water, pollution of lagoon and coastal areas due to limited waste and wastewater management and treatment, deforestation, destructive agricultural practices, overfishing/destructive fishing and invasive species. FP and NC have also pollution problems linked to high population density in urban areas, and to forests fires and land mining for NC; deep-sea mining is an emerging issue particularly for FP. Besides, climate change impacts are expected to be dramatic: sea level rise will cause loss of land and displace populations to higher grounds or to other islands; increase of sea surface temperature is affecting coral reefs; extremer weather events (storms, cyclones) will cause further destruction.

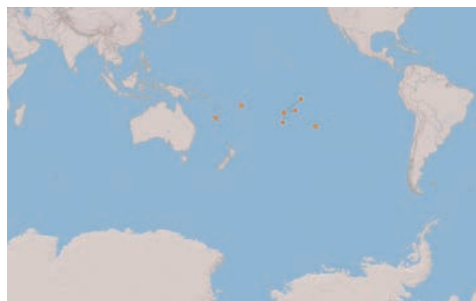
Some OCTs are implementing reforms or remarkable actions that have the potential to be expanded or replicated in other OCTs in the region:

ACTIONS	COMMENT
INCREASE PROTECTED AREAS (TERRESTRIAL AND MARINE)	NC has highest % of area that is officially protected (3.6 % of land area) and since the establishment of the Coral Sea Protected Area (2014), the whole EEZ. However, management challenges do exist.
ACTION AGAINST INVASIVE SPECIES	New legislation has been adopted in the three French OCTs and management actions have been strengthened. There is a need to continue to expand these efforts.
IMPROVE WASTE WATER AND SOLID WASTE COLLECTION AND (RE)USE	Remarkable efforts have been made by NC (waste) and FP (wastewater). Pitcairn is also improving the water and sanitation situation. There is a need to modernize the systems and, where possible, establish regional cooperation for off-island treatment of certain types of waste.
REDUCE ENERGY DEPENDENCY	PF, NC and Pitcairn encourage the construction of small renewable energy power plants. NC: Climate and energy policy (Schéma climat énergie) and mitigation measures (performance labelling, public transport promotion...)
NATURAL AND CLIMATE CHANGE	Plan ORSEC 2012 in NC, also recently applied in W&F (cyclone Evan, Dec 2012). Secretariat of Pacific Community (SPC) can be pivotal on the application of the plan to other islands. Should be supported.

Despite the obstacles to regional cooperation in the Pacific, which include the physical distance between the countries, their remoteness, large disparities of size, language, cultures, and human and economic resource endowment, the territories have developed some joint initiatives. It is recommended that support to regional initiatives is continued, including OCTs and ACPs. It is also recommended the private sector engagement on addressing issues such as waste management, renewable energies and integrated coastal zone management as there are markets (at territorial and regional level) worth to be developed.

Recommendations: Strengthen joint research, base knowledge production and monitoring on climate change and biodiversity between OCTs and ACP countries taking stock of the work already done; Support Climate Change Engagement Strategy for SPC 2011–2015; Mainstream climate change into development planning in each OCT; Expand the marine and terrestrial protected areas and equip with adequate management plans (technical and financial) and staff, enact protection legislation aligned with international

environmental agreements extended to the OCT; Engage in European and worldwide awareness raising campaigns for fund mobilization and tourist attraction as ways to ensure long time financing of protected areas network management; Continue the fruitful work on the control of invasive species with the support of South Pacific Regional Environment Programme (SPREP); Establish cooperation with Caribbean OCTs, particularly knowledge sharing regarding the lionfish and joint action on biosecurity; Develop waste management systems within each territory and in the region (Study the possibility of expanding PACWASTE to the OCTs; Promote regional agreements on different waste streams in order to achieve valorisation of waste, and to manage more efficiently some sorts of hazardous waste); Mainstream integrated coastal zone management through developing plans in a participatory way involving different departments, private sector and civil society, and promoting co-management and including blue-economy; Establish conditions for the penetration of renewable energies and promotion of energy efficiency, generating emerging markets.



Natural pool of Oro (Isle of Pines), New Caledonia. © Camille Vassart

FRENCH POLYNESIA



French Polynesia consists of five archipelagos. The two central archipelagos, Tuamotu and Gambier, consist of coral isles of a very low altitude that form atolls. The elevation of these isles amounts to only 2-3 meters above sea level. The 3 other archipelagos (the Society Islands, the Marquesas Islands and the Austral Islands) consist of younger isles that feature mountains with a rugged topography. Of a total of 118 isles, 76 are inhabited.

French Polynesia comprises 31 protected natural sites and areas. The territory encompasses a unique variation of coral reef formations and atolls. Their total surface amounts to 12,800 km². The 7 atolls of the municipality of Fakarava are classified as “biosphere reserve” under the UNESCO Man and Biosphere program. The Moorea lagoon is a Ramsar humid zone and is recognized as having international importance since 2009. Furthermore, the Marquesas archipelago has been identified as an ecologically or biologically significant marine area (EBSA).

French Polynesia conducts an active policy for the protection of its environment. It is aware of the threat of climate change, as many isles have a very low altitude and could disappear due to the rising of the sea level. Significant progress has been made in various environmental fields: wastewater treatment, renewable energies, and waste management.

Various researches/diagnostics have been conducted and proposals of concerted actions (in regard with climate, waste, forests, endangered

marine species, etc.) have been elaborated. A policy framework for water (including natural resources of surface water and groundwater, drinking water, wastewater, management of rainwater, recreational water and economical use of water) is in the process of elaboration. Investments have been made for the improvement of waste management and processing, wastewater treatment (in several municipalities, starting for the city of Papeete), and renewable energies.



Tahiti © Government of French Polynesia

Recommendations: establish an environmental observatory; create new protected areas in the forests; reinforce the management of existing MPAs; intensify biosecurity measures and control of invasive species; conduct research on the value of ecosystem services and popularisation of the results at several levels; modernise waste management, including waste sorting and recycling/energy recovery; increase the use of renewable energies at network level and in off-grid equipment, infrastructures.



LOCATION	South Pacific Ocean. Five archipelagos comprising 118 isles.
LAND AREA / EEZ	3,660 km ² / approx. 5 million km ²
POPULATION	268,207 and 73.3 inhab/km ² (2012 est.)
TOPOGRAPHY	Coral islands of low altitude as well as younger isles with a rugged topography. Highest point: 2,241 m

NEW CALEDONIA



New Caledonia is the third largest island of the South Pacific and the 4th largest economy in the area. Grande Terre is surrounded by the Belep Islands in the North, the Isle of Pines in the South, the Loyalty Islands (Ouvéa, Lifou, Tiga and Maré) in the East and the archipelago of the Chesterfield Islands and the Bellone reefs further down in the West.

New Caledonia shelters the largest amount of endemic species of the South Pacific, the world's largest lagoon, the second longest coral barrier reef as well as virgin tropical forests. The marine nature park of the Coral Sea, created in April 2014, covers almost 1.3 million km². The collectivity is also the world's third largest producer of nickel, whose ore is extracted from open-pit mines.

The government and the 3 provinces, which are the competent authorities in the environmental field, have launched several initiatives in the field of sustainable development. The government has, amongst others, adopted an ambitious land-use planning and development plan for the development of New Caledonia until 2025. Mention has to be made of, amongst other initiatives, the creation of an Environmental Advisory Committee in 2006 and of the Conservatory of Natural Areas, the procedures implemented for waste management or the protection and the spatial planning of maritime areas.

The main problems and challenges with regard to the environment are the threats to the rich biodiversity (destruction of habitats, wildfires and invasive species), the pollution and sedimentation of rivers and the lagoon. The coral ecosystems are also exposed to the impacts of climate change. The limited integration of environmental issues and climate change in urban and economic development, as well as the impact of mines and wildfires form part of the prime causes of pressure. Recently, works have been carried out in order to reduce pollution and sedimentation of the rivers and the lagoon.

Recommendations: protect the species and their habitats against wildfires, invasive species, soil erosion due to mining operations; promote the expansion of forested areas, the reduction of the fragmentation and a sustainable forest management; develop and implement an integrated management plan for the coastal areas; reinforce the conservation of biodiversity and marine ecosystems (stricter implementation of the legislation on deep sea mining, regional cooperation control fishing activities); modernisation of waste management (including waste recovery); adopt and implement the climate and energy plan; promote and reinforce sustainable agriculture.



LOCATION	South Pacific Ocean, 1,500 km east of Australia. Archipelago comprising a main island, "Grande Terre», and 4 island groups.
LAND AREA / EEZ	18,575 km ² / 1.4 million km ²
POPULATION	256,000 and 13.8 inhab/km ² (2012 est.)
TOPOGRAPHY	Grand Terre has a pronounced topography with peaks higher than 1,600m. The other isles have a flat topography.

PITCAIRN



Pitcairn is an extremely remote OCT linked to the UK. It is approximately 2,000 km from Tahiti (French Polynesia), and 5,500 km from New Zealand, and composed of four islands: Pitcairn, Henderson, Oeno and Ducie. Henderson Island is a UNESCO World Heritage. Oeno and Ducie are pristine atolls and are proposed to become Ramsar sites. Ducie is the southernmost atoll in the world.

Only Pitcairn is inhabited. It has a residential population of circa 50, the majority of whom are descendants of the mutineers of the HMAV Bounty. There are also normally five “off-island professionals” (the Administrator, doctor, teacher, police officer, FCA and their partners). They are generally on one-year contracts.

Pitcairn has a dedicated shipping service for cargo and passengers subsidised by the British Government: 4 cargo voyages to and from New Zealand, and 12 passenger services to and from Mangareva per year.

Pitcairn wants to establish a no-take marine protected area (MPA) in its entire EEZ except for the 12 nautical miles around Pitcairn Island. The purpose of the MPA will be to protect the abundant biodiversity, two of the most southern coral atolls in the world, and the deepest developed tropical coral reef. One of the non-environmental aims of the MPA is to decrease the dependency of Pitcairn from external aid (currently on the order of €57,000 per person mostly from the UK). It

will do this by attracting scientific research (biodiversity has been little documented) as well as non-consumptive tourism.

Environmental guidelines and strategies are set out in the Pitcairn Islands Environment Management Plan (2008) and Henderson Island Management Plan (2004-2009). The Strategic Development Plan (2012-2016) identifies protection of environment as a main objective. Several multilateral environmental agreements extend to Pitcairn, and territorial legislation provides adequate environmental coverage. Consent from the Council is required for any development and an EIA policy is in place.

Major environmental challenges are invasive species and soil erosion. Invasive species are affecting springs, the major source of Pitcairn’s fresh-water. Waste management and energy security (currently it is a highly remote territory dependent on import of fossil fuel) are also of concern.

Recommendations: strengthen bio-security and reduce/eradicate invasive species in the islands; develop rain water harvesting infrastructure and household designs to facilitate maintenance, and invest in well-drilling, desalination and increased storage; prepare Pitcairn to face climate change (studies, national adaptation action plans); reduce dependency on fossil fuels and increase energy security.



LOCATION	South Pacific, south-east of French Polynesia and half way between New Zealand and South America, 4 islands
LAND AREA /EEZ	42 km ² / 836,108 km ²
POPULATION	Approximately 50, all living on Pitcairn Island
TOPOGRAPHY	Pitcairn Island is volcanic. It has a rocky coastline with cliffs. The highest point is Pawala Valley Ridge at 347 m. Henderson is an unusual elevated coral atoll (makatea), with an elevation of about 30m. Oeno is a low-lying undisturbed atoll. Ducie Atoll consists of four islands surrounding the largest part of the lagoon with a maximum elevation of 3 m.

WALLIS AND FUTUNA



Wallis and Futuna consists of 3 isles of volcanic origin: Wallis (Uvea) on the one hand and Futuna-Alofi on the other hand. In Wallis, the environment has been substantially modified by human activity, while Futuna and Alofi are better preserved with a richer biodiversity, which concentrates most endemic species.

Wallis and Futuna is the least developed overseas French territory. The environment is subject to a degradation caused by geophysical factors and some local habits and practices: deforestation, overfishing and pollution of the Wallis lagoon and destruction of the coral reefs and beaches. The territory clearly tackles these problems and has established administrative structures, framed within the supervision of technicians, the adoptions of some legislation (e.g.: EIA) and budget allocation. In particular, the adoption of a sustainable Development Plan in 2002 at all administrative levels was a real achievement, given the complexity of the political structure: 1) the presence of the French government with a Prefect and several services; 2) the Territorial Assembly and 3) traditional chieftaincies in three regions. An environmental service defines and proposes the elements necessary for the elaboration of a coherent environmental policy and invigorates/coordinates researches and protection, recovery and treatment (pollutions, risks, etc.) activities.

There is potential for the promotion of solar and wind energy (individual and semi-collective installations), and the renovation and rehabilitation of the hydroelectric power plant of Vainifao in Futuna is in progress, for an amount of € 200,000. Other hydroelectric projects are planned, for a total amount of € 800,000.



Aerial view. © www.ifrecor.com

The main challenges are the conservation of nature and climate change, as the coastlines are receding due to erosion and the modification of the seashore by the population, as well as solid and liquid waste management.

Other recommendations concern raising more awareness of environmental issues, the reinforcement of sustainable management of marine resources and the blue economy as well as sustainable water management.



LOCATION	South Pacific Ocean, NE of the Fiji Islands. Archipelago consisting of three main isles: Wallis, Futuna and Alofi.
LAND AREA / EEZ	142 km ² / 262,500 km ²
POPULATION	12,197 and 85.8 inhab/km ² (2013 est.)
TOPOGRAPHY	Isles of volcanic origin Wallis has very little surface relief (highest peak: 151m); Futuna and Alofi have a pronounced topography with a peak at 524 m

SOUTH ATLANTIC

For the purpose of this work, the region of South Atlantic is considered as comprising the islands lying in the Atlantic Ocean south of the equator down to the Antarctic continent. There are four OCTs, all linked to the UK: St Helena (SH), Ascension (AI) and Tristan da Cunha (TdC) - although the three constitute a single OCT, they have distinct characteristics and governments; the Falkland Islands (FI); South Georgia and South Sandwich Islands (SGSSI); and the British Antarctic Territories (BAT). The latter two are situated south of the polar front. In the BAT and SGSSI there is no permanent population and only a small number of researchers, government officers, a military and visitors are stationed temporarily. Ascension Island is military base and only those that work on the island have the right to live there. Tristan da Cunha has a population of 254 inhabitants.

The territories are all rocky, rugged and mountainous. There is active volcanism on Tristan da Cunha and South Sandwich Islands, while SH and AI are also of volcanic origin. Except for BAT in the Antarctic continent, all the islands composing these OCTs are isolated from each other and from the nearest continent by thousands of kilometres. Their physical remoteness is compounded by a

lack of transport infrastructure. There is no airport on St Helena (although one is being built), TdC and SGSSI, and no public airport on Ascension Island (just military¹) or BAT (for science use). There are no deep-water landing facilities either.

The flora and fauna of these OCTs are determined in large measure by their remoteness, insularity and (for seabirds) their strategic situation in the ocean. Many islands exhibit high endemism. The territories are homes and/or breeding grounds to globally important seabird populations, notably albatrosses 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. However, a number of terrestrial mammals have been introduced, either intentionally or inadvertently since 300 years ago when humans first settled. 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, and efforts have been and are being made to control them – with a moderate degree of success.

Many of the environmental problems and challenges faced by the South Atlantic OCTs are similar. The following common issues were identified by the territories:

ISSUES	OCCURRENCE
WASTE INCLUDING MARINE DEBRIS	All four. The problem in BAT is marine debris. In SGSSI, marine debris, plus wrecked vessels and asbestos and oil abandoned station are degrading. In SH, AI and the Falkland Islands the problem is more related with waste produced on the islands.
IUU FISHERIES	Moderate for all four territories. Although much has been achieved in combating IUU fisheries and reducing bird-by-catch, continuous attention is required. Bird population declines are related with practices outside of the EEZ of the territories.
INVASIVE SPECIES	Severe for SHATdC and currently moderate for the Falkland Islands and SGSSI given successful initiatives.
CLIMATE CHANGE	Moderate for all except the Falkland Islands. Anyway Falkland Islands are implementing a climate change risk assessment on terrestrial ecosystems to determine how severely the territory will be impacted.

The South Atlantic territories have achieved some progresses worth mentioning and that can be replicated by other OCTs, in and out of the region.

ACTIONS	COMMENT
ACTION AGAINST INVASIVE SPECIES	The Falkland Islands and SGSSI have achieved very good results in eradicating fox and reindeer respectively. SGSSI currently has ongoing programs to remove invasive plant and rodent species.
INCREASE PROTECTED AREAS (TERRESTRIAL AND MARINE)	SGSSI has the largest Marine Protected Area for sustainable fisheries in the world. AI is developing an NBAP that will include number of Species and Habitat Action Plans, will be continually updated as targets are met and new research becomes available. Work of department, external organisations and visiting researchers will be linked to one or more NBAP objectives. SH is completing a Marine Biodiversity and Mapping Project in 2014, based on which marine protected areas will be defined.
IUU FISHERIES	Several fisheries MSC certified; TdC lobster fishery; SH pole & line and rod & line tuna fisheries, undertaken by small artisanal fisheries boats; the Falkland Islands longline fisheries (through bird-scaring devices and other mitigation measures accidental mortality of seabirds has reduced 90%); SGSSI toothfish longline and some of the companies/vessels fishing in its other two fisheries (krill and mackerel icefish). CCAMLR has very developed restriction on fisheries south of 60°S
REDUCE ENERGY DEPENDENCY	SGSSI energy comes from small hydropower plant. Falkland has a high level of wind energy. Saint Helena has increase to 19% the electricity coming from renewable sources, mostly wind.
IMPROVE WASTE WATER AND SOLID WASTE COLLECTION AND (RE)USE	Saint Helena is implementing waste management strategy (2012) and changing habits. The Falkland Islands have reduced to 12% of the original value the wastewater discharge into port at Stanley.

Although St Helena, Ascension and Tristan da Cunha is a single UK OCT, they have separate Councils, legislative procedures and budgets. It is recommended that cooperative projects between these islands can be fostered and supported. Also recommended is increased cooperation between OCTs and the Falkland Islands and SGSSI, as there are successful initiatives worth to be shared and the South Atlantic Environmental Research Institute (SAERI, the Falkland Islands) provides opportunities for common work.

Recommendations: Promote climate change research in those areas in which the OCTs have a comparative advantage (Southern Atlantic and Antarctic); Centralise climate data and set up conditions for adequate climate monitoring; Support continued efforts of fisheries manage-

ment and level requirements throughout Southern Atlantic, in the EEZ and high seas; Engage on measures to reduce the marine litter or its impacts on biodiversity and promote regional or global agreements (e.g. include marine litter requirements on fisheries licenses), and awareness raising campaigns with fisheries and shipping companies; Promote cooperation and sharing of solutions between OCTs and Engage on international agreements for the trans-boundary shipment of waste from OCTs to suitable waste management/recycling facilities off island; Continue collaborative long-term projects to control invasive species, profiting as well from the South Atlantic Research Institute. Involve EU universities and try to mobilise funds for research and development of activities.

1 It is a military airport, but the public can use it to go to the UK/ the Falkland Islands.

BRITISH ANTARCTIC TERRITORY



The British Antarctic Territory (BAT) is an overseas territory of the UK. It includes Graham Land, the South Orkney Islands, the South Shetland Islands, the mountainous Antarctic Peninsula, and the Weddell Sea. Antarctica is one of the main players on climate change, as the world's largest repository of ice (25 million km³ of grounded ice, would correspond to 60 m sea-level raise if melted), and the Weddell Sea (BAT) is one of the important feeders of the thermohaline global ocean circulation.

Vegetation in Antarctica is sparse on land although there are many types of native lichen, moss and algae, but so far no endemic terrestrial species found. Humans have introduced a wide range of alien, and in many cases invasive, species to Antarctica and the sub-Antarctic islands. These include microbes, algae, fungi, bryophytes, vascular plants, invertebrates, fish, birds and mammals. In some isolated cases those species dominate terrestrial, freshwater, and marine habitats. In the surrounding seas 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.

The BAT is self-financing. The main sources of revenue are the sale of postage stamps and taxes from over-wintering scientists. However, tourism is increasing (35,000 per year). Tourism is ship based, and approximately half of tourists visit former bases. The Environmental Protocol includes provisions for managing tourism to minimise environmental impact

The Antarctic Treaty is the key instrument for environmental protection in the BAT, and indeed throughout Antarctica, Fishing in areas of the Southern Ocean around BAT is managed through CCAMLR. The BAT is governed in strict accordance with the UK's environmental obligations arising under the Antarctic Treaty. The UK Antarctic Act 1994 transposed the Protocol on Environmental Protection 1991, and provides a permitting regime for all activities in the Territory by UK nationals, and also covers environmental monitoring and impact assessment, waste management, oil spills and protected areas and species. The revised UK Antarctic Act 2013 transposed the provisions of Annex VI to the Protocol regarding liability arising from environmental emergencies.

The Government of the BAT, in consultation with stakeholders, has developed a five-year strategy for the territory which sets out objectives and funding priorities. British Antarctic Survey (BAS) carries out scientific research, manages the bases and also carries out fisheries inspections under the Antarctic Treaty and CCAMLR. United Kingdom Antarctic Heritage Trust (UKAHT) manages historic sites on behalf of BAS.

The main issues are climate change, fishing in the Southern Ocean, including the occasional by-catch of seabirds such as albatrosses, tourism, and marine debris.

The Antarctic Treaty Committee on Environmental Protection has devised a group of priorities to address. BAS also sets regularly priority issues to address regarding environmental management.



LOCATION	Lies between longitudes 20° and 80° W, south of latitude 60°
LAND AREA	1,709,400 km ²
POPULATION	No permanent residents
TOPOGRAPHY	Several islands and mountainous peninsula. Highest point: 4,151 m in Palmer Land

THE FALKLAND ISLANDS



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. An OCT linked to the UK, it has a population of 2500 persons and an airfield with 250 – 300 persons.

Bird population has world-wide importance. Around one million penguins of five different species, including 75% of the southern form of rockhopper penguins (vulnerable) breed in the Falkland Islands. About 70% of the black-browed albatrosses, which global population has fallen by 18% between 1995 and 2000 due to fisheries in South Atlantic, breed in the Falkland Islands. There are also two endemic bird species and 14 sub-species, besides a significant number of endemic invertebrates and plants. It is also likely that important communities of marine mammals exist locally, but baseline information is lacking. The Falkland Islands have officially designated 19 terrestrial national nature reserves and two Ramsar sites. Twenty-two Important Bird Areas and 17 Important Plant Areas have been identified but these sites are not yet designated.

The Falkland Islands have a thriving economy based on fishing, tourism and agriculture. The hydrocarbon industry is emerging. The Falkland Islands are assuming importance in the South Atlantic region on environmental matters, namely through the South Atlantic Environmental Research Institute (natural and physical sciences), created by the Falkland Islands Government's Economic De-

velopment Strategy, as a way to build a knowledge economy and enhance cooperation between South Atlantic OCTs.

The Falkland Islands has good protection in place for most species. However, there lacks a scientific based list of nature reserves and there is no marine protected areas. Development controls are lacking outside Stanley. Moreover, environmental impact assessments (EIA) are not currently required for the majority of terrestrial development, although they are required for developments in the marine environment. Some £6 million is spent each year on research, fisheries management and surveillance. The Falkland Islands Government aircraft and an armed fishery protection vessel patrol waters. Conditions in the fishing licences and voluntary measures have reduced mortality of seabirds from fishing (longlining, trawling, jigging).

The main environmental issues in the Falkland Islands derive from (a) biodiversity preservation, namely marine birds; (b) waste management and (c) the likely future development and extraction of hydrocarbon resources offshore and possibly also onshore.

Recommendations: Increase baseline knowledge to enable/strengthen sustainable biodiversity management and invasive species control; Reform solid waste management (land and marine based), taking into account international best practice and adequate technology; Prepare for hydrocarbon exploitation, ensuring minimal risks and maximizing benefit sharing with the population.



LOCATION	South Atlantic, just north of the Antarctic convergence
LAND AREA /EEZ	12,200 km ² / 550,872 km ²
POPULATION	2,931 and 0.24 inhab/km ² (census 2012)
TOPOGRAPHY	Rugged and hilly, with indented coast. Highest point Mount Osborne (705 m)

SOUTH GEORGIA AND SOUTH SANDWICH ISLANDS



South Georgia (SG) and the South Sandwich Islands (SSI) is an OCT linked to the UK. It is formed by two geographically distinct groups of islands in the South Atlantic Ocean. SG is located 1290 km east-south-east of the Falkland Islands and SSI lie some 760 km south-east of SG.

South Georgia is situated on a biogeographic boundary where many species have their northern or southern boundaries. The South Sandwich Islands and surrounding waters host some unique ecosystems within the Southern Ocean including hydrothermal vent communities relying on hydrogen sulphide or methane (instead of sunlight and oxygen). SGSSI hosts 95% of the world population of Antarctic fur seals (*Arctocephalus gazella*), 50% of the breeding population of white-chinned petrel (*Procellaria aequinoctialis*), >50% of the breeding populations of southern elephant seals (*Mirounga leonina*), 45% king penguins (*Aptenodytes patagonicus*) and 40% grey-headed albatross (*Thalassarche chrysostoma*) and significant numbers of other species.

About 6,000 tourists per year visit South Georgia, and the impact of tourism is currently limited mainly due to the visitors' policies and regulations enacted. The South Sandwich Islands are a more remote volcanically active archipelago of islands with a maritime Antarctic climate and less visited.

SGSSI government is composed of 10 members operating from the Falkland Islands. There is no

permanent population, although South Georgia houses government representatives (two persons at any given time), research scientists and some other workers. The territory is nearly self-sufficient in financial terms (fisheries licences and tourist landing fees) and has limited capacity to undertake advocacy and fund mobilisation. SGSSI has established the largest sustainable fisheries marine protected area in the world.

South Georgia is impacted by habitat destruction by non-native species, and the barriers to further impact are being reduced with glacier retreat due to global warming. Rat and reindeer eradication is ongoing. Another environmental challenge is oil and asbestos waste in abandoned whaling stations which containers/infrastructure are degrading and is becoming a threat. Some bird populations are declining as a result of fishing activities outside the Economic Exclusive Zone.

Recommendations: assess current status of invasive species in terrestrial and marine environments, assess probable impacts of climate change, and develop adequate policies; monitor the impact on biodiversity and fisheries of the MPA methods and adequate accordingly; remove of oil, asbestos and other hazardous materials, and dismantle unsafe structures from SG; engage on advocacy towards the establishment of an agreement contribute to high seas enforcement of bird by-catching mitigation measures.



LOCATION	South Atlantic, south of the Antarctic convergence, two main groups of islands
LAND AREA / EEZ	3,755 km ² / 1,449,532 km ²
POPULATION	No permanent residents
TOPOGRAPHY	The land is rugged and mountainous. Many peaks exceeding 2000. Highest point: Mount Paget 2,934 m

SAINT HELENA, ASCENSION AND TRISTAN DA CUNHA



The territory of Saint Helena (SH), Ascension (A) and Tristan da Cunha (TdC) is a grouping of three largely separate and disparate territories linked to the UK. The distance between the northern tip of Ascension Island and the southern tip of Gough Island is 3,642 km. TdC is a group of four islands, is the most isolated archipelago in the world. Although regarded as one OCT each territory has its own government, policies and legislation.

After years of declining economy and emigration due to isolation, Saint Helena has new prospects with the construction of an airport, and government expects to engage private sector on tourism development, and on fisheries, agriculture (including distilling) and support services. All residents of Ascension are contract employees (either in the military base, or in the mostly communications companies) and their families, and when contracts end the persons must leave, hence there is no indigenous population and no right of abode. As TdC was devoid of all living organisms at its volcanic origin, non-inhabited islands are of worldwide scientific interest.

Due to their remoteness the islands are rich in biodiversity and high in endemism, namely plants and invertebrates. The islands have 13 endemic birds, 3 critically endangered (Gough bunting, Saint Helena plover and Tristan albatross), 7 endangered and 9 vulnerable (including the Ascension frigatebird, Atlantic petrel). Over 40% of Tristan da Cunha's territory is a declared nature reserve. The EEZ is

a whale sanctuary. Gough Island and In-accessible Island are Natural World Heritage Site. Gough hosts among other 48% of the world's population of the northern rockhopper penguin, breeding site for millions of puffins.

This biodiversity has been under severe stress since the historically recent human settlement, 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 need to be continued 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 (Saint Helena), ensure the ongoing health of the crayfish fishery (Tristan da Cunha) or revert biodiversity loss (Ascension).

Other environmental challenges include: waste management, IUU fisheries (Ascension is currently regulating its offshore fisheries), wastewater in SH, free-roaming livestock in TdC.

Recommendations: Implement the South Atlantic Invasive Species strategy; Increase public health and pollution control by improving water and waste planning, management, and services; Develop policies for benefiting from the potentialities of the ocean and preserve its habitats; engage on climate change impact assessment and adaptation planning, and disaster risk management; Increase environmental awareness; Increase cooperation between the 3 entities by devising joint projects and trying to get regional funding.



LOCATION	Southern Atlantic Ocean, from 8° S to 44° S		
LAND AREA km²	SH 122	A 88	TdC 98 (TdC group of islands: 207)
EEZ km²	SH 444,916	A 441,658	TdC 754,720
POPULATION	SH 4,257	A 702	TdC 254 (2008 census)
TOPOGRAPHY	All volcanic islands with peaks and plateaux. SH and A highest points are about 850m. Highest Point: Queen Mary's Peak on Tristan da Cunha, at 2,062 m		

NORTH ATLANTIC

The concept of a North Atlantic OCT region is a rather artificial one. In this work, North Atlantic means a group of three OCTs - Greenland (linked to Denmark, and interacting highly with the Arctic Council), Saint Pierre and Miquelon (SPM, linked to France, but interacting highly with Canada), and Bermuda (linked to UK). Bermuda has decided to adhere to the Overseas Association Decision, as of 2014. The other (non-OCT) territories which can be regarded as forming part of this region are Iceland and the Faroe Islands (the latter also linked to Denmark).

Greenland has a polar climate and much of the territory is covered by ice, SPM is cold and humid, while Bermuda has a sub-tropical climate and coral reefs. Both Greenland and SPM are located in

areas where warm and cold currents meet each other and conditions are created for rich fishing grounds. Marine mammals are abundant in these two territories, and Greenland is also endowed with large land mammals. Greenland is the largest OCT, and has the lowest population density of all OCTs and indeed of all inhabited countries in the world (0.14/km² for ice-free lands). In turn Bermuda is one of the smallest OCTs and has one of the highest¹ population density of the world, besides one of the highest GDP per capita.

In general, the three OCTs are making progress in developing an appropriate policy framework needed to manage their environment although allocated responsibilities have not yet been established in the territories.

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

OCT	MEAS PARTY	REMARKS
BM	Included in the UK's ratification of 17 MEAs, inter alia, CITES, CMS, Ramsar, World Heritage, UNFCCC, Kyoto Protocol, Montreal (Ozone), MARPOL	CMS Sharks MoU signed by the UK and extended to Bermuda; Merchant Shipping Regulation (on oil pollution, non-oil pollution, air pollution, pollution by garbage).
GL	CBD, Ramsar, Whales, World Heritage, CITES, LTRAP, Oslo, MARPOL, London, Ozone, Basel, OPRC, ESPOO but not all fully implemented	Subject to obligations under the Arctic Council.
SPM	CBD, CITES, Ramsar, Whales World Heritage, UNECE, Oslo	SPM follows France in all French environmental obligations, including MEAs, but no mention of such obligations in national plans or legislation.

The following regional agreements are also extended to the OCTs:

OCT	AGREEMENTS
BM	Participates at the International Commission for the Conservation of Atlantic Tunas (ICCAT) under the UKOT banner since 1995. ²
GL	OSPAR-Convention, Oslo Convention, Nordic Environmental Protection Convention, Copenhagen Agreement, Joint Commission on Narwhal and Beluga, Northwest Atlantic Fisheries Organisation.

There are a number of areas of common interest which the territories share by virtue of their non-sovereign status and isolation/uniqueness.

ISSUES	OCCURENCE
CLIMATE CHANGE	Affecting each OCT in different ways, Greenland being a major worldwide player, but constituting an important issue in each one
WASTE	Severe for the three
WASTEWATER	Severe in Bermuda, moderate in Greenland
BIODIVERSITY LOSS DUE TO ANTHROPOGENIC PRESSURE	Pressures of different nature and of different severities in each OCT. Examples are: Invasive species, infrastructures development, lack of chemicals control, pollution, oil and mining preparedness

It is possible to identify best practices that can be expanded or replicated in other OCTs:

ACTIONS	COMMENT
SUSTAINABLE DEVELOPMENT	Bermuda has established a Sustainable Development Plan and has established a Sustainable Development Department (SDD) within the Cabinet Office of the Government to promote and facilitate public and private sector implementation of the SDP, to monitor, record, analyse and report on commitments in the SDP; to evaluate current and planned policy initiatives; to recommend appropriate changes to policy initiatives; and to provide administrative support to the SD Roundtable. There is also a dedicated website and the SDP is evolving.
BIODIVERSITY KNOWLEDGE AND CONSERVATION	In addition to other existing local monitoring efforts, the Greenland government is piloting a natural resource monitoring system called Piniakkanik sumiiffinni nalunaarsuineq (Opening Doors to Native Knowledge), whereby local people and local authority staff are directly involved in data collection, interpretation and resource management. The promotion of locally relevant knowledge and local management actions will contribute to effective local conservation actions.
CLIMATE CHANGE	Saint Pierre and Miquelon has set up since 2009 a complete measuring and monitoring system of various natural phenomena (erosion, waves, rising sea levels) to better manage the effects of climate change. The system is framed by scientific partnerships with France and Canada, and it continues to improve. SPM is both contributing to the global climate monitoring and is being supported by research and means for its own planning.

Recommendations: Increase Climate Change research and integrate results in development – establish conditions for further cooperation on North Atlantic ocean and atmosphere circulation and interactions; Identify needs and set up conditions for adequate climate monitoring; increase cooperation on Marine Spatial Planning; In virtue of their geographic locations, increase synergies

and cooperation both on research and on awareness raising regarding the pollutants in the ocean, long range transboundary pollution with chemicals, heavy metals, and radionuclides, and on addressing high seas fisheries and mining issues - this cooperation should also involve non-OCTs in the region.

1 The 8th according to <http://mecometer.com/topic/population-density/>

2 According to Bermuda officials, this is often overshadowed by the need for the UK to maintain a united front with the European delegation

BERMUDA



Bermuda consists of an archipelago of over 150 islands perched on the south easterly edge of the submerged volcano rising 4,270 m from the floor of the western Atlantic Ocean, 965 km off the eastern coast of USA.

Bermuda has one of the highest population densities¹ in the world. The six main islands comprising Great Bermuda are connected by causeways and bridges to form a continuous area of 53.6 km². It is estimated that over 50% of Bermuda's land area is developed, while a further 17% comprises areas such as golf courses, residential and public gardens, lawns and playing fields. Remaining undeveloped arable land is mostly private, limiting expansion of agriculture. Bermuda has also one of the highest GDP per capita of the world, mainly due to offshore finance. But living costs are very high, and 11% of households live under the national poverty level.

About 3% of the occurring 4,597 marine and 3,702 terrestrial species are endemic to Bermuda. About 6% of the endemic species are critically endangered, 3% are possibly extinct and 10% are rare; two-thirds of endemic species inhabit caves and their status is unknown. About 23 alien species occur in Bermuda, and have been responsible for 39% of all native species extinctions since 1600.

Main environmental challenges are limited land, limited water resources, anthropogenic pressures, and invasive species. Bermuda has been

able to develop a sound waste management system but water and wastewater are still problematic. Vulnerable to climate change, particularly sea level rise and stronger and more frequent hurricanes, Bermuda has a high GHG (and pollutants) emission per capita, as is still to increase independence from fossil fuels.

Bermuda is playing a key role on the establishment of a Sargasso Sea Commission, aiming to bring greater protection to the vast Sargasso Sea ecosystem. There is also ongoing debate on the creation on a non-take marine protected area in the outer rim of its EEZ.



Hamilton. © www.officeoftourism.org

Recommendations: improve water resources planning, improve water and wastewater management and infrastructure; develop policies for benefiting from the potentialities of the ocean and preserve its habitats (blue growth); improve biodiversity protection through development of species and habitats management plans, awareness raising campaigns, and increased invasive species control.



LOCATION	Western Atlantic, 150 islands
LAND AREA /EEZ	53.6 km ² / 464,940 km ²
POPULATION	64,237 and 1,198 inhab/km ² (est. 2012)
TOPOGRAPHY	Usually hilly, old windblown dunes composed of limestone sands now hardened. Highest point: 76m.

¹ http://en.wikipedia.org/wiki/List_of_sovereign_states_and_dependent_territories_by_population_density

GREENLAND



Greenland is a self-governing territory of Denmark, the world's largest island. With an Arctic climate, most of the island is covered by the world's second largest ice-sheet (after Antarctica). The predominant economic activity is fishing. The Greenland National Park, protecting the High Arctic tundra and covering 956,000 km² is the largest terrestrial National Park in the world. Besides, there are 12 Ramsar and 12 protected areas. Greenland is also a hub for extensive climate change research and monitoring. Since 2013 Greenland/Denmark assure the co-leadership of Circumpolar Biodiversity Monitoring Program.

Climate change induced warming of sea and land is making ice-sheet to shrink, and seasons are changing. South Arctic species are moving north, but northern Arctic biodiversity is prone to become restricted to a few areas. Iconic species as polar bear are suffering from these changes. The melting of the permafrost in some areas may cause problems for the existing infrastructure.

On the other hand, agricultural production is increasing, transporting routes are expanding, and Mining and oil resources are becoming more easily available. Applicants for exploitation licenses and some exploration licenses are required to conduct full-scale environmental impact assessments and social impact assessments before licenses can be obtained.

Waste management is currently considered to be the major environmental problem in the inhabited part of Greenland; this despite the fact that several solutions are being tested, including local incinerators and

transport of waste to central incinerators after baling. Wastewater is also considered a problem, namely collection and management of bags from bucket toilets, and discharge of wastewater to the ground or to open sewer. Moreover, short lived climate pollutants (black carbon, tropospheric ozone, methane, and hydrofluorocarbons) represent a relevant challenge to the environment, climate change, and health.

Another environmental challenge, outside Greenland's direct control, is the widespread presence of transboundary distributed contaminants, in particular heavy metals and persistent organic pollutants.

According to a recent assessment¹, Greenland made sustainable development a key priority, established environmental and social safeguards based on best international practice² and have prioritized compliance monitoring and public participation across the life cycle of extractive projects.

Recommendations: Improve physical and natural resources planning, develop policies and strategies and legislation for benefiting from the emerging economic opportunities, while safeguarding the pristine environment and interests and livelihood of the population; Develop capacity, and assessment and contractual tools to adequately manage extractive sectors; and diversify industrial development; Promote Green Growth and Blue Growth. Efforts to Improve the waste and wastewater management and infrastructure should continue, using alternative methods based on best practices and lessons learned from other countries.



LOCATION	Arctic
LAND AREA /EEZ	2,166,000 km ² (410,000 km ² ice-free) / 2,353,703 km ²
POPULATION	56,370 and 0.14 inhab/km ² on ice free area (est. 2013)
TOPOGRAPHY	Mountain chains run along Greenland's east and west coasts, most of which covered by ice caps and glaciers. Parts of the central land area basin, depressed by the weight of the ice sheet, lie more than 300 m below sea level. The entire coastline of Greenland is deeply indented by fjords. There are many offshore islands. Highest point: 3700 m (Mt. Gunnbjørn).

¹ Colclough, C. and O. Perera, 2013, Sustainable Development in Greenland: Perspectives from a preliminary stakeholder consultation, International Institute for Sustainable Development.

² Requirements under EIA and SSIAs are modelled following best international practice from geographies such as Canada, Norway, Australia and the European Union.

SAINT-PIERRE AND MIQUELON



Saint-Pierre and Miquelon is a French territorial overseas collectivity, located between the Canadian provinces of Nova Scotia and Newfoundland. Important colonies of seals, dolphins and migratory birds enrich its natural wild environment, which would seem a desert without them: in fact, its flora is very diverse, but it is scrubby and typical of cold, subarctic environments. The archipelago has the only boreal forest found on a French territory. However, nearly 40% of the surface of this forest has been destroyed over the last fifty years because the deer introduced on the island of Miquelon-Langlade have slowly been preventing forest renewal.

Due to the depletion of fish stocks and various maritime claim disputes, the territory has a very limited fishing quota, which has seriously damaged its economy, closely entwined with the fishing industry.

The protection of the nature and the environment is the joint responsibility of the French government (which enforces its own environmental laws, applicable to the territory through its devolved services over the two municipalities of Saint-Pierre and Miquelon) and of the collectivity (the Territorial Council), which is responsible for planning, investment and implementation.

The main environmental challenges are linked to solid waste, wastewater and the management of fresh water supplies. Climate change

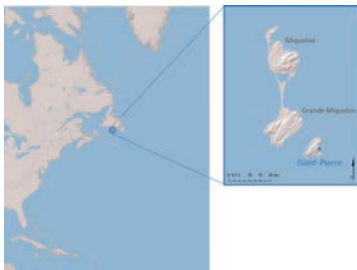
is threatening to cause further erosion to the coasts and to submerge any low-lying land. Seawater temperature changes could affect nutrients and fish stocks.



Puffins © Patrick Hacala

The priorities of the collectivity for the years to come are indicated in its Strategic Development Plan 2010-2030. This includes, in particular, a sustainable and balanced development of the territory by reducing energy dependency (in particular by improving the energy efficiency of buildings and promoting renewable energies), by preserving and valorising the environment and by managing water and waste in a sustainable way.

Recommendations: create new protected areas (particularly to preserve the boreal forests); modernise waste management; improve energy efficiency and promote renewable energies.



LOCATION	Archipelago consisting of two main islands and eight smaller isles
LAND AREA / EEZ	242 km ² / 12,344 km ²
POPULATION	6,314 and 26 inhab/km ² (2011 est.)
TOPOGRAPHY	The isles consist of coastal plateau and plains. A sand isthmus connects Langlade with Miquelon. The highest peak is the summit of Grande Montagne at an altitude of 240 m.

DISCLAIMER

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