



# Overseas Countries and Territories: Environmental Profiles

## FINAL REPORT

PART 2 – DETAILED REPORT

SECTION A – CARIBBEAN REGION

ANNEX J: ST. EUSTATIUS

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EU Overseas Countries and Territories in the Caribbean region

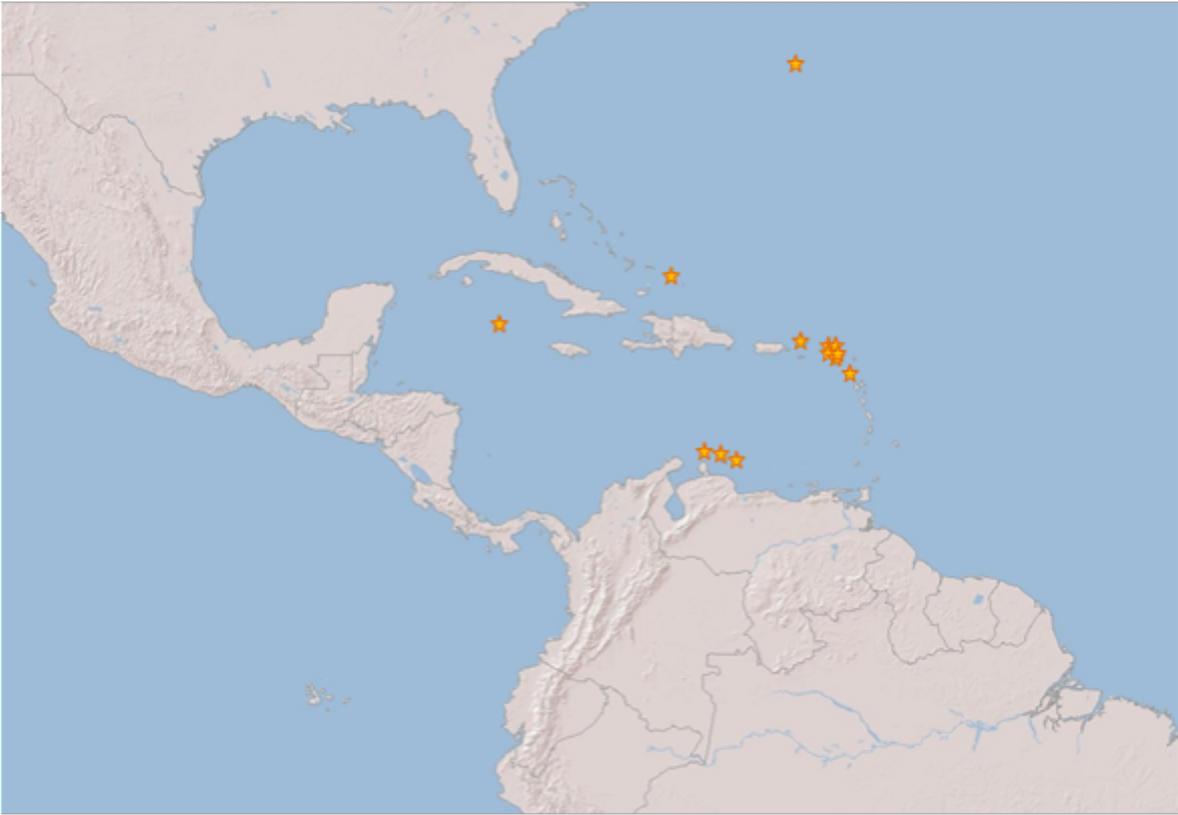
Report on the Caribbean region... PAGES 4-26

Report on Sint Eustatius PAGES 27- 43

References St. Eustatius page 43

References Caribbean Region .... page 46

Abbreviations and acronyms ... .. page 49



## 1 INTRODUCTION

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

This volume comprises an overall profile in which the territories are treated in the context of the Caribbean region as a whole (chapter 1), followed by the environmental profiles for the individual territories (Annexes A to L). The regional findings are brought together and consolidated in Part 1 - Main Report.

## 2 DESCRIPTION OF THE REGION

We here regard the Caribbean region as loosely comprising the archipelago of islands which bound or lie within the Caribbean Sea together with the islands immediately to the North of the archipelago, but not the littoral states of Central and South America.

Until recently the Dutch Caribbean OCTs were Aruba and the Netherlands Antilles. On 10 October 2010, two of the former territories of the Dutch Antilles became independent countries in the Kingdom of the Netherlands (Curaçao and Sint Maarten), and the other three territories (Bonaire, Saba and Sint Eustatius) became 'special' municipalities of the Netherlands<sup>1</sup>.

The Caribbean region includes:

- **five British territories** (Anguilla, Montserrat, British Virgin Islands, Cayman Islands and the Turks and Caicos Islands);
- **three countries** are part of the Kingdom of the Netherlands (Aruba, Curaçao and Sint Maarten) and **three territories** (Bonaire, Saba and Sint Eustatius) are 'special' municipalities' of the Netherlands;
- **one French territory** (Saint-Barthelemy) since 1 January 2012.

Apart from the OCTs, the Caribbean region comprises:

- 16 independent nations: Cuba, Haiti, the Dominican Republic, Jamaica, Barbados, the Bahamas, Belize, Trinidad and Tobago, Dominica, Guyana, Grenada, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, Suriname and Antigua and Barbuda, and
- a number of other territories and possessions: the French 'Outermost Regions'<sup>2</sup> Martinique, Guiana, Guadeloupe, and Saint Martin. Puerto Rico and the US Virgin Islands are part of the US commonwealth.

In their geology and biology the Caribbean OCTs have many common features. The Caribbean Sea region is active tectonically and seismically. The Soufrière volcano on Montserrat has been active since 1995 and has caused deaths, extensive damage and social and economic disruption, with the migration of 2/3 of the population and a temporary collapse of the economy. Hurricanes are a risk for all the 12 OCTs. Even Aruba, although outside the hurricane belt, was affected by three in recent years: Lenny (1999), Ivan (2004) and Felix (2007). Hurricanes are expected to become more intense in future as a result of climate change. The Caribbean OCTs are all fringed by mangroves, sea grass and coral reefs. These last three

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1 More precisely they have become a "Openbaar Lichaam " or 'Public Entity' and these 3 are usually referred to as Caribbean Netherlands. So the Kingdom now has 4 countries: Aruba, Curacao, Sint Maarten and the Netherlands.

2 In French 'Departements' with St-Martin a 'commune' of Guadeloupe.

habitat types form an interrelated ecosystem which is important to the economic<sup>3</sup> and physical well-being of the islands. Both coral and mangrove provide well-documented protection against rough waves and storm surges during hurricanes and tropical storms. Sea grass provides a very important settlement and sedimentation function for the particulate matter which runs off or is discharged from land, thereby protecting the coral reefs which are intolerant of and smothered by turbidity, but coral reefs also protect sea grass beds against storm damage.

An important distinguishing factor between islands is the extent to which they are low-lying. This fact is important because it causes vulnerability of the islands to natural hazards such as hurricanes which can produce a storm surge of several metres, tsunamis, as well as to longer term climate change induced sea level rise. Most of the Caribbean OCTs are generally low-lying, i.e. either all low or mostly low, the exception being Montserrat, the British Virgin Islands<sup>4</sup>, Saba and Curaçao as they are volcanic islands with rough topography.

### Key facts and statistics

<b>TABLE: Key facts and statistics for OCTs in Caribbean. Region</b>						
<b>OCT</b>	<b>Land area (km<sup>2</sup>)</b>	<b>EEZ (km<sup>2</sup>)</b>	<b>Population</b>	<b>inhab/km<sup>2</sup></b>	<b>GDP/cap (€)</b>	<b>Illiteracy rate</b>
<b>Anguilla</b>	100	92,178	15,754	158	16,345	5%
<b>BVI</b>	153	80117	28,280	185	21,273	2%
<b>Cayman</b>	262	119,137	55,036	210	38,609	0.3%
<b>Montserrat</b>	102 (44 habitable)	7,582	4,959	113	9,271	4%
<b>Turks and Caicos</b>	500	154,068	31458	63	16,335	2%
<b>St-Barthelemy</b>	25	4,000	9,171	367	29,000	5 <sup>5</sup> %
<b>Aruba</b>	180	2,200	109,153	606	17,842	3%
<b>Curaçao</b>	443	68,783	150,563	340	24,500	n.a.
<b>Sint Maarten</b>	34	12,860	39,000	1147	15,259	4%
<b>Bonaire</b>	294	3,198	18,250	62	13,808	n.a.
<b>Saba</b>	13	8,033	1,990	153	n.a.	4%
<b>St Eustatius</b>	21	1,107	3,900	186	n.a.	n.a.

The population of the islands ranges from 2,000 (Saba) to 150,000 (Curaçao), with population densities ranging from about 60 in Bonaire and Turks and Caicos to 1,147 in Sint Maarten; Aruba also has high population density. The population on the Dutch territories (332,000) account for 71% of the population of the 12 territories, and in general population density is higher. Many of the territories are experiencing net inward migration. As the Dutch Antilles was dissolved, the inhabitants of the 3 special municipalities now have the same rights as Dutch citizens. Population on the three islands has increased slightly between 2010 and 2012.<sup>6</sup>

There is a wide variation in mean incomes between the islands. In some of the OCTs income is distributed unevenly across the society and their GDP levels mask the development challenges faced by the territory.

There has been a shift in the economies of most Caribbean economies from agriculture and fishing to tourism, and the OCTs have participated in this trend. The majority of the islands import most of the food.

<sup>3</sup> Coral reefs are a major attraction and boost for the tourist industry.

<sup>4</sup> Island of Anegada is the exception in BVI, being a very low-lying atoll.

<sup>5</sup> <https://www.ethnologue.com/country/BL>

<sup>6</sup> <http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=80539ned&D1=0-1,9-10&D2=a&D3=a&HDR=T&STB=G1,G2&CHARTTYPE=1&VW=T>

The ratings<sup>7</sup> of countries most dependent on tourism show British Virgin Islands, Aruba and Turks and Caicos, Cayman Islands and Anguilla occupying the first positions.

Economy					
OCT	Finance	Fisheries	Tourism	Hydrocarbon /Mineral	Other
Anguilla	●	○*	●		
BVI	●	○	● <sup>8</sup>		
Cayman	●	○ tourists and anglers	●		
Montserrat		○ tourists and anglers	○		External Aid (UK)
Turks and Caicos	○	○*	●		Government suspended from 2009 to 2012
St-Barthelemy			●		Construction
Aruba	○	○ tourists and anglers	●	Refinery closed down	Marine transshipment
Curaçao	●		●	● Oil refinery	
Sint Maarten			●	● Oil terminal	
Bonaire	○	○ tourists and anglers	●	● Oil storage facility	Salt
Saba			●	Drilling for oil in experimental phase	Saba Univ School of Medecine
St Eustatius			●	● Oil terminal	
○ Unimportant ○ Artisanal / incidental / mainly for tourists ● Moderate activity ● Important ● Major activity * Important for own consumption					

Offshore finance is the first or second main activity on some territories, particularly Anguilla, BVI, Cayman, and Curaçao. There is an oil refinery on Curaçao and oil terminals on 3 other Dutch OCTs. Aruba is considering reconversion/ renovation of the refinery that closed down. Oil prospecting in the Saba Bank will probably not continue now that the Bank is a marine reserve, protected under Dutch environmental laws. These oil-related activities constitute the only heavy industry found on the OCTs in the region, posing pressures on the environment: accidents have occurred and cases registered of pollution of air and water.

Fisheries are important in all the islands, as a source of food, as a direct economic product and/or as an attraction to dive tourists and anglers. Most of the fishing takes place on the shallow shelves around the islands.

7 For example: <http://www.wttc.org/research/economic-data-search-tool/> and <http://www.rediff.com/business/slide-show/slide-show-1-25-most-tourism-dependent-countries-in-the-world/20120625.htm#11>

8 Rated as the most tourism dependent country in the world, <http://listdose.com/top-10-countries-that-are-dependent-on-tourism/> and Travel & Tourism Economic Impact 2014, British Virgin Islands, World Travel and Tourism Council, [http://www.wttc.org/site\\_media/uploads/downloads/british\\_virgin\\_islands2014.pdf](http://www.wttc.org/site_media/uploads/downloads/british_virgin_islands2014.pdf)

### 3 BIOGEOGRAPHY, ENDEMISM AND IMPORTANCE FOR GLOBAL BIODIVERSITY

Besides spectacular landscape of coral reefs, sea grass and mangroves, the isolation conferred by the insularity of the territories promotes endemism<sup>9</sup>. The following are some statistics on endemism on the Caribbean OCTs. There are no endemic freshwater fish on these territories, and the only endemic mammals are bats.

Endemism and other wildlife values in Caribbean region						
OCT	Endemism					Other notable aspects of wildlife (threatened species, etc.)
	Birds	Reptiles, amphib.	Insects	Plants	Fresh-water fish	
<b>Anguilla</b>		2	> 40			Anguilla's salt ponds are a habitat for many birds, including the endangered roseate terns, least terns and red-billed tropic birds. Endangered turtles.
<b>BVI</b>		8		>40 (endemic to Puerto Rican bank)		In 2012 a total of 48 threatened species had been identified. Home to the critically endangered Anegada rock iguana.
<b>Cayman</b>	16	18 30 land snails	>40	28	2(+ 1 marine)	Home to the rare blue iguanas and critically endangered ghost orchids
<b>Montserrat</b>	1	2 (4 sub-species)	>120	3		795 known native plants 78 of which are restricted range. 10 species of bat to include 1 endemic sub species and two species only found on 2 islands. The Montserrat oriole is critically endangered.
<b>Turks and Caicos</b>		≥3 lizards 2 snakes	≥ 3 butterfly.	≥ 8		Other endemic: at least 4 cave dwelling arthropods Two threatened species of wetland bird are found on the islands.
<b>St Barthelemy</b>	1 endemic bat	1				Among the 348 inventoried plants, 13 are endemic for the Lesser Antilles.
<b>Aruba</b>	1 owl 1 bat 1 parakeet	1 rattle snake, 1 snake, 2 lizard			1	The rattlesnake is threatened with extinction, as are a number of tree species. Four endangered sea turtle species breed on Aruban beaches. Different endangered and internationally protected bird species visit Aruba frequently.
<b>Curaçao</b>						68 coral species = more than 70% of all Caribbean species.
<b>Sint Maarten</b>						3 IUCN Red List Species, 10 CITES Appendix I species and 89 Appendix II species.
<b>Bonaire</b>		Lizard (7 species, 2 endemic)	> 200 endemic sp. and ssp. of beetle			6 IUCN Red list species, 11 CITES Appendix I species and 94 Appendix II species.
<b>Saba</b>		1 lizard ( <i>Anolis sabanus</i> )				
<b>St Eustatius</b>		1 endemic ground lizard	The rare Caribbean native iguanas can be seen	1 (Statia Morning Glory)		3 species of endangered turtles (leatherback, green, and hawksbill) nest on Zeelandia Beach, the main nesting beach for them in the Caribbean Netherlands.

<sup>9</sup> Endemism refers to the phenomenon that a species occurs in only one country (or island or group of islands). The species is then said to be endemic to that country. Endemism confers a special responsibility on the country or territory concerned since it is the sole steward of the fortunes of that species

The table below provides the relative importance of the different habitats in the Caribbean OCTs.

Extent of habitats in the Caribbean region					
OCT	Man-groves	Sea-grass	Wet-lands	Dry shrub/forest	Remarks
Anguilla	○	○	●	○	Anguilla's salt ponds are of great importance. These wetlands are a habitat for various bird species. Woodland is sparse and degraded.
BVI	●	●	●	○	Steep-sided rugged topography (except Anegada). Rain forests on the upper slopes of Tortola and Virgin Gorda. Anegada's salt ponds are of great importance. These wetlands are a habitat for various species; the Western Salt Ponds are a declared Ramsar site.
Cayman	●	●	●	●	Unique geomorphology with a large central swamp. Significant loss of forest as a result of development and hurricanes.
Montserrat	○	●	○	○	45% of the forest was destroyed by Volcano, as well as coral. Mangroves have also been severely depleted due to anthropogenic activities.
Turks and Caicos	●	●	●	●	Extensive but degraded forest.
St Barthelemy	○	●	○	○	3 IBAS on satellite islands. 50 ha lagoons Mangroves have been destroyed for coastal development.
Aruba	●	●	●	○	Arid terrain, shallow coastal lagoons, Bubali pond and Spanish lake have mangroves, some of the reef islands on the south side of the island are arid and some are populated by mangroves, 4 IBAs.
Curaçao	●	○	○	○	Salinas, some wetlands and mangroves.
Sint Maarten	○	○	●		Large salt pond and fresh water lakes. Mangroves and sea grass beds rapidly disappearing due to development.
Bonaire	●	●	●	○	5 Ramsar sites, 6 IBAs, hyper saline lakes. Loss of forests.
Saba	○	○	○		Moist forest, 1 IBA.
St Eustatius		●	○	○	Moist forest, 2 IBAs.

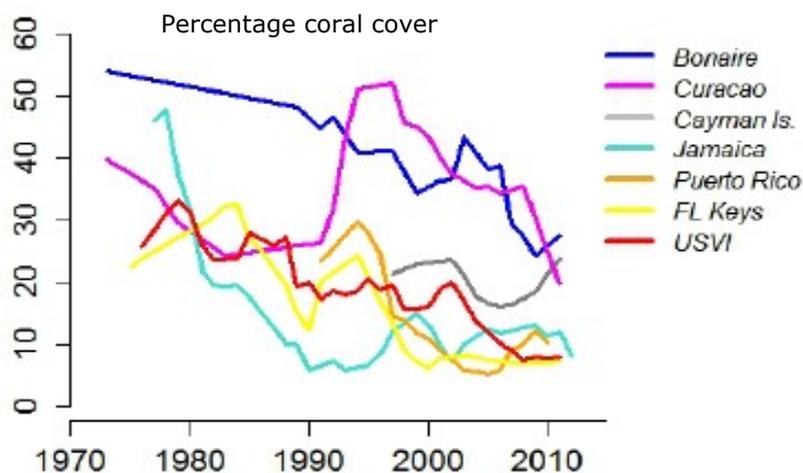
● Extensive   ○ Some   ○ None   IBA- Important Bird Area

The table below shows how widespread coral reefs occur on the territory and an indication of their state.

Coral reefs		
OCT	Occurrence	Remarks
Anguilla	●	Dubbed as the least damaged in the Eastern Caribbean <sup>10</sup>
BVI	●	Anegada Horseshoe Reef is the third largest barrier reef in the world
Cayman	●	Serious damage after 2005 bleaching episode.
Montserrat	○	Small patch and fringe coral reefs scattered around the island
Turks and Caicos	●	Dubbed as the least damaged in the Caribbean
St-Barthelemy	○	Poorly developed fringing reefs, degraded by terrestrial runoff, high mortality after bleaching in 2005, infections later
Aruba	●	Coral reefs are found all around the island. Coral reef at north coast still healthy.
Curaçao	●	Reefs suffered but are recovering. Nutrients pollution in places.
Sint Maarten	○	Threatened. A mixture of artificial reefs made by wrecks, old coral reefs, and encrusted rocks
Bonaire	●	Best preserved in region. Coral reefs around uninhabited Klein Bonaire are particularly well preserved. Nutrients pollution in places.
Saba	●	Saba Bank: new corals are growing
St Eustatius	●	Suffered bleaching and smothering

● Extensive  
○ Some  
○ None

<sup>10</sup> [https://www.iucn.org/about/union/secretariat/offices/europe/activities/overseas/overseas\\_list/overseas\\_anguilla.cfm](https://www.iucn.org/about/union/secretariat/offices/europe/activities/overseas/overseas_list/overseas_anguilla.cfm)



A 2012 Global Coral Reef Monitoring network workshop report depicts the evolution of the coral reefs in some OCTs and countries.<sup>11</sup> It is clearly seen that coral reefs are improving in Cayman after a decay in the mid of last decade, while in Bonaire and Curaçao there has been great degradation in recent years. In Bonaire the trend seems to start to revert.

All the islands are subject to the Ramsar Convention, and all contain at least one designated Ramsar site of international importance (sites on Anguilla and Montserrat not yet confirmed).

Protected Areas					
	Marine	Terrestrial	UNESCO WH	Ramsar	Remarks
<b>Anguilla</b>	6	1	2	0	Terrestrial PA owned by National Trust. Terrestrial protected areas are a particular difficulty because of the land ownership issue. No Ramsar site yet.
<b>BVI</b>	1	19			Protected Areas System Plan (2007-2017) <sup>12</sup> managed by various governmental organisations. Areas extend throughout the 60 islands and cays. Total land area 153.67 km <sup>2</sup> and total marine area 82,759 km <sup>2</sup> .
<b>Cayman</b>	10,255 ha of which 3,816 ha are no-take zones.	1,941 ha (7.35%) are protected			Marine parks well protected. National Conservation Law, 2013 was approved enabling establishment of protected areas. Up to now land protected areas were animal sanctuaries and land of the National Trust.
<b>Montserrat</b>		3 (30% of volcano safe zone)			No marine protected areas. Terrestrial protected areas: 2 forests, and 1 bird sanctuary which has been decimated by volcanic activity
<b>Turks and Caicos</b>	8 Marine + 4 Land and Sea	12		1	11 national parks, 11 nature reserves. Well established protected areas network
<b>St-Barthelemy</b>	1 (1,200 ha)	ZNIEFF (37 ha) and 42 ha of vegetation at Pointe à Toiny			ZNIEFF <sup>13</sup> located around island's 5 ponds. Uninhabited islets identified as Littoral Conservation Areas. Biotope Protection Orders in some areas (21 ha)
<b>Aruba</b>		1		1	National Park Arikok (est. 2000) with 3,400 ha covers 18 % of the country, 1 Ramsar site but not legally protected
<b>Curaçao</b>	(600 ha)	2	1	4	The Curaçao underwater Park (est. 1983) has no legal protection. Shete Boka: 470 ha of coastline plus Terrestrial Christoffel park (est. 1978) 2,300 ha and Shete Boka Park (est. 1974)

<sup>11</sup> [http://gcrmn.org/wp-content/uploads/2012/11/Tropical\\_Americas\\_Coral\\_Reef\\_Resilience\\_Final\\_Workshop\\_ReportC.pdf](http://gcrmn.org/wp-content/uploads/2012/11/Tropical_Americas_Coral_Reef_Resilience_Final_Workshop_ReportC.pdf) page 10

<sup>12</sup> <http://ess-caribbean.com/wp-content/uploads/2011/08/British-Virgin-Islands-Protected-Areas-System-Plan-2007-2017.pdf>

<sup>13</sup> Zone naturelle d'intérêt écologique, faunistique et floristique, a French system, with concrete criteria.

<b>Sint Maarten</b>	3,100 ha	None			Man of War Shoal Marine Park (est. 2010) is a home or migratory stopover for whales, dolphins, numerous species of shark, sea turtles and hundreds of fish species
<b>Bonaire</b>	1 (2,700 ha)	2		5 in marine park, 2 Terrestrial	Bonaire marine park (est. 1979) covers 100% of the waters surrounding Bonaire and Klein. Includes 2 no take areas. Terrestrial Washington Slagbaai National Park (1969) covers 19% of land area and Klein Bonaire island (est. 2000) 600 ha
<b>Saba</b>	2 (2,200 km <sup>2</sup> ) and 800 ha)	1			Saba Bank National Park (est. 2010) is the third largest of its kind in the region and received Particularly Sensitive Sea Area status in 2012. Saba National Marine Park (est. 1987) has 800 ha. Terrestrial: Saba National Park and Trails (est. 1999) 41 ha
<b>St Eustatius</b>	1 (2,750 ha)	1			St. Eustatius National Marine Park (est. 1996) protects an area from the high-water mark to a 30-metre depth contour around the island. Humpback whales regularly pass through on their migration route. Terrestrial : Quill / Boven National Park (est. 1997) 540 ha

#### 4 ISSUES AND THREATS

Many of the islands suffer similar problems. As stated above most of these territories are low lying and exposed to cyclones, hurricanes, and earthquakes, and two to volcanoes. The territories that due to topography are less exposed to sea level rise and beach erosion, are exposed to heavy rains, floods and landslides. Besides, as seen above the OCTs rely on tourism and tourists are very sensitive to the beauty of the landscape, and the existence of corals and beaches. The cost of inaction in the Caribbean has been estimated to be high.<sup>14</sup> Therefore climate change adaptation and Natural Disasters preparedness are a constant concern (and are not mentioned in the table below). One of the most developed regional initiatives in the region, which also include OCTs is indeed climate change and disaster risk management (see section 5). These initiatives should be continued and strengthened.

Main environmental challenges and problems in OCTs in Caribbean region				
OCT	Challenge / problem	Severity	Short description	Status 2007*
<b>Common to all</b>	Climate Change	Severe	Most of Caribbean OCTs are low lying and exposed to cyclones, hurricanes. The territories less exposed to sea level rise and beach erosion, are exposed to heavy rains, floods and landslides. There are on-going regional initiatives on climate change and disaster risk management that should be continued and strengthened.	
<b>Anguilla</b>	Coastal zone protection	Severe	Sedimentation runoff into coastal wetlands and coastal environment as a consequence of inadequate coastal development, in-filled ponds and unpaved roads. Beach erosion. Lack and/or exemption of ICZM <sup>15</sup> plans in the legislation related to coastal development	Severe
	Water supply and sanitation	Severe	Shortage of water resources. Lack of National groundwater/water management plan. Very limited sewage system. Contamination of groundwater and seawater.	Attention required
	Solid waste	Severe	Very weak management of domestic waste and hazardous waste (particularly electronic waste and bio-waste)	Attention required

<sup>14</sup> 5% of GDP for the whole Caribbean, in 2025. "The Caribbean and Climate change, the cost of inaction", 2008.

<http://ase.tufts.edu/gdae/pubs/rp/caribbean-full-eng.pdf>

<sup>15</sup> Intergrated Coastal Zone Management

Main environmental challenges and problems in OCTs in Caribbean region				
OCT	Challenge / problem	Severity	Short description	Status 2007*
BVI	Coastal zone protection	Severe	Tourist infrastructure development causes degradation of the forest ecosystem (water shed protection) which is contributing to beach erosion, greater flood events and increased sedimentation, degradation of the coral reefs and diminished water quality. The socio-economic implications include loss of property, heavier concentration of settlements, and decrease in fish stocks and decline in recreational marine activities.	Severe
	Energy climate change	Severe	Particularly: low-lying territory, vulnerable to beach erosion and to sea level rise, vulnerable to more intense hurricanes. For mitigation establish the best mix of renewable energies and update legislation	Severe
	Oil spills	Attention reqd.	Marine traffic, especially oil tankers and large cruise liners and cargo vessels in transit through coastal waters, present the risk of major oil pollution from collision, fire and explosion and from grounding. Lesser, but nevertheless serious, pollution is caused by vessels pumping out their bilges or otherwise illegally discharging oil.	Attention required
Cayman	Invasive species	Severe	Domestic and feral animals continue roaming and wild fed on protected species Rapid lionfish spread in the marine environment. Inadequate biosecurity protocols continue allowing import of invasive species.	Severe
	Waste and wastewater	Severe	The process on solid waste reform initiated in 2007 has been halted and the situation has continued to worsen. Landfill is over full and there is no recycling. Treated sewage injected into the groundwater and septic tank system are affecting corals due to nutrient arriving to the coast.	Moderate
	Coastal zone protection	Severe	Decreased water quality and increased turbidity due to upland and shoreline construction and modification, offshore dredging, clearance of fringing coastal mangroves and wetlands, sand removal from beaches. Increased fishing pressure removes important trophic groups, particularly herbivorous fish that have significant impacts to reef health and coral resilience.	Severe
Montserrat	Biodiversity	Severe	Key challenges facing biodiversity are climate change, habitat loss/fragmentation due to the expansion of agricultural practices and the built environment, invasive alien species and water harvesting.	Severe
	Invasive Alien Species	Moderate	Ungulates (pigs, goats, sheep, cattle) destroying habitat for the Montserrat Oriole. <i>Batrachochytrium dendrobatidis</i> (chytrid) impacting the mountain chicken. There are several invasive plants ( <i>Cryptostegia grandiflora</i> , <i>Casuarina equisetifolia</i> , <i>Syzygium cumini</i> , <i>Mimosa sp.</i> ). Invasive lionfish impacts native fish species	n.a.
	Coastal zone protection	Severe	Lack of an integrated coastal zone management plan to include an inventory and mapping of the coastal and marine assets and to undertake monitoring of the coastal and marine environment. Impacts of Climate Change on the coastal and marine zone via sea level rise, warmer and more acidic waters, increased frequency and intensity of tropical storms. Erosion of the coastline, loss of aesthetics and destruction of coral reefs and sea grass beds.	Moderate
	Solid and Liquid waste	Moderate	There are no recycling programs. There is a need for environmental education and awareness. The disposal of hazardous waste streams such as industrial waste, oils and abandoned cars is problematic. Need for a comprehensive strategy to address increased sewage load in the North Montserrat.	Moderate
	Capacity (human and financial)	Moderate	Insufficient human and financial resources to adequately staff, fund and equip environmental management agencies	n.a.

<b>Main environmental challenges and problems in OCTs in Caribbean region</b>				
<b>OCT</b>	<b>Challenge / problem</b>	<b>Severity</b>	<b>Short description</b>	<b>Status 2007*</b>
<b>TCI</b>	Coastal zone protection	Severe	Lack of a Physical Development Plan led to unplanned and haphazard development and progressive degradation in the environment There is no legal protection for threatened reptiles except within protected areas where all species are protected. Lack of enforcement is a major problem for species protection and conservation.	Severe
	Fisheries	Severe	Poor fishing practices and hurricane events of 2008 have resulted in 50% declines in stocks for conch and lobster. Declines are also noted in reef fish stocks and some fin fish populations. DEMA lacks enforcement capacity to be able to adequately patrol and enforce coastal areas and regulate fisheries	n.a
	Forest	Severe	Deforestation due to illegal charcoal manufacturing of undocumented persons. DEMA and other enforcement agencies lack capacity to enforce. This problem has increased exponentially due to inadequate border control.	n.a
	Water	Moderate	Need of funding and technical assistance to implement appropriate watershed management plans	n.a
	Waste	Moderate	Although the landfills on Providenciales and Grand Turk have been upgraded and improved the facilities are not lined and pose threats of toxic contamination to ground and coastal waters.	Attention required
<b>St Barthelemy</b>	Loss of biodiversity	Severe	Soil erosion due to rains, smothering and death of coral reefs due to run off and pollution. Less insects (and pollination) due to use of pesticides against mosquitoes. Vegetation eroded by overgrazing. Sea birds population declined because of rodents.	n.a.
	Fisheries	Severe	Fishing has increased on the continental shelf, from fishermen from other Caribbean islands incl. from Guadeloupe and Martinique. Urgent need for regionally agreed rules for sustainable use of marine resources.	n.a.
<b>Aruba</b>	Coastal zone protection	Moderate/severe at places	Coral communities threatened by intensified touristic and economic activities, diseases, invasive species, and polluted rainwater runoff (from construction, land clearances, polluted soils and economic and household waste). Cactus shrub vegetation disappearing and less turtles.	Attention reqd.
	Invasive species	Severe	Loss of local fauna and flora, marine and terrestrial. Unbalanced ecology. Loss of fisheries yield.	n.a.
	Degradation of natural habitats	Moderate	Cactus shrub vegetation disappearing. Natural/green areas outside the national park are decreasing due to economic development.	n.a.
	Freshwater	Severe	Dryness. Not enough freshwater, no/limited rain last years.	n.a.
	Waste	Severe	Landfills are overloaded	n.a.
<b>Curaçao</b>	Coastal zone protection	Severe	Decrease in the abundance of corals in the last 25 years due to non-treated waste water and pollution by industrial activities by Isla oil refinery and Aqualectra. Also effect on mangroves and sea grass beds.	n.a.
	Invasive species	Severe	A real problem but no policies yet: lionfish, agave, neem trees, and free roaming goats.	n.a.
	Water and air pollution	Severe	Causing health complaints around Schottegat bay (and refinery): high emissions of sulphur dioxide and particulates, and a 'tar lake'.	n.a.
<b>Sint Maarten</b>	Coastal zone protection	Severe	Due to ongoing development: building activity, habitat destruction, increased population density in low-income areas, mass tourism. Some appropriate national (Dutch) and island environmental regulations exist, but enforcement is limited by institutional capacity.	n.a.
	Waste	Severe	Lack of sewage and waste water treatment in many areas is polluting the groundwater and the sea. Poor waste management: landfills are reaching maximum capacity, increasing risks of groundwater contamination.	n.a.

Main environmental challenges and problems in OCTs in Caribbean region				
OCT	Challenge / problem	Severity	Short description	Status 2007*
	Energy dependency	Severe	Fully dependant on petroleum products. Power station uses heavy fuel oil. Plan for a new power plant using waste is ongoing.	n.a.
Bonaire	Coastal zone protection	Severe	Reefs are at the thresholds of polluted values at 10 sites due to wastewater pollution: nutrients, bacteria and organic matter. Also due to tourism, runoff and warm water episodes. Vegetation at risk due to overgrazing.	n.a.
	Waste	Severe	Landfills are full. Separate collection has started, new waste plan adopted but Bonaire is too small to process this waste on its own.	n.a.
Saba	Climate change	Moderate	More frequent and intense storms are a threat as the island is already frequently affected by hurricanes. Hurricane Hugo severely damaged the elfin forest and caused landslides. Hurricane/ tropical storm Earl 2010.	n.a.
	Coastal zone protection	Severe	Contaminated storm water by household pollution in ravines and debris from stone crusher runs into the sea at places, killing and smothering reefs. Animals endangered by hunting, free roaming animals detrimental for vegetation and rodents for birds (eggs).	n.a.
	Fresh water	Severe	Not enough water (there are two desalinisation plants).	n.a.
	Waste	Severe	The lack of proper waste disposal causes pollution of soil, the coast and the sea, also from accidents at the oil terminal. Waste dumped in sea at places.	n.a.
St Eustatius	Coastal Zone protection	Severe	Erosion and disturbance by increasing coastal development and inefficient waste removal systems. Debris, sand, cement, stones and other runoff of coastal development, land clearing techniques, and erosion are washed into the sea, causing serious damage or mortality to corals. Anchoring of vessels in the Marine Park damages coral reefs. Pollution from ships including ballast waters. An expansion of the terminal to another location was not allowed recently.	n.a.
	Invasive Species	Severe	The Mexican creeper ( <i>Antigonon leptopus</i> ) has invaded large areas of nature, suffocating all other vegetation. <sup>16</sup> The lionfish arrived in 2011 and is now established, though still in relatively low numbers. The African giant snail and a new invasive species of sea grass ( <i>Halophila stipulacea</i> ) arrived in 2013.	n.a.
	Erosion	Moderate	Particularly goats, sheep, cattle, pigs and chickens cause a lot of degradation of the vegetation, which causes erosion. The latter is a serious problem because the soil of the Kultuurvlakte is extremely prone to erosion. Donkeys are now fenced in.	n.a.

All the Caribbean OCTs are currently subject to rapid development, and in particular a fast growing tourist industry which forms the backbone of their economy. In the case of Montserrat, although access is still not as it used to be before the volcanic activity, port and airport access infrastructure and housing stock has increased significantly in the past 5 years (reconstruction and relocation of population). And to varying degrees they are all facing the dilemma of reconciling this rapid development with preserving the pristine beauty, natural resources and wildlife both terrestrial and marine, which are so important in attracting the tourists in the first place.

As can be seen in the table above, development and tourism place multiple stresses on the fragile ecosystems found on these islands:

- More buildings often in valuable nature areas or involving damage to ecosystems,
- Increased sewage load, much of which is pumped either untreated or partially treated into the sea, leading to algae formation, de-oxygenation of the seawater and distress and destruction of coral reefs;

16 <http://www.statiapark.org/downloads/downloads/Corallita%20pilot%20project-results%20recommendations-jan07.pdf>

- Increasing solid waste loads, requiring new waste treatment facilities and probably, increased discharge of contaminated leachates into the sea.

All small island states face special problems in relation to waste management: 1- lack of the critical size for modern facilities for safe processing solid waste (including hazardous) in sanitary landfills and incinerators; 2- lack of public awareness about waste, need for prevention and reduction; 3- making recycling and composting feasible.; 4- hurricanes can generate large volumes of waste and debris, which may be toxic, e.g. timber treated with preservatives. Several Caribbean OCTs are finding solutions and enacting policies. However, there is scope for a regional action and synergies between the OCTs, allowing for some scale and to value waste.

Well-functioning sewers for wastewater collection to be treated in water treatment plants are expensive infrastructures and not everywhere available to households and hotels in the Caribbean. Septic tanks and Packaged Sewerage Treatment Plants often service residential developments, hotels and industrial estates, but the systems are often poorly maintained and deliver raw sewage into ground and surface water. Hotels discharge untreated sewage into inshore waters throughout the region (often from inoperative treatment plants), affecting coastal wetlands, coral reefs and seagrass beds.

## 5 REVIEW OF ENVIRONMENTAL GOVERNANCE

### 5.1 ENVIRONMENTAL MANAGEMENT ADMINISTRATION

Environmental management administration in OCTs in Caribbean region		
OCT	Summary of government administrative capacity	NGOs, etc.
<b>Anguilla</b>	Department of environment with 6 technical staff Environmental Health Department deals with solid waste Water Authority water supply. There is a Department of Disaster Management. Anguilla Renewable Energy Office established in 2008.	Anguilla National Trust is a statutory body with a conservation mission. Although non-governmental it receive some government funding and works closely with government. Schools active in awareness-raising.
<b>BVI</b>	Conservation and Fisheries Department overall responsibility for environmental protection, nature conservation and fisheries. National Parks Trust designates protected areas. Solid Waste Department falls under the Ministry of Health and Social Development. Water and Sewerage Department under the Ministry of Communication and Works. <i>Planning Authority</i> grants permission for all developments and is responsible for economic and social planning. <i>Department of Disaster Management</i> the Deputy Governor's Office	National Parks Trust is a statutory body with a conservation mission. Although non-governmental it receives some government funding and works closely with government and runs national parks. One other US-based NGO active in BVI.
<b>Cayman</b>	Department of Environment (environment and fisheries), Department of Environmental Health (waste), Water Authority, the Central Planning Authority responsible for Development control. Ministry of Home and Community Affairs deals with Hazards management	National Trust is a statutory body which acquires land for conservation. Also has environmental education and awareness-building activity.
<b>Mont-serrat</b>	Ministry of Agriculture, Lands, Housing and Environment (MALHE) is the lead ministry for policy on environment and natural resources management. It has 6 major sections including – Administration, Environmental Management, Agriculture and Fisheries, Lands and Survey, Physical Planning and Housing. It has 87 staff and yearly budget of about, € 1.88 million one third of which is for the environment. Department of Environmental Health, within the Ministry of Education, Health and Community Services, is responsible for management of solid and liquid waste and promotes coastal water quality standards. There is Disaster Management Coordinating Agency that reports to the Governor's office and has responsibility for oil spill management	National Trust is the main conservation NGO, with a mandate to manage and preserve natural resources. It is also involved in education and awareness campaigns and trail development.

Environmental management administration in OCTs in Caribbean region		
OCT	Summary of government administrative capacity	NGOs, etc.
<b>TCI</b>	Ministry of Environment and Home Affairs comprises <i>inter alia</i> the Planning Department, the Department of Agriculture and the Department of Environment and Maritime Affairs. DEMA counts with 25 staff and an annual budget of \$1,213,055. Planning Department counts with 14 staff and an annual budget of \$ 599,215. Department of Disaster Management and Emergencies (DDME) was established in 2001, as a department of the Chief Secretary's Office	National Trust is a statutory body with a conservation mission. Receives no budgetary funding from government. Manages some protected areas, does education and public awareness
<b>St Barthelemy</b>	A Territorial Agency for the Environment was created in May 2013, with an Administrative Council (12 members), a Scientific Council (3) and an office (3).	Two NGOs have a seat in the Admin. Council.
<b>Aruba</b>	A Directorate of Nature and Environment (DNE) created in 2012 and since January 2014 it resorts under the Ministry of Economic affairs, Communication, Energy and Environment. Also: statistical office, meteorological service and city inspectors.	The National Integrated Strategic Plan (NISP) of 2010 involves civil society. There are NGOs which do awareness-raising, litter clearance, etc. National Park Arikok foundation manages the national Park.
<b>Curaçao</b>	Inside the Ministry of Public Health, Environment and Nature there is an Environment and Nature Department with 7 policy staff members and 22 inspectors and 8 monitors of air and water quality.	Many NGOs, including CARMABI Foundation that manages nine protected areas and organizes activities and projects in these parks. The NGO SMOC has launched many legal appeals against the oil refinery.
<b>Sint Maarten</b>	Ministry of Public Housing, Spatial Planning, Environment and Infrastructures with policy advisors, incl. for nature and environment.	Many NGOs, incl. The Nature Foundation Sint Maarten that manages the Marine Park.
<b>Bonaire, Saba, Sint Eustatius</b>	Bonaire has a Directorate Space and Development. Saba has a planning bureau and a public works department. St Eustatius has a Directorate Economy and Infrastructure and one for Inspection and Control.  These 3 special municipalities of the Netherlands receive expert support from the Dutch Ministry of Economic Affairs (incl. nature) and Infrastructure (incl. environment).	Stinapa (a foundation) manages the Marine Park on Bonaire. Saba Conservation Foundation manages the Saba Bank Mari Park. STENAPA (St Eustatius National Park Foundation) manages the Marine and Terrestrial parks (and has a staff of 8). Local NGOs and WWF, Birdlife and DCNA (Dutch Caribbean Nature Alliance) which works for all 6 Dutch OCTs.

## 5.2 POLICIES, STRATEGIES, PLANS, AWARENESS AND MONITORING

OCT	Sustainable Developmt	Environmt	Biodiversity	Climate Change	Spatial planning	Marine/ Fisheries	Disaster Risk Reduction	Other	Remarks
<b>Anguilla</b>		✓	✓	+/-			✓	✓	Has NBSAP and Invasive species action plan. Lion fish response plan; National energy policy 2009; draft Climate Change policy. Social, Economic and Environmental Considerations into National Development Policies, Plans and Programmes is lacking.
<b>BVI</b>			(withi n Prote cted Areas)	✓	+/-	✓	✓		All of the following plans have been approved by Government: - VI Comprehensive Disaster Management Strategy and Implementation Plan and the VICDM Policy; - Protected Areas System Plan 2007 – 2017 addresses marine and fisheries areas for management; - Climate Change Policy 2012 under the Ministry of Natural Resources and Labour addresses CC adaptation and mitigation

									measures for the Territory. EIA under the Physical Planning Act can be requested and it is mandatory based on the type of development project undertaken. Road Town Physical Development Plan 2005-2020. National Oil Spill Contingency Plan (2006)
<b>Cayman</b>		✓	✓	✓	+/-		✓	✓	No NBSAP but yes Protected Areas action Plan. Road Town Physical Development Plan 2005-2020. National Oil Spill Contingency Plan (2006). CI climate change policy (2011).
<b>Montserrat</b>	✓	+/-		+/-	+/-			+/-	Sustainable Development Plan 2008-2020; National Environmental Management Strategy. Public Participation Policy. Physical Development Plan (PDP) for North Montserrat 2012-2022. Climate Change Adaptation Policy (2011). Species plans for 6 species
<b>Turks and Caicos</b>	✓	✓	+/-	✓	+/-		✓	✓	10-Year National Socio-economic Development Strategy - NSDS (2008-2017). Plan for Biodiversity Management and Sustainable Development around the Turks and Caicos Ramsar Site. National Climate Change Adaptation Strategy and Action Plan in preparation.
<b>St Barthelemy</b>		✓	✓		+/-	✓	+/-		New waste water treatment plant in 2012. Subsidies for solar boilers and panels. Spatial planning for part of the coast.
<b>Aruba</b>	✓	New draft	New draft					+/-	National Action Plan 2010-2013 (NISAP) has been adopted in 2010 and includes sustainable development. Commitments for reducing use of fossil fuels. Directorate DNE is drafting a Nature and Environment Policy plan with 16 themes, which will be publicly discussed in June 2014. The Arikok National Park provides for 18% of the island's area to be reserved for nature conservation, but it is not known whether, for example, there is a management plan for the Park.
<b>Curaçao</b>								+/-	'Old' policies from before 10-10-10 are still in force. Govt' programme for 2013-2016 deals among others with a healthy living environment. Vision 2025 deals mostly with higher standards of living and education.
<b>Sint Maarten</b>		New draft	New draft		✓			+/-	New Nature Policy Plan and new Environmental Policy Plans drafted. EIA included. An adopted 'Structure Vision' includes zoning and measures to protect nature and environment. A Waste to power plant is being planned.
<b>Bonaire, Saba, St Eustatius</b>									Collectively the three islands are known as the Caribbean Netherlands and are the focus of a Nature Policy Plan 2013-2017. <sup>17</sup> The plan was made in close consultation with them.

#### Definitions:

- Sustainable development – if environment is included in the overall territory development plan or strategy;
- Environment – water and sanitation and waste plans as well;
- Biodiversity – protected areas, species, strategy on invasive, etc.;
- Climate change – policy, strategy, or adaptation/mitigation programmes;
- Spatial planning – considering as well coastal zone management;

<sup>17</sup> Nature Policy Plan- Caribbean Netherlands 2013-2017: [http://www.dcnanature.org/wp-content/uploads/2013/10/EZ\\_BO\\_NaturePolicyPlan%20Car.NL\\_ENG\\_2.pdf](http://www.dcnanature.org/wp-content/uploads/2013/10/EZ_BO_NaturePolicyPlan%20Car.NL_ENG_2.pdf)

- Marine / Fisheries – strategy/plan on marine issues (blue growth) and/or fisheries master plans or management programmes;
- Other – if at least one of the following: forest, renewable energy and/or energy efficiency;
- Remarks - plans on specific environmental components (protected areas, waste...).

### 5.3 LEGAL FRAMEWORK

The OCTs cannot sign MEAs in their own right. But OCTs can take on the responsibilities of an MEA if the associated sovereign state (in this case the United Kingdom, France or the Netherlands) has signed the MEA and asks, at the request of the OCT, that the MEA is extended to the territory of the OCT. If this happens, and if the OCT complies with the obligations of the treaties concerned and implements them fully, it can be an effective way of protecting its natural capital.

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

OCT	MEAs Party	Remarks
<b>Anguilla</b>	World Heritage Convention, Ramsar Convention, International Convention on the Regulation of Whaling	Aruba is considering the ask for the extension of 10 MEAs
<b>British Virgin islands</b>	CBD, CITES, Ramsar, CMS, London Convention (Dumping at Sea), UNCLOS, Straddling Fish Stocks and Highly Migratory Fish Stocks, World Heritage Convention	The Caribbean Action Plan in World Heritage (2004-2014) was signed by BVI
<b>Cayman Islands</b>	CBD, Ramsar, CITES, Migratory Species, Climate Change, London (Marine Pollution)	The National Conservation Law has been enacted enabling implementation of CBD. The territory asked for UNFCCC/KYOTO to be extended to it in September 2005.
<b>Montserrat</b>	World Heritage, Ramsar, CITES, CMS, Vienna Convention (Ozone Layer, and Montreal Protocol, London Convention (also ratification of amendments and protocol), Marine pollution conventions and protocols oil and non-oil, UNCCD, Regulation of Whaling	Two Ramsar sites proposed
<b>Turks and Caicos</b>	World Heritage, Ramsar, CITES, CMS, Nagoya Protocol, London Convention, MARPOL	Considering extending CBD
<b>Saint-Barthelemy</b>		
<b>Aruba</b>	CITES	Aruba plans to have Cartagena Protocol and is also considering the Climate Change Convention and Kyoto Protocol
<b>Curaçao</b>	CBD, CMS, CITES, Ramsar, Basel, MARPOL, ICCAT Convention	
<b>Sint Maarten</b>	Basel, CMS, CITES, Ramsar, Rotterdam	
<b>Bonaire</b>	CBD, CMS, CITES, Ramsar	Many of these MEAs are not yet fully implemented.
<b>Saba</b>	CMS, CITES	
<b>St Eustatius</b>	CITES	

\*Including Oil Spills Protocol

Although the OCTs are all participating in some MEAs, these are not always fully implemented. For example only two of the Caribbean OCTs (BVI and Cayman) have signed the CBD, and neither of these has yet implemented it fully.

Several regional conventions have been developed by UNEP and SPREP that are relevant to coral reef conservation. All countries have ratified the following conventions:

Name of convention or agreement	Main goal	Parties
Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention)	To provide the legal framework for cooperative regional and national actions in the Caribbean. The Convention is supplemented by the Oil Spills Protocol, the SPAW Protocol and the LBS Protocol	Curaçao, Sint Maarten, Bonaire, Saba, St Eustatius, BVI, Cayman Is, Turks and Caicos Is
Specially Protected Areas and Wildlife (SPAW Protocol)	To assist with regional implementation of the broader and more demanding global Convention on Biological Diversity (CBD).	Aruba, Sint Maarten, Bonaire, Saba and St Eustatius, BVI
Oil Spill Protocol	To ensure means of responding to oil spill including relevant legislation, contingency plans, capability to respond to an oil spill incident and the designation of a national authority in the countries and territories of the Wider Caribbean Region.	Sint Maarten, Saba, BVI
Pollution from Land-Based sources LBS Protocol	To implement article 7 of the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region concerning pollution from land-based sources and activities.	Bonaire implemented but not yet ratified, BVI
Inter-American Convention (IAC) for the Protection and Conservation of Sea Turtles	Promotes the protection, conservation and recovery of the populations of sea turtles and those habitats on which they depend.	Sint Maarten, Bonaire, Saba

The following table provides a notion of the environmental components covered by local legislation in each OCT.

Theme	ANG	BVI	CAY	MON	TCI	ARU	CUW	SXM	B O N	SA B	St Eus	BLM
Nature protection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Conservation of species	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sites and habitats						2 parks	2 terrestr. parks	1 marine park	2 parks	1 marine park	3 parks	
Terrestrial & Marine development control	✓	+/- not complete regime		✓	✓	+/- moratorium on building hotels	?	✓	Obligation to make spatial physical plan		own /	No spatial plan
Coastal /Beach Protection	✓	✓		✓	✓							
Strategic Environmental assessment and EIA			+/- with National Conservation Legislation	✓ (protocols for monitoring and enforcement needed)	✓	✓	✓	✓	✓			✓
Integrated Pollution Prevention and Control					✓	Limited to nuisance	New being drafted	?	Obligation to make spatial / physical plans			?
Air							? yes for measuring					Measurement
Water and	✓	✓ oil	✓	✓	✓ +	+/-	?					✓

Theme	ANG	BVI	CAY	MON	TCI	ARU	CUW	SXM	B O N	SA B	St Eus	BLM
wastewater		pollution by shipping			Marine pollution							
Waste (oils, clinical, construction and demolition) Landfills		+/- Derelict vehicles only	+/- Draft version only			For pollution yes, but not for waste as such	yes but not actively implemented	✓				✓
Noise		✓	+/- outdated			✓						
Hazardous Substances (chemicals)			✓	✓ pesticides		✓	yes but not actively implemented	✓				?
Remediation				+/- Wrecks and ships		no		?				?
IUU fisheries	✓	✓		✓	✓	✓	✓	✓				
Other relevant sectorial legislation with environment related requirements				Disaster preparedness	Limited application of EIA							

## 6 COOPERATION

### 6.1 RELEVANT REGIONAL ORGANISATIONS AND PROGRAMMES

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

Name	OCT members	Other members	Remarks
Association of Caribbean States (ACS)	Associated members : Aruba, Curaçao, Sint Maarten  NL on behalf of Bonaire, Saba, St Eustatius,  FR on behalf of St-Barthelemy	25 other countries including Latin American countries  Associated: France on behalf of French Guiana, St Martin, Guadeloupe, Martinique	<b>Created:</b> 1994. <b>Goal:</b> strengthening regional co-operation and integration, creating an enhanced economic space, preserving the environmental integrity of the Caribbean, promoting the sustainable development of the Greater Caribbean. <b>Activities:</b> 1- prevention and mitigation of natural risks: incorporating knowledge on prevention in education and planning, also on effects of disasters. 2- Sustainable tourism: achieve the establishment of the Sustainable Tourism Zone of the Caribbean (STZC) involving the certification of countries adopting sustainable tourism. Also work on indicators for sustainable tourism.

Name	OCT members	Other members	Remarks
Forum of the Caribbean ACP States (CARIFORUM)	OCTs are observers	Fifteen independent countries in the Caribbean region	<b>Created</b> in 1992 <b>Goal:</b> bringing together CARICOM members and ACP countries in the region with a view to better coordination of EU support and improved regional integration and cooperation. In 2011, the Caribbean Community Council of Ministers decided that the new CARIFORUM structure should include both the Economic Partnership Agreement (EPA) Implementation Unit and the traditional programming and development co-operation function, with its own dedicated staff.
Caribbean Community (CARICOM)	Montserrat Associated: ANG, BVI, CAY, TCI	Most former British colonies in Caribbean plus, recently, Suriname and Haiti	<b>Created</b> in 1973 as a free trade area (incl. Montserrat). Other British OCTs became associated members between 1991 and 2002. <b>Goal</b> of CARICOM Task Force on Climate Change and Development: facilitate and coordinate technical work, advise on policy directions, support CARICOM Member States in their preparations for key regional, hemispheric and other global forums and in their negotiations with international development partners.
Organisation of Eastern Caribbean States (OECS).	Member : Montserrat Associated members : Anguilla, BVI	Antigua and Barbuda, Dominica, Grenada, St Kitts and Nevis, St Lucia, St Vincent and Grenadines	<b>Created</b> in 1981, revised treaty signed in 2010. The Treaty establishes the OECS economic union, making possible the creation of a single financial and economic space. <b>Goal:</b> economic harmonisation and integration, protection of human and legal rights, and the encouragement of good governance. <b>Activities:</b> there is an Environment and Sustainable Development Unit (OECS-ESDU) and an RRHCC (Reduce risks to human and natural assets from climate change) project. As part of this project, the EU is financing a 2014 'Global Climate Change Alliance Project on Climate Change Adaptation and Sustainable Land Management in the Eastern Caribbean' for € 10 million for Implementation of specific physical adaptation measures, including soil and land stabilisation, river and sea defence, forest and ecosystem restoration.
Caribbean Community Climate Change Centre (CCCCC)	As above		<b>Created</b> in 2005. <b>Goal:</b> coordinate the region's response to climate change, working on effective solutions and projects to combat the environmental impacts of climate change and global warming. <b>Activities:</b> climate change-related policy advice and guidelines to the Caribbean Community (CARICOM) Member States through the CARICOM Secretariat and to the UK Caribbean OCTs. Clearing House for regional climate change data and documentation.
CDEMA (Caribbean Disaster Emergency Management Agency)	ANG, BVI, MSR, TCI	11 other CARICOM members	<b>Created</b> in 2009, an agency of CARICOM. <b>Goal:</b> CDM (Comprehensive Disaster Management) and reducing risk and losses which come with disasters, such as natural and technical hazards and risks and losses associated with climate change. <b>Activities:</b> mobilising and coordinating disaster relief; providing immediate and coordinated response by means of emergency disaster relief to any affected States
Caribbean Environmental Health Institute (CEHI)	ANG, BVI, MSR, TCI	12 other CARICOM members	<b>Created</b> in 1979 as a technical institute of CARICOM. <b>Goal:</b> Focus on the impacts of human activity on the environment and consequent effects on human health (and socio-economic development) <b>Activities:</b> providing technical and advisory services to its 16 Member States.
Pan American Health Organisation (PAHO)	All OCTs in region	FR, UK and NL are 'participating states'	<b>Created</b> in 1902. International public health agency for the Americas, regional office of WHO. Supports country efforts in the development of affordable and sustainable water and sanitation services and solid waste disposal.
Caribbean Tourism Organisation	CAY Montserrat		<b>Created</b> in 1989. <b>Goal:</b> develop sustainable tourism for the economic and social benefit of Caribbean people. It is made up of government and private sector reps involved with tourism across the Caribbean. CTO collects and disseminates research and data on the development of the regional industry, gives scholarships and organises a yearly conference on sustainable tourism.
Caribbean Natural Resources Institute (CANARI)		Non-profit organisation	<b>Created</b> in 1989. <b>Goal:</b> independent research to analyse and promote the participatory management of natural resources in the islands of the Caribbean. <b>Activities:</b> stimulate the participation of stakeholders in ecosystem management and develop appropriate responses to climate change, through participatory action research and application and dissemination of lessons learned. CANARI is the Regional Implementation Team (RIT) for the Critical Ecosystem Partnership Fund (CEPF) <sup>18</sup> .

18 The Critical Ecosystem Partnership Fund unites seven global leaders who are committed to enabling nongovernmental and private sector

Name	OCT members	Other members	Remarks
Wider Carib. Sea Turtle Cons. Network (WIDECAST)	All OCTs in the region		International scientific network comprised of volunteer country coordinators (sea turtle experts and community-based conservationists), an international Board of Scientific Advisors, and partner organizations in more than 40 Caribbean States and territories. Annual meetings.
Dutch Caribbean Nature Alliance (DCNA)		Coalition of Environmental organizations from all Dutch OCTs	<b>Created</b> in 2005, non-profit organisation. <b>Goal:</b> protect the natural environment and to promote sustainable management of natural resources on the six Dutch Caribbean islands, that contain the richest biodiversity in the Kingdom of the Netherlands. <b>Activities:</b> assists the 6 organisations that have been mandated to manage the protected areas within the Dutch Caribbean: research, database, meetings, training, work plans
E. Caribbean Central Bank (ECCB)	ANG, MSR	6 other E. Caribbean states	<b>Created</b> in 1983 as the Central bank of the OECS countries which all share a common currency, the Eastern Caribbean dollar. Goal: To maintain the stability of the Eastern Caribbean dollar and the integrity of the banking system in order to facilitate the balanced growth and development of Member States.
Caribbean Development Bank (CDB)	ANG, BVI, CAY, MSR, TCI	13 other former British colonies + Suriname, UK, Italy, Germany	<b>Created</b> in 1970. Development Bank for the Caribbean. Makes loans for development purposes to its members
World Bank	None	12 Caribbean countries	The Caribbean Regional Pilot Program for Climate Resilience (PPCR); is geared toward vulnerable countries and small island developing states. The PPCR was set up in 2008 as a collaborative effort among five multilateral development banks to help bridge the gap in financing and learning for climate change action. Example of project: the Regional Disaster Vulnerability Reduction Project protecting Grenada/ Saint Vincent and the Grenadines from the effects of natural disasters with 'Climate-Safe Infrastructure', a 5 years project, costing US\$ 50 million, benefitting more than 200,000 people).

It should be noted that organisations tend to be rather segregated along linguistic/historical/cultural lines.

## 6.2 RELEVANT REGIONAL INITIATIVES AND PROJECTS

As seen in the previous section (relevant regional organisations and programmes), the countries and territories organised themselves in several institutions, some which (e.g. CARICOM) have established operational bodies for direct action. The international community, donors, development banks, NGOs, foundations, etc., often work with these organizations or their operational bodies on a regional level. It should be highlighted that while the CARICOM and the sub-regional Organization of East Caribbean States are integration organisations bound by treaties, CARIFORUM and ACS are modes of regional cooperation.

The setting is quite complex and a recent paper<sup>19</sup> highlights that “The policies and activities of the European Union (EU) in the Caribbean are a complex mix of overlapping but distinct programmes implemented through an ‘alphabet soup’ of regional organizations which themselves have overlapping responsibilities and areas of competence.”

The EU itself relates to the Caribbean OCTs through different delegations, the *Delegation of the European Union to Jamaica, Belize, The Bahamas, Turks and Caicos Islands and Cayman Islands* deals with the two referred OCTs, the *Delegation to Barbados and the Eastern Caribbean* deals with Anguilla, Montserrat and the British Virgin Islands, and the *Delegation to Guyana, Suriname, Trinidad and Tobago and for the*

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organizations to help protect vital ecosystems. The participants of the fund are the Global Environmental Facility (GEF), the European Union, the World Bank, the French Cooperation Agency, the Japan Government, Conservation International (NGO) and the The John D. and Catherine T. MacArthur Foundation. Grant recipients range from small farming cooperatives and community associations to private sector partners and international organizations in developing and transitional countries engaged on conserving their environment and influencing decisions that affect lives, working in network, promoting synergies and eliminating duplications. (<http://www.cepf.net/>)

<sup>19</sup> Sutton, Paul, The European Union and the Caribbean Region: Situating the Caribbean Overseas Countries and Territories. European Review of Latin American and Caribbean Studies 93, October 2012 | 79-94

*Dutch Overseas Countries and Territories* deals with Aruba, Curaçao, Sint Maarten, Bonaire, Saba and St Eustatius. Saint-Barthelemy has just joined the ODA.

The EU institutions (Commission plus EU Member States) have been the largest donor to the Caribbean region since 1975. Focus has been on implementation of Cotonou Agreement, namely Caribbean achievement of the Millennium Development Goals (Article 1); integrating ACP countries into the world economy by promoting economic cooperation, the free movement of persons, goods and capital, the diversification of economies, and trade expansion (Article 28); and co-operation on regional economic integration (Articles 29, 30 and 35). The Cotonou Agreement is implemented through the EDF, which is funded by EU Member States outside the EU budget process. Development co-operation under the EDF has been guided since 1994 through the CARIFORUM.

In addition to the Cotonou Agreement, the relationship is complemented<sup>20</sup> by the EU-CARIFORUM Economic Partnership Agreement for trade, and the Joint Caribbean EU Partnership Strategy. This latter identifies five key areas for EU-CARIFORUM and intra-CARIFORUM regional cooperation, including Regional Integration, Climate Change and Natural Disasters, Joint Action in Multilateral Fora, as well as Crime and Security and Haiti's Reconstruction. Agreements and fora that help the EU and the Caribbean countries to work towards common goals include: Joint Caribbean-EU Partnership Strategy (2012); EU-CARIFORUM Economic and Partnership Agreement (signed in 2008). Specialized meetings on drugs and migration; and EU-RIO Group - Caribbean countries are either full members or represented.

For the period 2008-2013, the European Development Fund (EDF) made provided approximately € 938 million available for the implementation of the National and the Caribbean regional indicative programmes. Of that amount, about € 72.09 million was allocated to specific Caribbean OCTs and 15M€ for a regional project (see below). For specific OCTs, the 10<sup>th</sup> EDF the indicative allocation was as follows: Aruba (€ 8.88 million), former Netherlands Antilles (€24 million), Anguilla (€ 11.7 million), Montserrat (€ 15.66 million) and Turks and Caicos (€11.85 million). The amounts for the 11<sup>th</sup> EDF are already decided, and the eligible OCTs are currently preparing the single programming documents for the new programming period. Due to their high GDP per capita<sup>21</sup>, some OCTs are not eligible for territorial allocations under the European Development Fund (EDF). However, they are eligible for non-programmable aid. For instance, Cayman Islands received from the 9<sup>th</sup> EDF about € 7 M in aid for the reconstruction and rehabilitation of houses that were destroyed by Hurricane Ivan, and € 4.5 million for a Digital Early Warning System which will fill in a gap in the Regional radar system.

Regardless of their GDP, the OCTs can access funding or technical assistance under 'horizontal'<sup>22</sup> European programmes (e.g. research, education and training, innovation and competitiveness, and culture and media among others). For instance under the Technical Cooperation Facility, the OCTA is being supported for 3 years, and several regional (and global) training, studies and seminars are being held. Topics include waste management, biodiversity and conservation, environmental impact assessment aquaculture, renewable energies. However, many OCTs do not take advantage of the horizontal funding due to different reasons – often evoking time consuming procedures and their shortage of human resources.

All the Caribbean OCTs are also eligible for the wider Caribbean Regional Indicative programme (CRIP) and others mentioned above channelled through the CARIFORUM. Humanitarian and Emergency funding is also available and an indicative allocation with the European Investment Bank. Therefore it is hard to account for all the funding received by the OCTs. Anyway, some actions at regional level include:

- EU contribution to the Caribbean catastrophe risk insurance facility;
- The Regional Risk Reduction Initiative (2009-2011) involving the British and Dutch Caribbean OCTs implemented by UNDP under a contribution agreement with the EU23;

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20 [nao.dm/index.php/projects](http://nao.dm/index.php/projects)

21 The EU average GDP per capita in 2012 was €25500.

22 EDF10 – Single Programming Document – Regional Cooperation Strategies for Overseas Countries and Territories

23 This project provided a network of regional infrastructure, programmes, policies and protocols OCTs to strengthen their capacity to predict and prepare for natural hazards, thus improving resilience and reduce risk and subsequent loss.

- Management of protected areas for environmental purposes in the Cayman islands, BVI and Turks and Caicos Islands (€2.475 million);
- Strengthening of medical laboratory services in the Caribbean OCTs (€1.138 million);
- Automated system for customs data in Anguilla, Montserrat and the Turks and Caicos Islands (€1.38 million);
- The Caribbean 10th EDF 15M€ regional programme on Strengthening the Development of Small and Medium Enterprises (SMEs) of the OCTs in the Caribbean Region implemented from the British Virgin Islands.
- Turks and Caicos Islands have received € 4.3 million (B-envelope) following hurricane Ike.
- Started January 2014 Global Climate Change Alliance Project on Climate Change Adaptation and Sustainable Land Management in the Eastern Caribbean<sup>24</sup> in OECS Member States (including Anguilla, British Virgin Islands, Montserrat) for € 10 million.

The three frameworks through which the EU engage with the Caribbean and directly or indirectly address the concerns of the Caribbean OCT have not yet focused on promoting coordination and synergies between the Caribbean countries and territories. The 2013 Overseas Association Decision, however, does promote a stronger regional dimension to OCT-EU relations and major studies on EU-OCT relations endorse it as a practical way forward<sup>24</sup>. The experience of the last decades indicates that in order for this process to progress, efforts are also required coming from the Caribbean OCTs themselves, to take the initiative in their own interest. In November 1993 Chief Minister Lavity Stouff of the BVI organized the first meeting of the Caribbean OCTs associated with the EU in Tortola, to explore closer cooperation.

At the 7<sup>th</sup> OCT-EU Forum held in the Cayman Islands in November 2008 the CARICOM/CARIFORUM and the French Outermost Regions in the Caribbean, as well as the relevant Member States and the Commission agreed on the intention to create a regional OCTs, ACPs and Outermost Regions cooperation platform in the Caribbean, and decided on a pilot-project on civil protection to create synergies through increased cooperation<sup>25</sup>. Despite regional work on disaster risk reduction, the envisaged platform was not established. Besides, the Joint Caribbean-EU Partnership Strategy (JCEUS) has been progressing slowly among the independent states and the Caribbean OCTs, due to their constitutional status. They cannot participate at such a high level and have been participating only collectively through the OCTA. The establishment of a dedicated mechanism to facilitate dialogue among all the Caribbean OCTs and a specific EU-Caribbean OCT regional arrangement can be envisaged under the new ODA, and can be expected to have a real impact.

There is also bilateral cooperation between the UK, the Netherlands, and France and the Countries and Territories linked to them. However, this cooperation tends restricted to some group of OCTs linked with the respective MS. Some UK initiatives include the JNCC initiatives such as Environmental Economics with the UK Overseas Territories in the by the EEWOC Caribbean developed and provided tools, training and technical support. This allows Caribbean Overseas Territories to use environmental valuation to inform and improve decision-making. The 2011 Biodiversity Snapshot (for the whole UK OCTs) is another example. To provide a central access 'place' where as many links as possible to other sources of biodiversity information about the OTs and CDs can be found.

Other major donors in the region include UNDP, United Nations Population Fund (UNFPA), UNAIDS, World Bank, International Bank for Reconstruction and Development (IBRD), InterAmerican Development Bank (IDB), Caribbean Development Bank, UK-DFID, USAID, CIDA, the Dominican Republic, Italy, Spain and Japan.

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<sup>24</sup> E2011 Regional Level Evaluation of the Commission of the European Union's co-operation with the Caribbean Region

<sup>25</sup> European Union Delegation of Barbados and the Eastern Caribbean (2009) Press Release: European Commission discuss a platform for regional co-operation in the field of disaster management and civil protection Bridgetown, 22 May.

## 7 RECOMMENDATIONS FOR COOPERATION IN THE ENVIRONMENT BETWEEN THE EUROPEAN UNION AND CARIBBEAN OCTS

This section considers recommendations at the level of the Caribbean region. Recommendations with regard to individual OCTs are made at the end of the individual OCT environmental profiles. Part 1 of this report contains recommendations at the overall and interregional levels.

The OCTs identified the following issues:

Issues	Severity
Coastal zone issues causing loss of biodiversity and other hazards	10 OCTs state this is the number one priority. Problems are related to lack of appropriate physical development plans and regulations. Also diffuse and point source land based pollution.
Waste	9 OCTs mention lack of adequate waste management as one of their top priorities. Problems are linked to lack of infrastructure, lack of management processes, and lack of governance instruments.
Water and wastewater	5 OCTs refer 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. In other OCTs the problem also exists, namely the lionfish in the marine environment, or destruction of birds and endemic lizards or plants
Energy dependency	2 OCTs refer the dependency on fossil fuels and the need for renewable energy and energy efficiency as top priority
Oil spills	2 OCTs refer this problem, particularly in the cases where there is heavy traffic or where there are large oil related infrastructures.
Fisheries	2 OCTs refer overfishing as a problem
Forest	1 OCT suffers heavy pressures on its forest
Climate change and disaster risk management	All OCTs are concerned with climate change, and all are integrated in regional initiatives

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

Actions	Comment
Increase protected areas (terrestrial and marine)	British Virgin Islands and Turks and Caicos have well established protected areas networks. The OCTs linked to the Netherlands all have protected areas/ parks and the foundation DCNA coordinate and supports them all.
Wastewater	Turks and Caicos has established and maintains 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	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. In some of the islands the Hotel Operator Associations have a role on waste management, namely on its recycling and elimination without hazards
Reduce energy dependency	Anguilla and Aruba are making efforts on promoting renewable energy as well as green growth.
Natural catastrophes and climate change	The whole Caribbean region is mobilized for this subject and receiving support. More coordination could be useful.

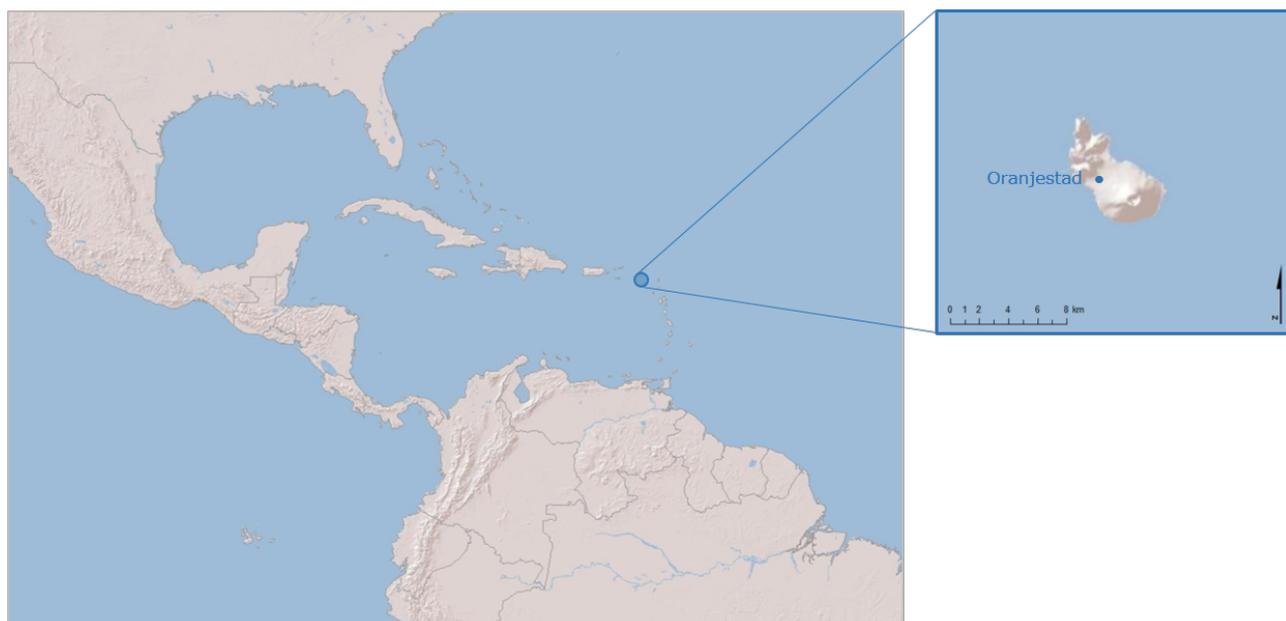
Goal	Action	Baseline situation	Priority and time frame	Implementing entity(ies)	€ and HR Needs	Risks and Assumptions	Possible € sources
Integrated Coastal zone Management	Develop and implement coastal zone management plans and harmonize legislation	There are pressures on coastal zones in all OCTs. Corals and mangroves are being destroyed due to several pressures. Income generating activities in the coastal area including in the sea are to not being fully explored.	5 years	OCT governments			Member States, EU
	<b>Activities</b> Involve and coordinate the various actors (environment, land, fishing, police, defence, ports, tourism, rural development, local authorities) Develop a study on the potential economic and environmental risks in coastal areas including climate change and the legal framework in the different OCTs. Develop studies on income generating activities in the coastal areas, with a view also to support activities at sea. Conduct workshops to discuss options both at national and regional level. Develop a regional strategy for the elaboration of each territories integrated coastal zone management plans integrating the several uses and the needs for protection, and take into account prospective scenarios and climate change. Drafting legislation necessary to implement the plan – having a perspective of harmonization of legislation. Promote co-management, eco-tourism, renewable energies, wherever possible.						

Goal	Action	Baseline situation	Priority and time frame	Implementing entity(ies)	€ and HR Needs	Risks and Assumptions	Possible € sources
Improve waste management	Develop waste management systems within each territory and in the region	Solid waste management is problematic in many of the OCTs. Some OCTs are making efforts to improve waste management. Sint Maarten is building a waste-to-energy plant requiring volume of waste.	5 years	OCT governments, Caribbean countries governments, private sector			Member States, EU, banks
	<b>Activities</b> Assess the waste streams and the installed infrastructure and process to detect the comparative advantages of the different OCTs in managing waste streams. Assess the capacities of neighbouring ACP countries and OR to deal with different waste streams with a view to establish cooperation, where adequate. Study the several options and strategies for waste valorisation through recycling and waste to energy methods – including cost-efficiency analysis, assessment of human resource capacity, strategic environmental assessment, etc. Promote regional agreements (OCTs, ACP, ORs) on different waste streams in order to achieve valorisation of waste, and to manage more efficiently some sorts of hazardous waste. Develop a regional strategy involving as well the neighbouring Caribbean states, including investments on infrastructure on a regional perspective, and on vessel(s) for inter-islands transport of waste. Organise a structured business dialog with the stakeholders and decision makers of each OCT in order to fix realistic plans (ready to be implemented) on different waste streams in order to achieve valorisation of waste, and to manage more efficiently some sorts of hazardous waste. Update standards and regulations for waste management. Establish agreement with other country outside of the Caribbean to receive sorts of waste that cannot be adequately managed in the region.						

Goal	Action	Baseline situation	Priority and time frame	Implementing entity(ies)	€ and HR Needs	Risks and Assumptions	Possible sources €
Reduce dependency on fossil fuels and GHG emissions	Establish conditions for the penetration of renewable energies and promotion of energy efficiency	OCTs are extremely vulnerable to increased oil prices and there is uncertainty of delivery in isolated places. Due to the cost of production and transport, electricity tariffs can be high which poses access problems to less well-off population. Each OCT has established its own targets, as there is no legal obligation to adhere to EU goals for sustainable development, and in general this means increase energy efficiency, and renewable energy use. These initiatives can also be seen as climate change mitigation measures.	5 years	OCTs governments Regional Organisations			Member States, EU WB and Regional Development Banks Private sector
	<b>Activities</b>	<p>Organise networking between the different regional (OCTs, ACP, ORs) public and private stakeholders dealing with energy issues.</p> <p>Study the possibilities of interisland transport of electricity through submarine cables. There are some studies undertaken by the US National Renewable Energy Laboratory.</p> <p>Promote sharing of experiences, and knowhow and agree on possibilities – regional interconnection, smaller sub regional interconnections.</p> <p>Assess the renewable energy resource of the different islands and establish energy mix and forecast scenarios.</p> <p>Devise what can be done regionally (specialised technical teams, production of equipment, training teams) and support its development.</p> <p>Review the institutional framework so that energy can be dealt in its integrity – electricity, fuels, etc. and linked with environment and climate change – this at both territorial and regional level.</p> <p>Study the most appropriate renewable energies (RE) solutions, and the most appropriate energy efficiency (EE) solutions, taking into account the initial cost and the cost of operation, the feasibility of local maintenance and repair – engage private sector and increase local expertise on RE and EE solutions.</p> <p>Establish appropriate regulatory framework, enabling involvement of private sector, incentives towards the shift to renewable energies and increase of energy efficiency, and establishing the adequate safeguards for energy safety and security.</p> <p>Develop capacity building in project finance, including strengthening fund raising expertise and requiring regular “Donor” coordination meetings.</p>					

# REPORT ON SINT EUSTATIUS

## ENVIRONMENTAL PROFILE



Summary .....	
Background information .....	
Biogeography, endemism, importance for global biodiversity .....	
State of the environment/ threats/ vulnerabilities.....	
Environmental Governance .....	
Cooperation.....	
Conclusions and recommendations .....	

### SUMMARY

On October 10, 2010, the Dutch Antilles were dissolved and the status of Sint Eustatius (or Statia) changed as it became a Public Entity<sup>1</sup>, i.e. a Dutch municipality 'with special status' of the Netherlands. Three of the former Netherlands Antilles (Caribbean Netherlands), consisting of Bonaire, Sint Eustatius and Saba<sup>2</sup> now have the same status.

St Eustatius is a small island situated in the Caribbean Sea, one of the northern or Leeward Islands, 50 km from Sint Maarten. Together with St Kitts and Nevis it lies on a shallow submarine bank, the St Kitts

<sup>1</sup> Openbaar Lichaam (OL)

<sup>2</sup> Sometimes called the BES islands

bank. It has a range of dormant volcanos on the north side (Boven, 200-300 m) and a younger dormant volcano on its south side (The Quill, 600 m).

St Eustatius is in a transition phase in relationship to The Netherlands. Many Dutch ministries are intervening on the island: renovation of school buildings, considering new infrastructural works and repairing existing ones. The island is proposing a Master Plan for its integrated development, in which access to nature areas has been included, improvement of airport and harbour and work on waste problems. A lot of upkeep work is also needed.

As for nature protection, as early as 1997 a biological inventory was made of Sint Eustatius<sup>3</sup> and there are two national parks: the St Eustatius National Marine Park created in 1996 and the SPAW listed St Eustatius Quill / Boven National Park, created in 1997. The Miriam Schmidt Botanical Garden adjacent to the latter was started in 1999. The three areas are mandated by the island government to be managed by an NGO: the St Eustatius National Parks Foundation (STENAPA).<sup>4</sup>

## 1 BACKGROUND INFORMATION

St Eustatius is a small Caribbean island of 21 km<sup>2</sup> and 3,900 inhabitants. The submarine bank on which it is linked to St Kitts and Nevis is relatively shallow (max 180 m).

<b>Name of Territory</b>	Sint Eustatius
<b>Region</b>	Caribbean
<b>Land area</b>	21 km <sup>2</sup>
<b>Maritime claims</b>	Territorial sea: 1,174 km <sup>2</sup> . EEZ: 1,107 km <sup>2</sup>
<b>Population</b>	3,900 (2013 <sup>5</sup> )
<b>GDP/capita</b>	n.a. <sup>6</sup>
<b>Literacy rate</b>	n.a.
<b>Unemployment rate</b>	3.2 % (2013 <sup>7</sup> )
<b>% below poverty line</b>	n.a.

It has historic, Dutch style buildings, from when it had an important agricultural production and was a regional trading centre, called the Golden Rock. It is now known as the Caribbean's Hidden Treasure. The capital is Oranjestad.

From an economic point of view, the majority of the people work for the government and the oil terminal (Nustar) but tourism is also important although data are missing for its share of GDP. Approximately 11,000 tourists visit the island on a yearly basis.<sup>8</sup> Of these, 80% engage in marine ecosystem related activities.<sup>9</sup> In 2009 a total of 6,050 dives were registered in the Marine Park and 713 visitors paid National Parks entrance fees.<sup>10</sup>

The climate is partly savannah and partly monsoon-type. The Quill volcano, in the south, clinging the clouds, causes more rainfall on the top than on the plains and on the northern hills. These climatological differences lead to a great variety of plants and plant communities.

<sup>3</sup> Anna Rojer, Biological Inventory of Sint Eustatius, Carmabi Foundation, 1997, <http://www.bio-diversity-nevis.org/Documents/Biodiversity%20of%20Statia.pdf>

<sup>4</sup> St Eustatius National Parks Foundation (Stenapa), <http://www.statiapark.org/>

<sup>5</sup> CBS, Statistical Office

<sup>6</sup> According to the Woonvisie, a Cooperative for social housing, average household income was 900- 1,000 € per month (2012-2015) but a large part of the population earns 4.20 per hour, = 600-700 per month.

<sup>7</sup> CBS

<sup>8</sup> <http://knoema.com/WTODB2014Jan/world-tourism-organization-database-january-2014>

<sup>9</sup> Tadzio Bervoets: St Eustatius National Marine Park- Report on the Economic Valuation of St Eustatius' Coral Reef Resources, Stenapa, March 2010.

<sup>10</sup> Sint Eustatius National Parks Annual report 2009.

**The Northern Hills** (including the Boven National Park) consist of 5 hills that contain numerous layers of volcanic deposits and are red colored due to oxidation of the iron-magnesium mineral. Arid conditions are the cause of much more sparse vegetation than that of the Quill volcano in the south. Besides the weather conditions, the vegetation of the Northern Hills has been seriously disturbed in the past by agriculture and roaming livestock. At present agriculture is greatly reduced, but the roaming livestock (mainly goats) continues to reduce the vegetation and threaten native species.

These Hills provide a habitat to a number of endangered species, most of which are protected by local laws and some by international treaties. These species include:<sup>11</sup>

- The Lesser Antillean iguana<sup>12</sup>, a rare and threatened species (different from the Green iguana, its Central American relative). The native iguanas are hard to find but are seen in parts of the Boven Park. St Eustatius is one of the few remaining islands where this endangered species is still found. A recent study showed that the population on the island is in decline and critically endangered.<sup>13</sup>
- The endemic ground lizard<sup>14</sup> is one of the most common animals of St Eustatius and is recognizable due to light yellowish lines along their flanks and red heads. They live in holes and are seen along the trail in the Boven Park.
- The leatherback turtle, green sea turtle and hawksbill sea turtle<sup>15</sup> nest on Zeelandia Beach, the main nesting beach of these endangered sea turtles in the Caribbean Netherlands.
- 18 species of orchid are found around St Eustatius, often in big trees, at the top of the Boven and in and around the large cracks of the rocks.
- The endemic Statia Morning Glory 16 is a creeper found throughout the Northern Hills.
- The cliffs on the south side area are a nesting site for the red-billed tropicbird.<sup>17</sup>
- The Red-tailed Hawk is frequently seen hunting in the Northern Hills.<sup>18</sup>

**The Quill (National Park)** contains the only "evergreen seasonal forest" of the Dutch Caribbean islands with other rare mountain vegetation like "montane thicket" and "elfin woodland".<sup>19</sup> Towards the top of the crater a lush vegetation shows a rich variety of mosses, ferns, arum, bromeliads and orchids. The Quill is the only habitat on St Eustatius of the bridled quail dove, the brown trembler and the scaly-naped pigeon.<sup>20</sup> Recently a new plant species unknown to science was found on St Eustatius. It is a vine in the milkweed family<sup>21</sup> and was found on the inner crater walls of the Quill. The extent of the population is not yet known.<sup>22</sup>

**The exclusive economic zone** around Saba, Sint Eustatius and Sint Maarten encompasses the entire Saba Bank, which is the largest submerged coral atoll in the Atlantic Ocean and has some of the richest marine biodiversity in the Caribbean Sea. New species of fish, coral and algae that have never been described before are discovered here on a regular basis. The deep reef and deep-sea environment around the islands are as of yet essentially unexplored, but appear to be rich in species as compared to other

11 <http://www.statiapark.org/parks/boven/index.html>

12 *Iguana delicatissima*

13 Debrot, A.O. and Erik Boman. The Lesser Antillean Iguana on St Eustatius: 2012 status update and review of limiting factors. IMARES Report number C166/12.

14 *Ameiva erythrocephala*

15 *Dermochelys coriacea*, *Chelonia mydas*, *Eretmochelys imbricate*

16 *Ipomoea sphenophylla*

17 *Phaethon aethereus*

18 *Buteo jamaicensis*

19 Nature Policy Plan 1998-2003 by F.J. van Zadelhoff, 1997.

20 Respectively: *Geotrygon mystacea*, *Cinlocerthia ruficauda* and *Columba squamosa*.

21 *Gonolobus aloiensis*.

22 A. Krings and F. Axelrod: '*Gonolobus aloiensis* (Apocynaceae, Asclepiadoideae), a New Species from St Eustatius', Systematic Botany, Volume 38, Number 4, 2013.

deep sea areas.<sup>23</sup> Species found in Statia's waters:

Sea turtles	Confirmed sightings of leatherback, green and hawksbill sea turtles, and an unconfirmed sighting of loggerhead sea turtle <sup>24</sup> .
Cetaceans - whales	Regular visitors both to the reefs and the waters around Statia: baleen, pilot, dwarf sperm, humpback, Gervais' beaked, killer, melon-headed, sperm and Cuvier's beaked whales <sup>25</sup>
Cetaceans - dolphins	Pantropical spotted, striped, spinner and bottlenose dolphins <sup>26</sup>
Rays	Manta and eagle Rays <sup>27</sup> visit the Marine Park from deeper waters.
Commercially and recreationally valued marine animals	Queen conch, spiny lobsters and two shark species, Caribbean reef and nurse sharks. <sup>28</sup>

Plate corals	<i>Agaricia sp.</i>
Soft corals	Sea fans and wire corals ( <i>Ellisella sp.</i> ).
Hard corals on shallower reefs	Mustard hill coral ( <i>Porites astreoides</i> ), brain coral ( <i>Diploria sp.</i> ), various forms of star coral ( <i>Montastrea sp.</i> ), flower coral ( <i>Eusmilia fastiagata</i> ), maze coral ( <i>Meandrina meandrites</i> ), pillar coral ( <i>Dendrogyra cylindrica</i> ) and the blade form of fire coral ( <i>Millepora complanata</i> ).
Other coral species	Sea plumes, gorgonians and black coral ( <i>Antipathes sp.</i> ) at depths in excess of 20 m, particularly at the drop off.

In the three Parks, numerous endangered or critically endangered species are protected through active management, research and monitoring programmes, including four species of sea turtles, the Lesser Antillean iguana, red bellied racer snake, orchids, cacti and the endemic vine Statia Morning Glory.<sup>29</sup> St Eustatius records 26 nesting species of birds with an additional 28 migratory species.<sup>30</sup>

23 Nature Policy for the Caribbean Netherlands 2013-2017, Dutch Ministry of Economic Affairs and Nature, April 2013.

24 Respectively: *Dermochelys Coriacea*, *Chelonia Mydas*, *Eretmochelys Imbricate*, *Caretta caretta*.

25 Respectively: *Balaenoptera sp.*, *Globicephala macrorhynchus*, *Kogia simus*, *Megaptera novaeangliae*, *Orcinus orca*, *Peponocephala electra*, *Physeter macrocephalus*, *Ziphius cavirostris*.

26 Respectively: *Stenella attenuate*, *Stenella coeruleoalba*, *Stenella longirostris*, *Tursiops truncates*.

27 *Manta birostris* and *Aetobatus narinari*.

28 *Strombus gigas*, *Panulirus argus*, *Carcharhinus perezii*, *Ginglymostoma cirratum*.

29 <http://www.statiapark.org/>

30 Stenapa Bird monitoring program, see <http://www.statiapark.org/parks/boven/index.html>

#### 3.1 OVERVIEW OF THE STATE OF ST EUSTATIUS' ENVIRONMENT

There is no recent study of the state of the environment in St Eustatius but STENAPA has a number of programmes to protect and monitor sea turtles, queen conch, spiny lobster, Lesser Antillean iguana, red-billed tropicbirds<sup>31</sup>, butterflies, spiders, the Statia Morning Glory. The Quill and Boven National park was declared an Important Bird Areas (IBAs) in 2008. The results of bird monitoring showed that 20 different species of birds were observed, totalling 679 individuals. Seven of nine species listed as key species for Sint Eustatius by Bird Life International were observed during the 2009 survey.<sup>32</sup>

The Ministry of Economic Affairs and the Island Government have commissioned IMARES (Institute for Marines Resources and Ecosystem Studies, Wageningen UR) to carry out research on a variety of issues, like invasive species, marine habitats, conch, spiny lobster and fish populations.

All waste is currently brought to one place and there is no sorting. The current landfill is located directly next to Zeelandia beach, the turtle nesting area. Waste, mostly plastic, ends up on the beach and other surrounding areas. However, the Dutch State Secretary committed to a technical and financial assistance for the Waste Management project (October 2013). This technical assistance consists of a waste expert for the three BES islands and finances for the purchase of an incinerator and supplementary material. The waste expert is stationed on Bonaire since November 2013 and visits St Eustatius on a regular basis. In cooperation with this waste expert, an action plan is made for St Eustatius aiming at (partly) separated collection of waste, facilities for further separation and processing of the waste and the installation of an incinerator. There are also plans to close the existing landfill.

#### 3.2 VULNERABILITIES AND MAIN CHALLENGES

##### Challenge 1 - Climate change - Severe

Climate change is expected to have a whole raft of adverse effects in many countries, but these effects are likely to be particularly severe in small tropical islands. The table below applies this general analysis to the specific circumstances of Sint Eustatius.

Impact	Severity	Comments
Inundation of coastal land	●	The capital, Oranjestad, has a lower and an upper town. The airport and some containers of the oil terminal are also low-lying.
Stressed fisheries	○	The fishing industry is not of great economic importance in the Territory
Coral reefs	●	Islands ringed by coral reefs are subject to multiple threats (bleaching, decreasing pH)
Tourist industry	●	Tourist industry accounts for a large number of jobs (and income <sup>33</sup> ). Reef tourism (diving and snorkelling) and hiking are important attractions.
More frequent and more intense storms	●	This poses a severe threat for the Leeward Islands which are already affected frequently by hurricanes. Hurricane Omar in 2008. <sup>34</sup>

31 Hatching success of Red-billed Tropicbirds at five study sites in St Eustatius, November 2012 – June 2013.

<http://www.statiapark.org/downloads/>

32 See publications on <http://www.statiapark.org/downloads/index.html> and 2009 report:

<http://www.statiapark.org/downloads/downloads/St%20Eustatius%20National%20Parks%20Annual%20Report%202009.pdf>

33 Exact data n.a.

34 <http://www.youtube.com/watch?v=jqBibbZrHsQ>

Impact	Severity	Comments
"Cooked" turtle eggs	●	Since 2009 the STENAPA Sea Turtle Conservation programme has been documenting the occurrence of infected and (partially) cooked eggs due to excessively high sand temperatures. <sup>35</sup> With the predicted increase in temperatures the programme will be in a position to best determine from combined years data what mitigating measures can be taken to address the problem.
○ Nil      ○ Slight      ● Moderate      ● Heavy		

## Challenge 2 - Loss of natural habitats and biodiversity - Severe

Damages to coral reefs		
Cause	Severity	Impacts
Tourism	●	Erosion and disturbance by increasing coastal development and inefficient waste removal systems.
	○	Damage to reefs resulting directly from tourism includes mechanical breakage by scuba divers and snorkelers; to accommodate scuba divers the Marine Park offers 30 buoyed dive sites for boats up to 50 feet and five designated for boats up to 100 feet. <sup>36</sup>
Building and development activities	●	Debris, sand, cement, stones and other runoff of coastal development and erosion that are washed in the sea can cause serious damage or mortality to corals by smothering them and blocking their access to the sunlight they need for energy. This runoff is increased by land clearing techniques which remove plants that hold the soil in place.
Fishing	○	Over-fishing threatens coral reefs, though fishing pressure on St Eustatius is low.
To sea grass beds	○	Coral reefs protect the sea grass beds lying on their shoreward side, so their degradation can adversely affect the sea-grass. Vice versa sea grass beds also protect smothering of coral reefs.
Other causes	●	Corals can bleach with temperature increases and disease can derive from a series of factors.
○ Nil      ○ Slight      ● Moderate      ● Heavy		

Pressures on biodiversity and natural habitats		
Pressure	Severity	Impacts
Pollution	○	The lack of proper waste disposal causes pollution of soil, the coast and the sea (but is being worked on). The Oil Terminal has caused several incidents of leakages into the soil and into the marine environment.
Oil Terminal Nustar	●	Anchoring of vessels in the Marine Park damages coral reefs. Pollution from ships including ballast waters. An expansion of the terminal to another location was not allowed recently.
Storms	○	St Eustatius has repeatedly been hit by hurricanes in the past. Trees in the craters might fall during a hurricane or tropical storm.
Ship traffic	○	In 2002, tanker Paulina dumped its ballast water containing oil that polluted the length of the island, the marine park, harbour and shoreline. 12 years later, the St Eustatius National Parks Foundation (STENAPA) has yet to receive restitution for cleanup of this incident; sources say it will likely end up in court. <sup>37</sup> Improper anchoring causes mechanical damage to the coral reef and ships travelling out of the shipping lanes cause damage to fishing gear and moorings.

35 <http://www.statiapark.org/downloads/downloads/2012%20Sea%20Turtle%20Conservation%20Program.pdf>

36 <http://www.statiatourism.com/ecotourism.html>

37 <http://www.ecology.com/2012/01/02/oil-terminal-risks-st-eustatius/>

Pressures on biodiversity and natural habitats		
Pressure	Severity	Impacts
Hunting and trade	○	Danger of hunting mainly for Lesser Antillean Iguana. Some plant species, e.g. orchid and ferns can be potential trade objects. <sup>38</sup>
Construction and industry	●	Valuable nature areas are sacrificed to industrial or tourism development. Tumble Down Dick Bay (the Oil Terminal) was lost as nesting area for regionally endangered and vulnerable sea birds. The impact goes beyond just the immediate area concerned because of e.g. the visual disturbance of the landscape.
Invasive species	●	The Mexican creeper ( <i>Antigonon leptopus</i> ) has invaded large areas of nature, suffocating all other vegetation. <sup>39</sup> The lionfish arrived in 2011 and is now established, though still in relatively low numbers. The African giant snail and a new invasive species of sea grass ( <i>Halophila stipulacea</i> ) arrived in 2013.
Free roaming cattle	●	Particularly goats, sheep, cattle, pigs and chickens cause a lot of degradation of the vegetation, which causes erosion. The latter is a serious problem because the soil of the Kultuurvlakte is extremely prone to erosion. Donkeys are now fenced in.
Introduced (predator) species	○	Cats and rats pose a threat to herpetofauna and avifauna (breeding seabird red-billed tropicbird). There is also a danger of accidental introduction of the Mongoose, monkey and Green Iguana from other islands.
○ Nil      ○ Slight      ● Moderate      ● Heavy		

## 4 ENVIRONMENTAL GOVERNANCE

### 4.1 CONSTITUTION

St Eustatius is one of the three special municipalities of the so called Caribbean Netherlands (or BES). A set of new laws (the BES laws) have been laid down by the Netherlands for the 3 Caribbean municipalities (Sint Eustatius, Saba, and Bonaire), dealing with nature protection, environment, physical planning, marine management and fisheries.<sup>40</sup> These will be introduced in stages and so often the 'old' laws from before 10 October 210 (Netherlands Antilles) are still in force.

For instance the BES Nature Conservation Law<sup>41</sup> delegates the primary responsibility for Nature on the islands of the Caribbean Netherlands to the islands themselves. Nature is a local island resource and should be managed by the island that directly benefits from this resource. This includes the management of species or areas that have been identified internationally as needing special protection.

However, it is the responsibility of the Minister in The Hague to see to it that the islands adequately manage their nature and that assistance is given when they are unable to do so. Special areas or species that are of international concern, and are so designated by the Minister through the Nature Conservation Law BES, add to the responsibilities of the islands.

Outside of the jurisdiction of the islands, i.e., in the ocean beyond the territorial waters of the islands, the Dutch Minister is directly responsible for the management of nature. The Minister also holds a responsibility for the management of the territorial waters based on the Maritime Management Law.<sup>42</sup>

38 Biological inventory by Rojer. <http://www.statiapark.org/downloads/downloads/RojerKNAP96-33BioInv-statia%5Beng%5D.PDF>

39 <http://www.statiapark.org/downloads/downloads/Corallita%20pilot%20project-results%20recommendations-jan07.pdf>

40 These BES laws can be found on: <http://www.dcnanature.org/resources/policy-law-enforcement/>

41 Wet Grondslagen Natuurbeheer en -bescherming BES, [http://wetten.overheid.nl/BWBR0028434/geldigheidsdatum\\_13-12-2011](http://wetten.overheid.nl/BWBR0028434/geldigheidsdatum_13-12-2011)

42 Wet Maritiem Beheer BES, <http://dcnanature.org/wp-content/uploads/2012/09/Wet-maritiem-beheer-BES.pdf>,

## 4.2 REVIEW OF CURRENT INSTITUTIONS

<b>Institutions and Responsibilities<sup>43</sup></b>					
Directorate E&I (Economy and Infrastructure)= Dir E&I Unit for Implementation & Control (Inspectie & Uitvoering) = unit I&C Department of Area Planning and Public Works = DROB STENAPA= St Eustatius National Parks Foundation					
<b>Topics</b>	<b>Policy-making</b>	<b>Implementation of projects</b>	<b>Law-enforcement</b>	<b>Monitoring</b>	<b>Statistics</b>
Environment	Island Govern't: Dir. E&I and Kingdom	Island Govern't Dir. E&I, unit I&C STENAPA	Police, Island Govern't: Dir. E&I, unit I&C STENAPA	Island Govern't: Dir. E&I, unit I&C STENAPA IMARES	Island Govern't: Dir. E&I, unit I&C STENAPA IMARES
Drinking water and waste water	Island Govern't: Dir. E&I and Kingdom	Sint Eustatius Utility Company STUCO			
Waste	Island Govern't: Dir. E&I	Island Government Dir. E&I Units DROB & Management	Police		
Biodiversity	Island Govern't: Dir. E&I and Kingdom	Island Govern't: Dir. E&I, unit I&C STENAPA	Police, Island Govern't: Dir. E&I unit I&C STENAPA	Island Govern't: Dir. E&I unit I&C STENAPA IMARES	Island Govern't: Dir. E&I unit I&C STENAPA IMARES
Territorial Planning	Island Govern't: Dir. E&I	Island Govern't: Dir. E&I, unit management	Police		
Civil Protection (see end note) <sup>44</sup>	Kingdom & Island Government	Island Government (and STENAPA)	Police and Island Government (and STENAPA)	Island Govern't, STENAPA and IMARES	
Integrated Coastal Zone Management	Island Govern't: Dir. E&I and Kingdom	Island Govern't and STENAPA	Police, Island Government: Dir. E&I unit I&C STENAPA	Island Govern't, STENAPA and IMARES	
Fisheries	Island Govern't: dir. E&I	Island Govern't: Dir. E&I, unit I&C and STENAPA	Police, Island Govern't Dir. E&I, unit I&C and STENAPA	Island Govern't, STENAPA and IMARES	Dir. E&I, unit I&C
Farming and livestock	Island Govern't: Dir. E&I	Island Govern't: Dir. E&I unit I&C	Police and Island Government	Island Govern't: Dir. E&I unit I&C	
Renewable energy and energy efficiency	Island Govern't: Dir. E&I	Island Govern't: Dir. E&I			
Industry	Island Government (dir. E&I)	NOTE: very few industries on the island			
Tourism	St Eustatius Tourism Development Foundation	St Eustatius Tourism Development Foundation		St Eustatius Tourism Development Foundation	St Eustatius Tourism Development Foundation
Private Sector			Police		

Nature Conservation on the islands is delegated to STENAPA (St Eustatius National Parks), a non-governmental nature conservation organisation. Its mandate is anchored in regulations and management agreements. Apart from being responsible for the development and implementation of the management

<sup>43</sup> <http://www.statiagovernment.com/directory.html>

<sup>44</sup> Response to disasters, emergencies, coordination of contingency planning, responsible for management of early warning systems

plans, this organisation also has enforcement authority.<sup>45</sup> In 2013 STENAPA had eight qualified and experienced members of staff with over 35 years of practical experience with the Foundation.<sup>46</sup> The Marine Park has a manager and a ranger and successfully recruits volunteers to supplement the workforce.<sup>47</sup> The Marine Park staff work closely with two local dive centres to ensure that diving practices minimize impact on the reef.

Staff members of STENAPA were trained in bird identification and monitoring by Bird Life International, within the framework of a monitoring programme for bird populations funded in 2008 by the NGOs DCNA<sup>48</sup> and Vogelbescherming (Bird Protection) Netherlands.

Concerning the Management Plan for the natural resources of the EEZ of the Dutch Caribbean, which excludes the Marine Park of Statia, tasks are delegated as follows: implementation will be led by a dedicated committee for marine biodiversity and fisheries, the EEZ committee. The National Government will:

- coordinate the implementation of the EEZ management plan for natural resources in the EEZ for the Dutch Caribbean;
- guarantee active management of the EEZ for the Dutch Caribbean by developing mutually agreed common policy approach;
- ensure continuous involvement of interested parties in the development
- Implementation of the management plan;
- develop an integrated research and monitoring plan, in cooperation with the partners of the EEZ committee, based on national and international commitments, the different competences of signatories and other parties, and on the possibility of using local capacity.

Another stakeholder with responsibility for nature or the environment is the utilities company GEBE<sup>49</sup> who was, until 1 January 2014, producing and distributing electricity on Sint Maarten, Saba and Sint Eustatius and distributing water on Sint Maarten and St Eustatius and also for waste water management. But Sint Maarten is now the full owner of GEBE since Dec 2013. The new utility companies on Saba and St Eustatius are: Statia Utility Company STUCO and Saba Electrical Company (SEC). A six-month grace period is now in effect, allowing Sint Maarten to render any technical service that may be required by Saba and Statia. All operations and employees will be transferred by January 1, 2014.<sup>50</sup>

### 4.3 POLICY, STRATEGY, PLANS, PROGRAMMES

There is no Nature Policy Plan for Statia yet, as required in the more general Nature Policy plan 2014-2017 made by the Dutch Ministry for the three BES islands.<sup>51</sup> There is however a Spatial Planning plan.

But as said earlier, there are two National Parks, the Quill / Boven National Park and the St Eustatius National Marine Park, managed by STENAPA. The Quill / Boven National Park has also been recognized by the Specially Protected Areas and Wildlife (SPAW) protocol as a protected area of regional importance. The criteria and procedure for this recognition were only recently established by the parties.

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45 BES nature policy 2013- 2017

46 [www.statiapark.org](http://www.statiapark.org)

47 Hoetjes et al, 2002, chapter 17 (Status of Coral Reefs in the Eastern Caribbean: The OECS, Trinidad and Tobago, Barbados, and the Netherlands Antilles in Wilkinson (ed.): Status of coral reefs of the world: 2002. GCRMN Report.

48 <http://www.dcnanature.org/> Dutch Caribbean Nature Alliance

49 Gemeenschappelijk Elektriciteitsbedrijf Bovenwindse Eilanden

50 <http://www.dutchcaribbeanlegalportal.com/news/business-financial/3685-gebe-fully-owned-by-st-maarten-lake-lauds-all-who-made-it-possible>

51 <http://www.government.nl/documents-and-publications/publications/2014/02/03/nature-policy-plan-the-caribbean-netherlands.html>



The St. Eustatius Marine Park Management Plan was published in 2007 and the Quill / Boven National Park and Botanical Garden Management Plan was finalized in 2009. STENAPA distributed CDs of the management plan to island stakeholders involved with development and implementation of the plan, including the Island Council, Tourist Office and Legal Office. The management plans were presented to the public via media including the newspaper and STENAPA newsletter, and made available on their website.<sup>52</sup>

Following the declaration of the Quill and Boven as Important Bird Areas (IBAs) in 2008<sup>53</sup> two NGOs funded the establishment of a monitoring framework for bird populations (see above).

In 2010 an EEZ management plan was developed in consultation with the 6 OCTs within the Kingdom of the Netherlands: the Management Plan for the natural resources of the EEZ of the Dutch Caribbean.<sup>54</sup> A Memorandum of Agreement was drawn up for the implementation of the Management Plan, not only including these waters, but also the territorial waters outside the borders of the marine parks around the islands.<sup>55</sup>

In 2013 a Master plan Infrastructure St. Eustatius was made.<sup>56</sup> According to this Master plan the authorities on St. Eustatius main goals are: upgrading many important infrastructures: the airport (€ 5-8 million), prison (€ 6 Million), houses and roads (€ 5-8 million, including the road to the Botanical Garden and if including dirt roads: € 8-11 million), prevention against storms (bringing all cables underground (€ 11-14 million)).

As said earlier on, ambitious new policy initiatives are taking place since October 2013 in the area of waste management, with Dutch technical assistance for extra expert manpower and funds for new installations.

For energy, a feasibility study was done to place windmills near Corre Corre bay. Due to the isolated location of the windmills and the possible threat of damage in the case of a storm or hurricane, it is believed that this project is not profitable. The government is now looking into solar energy.

Also concerning the free roaming animals, donkeys are already fenced in and there is a project to fence in or destroy the roaming cows.

### **Actions by STENAPA**

Beach cleanups are regularly conducted on Zeelandia Beach and other beaches. Within the Marine Park there are two actively managed Reserves in which no fishing or anchoring is permitted to conserve marine biodiversity, protect fish stocks and promote sustainable tourism. Regular mooring maintenance (dive, snorkel and yacht sites), patrols and research are also done by STENAPA.

<sup>52</sup> STENAPA annual report 2009:

<http://www.statiapark.org/downloads/downloads/St%20Eustatius%20National%20Parks%20Annual%20Report%202009.pdf>

<sup>53</sup> STENAPA report 2009

<sup>54</sup> IMARES, 2010.

<sup>55</sup> This plan has been signed so far by all parties except Aruba and St. Maarten.

<sup>56</sup> Ontwikkelplan Openbaar Lichaam Sint Eustatius, document provided by authorities in The Hague.

#### 4.4 LEGAL FRAMEWORK, MONITORING AND ENFORCEMENT

Five pieces of legislation have been adopted by the Dutch Parliament for the 3 BES islands i.e. including Sint Eustatius, concerning nature, environmental wellbeing (water, waste, energy), physical planning, marine management and fisheries.<sup>57</sup>

In particular the Nature protection and management law for the BES islands, adopted (unchanged from the Netherlands Antilles) in December 2011<sup>58</sup> lays down many policy measures and law enforcement for Sint Eustatius (and Bonaire and Saba). In particular SPAW, Cites, the Bonn and Sea Turtle conventions and obligations are cited and Ramsar and CBD conditions are recalled. It states that the islands have to make a nature policy plan every 5 years, containing a list of actions for the plan period.

The Island Ordinance for Protection of Fauna and Flora (1997) and the Marine Environment Ordinance (1996) are still in force. However, these ordinances do not fully implement the international requirements with regard to sea turtles, or the annexes of the Bonn Convention or SPAW protocol. The Dutch Ministry can provide support to the island to review and update these ordinances for full compliance. A proposal for this was recently sent to the executive council.

Regulates	Implementation status
Protection of flora and fauna	- Addendums I and II of the Sea Turtle Treaty (Inter-American Convention for the Protection and conservation of Sea-Turtles) - Addendum I of Bonn Convention on Migratory Species - The islands' decree in force does not include sea turtles, the explanatory memorandum mentions them
Conservation of biodiversity	Convention on Biological Diversity: insufficient implementation
Management and conservation of habitats and ecosystems	- Ramsar Convention on Wetlands of International Importance (St Eustatius does not have significant wetlands) - Addendums I and II of the SPAW-protocol (Specially Protected Areas and Wildlife Protocol) of the Cartagena Convention - Not Implemented
Trade in endangered species	Addendum I of the CITES or Washington Convention- Not implemented, but customs enforces CITES permit requirements

Multilateral Environment Agreement	Remarks
Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention)	Convention, together with the Oil Spills and SPAW Protocols are in BES law
Convention on Biological Diversity (CBD)	Enabling law is available for BES but for full implementation island legislation is required. Not yet done
CITES	Mentioned in BES. Implemented by national legislation but not yet at island level. Customs enforces CITES permit requirements
Convention on the Conservation of Migratory Species of Wild Animals (CMS)	Enabling law is available for BES but island legislation is required. But not yet done

#### Monitoring

Monitoring of tankers increased in 2009 and a number of violation reports completed. Since 2010 the shipping inspectorate under the Ministry of I&M is strictly enforcing the maritime act for BES including environmental requirements. Patrols of marine reserves are ongoing.<sup>59</sup>

<sup>57</sup> Wet volkshuisvesting, ruimtelijke ordening en milieubeheer BES <http://dcnature.org/wp-content/uploads/2012/09/Wet-VR0M-BES.pdf>, Wet maritiem beheer BES, <http://dcnature.org/wp-content/uploads/2012/09/Wet-maritiem-beheer-BES.pdf>, Wet grondslagen ruimtelijke ontwikkelingsplanning BES, <http://dcnature.org/wp-content/uploads/2012/09/Wet-grondslagen-ruimtelijke-ontwikkelingsplanning-BES.pdf>, Wet grondslagen natuurbeheer- en bescherming BES. <http://www.dcnature.org/wp-content/uploads/2012/09/Wet-grondslagen-natuurbeheer-BES.pdf>, Visserijwet BES, <http://dcnature.org/wp-content/uploads/2012/09/Visserijwet-BES.pdf>

<sup>58</sup> Wet grondslagen natuurbeheer- en bescherming BES, [http://wetten.overheid.nl/BWBR0028434/geldigheidsdatum\\_13-12-2011](http://wetten.overheid.nl/BWBR0028434/geldigheidsdatum_13-12-2011)

<sup>59</sup> Stenapa report 2009

## 4.5 ENVIRONMENTAL AWARENESS

Activities by STENAPA mentioned in their last report (2009):

Public information was further expanded with the in-house completion of three guide books for the National Parks: Diver guide to the Statia National Marine Park (200 pages), Hiker guide to the Quill / Boven National Park (40 pages) and Guide to the Miriam C Schmidt Botanical Garden (40 pages).

Quarterly newsletters and press releases for all significant events and visits are made and quarterly informative public forums are held.

Outreach activities include presentations, guided hikes, tours, trails, talks and other activities:

- public meeting and presentation of information on lionfish;
- seabird research presentation;
- presentation to visiting parliamentarians;
- guided hikes for the general public, tourists, travel agents, press;
- tours in the Botanical Garden (daily, full moon and school tours);
- tour for the visiting representatives of the Dutch ministry;
- meetings, advice and report review for consultants from Holland on various issues;
- a fishermen workshop took place in 2009 about use of environmentally friendly fish traps, use of pop up devices, and use of GPS units. A presentation about shark protection was also given;
- four types of after-school clubs are held during the school year: Snorkel Club, Advanced Snorkel Club, Junior Rangers 1 and Junior Rangers 2.

Furthermore, a new event was held in October 2012: "People and the Parks".<sup>60</sup> Staff from each department gave informative presentations about their respective areas of work to the public, who were given the opportunity to ask questions at the end of each session. STENAPA is working on a project to produce a set of television programmes so that the message can be made available to the wider public.

STENAPA staff took part in the Sustainable Conference in Statia in 2012 and 2013.

<b>Role of civil society</b>	
Non-Governmental Organisations (NGOs) related to environment and type of activities	STENAPA- <a href="http://www.statiapark.org">www.statiapark.org</a> is the only organization on the island mandated to manage the Protected Areas of St Eustatius. DCNA (Dutch Caribbean Nature Alliance) <a href="http://www.dcnanature.org">www.dcnanature.org</a> , is a regional network of protected areas set up to help and assist the park management and conservation organisations on the islands of Aruba, Bonaire, Curaçao, Saba, St Eustatius and Sint Maarten to better safeguard their unique natural world. SEAD (St Eustatius Awareness and Development) has protested against the extension of the oil terminal to "the Farm", an abandoned farming area. WWF Netherlands provides some funding for nature conservation on the islands
Role of the private sector concerning the environment	There are two dive centres on the island. They raise awareness for the marine environment.

The Dutch Caribbean Biodiversity Database (DCBD) is a data base funded by Dutch Ministries, which helps raise awareness. [www.dcbd.nl](http://www.dcbd.nl)

<sup>60</sup> <http://www.statiapark.org/downloads/downloads/newsletter/newsletter-dec2012.pdf>

## 4.6 FINANCE FOR THE ENVIRONMENT

The BES Nature Policy Plan 2013-2017 goal is to help BES islands, including Sint Eustatius, to set priorities for nature conservation, ensuring the allocation of resources including the € 7.5 million earmarked by the Dutch Parliament for nature conservation in the three BES islands over the coming four years. For St Eustatius, \$ 2,488,240 is available (approx. € 1.8 million).

Amongst the four project plans proposed by St Eustatius, three have been approved:

- Concerning Roaming Animals (related to sustainable animal husbandry);
- Strengthening Nature Management;
- Anti-Erosion Measures.

The fourth plan, on beach restoration, needs to be revised or replaced.

The BES Nature Policy Plan states that most of the funding available for nature management in the Caribbean Netherlands is generated by user fees. On Sint Eustatius National Parks generate only 14% of their total budget for nature management by means of user fees.<sup>61</sup> Divers in the Marine Park have to purchase a dive tag for the upkeep and maintenance of the park facilities. Year passes are sold for US\$30 and single dive passes are sold for US\$ 6.<sup>62</sup> Part of the exploitation costs of the designated protected areas is covered by subsidies from the islands' governing bodies (for Sint Eustatius 48%, Saba 17%). The Government in The Hague, in partnership with the 3 BES islands' governing bodies and local stakeholders, will carry out an exploratory study and put forward recommendations to ensure a sustainable financial future for the national parks.

In 2007 the Dutch government decided to give € 1 million per year (during 10 years) to a Trust Fund for the DCNA (Dutch Caribbean Nature Alliance). Other charities are now also putting money into this fund (National Lottery). Such a construction avoids complicated project selection and disbursement procedures by civil servants. The Trust Fund is managed by an independent board and disburses only the interest earned by the fund.

The recent St Eustatius Authorities' Master Plan asks for investments in roads (see under policies, above), airport and to improve the safety of the harbour, extending the wave breaker (€ 10 million), investments needed to separate commercial and tourism harbour and build new commercial harbour (in the longer term) are estimated at € 20-25 million.

EU subsidies available for upgrading the container terminal from the 10th EDF amounted to € 2 million (Finance Agreement signed).

### **Energy**

Research into the possibility of using geothermal energy on the island was planned. The company that was supposed to execute this would arrange for funding, which unfortunately did not happen. The island is looking into solar energy at this moment. The Netherlands also financed research into best location for 2-3 windmills and a feasibility study was done for the Corre Corre bay.

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<sup>61</sup> On Saba it is 53%, due to a larger number of visitors.

<sup>62</sup> <http://www.statiatourism.com/ecotourism.html>

There is regional interactive action on nature issues, by STENAPA:

The STENAPA 'Lionfish Action Plan' developed a list of invasive species in the Dutch Caribbean and STENAPA staff attended a workshop about invasive species management in Guadeloupe (Report 2009).

STENAPA participated in a workshop to prepare a plan for invasive species on the French Antilles. Contacts were made with other groups working on Corallita.

The Turtle programme: The beach monitoring programme was started in 2002 in affiliation with the Wider Caribbean Sea Turtle Conservation Network (WIDECAST). In 2003 however, regular night patrols were conducted following the introduction of the Working Abroad Programme, which brings groups of international volunteers to assist with projects in the National and Marine Parks. By 2004 the programme had expanded to include morning track surveys on the islands nesting on Zeelandia beach, with a dedicated vehicle and a part time project coordinator, during the nesting season.<sup>63</sup>

STENAPA is a member of the Caribbean Marine Protected Area Managers (CaMPAM) network of the SPAW Protocol and received support from SPAW to participate in capacity building for marine protected areas (train the trainer workshops) and to participate in regional meetings of marine parks and workshops on combating the invasive lionfish. With the St Eustatius National Marine Park now recognized by the SPAW Protocol as a protected area of regional importance (one of eighteen so far, including also the Saba Bank National Park and the Bonaire National Marine Park), it is eligible for a small grant fund of the SPAW Protocol established in 2013 and earmarked to promote and develop cooperation between such areas.

STENAPA participates in yearly joint surveys of marine mammals funded by the French 'Agoa' marine mammal sanctuary. These surveys also include the Saba Bank and are part of the cooperation of the Ministry of EZ with Agoa in preparation for declaration of a Dutch marine mammal sanctuary in the EEZ waters surrounding Saba and St Eustatius.

Through DCNA, STENAPA receives support in cooperative programmes aimed at capacity building. This includes joint training workshops with the other Dutch islands and exchange of staff with Sint Maarten, Saba, and Bonaire.

As a member of DCNA, STENAPA is also eligible for emergency funding from DCNA, in case of an acute emergency situation due to a hurricane for instance.

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<sup>63</sup> <http://www.statiapark.org/downloads/downloads/2012%20Sea%20Turtle%20Conservation%20Program.pdf>

## 6 CONCLUSIONS AND RECOMMENDATIONS

Besides the Boven/Quill national park and the marine park, the species protection legislation existing since 1997, the research and monitoring done by the NGO STENAPA, we note that there is a Nature Policy Plan 2013-2017 for the 3 BES, but that a Nature Policy Plan has not been developed for St Eustatius. The Spatial planning Plan can however help protect important species and habitats.

The main priorities identified in the territory are:

<b>Issues</b>	<b>Current situation</b>	<b>Responses</b>
Pressures on Statia's habitats and biodiversity	Roaming cattle, illegal sand mining on Zeelandia beach	Implement the "Roaming Animals for Sustainable Animal Husbandry" plan.
Invasive species	Lionfish, corallita, African giant snail, <i>Halophila stipulacea</i> , etc.	Monitoring and eradication of lionfish.
Climate change / sea level rise		Sites for wind mills were prospected, now also considering greater use of solar energy
Waste management	No separation of waste, everything dumped on landfill.	New ambitious waste policy and infrastructures are being prepared with Dutch aid.

Goal	Action	Baseline situation	Priority and time frame	Implementing entity(ies)	€ and HR Needs	Risks and Assumptions	Possible € sources
Help make transition to new constitutional regime	Support making new nature policy and law, according to the Nature Plan Caribbean Netherlands and BES laws	The 'old' nature policy and laws still in force					
	<b>Activities</b> Provide support to the island's administration and Nature Park management to evaluate its nature policy and legislation. Idem to identify gaps in implementation of the new Nature Plan Caribbean Netherlands and new BES Nature law (plus international requirements). Idem to identify the necessary measures to realize new BES Plan and BES law. Consider the possibility of making St Eustatius an UNESCO Man and Biosphere reserve (example St Kitts?) Make own nature plan and nature law.						

Goal	Action	Baseline situation	Priority and time frame	Implementing entity(ies)	€ and HR Needs	Risks and Assumptions	Possible € sources
Combat invasive species	Support monitoring/ policy/legislation/implementation	Lionfish appeared in 2011 and has established itself. Invasive plants are dominant on large tracts on the island.					
	<b>Activities</b> Continue monitoring Lionfish and eradicated where possible Analysis of the ciguatera contents of lionfish and of risk of ciguatera fish poisoning. Monitor (and eradicate) other invasive species like the African Giant Snail and the invasive sea grass ( <i>Halophila stipulacea</i> ). On land: the Corral vine (Corallita) is especially prevalent. Neem trees, the spiny and succulent vine are also very invasive. Support additional capacity and the establishment of a network of experts and volunteers to mobilize when necessary. Legislation is needed to provide authority for impoundment, exclusion, confiscation, quarantine and destruction of potentially invasive species.						

Goal	Action	Baseline situation	Priority and time frame	Implementing entity(ies)	€ and HR Needs	Risks and Assumptions	Possible € sources
Introduce 'polluter pays principle'	Increase knowledge and use (in policies) of the economic value of nature	A recent study of the value of nature on St Eustatius gives recommendations on how to incorporate results in other policies					
	<b>Activities</b> Include economic impacts in assessing fines for damages to reefs from activities such as anchoring in the reserves, oil spills etc., Enforce strict usage of anchorage areas, Evaluate distributional effects ("winners" and "losers") of proposed coastal development projects, Incorporate economic valuation into EIAs, Enforce land-use and development regulations (in particular in coastal areas where there are new developments) Weigh revenues from a growing tourism industry against possible long-term economic losses from environmental impacts, Invest in Scientific Research. Recently the Caribbean Netherlands Science Institute was installed on St Eustatius. Increase support from the private and public sector in the Marine Park Management Authority (STENAPA)						

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Organisation	Website address
Government of Sint Eustatius	<a href="http://www.statiagovernment.com/">http://www.statiagovernment.com/</a>
Office of the Kingdom Representative on Sint Eustatius	<a href="http://www.rijksdienstcn.com/en/office-of-the-kingdom-representative">http://www.rijksdienstcn.com/en/office-of-the-kingdom-representative</a>
St Eustatius Tourist Office	<a href="http://www.statiatourism.com/">http://www.statiatourism.com/</a> <a href="http://www.statiatourism.com/ecotourism.html">http://www.statiatourism.com/ecotourism.html</a>
Office of the Kingdom Representative (for Saba, Bonaire and St Eustatius)	<a href="http://www.rijksdienstcn.com/en/office-of-the-kingdom-representative">http://www.rijksdienstcn.com/en/office-of-the-kingdom-representative</a>
Government of the Netherlands- Caribbean parts of the Kingdom	<a href="http://www.government.nl/issues/caribbean-parts-of-the-kingdom/bonaire-st-eustatius-and-saba">http://www.government.nl/issues/caribbean-parts-of-the-kingdom/bonaire-st-eustatius-and-saba</a>
Dutch Ministry of Interior Affairs and Kingdom Relations	<a href="http://www.minbzk.nl">www.minbzk.nl</a>

Organisation	Website address
National Office for the Caribbean Netherlands (RCN- Rijkdienst Caribisch Nederland)	<a href="http://www.government.nl/issues/caribbean-parts-of-the-kingdom/national-office-for-the-caribbean-netherlands">http://www.government.nl/issues/caribbean-parts-of-the-kingdom/national-office-for-the-caribbean-netherlands</a>
The Netherlands and development of Dutch Caribbean	<a href="https://www.rijksdienstcn.com/en/news/bonaire-st-eustatius-saba-and-dutch-government-embrace-development-plans">https://www.rijksdienstcn.com/en/news/bonaire-st-eustatius-saba-and-dutch-government-embrace-development-plans</a>
DCNA Dutch Caribbean Nature Alliance	<a href="http://www.dcna.nl">www.dcna.nl</a>
STENAPA (St Eustatius National Parks Foundation):	<a href="http://www.statiapark.org/">http://www.statiapark.org/</a>
DCNA Dutch Caribbean Nature Alliance	<a href="http://www.dcna.nl">www.dcna.nl</a>
DCBD (Dutch Caribbean Biodiversity Data Base)	<a href="http://www.dcbd.nl">www.dcbd.nl</a>
Carmabi Foundation- Caribbean Research & Management of Biodiversity	<a href="http://www.carmabi.org/">http://www.carmabi.org/</a>

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Organisation	Website address	Remarks
CANARI - Caribbean Natural Resources Institute	<a href="http://www.canari.org/default.asp">http://www.canari.org/default.asp</a>	
Caribbean Tourism Organisation	<a href="http://www.onecaribbean.org/about-cto/">http://www.onecaribbean.org/about-cto/</a>	
Caribbean Development Bank (CDB)	<a href="http://www.caribank.org/">http://www.caribank.org/</a>	
CCCCC	Caribbean Community Climate Change Centre <a href="http://caribbeanclimate.bz/">http://caribbeanclimate.bz/</a>	
CARICOM -	Secretariat of the Caribbean Community and Common Market <a href="http://www.caricom.org/">http://www.caricom.org/</a>	
CDEMA -	Caribbean Disaster Emergency Management Agency <a href="http://www.cdema.org/">http://www.cdema.org/</a>	
CEHI -	Caribbean Environmental Health Institute <a href="http://www.cehi.org.lc/">http://www.cehi.org.lc/</a>	
CIMH - The Caribbean Institute of Hydrology and Meteorology		
CYEN- The Caribbean Youth Climate Change Mitigation Project	<a href="http://www.cyen.org/climatechange/documents/cc_and_the_caribbean.html">http://www.cyen.org/climatechange/documents/cc_and_the_caribbean.html</a>	
DCNA- Dutch Caribbean Nature Alliance	<a href="http://www.dcnanature.org/marine-mammals-in-the-dutch-caribbean/">http://www.dcnanature.org/marine-mammals-in-the-dutch-caribbean/</a>	On Marine mammals in the Dutch Caribbean
Eastern Caribbean Central Bank (ECCB)	<a href="http://www.eccb-centralbank.org/Contact/">http://www.eccb-centralbank.org/Contact/</a>	
EU- GCCA 2011 project 10 <sup>th</sup> EDF	Global climate change Alliance - Caribbean component of the Intra-ACP Support Programme to the GCCA: <a href="http://archive.gcca.eu/pages/79_2-In-the-Caribbean.html">http://archive.gcca.eu/pages/79_2-In-the-Caribbean.html</a>	
Green Antilles	<a href="http://www.greenantilles.com/">http://www.greenantilles.com/</a>	
IADB - Inter-American Development Bank	<a href="http://www.iadb.org/en/about-us/about-the-inter-american-development-bank,5995.html">http://www.iadb.org/en/about-us/about-the-inter-american-development-bank,5995.html</a>	

Island Resources Foundation	<a href="http://www.irf.org/">http://www.irf.org/</a>	Foundation is dedicated to solving the environmental problems of development in small tropical islands
NOAA	<a href="http://www.ospo.noaa.gov/data/cb/TS_vs/vs_ts_multiyr_CuracaoandAruba.png">http://www.ospo.noaa.gov/data/cb/TS_vs/vs_ts_multiyr_CuracaoandAruba.png</a>	With data on evolution temperature water and coral reefs
TNC - The Nature Conservancy	<a href="http://www.nature.org/">http://www.nature.org/</a>	
Organisation of Eastern Caribbean States (OECS)	<a href="http://www.oecs.org">http://www.oecs.org</a>	
(OECS-ESDU)	Environment and Sustainable Development Unit of the Organisation of Eastern Caribbean States <a href="http://www.oecs.org/our-work/units/environment-sustainable-development">http://www.oecs.org/our-work/units/environment-sustainable-development</a>	
OECS- RRACC project	Reduce risks to human and natural assets from climate change <a href="http://www.oecs.org/our-work/projects/rracc">http://www.oecs.org/our-work/projects/rracc</a>	
OECS- EU project	Global Climate Change Alliance Project on Climate Change Adaptation and Sustainable Land Management in the Eastern Caribbean <a href="http://www.oecs.org/rracc-news/816-new-project-activated-to-boost-efforts-to-reduce-the-impact-of-climate-change-in-the-oecs">http://www.oecs.org/rracc-news/816-new-project-activated-to-boost-efforts-to-reduce-the-impact-of-climate-change-in-the-oecs</a>	
Pan-American Health Organization	<a href="http://www.paho.org/english/sha/prflcay.htm">http://www.paho.org/english/sha/prflcay.htm</a>	Description of solid waste and sanitation
UNECLAC -	United Nations Economic Commission for Latin America and the Caribbean <a href="http://www.cepal.org/portofspain/">http://www.cepal.org/portofspain/</a>	
UWI - University of the West Indies	<a href="http://www.uwichill.edu.bb/">http://www.uwichill.edu.bb/</a>	
Wider Carib. Sea Turtle Conservation Network (WIDECAST)	<a href="http://www.widecast.org/Who/Contact.html">http://www.widecast.org/Who/Contact.html</a>	
World Bank project 2012	Small Caribbean States Work Together against Big Natural Disasters : <a href="http://www.worldbank.org/en/news/feature/2012/10/10/Grenada-Saint-Vincent-project-against-natural-disasters">http://www.worldbank.org/en/news/feature/2012/10/10/Grenada-Saint-Vincent-project-against-natural-disasters</a>	
World Bank project	Regional Disaster Vulnerability Reduction Project, <a href="http://www.worldbank.org/projects/P117871/oecs-disaster-vulnerability-reduction-project?lang=en">http://www.worldbank.org/projects/P117871/oecs-disaster-vulnerability-reduction-project?lang=en</a>	
World Resources Institute		On refs in the Caribbean

## ABBREVIATIONS AND ACRONYMS

ACAP	Agreement on the Conservation of Albatrosses and Petrels
ACOR	Association Française pour les Récifs Coralliens
ACP	Africa Caribbean and the Pacific
ACS	Association of Caribbean States
AEPS	Arctic Environmental Protection Strategy
AFD	French Development Agency
AMAP	Arctic Monitoring and Assessment Programme
AMOC	Atlantic Meridional Overturning Circulation
AOSIS	Alliance of Small Island States
APEC	Asia–Pacific Economic Cooperation
BAS	British Antarctic Survey
BEST	EU Voluntary Scheme for Biodiversity and Ecosystem Services in Territories of European Overseas
BRGM	Bureau de Recherches Géologiques et Minières
CAFF	Conservation of Arctic Flora and Fauna
CANARI	Caribbean Natural Resources Institute

CARICOM	Caribbean Community
CARIFORUM	Caribbean Forum
CBD	Convention on Biological Diversity
CCAMLR	Convention on the Conservation of Antarctic Marine Living Resources
CCAS	Convention on Conservation of Antarctic Seals
CCC	Cod and Climate Change Programme
CCCCC	Caribbean Community Climate Change Centre
CDB	Caribbean Development Bank
CDEMA	Caribbean Disaster Emergency Management Agency
CDS	Catch Documentation Scheme
CEHI	Caribbean Environmental Health Institute
CIDA	Canadian International Development Agency
CITES	Convention on International Trade in Endangered Species
CMS	Bonn Convention on Migratory Species
CNRS	Centre National pour la Recherche Scientifique
COLTO	Coalition of Legal Toothfish Operators
COMESA	Common market for Eastern and Southern Africa
CoP	Conference of the Parties
CPA	Country Poverty Assessment
CPACC	Caribbean Planning for Adaptation to Climate Change
CR	Critically endangered (IUCN classification)
CRAMRA	Convention on the Regulation of Antarctic Mineral Resource Activities
CRISP	Coral Reefs in the South Pacific
CROP	Council of Regional Organizations of the Pacific
CSD	Commission on Sustainable Development
CSME	Caribbean Single Market and Economy
Darwin Plus	Fuses OTEP and Darwin (OCT component) in what concerns competitive funding to deliver long-term strategic outcomes for the natural environment in the UK's Overseas Territories
DCNA	Dutch Caribbean Nature Alliance
DEFRA	Department for Environment, Food and Rural Affairs of UK government
DFID	DEPARTMENT FOR INTERNATIONAL DEVELOPMENT of UK government
DK	Denmark
DPSIR	Driver, Pressure, State, Impact and Responses
ECCB	Eastern Caribbean Central Bank
EDF	European Development Fund
EE	Energy efficiency
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EIB	European Investment Bank
EN	Endangered (IUCN classification)
ENSO	El Niño Southern Oscillation
EPA	Economic Partnership Agreement
EPD	Environment, planning and development
EPPR	Emergency Prevention, Preparedness and Response
EU	European Union
FAO	Food and Agriculture Organisation
FCO	Foreign & Commonwealth Office UK Government
FEA	Fonds pour l'Environnement et l'Agriculture
FR	France
GCRMN	Global Coral Reef Monitoring Network
GDP	Gross Domestic Product
GEF	Global Environment Facility

GGF	Good Governance Fund
GHG	Greenhouse Gas
GIWA	Global International Water Assessment
GLIPSA	Global Islands Partnership
HMS	His Majesty's Ship
I&M	Dutch Ministry of Infrastructure and Environment
IAATO	International Association of Antarctica Tour Operators
IAC	Inter-American Convention for the Protection and Conservation of Sea Turtles
IBA	Important Bird Area
IBRD	International Bank for Reconstruction and Development
ICCAT	International Commission for the conservation of tuna-like fish in the Atlantic
ICES	International Council for the Exploration of the Sea
ICES-CCC	ICES Cod and Climate Change Programme
ICRI	International Coral Reef Initiative
IDB	Inter-American Development Bank
IFRECOR	Initiative Française pour les Récifs Coralliens
IIED	International Institute for Environment and Development (UK)
IMF	International Monetary Fund
INTEGRE	Initiative des Territoires du Pacifique pour la gestion régionale de l'environnement
IOC	Indian Ocean Commission
IPCC	International Panel on Climate Change
IRD	Institut de Recherche pour le Développement (FR)
IUCN	International Union for Conservation of Nature
IUU	Illegal unregulated and unreported fishing
JCNB	Joint Commission on Narwhal and Beluga
JNCC	Joint Nature Conservation Committee UK Government
LPO	Ligue pour la Protection des Oiseaux
LSB	Landbased Sources of Marine Pollution (protocol of the Cartagena Convention)
MAB	Man and Biosphere (Reserve)
MACC	Mainstreaming Adaptation to Climate Change
MDGs	Millennium Development Goals
MEA	Multilateral Environmental Agreement
MoU	Memorandum of Understanding
MPA	Marine Protected Area
MSC	Marine Stewardship Council
MSP	Marine Spatial Planning
n.a.	not available
NAFO	North Atlantic Fisheries Organisation
NAMMCO	North Atlantic Marine Mammal Commission
NBSAP	National Biodiversity Strategy and Action Plan
NEMS	National Environmental Management Strategy
NGO	Non-governmental organization
NL	Netherlands
NNR	National Nature Reserve
NT	National Trust
NZ	New Zealand
OAD	Overseas Association Decision
OAU	Organisation of African Unity
OCTA	Overseas Countries and Territories Association
OCTs	Overseas Countries and Territories
OECD	Organisation for Economic Co-operation and Development
OECS	Organisation of Eastern Caribbean States
OT	Overseas Territories (commonly used in texts from the UK)

OTCF	UK Overseas Territories Conservation Forum
OTEP	Overseas Territories Environment Programme (replaced by Darwin Plus)
PAME	Protection of the Arctic Marine Environment
PCCFAF	Pacific Climate Change Finance Assessment Framework
PECCO	Pacific Environment and Climate Change Outlook
PEP	Poverty and Environment Partnership
PGA	Plan Général d'Aménagement
PGEM	Plan de Gestion de l'Espace Maritime
PID	Pacific Islands Development Programme
PILN	Pacific Invasives Learning Network
PIP	Pacific Invasives Partnership
PNG	Papua New Guinea
POP	Persistent Organic Pollutant
PPCR	Pilot Program for Climate Resilience
PROE	Programme régional océanien de l'environnement
PWSD	Public Works and Services Department
RE	Renewable Energy
RFMO	Regional Fisheries Management Organisation
RIP	Regional Indicative Programme
RSP	Regional Seas Programme or Regional Strategy Paper
RSPB	Royal Society for the Protection of Birds
SADC	Southern Africa Development Community
SAERI	South Atlantic Environmental Research Institute
SAWG	South Atlantic Working Group (of the UK OTCF)
SCOR	Scientific Committee on Oceanic Research
SCP	Strategic Country Programme
SD	Sustainable Development
SDP	Sustainable Development Plan
SEA	Strategic Environmental Assessment
SEAFO	South-East Atlantic Fisheries Organisation
SIDS	Small Island Developing States
SIDSnet	Small Island Developing States Information Network
SME	Small and Medium Enterprises
SOPAC	South Pacific Applied Geoscience Commission
SORP	Southern Ocean Research Partnership
SPA	Specially Protected Area
SPAW	Protocol concerning Specially Protected Areas and Wildlife
SPC	Secretariat of Pacific Community
SPD	Single Programming Document
SPREP	South Pacific Regional Environment Programme
SPT	South Pacific Tourism Organisation
STZC	Sustainable Tourism Zone of the Caribbean
TAC	Total Allowable Catch
TAO	Territorial Authorising Officers
TEP	Tonne Equivalent Pétrole (TEP Vertes is a climate change mitigation programme in the Pacific)
UK	United Kingdom
UKAHT	United Kingdom Antarctic Heritage Trust
UKOTA	Association of OCT linked to the UK
UKOTCF	United Kingdom Overseas Territories Conservation Forum
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme

UNECE	United Nations Economic Commission for Europe
UNECLAC	United Nations Economic Commission for Latin America and the Caribbean
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Social and Cultural Organisation
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
VMS	Vessel Monitoring System
VROM	Netherlands environment ministry
VU	Vulnerable (IUCN classification)
WH	World Heritage
WIDECAST	Wider Caribbean Sea Turtle Conservation Network
WRI	World Resources Institute
WTO	World Trade Organisation
WWTP	Wastewater Treatment Plant

