



INTEGRATED WATER, LAND AND ECOSYSTEMS MANAGEMENT (IWECO) PROJECT

CONSULTANCY FOR DEVELOPMENT OF THE
REGIONAL ENVIRONMENTAL INDICATORS
COMPENDIUM IN IWECO PARTICIPATING
STATES (PSM/20069)

Regional Environmental Indicators Compendium *Final Report*

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Acronyms and Abbreviations

ACS	Association of Caribbean States
AGRRA	Atlantic and Gulf Rapid Reef Assessment
BPoA	Barbados Programme of Action
BSS	Barbados Statistical Service
BWA	Barbados Water Authority
CANARI	Caribbean Natural Resources Institute
CAR/RCU	Caribbean Regional Coordinating Unit (UNEP)
CARDI	Caribbean Agricultural Research and Development Institute
CAREC	Caribbean Epidemiology Centre
CARICOM	Caribbean Community
CARICOMP	Caribbean Coastal Marine Productivity Programme
CAST	Caribbean Alliance for Sustainable Tourism
CBD	Convention on Biological Diversity
CCCCC	Caribbean Community Climate Change Centre
CCD	Convention to Combat Desertification
CCDC	Caribbean Coastal Data Centre
CDERA	Caribbean Disaster Emergency Response Agency
CEHI	Caribbean Environmental Health Institute
CERMES	Centre for Resource Management and Environmental Studies
CFRAMP	CARICOM Fisheries Resources Assessment and Management Programme
CIDA	Canadian International Development Agency
CIMH	Caribbean Institute of Meteorology and Hydrology
CITES	Convention on Trade in Endangered Species
CLAWRENET	Caribbean Land and Water Resources Network
CMA	Caribbean Marine Atlas
CMS	Centre for Marine Studies

CPACC	Caribbean Planning for Adaptation to Climate Change Project
CRED	Centre for Research on the Epidemiology of Disasters
CRFM	CARICOM Regional Fisheries Mechanism
CRIS	Coastal Resource Information Systems
CSD	Commission on Sustainable Development (UN)
CTO	Caribbean Tourism Organization
CWSA	Central Water and Sewerage Authority
CWWA	Caribbean WasteWater Association
CZM	Coastal Zone Management
DPSIR	Driver-Pressure-State-Impact-Response
ECLAC	Economic Commission for Latin America and the Caribbean
EMA	Environmental Management Authority (Trinidad & Tobago)
EPD	Environmental Protection Department
EVI	Environment Vulnerability Index
FAO	Food and Agriculture Organization
GCRMN	Global Coral Reef Monitoring Network
GEF	Global Environment Facility
GEO	Global Environment Outlook
GIS	Geographic Information System
GPA	Global Programme of Action for the Protection of the Marine
ELBSP	Environment from Land-based Sources of Pollution
GPS	Global Positioning System
ICOM	Integrated Coastal and Oceans Management
ICRI	International Coral Reef Initiative
ICZM	Integrated Coastal Zone Management
IDB	Inter-American Development Bank
IITF	International Institute of Tropical Forestry
ILAC	Latin American and Caribbean Initiative for Sustainable Development

IMA	Institute of Marine Affairs (Trinidad & Tobago)
IOCARIBEGOOS	Intergovernmental Oceanographic Commission (Caribbean) Global Ocean Observing System
IODE	International Oceanographic Data and Information Exchange
ITTO	International Tropical Timber Organization
IUCN	World Conservation Union
IWCAM	Integrating Watershed and Coastal Areas Management
IWRM	Integrated Water Resource Management
JPOI	Johannesburg Plan of Implementation
MACC	Mainstreaming Adaptation to Climate Change
MDG	Millennium Development Goals
MEA	Multilateral Environmental Agreement
NALIN	National Land Information Project
NBSAP	National Biodiversity Strategy and Action Plan
NEPA	National Environment and Planning Agency (Jamaica)
NEPA	National Environment and Planning Agency
NSO	National Statistical Office
OAS	Organization of American States
OECS	Organization of Eastern Caribbean States
PAHO	Pan-American Health Organization
PC	Participating Country (in the GEF-IWCAM project)
REDESA	Network of Institutions and Experts on Social and Environmental Statistics
ROLAC	Regional Office for Latin America and the Caribbean
SCCS	Standards Committee for Caribbean Statistics
SGD	St. George's Declaration of Principles for Environmental Sustainability (OECS)
SIDS	Small Island Developing States

SLM	Sustainable Land Management
SOPAC	South Pacific Applied Geoscience Commission
SPAW	Specially Protected Areas and Wildlife Protocol
TNC	The Nature Conservancy
UNCED	UN Conference on Environment and Development
UNCSD	United Nations Commission on Sustainable Development
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNECLAC	Economic Division of Latin America and the Caribbean
UNEP	United Nations Environment Programme
UNFCCC	UN Framework Convention on Climate Change
UNSD	UN Statistical Division
USGS	United States Geological Survey
UWI	University of the West Indies
VCD	Vector Control Division
WCMC	World Conservation Monitoring Centre
WECAFC	Western Central Atlantic Fisheries Commission
WHO	World Health Organization
WRMA	Water Resources Management Authority
WSA	Water and Sanitation Authority
WSSD	World Summit on Sustainable Development
WTO	World Tourism Organisation

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1.0 Background

Caribbean Small Island Developing States (SIDS) are highly vulnerable to many of the economic and environmental pressures that are evolving globally. The Caribbean is one of thirty-four Global Biodiversity Hotspots mainly due to the high degree of endemic flora and fauna found in the region, many of which are under threat of species decline and/or even extinction. Another feature of Caribbean SIDS is that their seascape is significantly larger than their land mass.

Approximately 20 Million inhabitants in the region depend on the natural resource base for socio-economic development and well-being. Biodiversity and ecosystem services for example, provide food, shelter, protection from natural hazards, while health and recreation are some of the benefits provided by the Region's rich biological resources.

The development programmes of Caribbean SIDS face a number of challenges including threats to natural resources such as marine pollution, overfishing, land and water resource degradation, depletion of biological resources, habitat degradation and compromised ecosystem functioning resulting from developmental pressures on very fragile environments. These threats are further exacerbated by exposure of terrestrial and marine ecosystems to natural hazards and climate change impacts, some of which may be human induced as well as pollution from land and marine-based sources. Also included are challenges of low institutional capacity, inadequate environmental policy, legislation and regulations including weak enforcement capacity, weak institutional and coordinating mechanisms, inadequate economic valuation of natural resources, limited human and financial resources and inadequate engagement of and provision of incentives to the private sector and civil society to support inclusive green growth.

Regional treaties such as the Revised Treaty of Chaguaramas, establishing the Caribbean Community (CARICOM) including its Single Market and Economy (CSME), and the Revised Treaty of Basseterre, establishing the OECS Economic Union, present opportunities for deeper integration and coordination among key agencies both at the national and regional level in pursuit of sustainable development under the three pillars of economic development, social development and environmental sustainability.

There are also a number of International and Regional Conventions and Agreements that CARICOM countries are party to that deal with the protection of the environment. These include:

- (a) The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES);
- (b) The Convention on Biological Diversity (CBD);
- (c) FAO Code of Conduct;
- (d) CARICOM Single Market and Economy (CSME);
- (e) Caribbean Tourism Organisation (CTO);
- (f) The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA);
- (g) The International Atomic Energy Agency (IAEA);
- (h) The Sustainable Development Goals (SDGs);
- (i) The Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention);
- (j) Agenda 21;
- (k) The Association of Caribbean States;
- (l) Barbados Programme of Action for the Sustainable Development of SIDS (BPOA):
 - (i) Mauritius Strategy of Implementation (MSI);

- (m) Latin American and Caribbean Initiative for Sustainable Development (ILAC);
- (n) The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention);
- (o) Caribbean Alliance for Sustainable Tourism (CAST);
- (p) The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (the Chemicals Weapons Convention-CWC);
- (q) The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (The London Protocol and London Convention);
- (r) The Montreal Protocol on Substances that Deplete the Ozone Layer (The Montreal Protocol);
- (s) The Stockholm Convention on Persistent Organic Pollutants (The Stockholm Convention);
- (t) The St. George's Declaration of Principles of Environmental Sustainability in the OECS (SGD);
- (u) The Ramsar Convention on Wetlands of International Importance Especially as Waterfowl (Ramsar Convention /Convention on Wetlands);
- (v) The United Nations Convention to Combat Desertification (UNCCD);
- (w) The United Nations Framework Convention on Climate Change (UNFCCC);
- (x) The United Nations Conference on Sustainable Development (UNCSD);
- (y) World Trade Organization (WTO).

The GEF-IWEco project has four components: (1) Development and implementation of integrated targeted innovative, climate-change resilient approaches in sustainable land management (SLM), integrated water resources management (IWRM) and maintenance of ecosystem services; (2) Strengthening

of the SLM, IWRM and ecosystems monitoring, and indicators framework; (3) Strengthening of the policy, legislative and institutional reforms and capacity building for SLM, IWRM and ecosystem services management taking into consideration climate change resilience building and (4) Enhancing knowledge exchange, best practices, replication and stakeholder involvement. The project will be implemented through a network of international, regional and national partners in accordance with their comparative advantage. This assignment to develop a Regional Environmental Indicators Compendium in IWEco Participating States forms part of the activities associated with regional component 2.1: Strengthened national and regional systems for monitoring of environmental status with respect to key international agreements; CARPHA is implementing this component.

The current situation in the sector in terms of water, land, forest and biodiversity challenges speaks to the Caribbean Small Island Developing States (SIDS) being characterised by, and facing challenges emanating from their small, open economies – highly vulnerable to external shocks, limited infrastructure, high vulnerability of ecosystems to natural hazards. These combined with multiple drivers and root causes such as prevailing land tenure systems, fragile ecosystem habitats, physiographic and climatic variation, overexploitation of certain species, invasive species, competition and conflicts pertaining to resource use and user categories including urban settlement, agriculture, fisheries, forestry, tourism and other developments, and impacts of global climate change, all combine to erode the ability of CARICOM States to meet their development aspirations sustainably.

Caribbean SIDS are facing multiple threats of land and water resource degradation, depletion of biological resources, and compromised ecosystem functioning due to intensive developmental pressures on very fragile environments. The “Ridge to Reef” or Integrating Watershed Management

approach to natural resources management in SIDS is promoted in the Caribbean for maintaining sustainable ecosystems (water, land and biodiversity).

Given the spatial and temporal scarcity of water resources in many countries of the Caribbean, in terms of supply reliability, numerous communities suffer from inadequate availability of clean drinking water and are faced with associated health problems due to unsanitary drinking water, lack of access to sustainable sanitation services, and poor wastewater treatment. Investments by water utilities are hampered by undercapitalization and there is a lack of appropriate governance arrangements to facilitate coordinated management of the water resources along with service provision. IWRM approaches, while becoming better appreciated in the Caribbean have not seen the level of evolution required to make significant changes in mainstreamed inter-sectoral governance for improving water resources management, wastewater management and sanitation. Water source availability in terms of quality and quantity of the resource has been negatively impacted by poor land management practices.

The rise in development has contributed to the rise in land-based sources of marine pollution and the adverse impacts on marine and coastal resources, livelihoods and human and environmental health. The significant increase in conversion of land use from forests to agriculture and urbanisation has contributed to soil erosion which in turn contributes to increasing sedimentation in freshwater and marine ecosystems and has also impacted the marine and terrestrial habitat of many native species resulting in decline in biodiversity richness for which the region is known.

Climate change is a significant driver that may accelerate the significant rate of degradation that is being imposed on the sensitive ecosystems in Caribbean SIDS. Climate change impacts will therefore have serious deleterious environmental, social and economic consequences for these islands. As sea

surface temperatures increase, the frequency of high intensity hurricanes and rainfall events is a likely outcome that will worsen land degradation and ecosystem impairment, and further accelerate the deterioration of marine ecosystems through pollutant and sediment mobilization. With higher rainfall intensities the risk of flooding will be increased along with risk of loss of life and property. Already the region is experiencing the effects on corals as they bleach and die with warmer seas, changing weather patterns that affect watersheds and water resources, and the invasion of non-native species is already creating serious problems on islands. Climate change experts estimate that annual rainfall accumulations across much of the Caribbean could be potentially reduced by as much as one third, presenting serious challenges for surface and ground water aquifer recharge threatening water security in many in areas where the water supply infrastructure is already compromised on account of operational challenges, or where demand simply outstrips supply.

In terms of capacity and mainstreaming challenges, efforts to reduce the negative environmental impacts, protect watersheds, and conserve endangered biodiversity while supporting traditional livelihoods have been frustrated by generally weak policy, in addition to inadequate regulatory and institutional environments. Human and financial resource availability within responsible state agencies remain constrained and compounded by limited economic incentives that will support private sector engagement to invest in greener, cleaner production processes.

Pursuant to the UNCCD and CBD conventions, most Caribbean countries have developed National Action Plans (NAPs) and National Biodiversity Strategy and Action Plans (NBSAPs) that lay out strategic actions in the management of land, forest and biological resources (including terrestrial and marine ecosystems), as well as climate change adaptation and to some extent, fresh water

resources. Many policies have been developed and pieces of legislation drafted but the implementation of these are impacted by the inability to adequately mainstream policies into national planning and development and to adequately monitor and enforce legislative mandates, especially those related to environmental protection. Weak coordinating mechanisms and communication among state and non-state actors have also contributed to the inadequate implementation of policies and strategies. There is need therefore to create or improve the enabling environment for integrated natural resources management by strengthening implementation frameworks, enhancing coordinating mechanisms and building capacity at the national and regional level.

This assignment incorporated outputs from other donor related programmes, project and activities. Some of these include results of activities under the following projects:

- IWCAM Indicators Mechanism and Capacity Assessment;
- State of Convention Area Report on Pollution (CEP) – SOCAR;
- State of Marine Biodiversity Report (CEP);
- CLME+ Indicators proposed by CLME+ Project;
- LME Indicators proposed by GEF IW Learn;
- UNEP ROLAC and their work on indicators including with CARICOM;
- Regional Seas Indicators - Integrated Management and Governance Strategies for Delivery of Ocean-related Sustainable Development Goals"
- Indicators relating to SDGs and in particular SDG 6, 14 and 15
- GEF Portfolio Indicators for Biodiversity, International Waters and Land Degradation;

These projects form part of a greater body of work that seeks to provide indicators for various regional activities and programs as it relates to environmental health and sustainable development goals.

The five-year (2016-2021) Integrated Water, Land and Ecosystems Management (IWEco) Project objective is to provide an integrated framework in support of ecosystem integrity, biodiversity conservation and sustainable livelihoods through sustainable land, forest and watershed management, improved fresh and coastal water resources management, and enhanced resilience to climate change impacts.

The GEF funded Project involves working with ten (10) Caribbean Participating States and consists of the following four components:

- 1) Development and implementation of integrated targeted innovative, climate-change resilient approaches in Sustainable Land Management (SLM), Integrated Water Resources Management (IWRM) including Water use Efficiency (WUE), Integrated Coastal Zone Management (ICZM) and maintenance of ecosystem services;
- 2) Strengthening of the SLM, IWRM and Ecosystems Monitoring, and Indicators framework(s);
- 3) Strengthening of the Policy, legislative and institutional reforms and capacity building for SLM, IWRM/WUE and ecosystem services management taking into consideration climate change resilience building; and
- 4) Enhancing knowledge exchange, best-practices, replication and stakeholder involvement.

This assignment falls under the regional component 2.1. The component's objective is to strengthen national and regional systems for monitoring of environmental status with respect to key international agreements. This assignment falls directly under Sub-component 2.1.1: Development of a Regional Environmental Indicators Compendium. The project will strengthen the scientific basis for effective monitoring and assessment to include tools and

indicators for multi-scale application by developing improved methods for multi-scale assessment and monitoring of land degradation trends, and for impact monitoring of GEF investment in water, land and ecosystem services maintenance. This will build on existing GEF-financed initiatives to fully integrate methods for establishment of project baselines, identifying measurable environmental indicators, and subsequent monitoring.

Indicators provide a means of assessing natural and anthropogenic impacts on the environment and activities aimed at mitigating negative impacts. Over the years, several indicators have been developed as a means of monitoring anthropogenic activities, natural events and the exacerbating impacts of climate change on these; as well as processes and policies aimed at strengthening mitigating activities.

National, regional and global indicators have also been developed to support monitoring of the achievements of environmental targets associated with country visions, development plans and strategies as well as regional and global Multilateral Environmental Agreements (MEAs).

The Compendium of Indicators speaks to causal linkages in human-environment systems such as those captured in conceptual frameworks like the driver-pressure-state-impact-response model; as well as identification of any new indicators that would assist with national reporting on the status of the environment and fulfilment of various Multi-lateral Environmental Agreements (MEAs).

Section One

Core Environmental Indicators

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National and CARICOM Environmental Indicators Compendium

2.0 Routine National and CARICOM Environmental Indicators

This sections covers, what can be classified – for the most part- as a set of routine environmental indicators compiled at the national level into national environmental datasets, reports and, in some cases, national environmental compendium. This culminates at the regional level into the CARICOM Environment in Figures.

The CARICOM Environment In Figures (2014) chapters covers population and households, tourism, environmental health, natural disasters, energy and minerals, land use and agriculture, coastal and marine resources, biodiversity, forests, air, waste and water. The chapters are mapped (table 1) to the themes of: atmosphere, biodiversity, coasts and seas, freshwater resources, land and land cover, natural disasters, sanitation and human health, waste, tourism, socio-economics and governance and the environment and sustainable development. Table 2 give a detailed presentation of a set of CARICOM/National routine environmental indicators presented by chapter areas/themes/sub-themes and with their associated data elements.

Table 1: Areas covered in each chapter of the CARICOM Environment In Figures mapped against the main Themes

<p>ENVIRONMENTAL THEMES/SUB-THEMES</p>	<p>Theme: Atmosphere Sub-theme: Climate, Air quality</p>	<p>Theme: Biodiversity Sub-theme: Habitats, species</p>	<p>Theme: Coasts & Seas Sub-theme: Fisheries, coastal ecosystems, water quality, sea level</p>	<p>Theme: Freshwater Resources Sub-theme: Water quality, availability/use</p>	<p>Theme: Land and Land Cover Sub-theme: Forest, urbanization, agriculture, land degradation</p>	<p>Theme: Natural Disasters Sub-theme: Occurrence; human, economic environmental impacts</p>	<p>Theme: Sanitation and Human Health Sub-theme: Access to sanitation and freshwater, related illnesses</p>	<p>Theme: Waste Sub-theme: Waste generation, waste management</p>	<p>Theme: Tourism Sub-theme: Tourism intensity, environmental impacts</p>	<p>Theme: Socio-economics & Governance Sub-theme: Population, economic development, human development, Institutional and policy setting</p>	<p>Theme: Environment & Sustainable Development</p>
<p>AREAS COVERED IN EACH CHAPTER</p>	<p>Chapter 10: Air</p>	<p>Chapter 8: Biodiversity</p>	<p>Chapter 7: Coastal and Marine Resources</p>	<p>Chapter 12: Water</p>	<p>Chapter 6: Land Use and Agriculture Chapter 9: Forests</p>	<p>Chapter 4: Natural Disasters</p>	<p>Chapter 3: Environmental Health</p>	<p>Chapter 11: Waste</p>	<p>Chapter 2: Tourism</p>	<p>Chapter 1: Population and Households Chapter 5: Energy and Minerals</p>	

Table 2: CARICOM/National routine environmental indicators presented by chapter areas and with their associated data elements

Chapter Area	Indicator	Data elements
1.0 Population and Households	Number of households by type of dwelling	(a) Number of households (b) Type of dwelling
	Percentage distribution of households by type of dwelling	(a) Percentage distribution of households (b) Type of dwelling
	Number of households by type of tenure	(a) Number of households (b) Type of tenure
	Percentage distribution of households by type of tenure	(a) Percentage distribution of households (b) Type of tenure
	Number of households by type of material of outer walls	(a) Number of households (b) Type of material of outer walls
	Number of households by type of material used for roofing	(a) Number of households (b) Type of material used for roofing
	Number of households by number of bedrooms	(a) Number of households (b) Number of bedrooms
	Population by size of household	(a) Population (b) Size of households
2.0 Tourism	Average tourist nights spent, tourists and cruise ship arrivals by year	(a) Average tourist nights spent (b) Tourist arrivals (c) Cruise ship arrivals (d) Year
	Tourist intensity ratio	(a) Tourist arrivals (b) Population (c) Year
	Tourism density ratio	(a) Number of visitors/tourists (b) Average stay (c) Land area (d) Number of days in a year (e) Year

Table 2: CARICOM/National routine environmental indicators presented by chapter areas and with their associated data elements

Chapter Area	Indicator	Data elements
2.0 Tourism cont'd	Tourist penetration ratio	(a) Number of visitors (b) Average stay (c) Mid-year population estimates (d) Number of days in a year (e) Year
	Number of hotels by number of rooms (size)	(a) Number of hotels (b) Number of rooms (c) Year
	Number of beds	(a) Number of beds
	Total number of rooms occupied	(a) Number of rooms occupied (b) Year
	Room occupancy rate	(a) Number of rooms occupied (b) Number of rooms available for use (c) Year
	Visitor expenditure	(a) Number of rooms occupied (b) Number of rooms available for use (c) Visitor expenditure (d) Year
	International and domestic tourism expenditure	(a) International tourism expenditure (b) Domestic tourism expenditure (c) Year
	Expenditure on same-day visits	(a) Expenditure on same-day visits (b) Year
	Expenditure on accommodation, meals, drinks and shopping	(a) Expenditure on accommodation (b) Expenditure on meals and drinks (c) Expenditure on shopping (d) Year
Total number of persons employed directly in the tourism sector by gender	(a) Total number of persons employed directly in the tourism (b) Gender of employees (c) Year	

Table 2: CARICOM/National routine environmental indicators presented by chapter areas and with their associated data elements

Chapter Area	Indicator	Data elements
	Tourist arrivals by type of accommodation	(a) Tourist arrivals (b) Type of accommodation (c) Year
	Percentage distribution of tourist arrivals by type of accommodation	
2.0 Tourism cont'd	Tourist arrivals by Country of Origin	(a) Tourist arrivals (b) Country of Origin (c) Year
3.0 Environmental Health	Number of reported cases of environmentally related diseases by gender	(a) Number of reported cases of environmentally related diseases (b) Gender (c) Year
	Number of households by type of sanitation facilities	(a) Number of households (b) Type of sanitation facilities (c) Year
	Number of households by type of water supply	(a) Number of households (b) Type of water supply (c) Year
	Percentage distribution of households by type of water supply	
4.0 Natural Disasters	Natural disaster type by year, type of causality, total population affected, estimated damage in dollar value, affected persons by flooding, power outage, or general inconvenience	(a) Natural disaster type (b) Type of causality (c) Total population affected, (d) Estimated damage in dollar value (e) Affected persons by flooding, power outage, or general inconvenience (f) Year
5.0 Energy and Minerals	Energy consumption by type and year	(a) Energy consumption by Type and (b) Year
	Number of household by type of fuel used for cooking	(a) Number of household (b) Type of fuel used for cooking
	Number of household by type of fuel used for lighting	(a) Number of household (b) Type of fuel used for lighting
	Mineral production by type	(a) Mineral production (b) Type of mineral (c) Year

Table 2: CARICOM/National routine environmental indicators presented by chapter areas and with their associated data elements

Chapter Area	Indicator	Data elements
5.0 Energy and Minerals <i>cont'd</i>	Mineral reserves by type	(a) Mineral reserves (b) Type of mineral (c) Year
6.0 Land Use and Agriculture	Land use	(a) Land use (b) Year
	Use of fertilizer by type and year	(c) Use of fertilizer (d) Type of fertilizer (e) Year
	Use of pesticides by type and year	(f) Use of pesticides (g) Type of pesticides (h) Year
7.0 Coastal and Marine Resources	Total marine area	(a) Total marine area (b) Year
	Protected marine area	(a) Protected marine area (b) Year
	Total fish landing	(a) Total fish landing (b) Year
	Fish landing by fish type	(a) Total fish landing (b) Fish type (c) Year
	Population in coastal areas	(a) Population in coastal areas (b) Year
	Number of families in coastal areas	(a) Number of families in coastal areas (b) Year
8.0 Biodiversity	Protected area as a percentage of total area	(a) Protected area (b) Total area (c) Year
9.0 Forests	Protected forest area as a percentage of total forest area	(a) Protected forest area (b) Total forest area (c) Year

Table 2: CARICOM/National routine environmental indicators presented by chapter areas and with their associated data elements

Chapter Area	Indicator	Data elements
9.0 Forests <i>cont'd</i>	Protected forest area as a percentage of total land area	(a) Protected forest area (b) Total land area (c) Year
10.0 Air	Emissions of Carbon Dioxide (CO ₂)	(a) Carbon dioxide emissions (b) Year
	Emissions of Sulfur Dioxide (SO ₂)	(a) Sulfur dioxide emissions (b) Year
	Emissions of Nitrogen Oxides (NO _x)	(a) Nitrogen oxides emissions (b) Year
	Emissions of Non-Methane Volatile Organic Compounds (NM-VOCs)	(a) Non-Methane volatile organic compounds emissions (b) Year
	Emissions of Lead (P _b)	(a) Lead emissions (b) Year
	Consumption of Leaded Petrol	(a) Leaded petrol consumption (b) Year
10.0 Waste	Generation of waste by source	(a) Generation of waste by source (b) Year
	Management of hazardous waste: (i) Stock of hazardous waste at the beginning of the year (ii) Hazardous waste generated during the year (iii) Hazardous waste imported during the year (iv) Hazardous waste exported during the year (v) Hazardous waste treated or disposed of during the year (recycling, incinerated, landfilled, other, total) (vi) Stock of hazardous waste at the end of the year	(a) Stock of hazardous waste at the beginning of the year (b) Hazardous waste generated during the year (c) Hazardous waste imported during the year (d) Hazardous waste exported during the year (e) Hazardous waste treated or disposed of during the year (f) Stock of hazardous waste at the end of the year (g) Year

Table 2: CARICOM/National routine environmental indicators presented by chapter areas and with their associated data elements

Chapter Area	Indicator	Data elements
11.0 Waste cont'd	Management of municipal waste: (i)Municipal waste collected from households (ii)Municipal waste collected from households (iii) Total amount of municipal waste (a+b) (iv) Municipal waste imported for treatment /disposal (v) Municipal waste exported for treatment /disposal (vi) Municipal waste managed in country – amounts going to: recycling, composting, incineration, landfilling, controlled landfilling, other and total (vii) Total population served by municipal waste collection (%) (viii) Urban population served by municipal waste collection (ix) Rural population served by municipal waste collection	(a) Municipal waste collected from households (b) Municipal waste collected from other origins (c) Municipal waste imported for treatment/disposal (d) Municipal waste imported for treatment/disposal (e) Municipal waste managed in country disaggregated by: recycling, composting, incineration, landfilling, controlled landfilling, other (f) Total population served by municipal waste collection (g) Urban population served by municipal waste collection (h) Rural population served by municipal waste collection (i) Year
	Composition of municipal waste (paper/paperboard, textiles, plastic, glass, metals, other inorganic material, organic material, organic material of which: food and garden waste)	(a) Composition of municipal waste (b) Year
	Management of municipal waste – city data: (i)Total population of the city (ii)Percentage of city population served by municipal waste collection (%) (iii) Municipal waste collected from households (iv) Municipal waste collected from other origins (v) Total municipal waste collected (vi) Municipal waste imported for treatment/disposal (vii) Municipal waste exported for treatment/disposal (viii) Municipal waste managed in the country, amounts going to: (recycling, composting, incinerating, landfilling, controlled landfilling, other and total)	(a) Total population of the city (b) Population of city served by municipal waste collection (c) Municipal waste collected from households (d) Municipal waste collected from other origins (e) Municipal waste imported for treatment/disposal (f) Municipal waste exported for treatment/disposal (g) Municipal waste managed in the country disaggregated by recycling, composting, incinerating, landfilling, controlled landfilling and other (h) Year
	Waste treatment and disposal facilities	(a) Waste treatment and disposal facilities (b) Year
	Generation and recycling of selected waste material	(a) Generation and recycling of selected waste material (b) Year

Table 2: CARICOM/National routine environmental indicators presented by chapter areas and with their associated data elements

Chapter Area	Indicator	Data elements
12.0 Water	Renewable freshwater resources by resource type	(a) Renewable freshwater resources by (i) Precipitation (ii) Actual evapotranspiration (iii) Internal flow (1-2) (iv) Inflow of surface and ground waters (v) Total renewable fresh water resources (iii + iv) (vi) Outflow of surface and ground waters to neighbouring countries (b) Year
	Freshwater abstraction and use: (i) Fresh surface water abstracted (ii) Fresh ground water abstracted (iii) Freshwater abstracted (i + ii) (iv) Desalinated water (v) Reused water (vi) Imports of water (vii) Exports of water (viii) Total fresh water available for use (iii + iv + v + vi + vii) (ix) Losses during transportation (x) Total freshwater use (viii – ix) [W4, 1] Freshwater abstracted of which abstracted by: <ul style="list-style-type: none"> • Water supply industry (ISIC 36) • Households • Agriculture, forestry and fishing (ISIC 01-03) • Manufacturing (ISIC 10-33) • Electricity Industry (ISIC 351) • Other economic activities 	(a) Fresh surface water abstracted (b) Fresh groundwater abstracted (c) Desalinated water (d) Reused water (e) Imports of water (f) Exports of water (g) Losses during transportation (h) Freshwater abstracted of which abstracted by: <ul style="list-style-type: none"> ○ Water supply industry (ISIC 36) ○ Households ○ Agriculture, forestry and fishing (ISIC 01-03) ○ Manufacturing (ISIC 10-33) ○ Electricity Industry (ISIC 351) (i) Year
	Total fresh water use, of which by: (i) Households (ii) Agriculture, forestry and fishing (ISIC 01 03) (iii) Manufacturing (ISIC 10-33) (iv) Electricity industry (ISIC 351) (v) Other economic activities (vi) Total	(a) Total fresh water use disaggregated by: (i) Households (ii) Agriculture, forestry and fishing (ISIC 01 03) (iii) Manufacturing (ISIC 10-33) (iv) Electricity industry (ISIC 351) (v) Other economic activities

Table 2: CARICOM/National routine environmental indicators presented by chapter areas and with their associated data elements

Chapter Area	Indicator	Data elements
12.0 Water <i>cont'd</i>	Gross freshwater supplied by water supply industry (ISIC 36)	(a) Gross freshwater supplied by water supply industry (ISIC 36)
	Losses during transport by supply industry (ISIC 36)	(a) Losses during transport by supply industry (ISIC 36) (b) Year
	Net freshwater supplied by water supply industry (ISIC 36)	(a) Net freshwater supplied by water supply industry (ISIC 36) (b) Year
	Net freshwater supplied by water supply industry (ISIC 36 of which supplied to: (i)Households (ii) Agriculture, forestry and fishing (ISIC 01 03) (iii) Manufacturing (ISIC 10-33) (iv)Electricity industry (ISIC 351) (v)Other economic activities	(a) Net freshwater supplied by water supply industry (ISIC 36 of which supplied to: (i)Households (ii) Agriculture, forestry and fishing (ISIC 01 03) (iii) Manufacturing (ISIC 10-33) (iv)Electricity industry (ISIC 351) (v)Other economic activities
	Population supplied by water supply industry (ISIC 36) 9%)	(a) Population supplied by water supply industry (b) Year
	Population connected to waste water treatment:	
	Population connected to wastewater (% of pop.)	(a) Population connected to wastewater (b) Total population (c) Year
	Population connected to wastewater treatment (total)	(a) Population connected to wastewater treatment
	Population connected to wastewater treatment of which at least secondary treatment	(a) Population connected to wastewater treatment of which at least secondary treatment
	Population with independent wastewater (% of pop)	(a) Population with independent wastewater (b) Total population
Population not connected to wastewater (% of pop)	(a) Population not connected to wastewater (b) Total population	

Environmental Indicators

Data Gap Analysis

3.0 Environmental Indicators Data Gap Analysis

This section captures the routine environmental indicators, compiled national and culminating regional into the CARICOM Environment in Figures (2014), data gaps by country. Specifically, for the Member States of Antigua and Barbuda, Barbados, Grenada, Jamaica, Saint Lucia, St. Kitts and Nevis, Saint Vincent and the Grenadines and Trinidad and Tobago the data gaps for the indicators and associated data elements are presented, in table 3 below, as per the follows themes/sub-themes:

- population and households;
- tourism;
- environmental health;
- natural disasters;
- energy and minerals;
- land use and agriculture;
- coastal and marine resources;
- biodiversity;
- forests;
- air;
- waste and
- water.

Table 3 : Environmental indicators data gaps presented by Participating States and themes/sub-themes¹

DESCRIPTION OF INDICATORS	DATA GAP FOR INDICATORS AND DATA ELEMENTS (2009 – 2014) <i>{being updated to 2019/2020}</i>							
	Antigua and Barbuda	Barbados	Grenada	Jamaica	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines	Trinidad and Tobago
Theme/Sub-Theme: Population and Households								
Number of Households by Type of Dwelling (2000, 2001, 2010, 2011, 2012)	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2000 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Percentage Distribution of Households by Type of Dwelling (2000, 2001, 2010, 2011, 2012)	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2000 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Number of Households by Type of Tenure (2000, 2001, 2010, 2011, 2012)	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2000 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Percentage Distribution of Households by Type of Tenure (2000, 2001, 2010, 2011, 2012)	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2000 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Number of Households by Type of Materials of Outer Walls (2000, 2001, 2010, 2011, 2012)	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2000 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Percentage Distribution of Households by Type of Materials of Outer Walls (2000, 2001, 2010, 2011, 2012)	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2000 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Number of Households by Type of Material used for Roofing (2000, 2001, 2010, 2011, 2012)	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2000 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Percentage Distribution of Households by Type of Material used for Roofing (2000, 2001, 2010, 2011, 2012)	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2000 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Households by Number of Bed Rooms (2000, 2001, 2010, 2011, 2012)	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2000 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Percentage Distribution of Households by Number of Bed Rooms (2000, 2001, 2010, 2011, 2012)	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2000 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Number of Households by Size of Household (2000, 2001, 2010, 2011, 2012)	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2000 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Percentage Distribution of Households by Size of Household (2000, 2001, 2010, 2011, 2012)	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2000 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)

¹ MD: Missing data; DATA: Data is available.

Table 3 : Environmental indicators data gaps presented by Participating States and themes/sub-themes¹

DESCRIPTION OF INDICATORS	DATA GAP FOR INDICATORS AND DATA ELEMENTS (2009 – 2014) <i>{being updated to 2019/2020}</i>							
	Antigua and Barbuda	Barbados	Grenada	Jamaica	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines	Trinidad and Tobago
Theme/Sub-theme: Tourism								
Tourists, Cruise Ships Arrivals and Average Tourist Nights Spent by Year (2009-2013)								
Visitor arrivals								
Stop over (tourists)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2014)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2014)
Cruise passengers	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2014)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2014)
Other	MD	MD	DATA (2009 - 2013)	MD	MD	DATA (2009 - 2013)	MD	MD
Cruise ships arrivals	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2014)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)
Average nights spent	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2014)	MD	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2010)
Tourism Intensity Rate, Tourism Density Ratio and Tourist Penetration Ratio (2009-2013)								
Tourism intensity rate	MD	MD	MD	MD	MD	DATA (2009 - 2013)	MD	MD
Tourism density ratio	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)
Tourism penetration ratio	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)
Number of Hotels classified by Size, Beds and Rooms by Year (2009-2013)								
Hotel by number of rooms	MD	MD	MD	DATA (2009 - 2013)	MD	MD	MD	DATA (2009 - 2013)

Table 3 : Environmental indicators data gaps presented by Participating States and themes/sub-themes¹

DESCRIPTION OF INDICATORS	DATA GAP FOR INDICATORS AND DATA ELEMENTS (2009 – 2014) <i>{being updated to 2019/2020}</i>							
	Antigua and Barbuda	Barbados	Grenada	Jamaica	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines	Trinidad and Tobago
Total number of beds	MD	MD	MD	DATA (2009 - 2013)	MD	MD	MD	MD
Total number of rooms occupied	MD	MD	MD	MD	MD	MD	MD	MD
Room occupancy rate	MD	MD	MD	DATA (2009 - 2013)	MD	MD	MD	MD
Visitor Expenditure and Number Employed in Tourism (2009-2013)								
Visitor expenditure (US\$M)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2012)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)
Int'l and domestic tourism expenditure ('000US\$)	MD	MD	MD	MD	MD	MD	MD	MD
Expenditure on same-day visits ('000US\$)	MD	MD	DATA (2009 - 2013)	MD	MD	MD	MD	MD
Expenditure on accommodation, meals and drinks, shopping, entertainment etc. ('000US\$)	MD	MD	MD	MD	MD	MD	MD	DATA (2009 - 2013)
Total directly employed in tourism	MD	MD	MD	DATA (2009 - 2013)	MD	MD	MD	MD
Number of Tourist Arrivals by Type of Accommodation (2009-2013)								
	MD	MD	MD	DATA (2009 - 2014)	MD	DATA (2009 - 2013)	DATA (2009 - 2012)	MD
Percentage Distribution of Tourist Arrivals by Type of Accommodation (2009-2013)								
	MD	DATA (2009 - 2013)	MD	DATA (2009 - 2014)	MD	DATA (2009 - 2013)	DATA (2009 - 2012)	MD
Tourist Arrivals by Country of Origin (2009-2013)								
	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)
Percentage Distribution of Tourist Arrivals by Country of Origin (2009-2013)								
	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)	DATA (2009 - 2013)

Table 3 : Environmental indicators data gaps presented by Participating States and themes/sub-themes¹

DESCRIPTION OF INDICATORS	DATA GAP FOR INDICATORS AND DATA ELEMENTS (2009 – 2014) <i>{being updated to 2019/2020}</i>							
	Antigua and Barbuda	Barbados	Grenada	Jamaica	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines	Trinidad and Tobago
Theme/Sub-Theme: Environmental Health								
Number of Reported Cases of Environmentally Related Diseases (2009 - 2013)			DATA (2009-2013)			DATA (2009-2013)		DATA (2009-2013)
Number of Households by Type of Sanitation facilities (2000, 2001, 2010, 2011 & 2012)	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2001 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Percentage distribution of Households by Type of Sanitation facilities (2000, 2001, 2010, 2011 & 2012)	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2001 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Number of Households by Type of Water Supply (2000, 2001, 2010, 2011 & 2012)	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2001 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Percentage distribution of Households by Type of Water Supply (2000, 2001, 2010, 2011 & 2012)	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2001 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Theme/Sub-Theme: Natural Disasters								
Natural Disasters by Year (2009 - 2014)								
Disaster								
Type of disaster	MD	MD	DATA (2011)	DATA (2009, 2010 & 2013)	MD	DATA (2009, 2010 & 2011)	DATA (2009)	MD
Name of disaster	MD	MD	-	DATA (2009, 2010 & 2013)	MD	DATA (2009, 2010 & 2011)	MD	MD
Date started	MD	MD	DATA (2011)	DATA (2009, 2010 & 2013)	MD	DATA (2009, 2010 & 2011)	MD	MD
Total casualties	MD	MD	DATA (2001)	DATA (2009, 2010 & 2013)	MD	DATA (2009, 2010 & 2011)	MD	MD
Total Population Affected (Number)Type of disaster	MD	MD	MD	DATA (2009, 2010 & 2013)	MD	MD	MD	MD

Table 3 : Environmental indicators data gaps presented by Participating States and themes/sub-themes¹

DESCRIPTION OF INDICATORS	DATA GAP FOR INDICATORS AND DATA ELEMENTS (2009 – 2014) <i>{being updated to 2019/2020}</i>							
	Antigua and Barbuda	Barbados	Grenada	Jamaica	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines	Trinidad and Tobago
Affected persons by flooding, power outage, or general inconvenience	MD	MD	MD	DATA (2009, 2010 & 2013)	MD	MD	MD	MD
Damage	MD	MD	MD	DATA (2009, 2010 & 2013)	MD	DATA (2009, 2010 & 2011)	MD	MD
Theme/Sub-Theme Energy and Minerals								
Energy consumption by type and year	DATA (2009 & 2013)	MD	MD	DATA (2009 & 2013)	MD	MD	DATA (2009 & 2013)	DATA (2009 & 2013)
Number of Households by Type of Fuel used for cooking (2000 & 2010)	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2001 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Percentage Distribution of Households by Type of Fuel used for cooking	DATA (2001 & 2011)	DATA (2000 & 2010)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2001 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Number of Households by Type of Fuel used for Lighting	DATA (2001, 2009-2014)	DATA (2000)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2001 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Percentage distribution of Households by Type of Fuel used for lighting	DATA (2001 & 2011)	DATA (2000)	DATA (2001)	DATA (2001 & 2011)	DATA (2001)	DATA (2001 & 2010)	DATA (2001 & 2012)	DATA (2000 & 2011)
Mineral Production by Type	MD	MD	MD	DATA (2010 - 2014)	MD	MD	MD	DATA (2009 - 2014)
Mineral Reserves by Type	MD	MD	MD	DATA (2012)	MD	MD	MD	DATA (2013)
Theme/Sub-Theme: Land Use and Agriculture								
Total and protected marine area (2009 - 2013)								
Land use	DATA (2010)	MD	MD	DATA (2009-2013)	MD	MD	MD	MD
Use of fertilizer by type and year	DATA (2009-2013)	DATA (2009-2013)	DATA (2009-2013)	DATA (2009-2013)	DATA (2009-2013)	DATA (2009-2013)	DATA (2009-2013)	DATA (2009-2013)

Table 3 : Environmental indicators data gaps presented by Participating States and themes/sub-themes¹

DESCRIPTION OF INDICATORS	DATA GAP FOR INDICATORS AND DATA ELEMENTS (2009 – 2014) <i>{being updated to 2019/2020}</i>							
	Antigua and Barbuda	Barbados	Grenada	Jamaica	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines	Trinidad and Tobago
Use of pesticides by type and year	DATA (2009-2013)	DATA (2009-2013)	DATA (2009-2013)	DATA (2009-2013)	DATA (2009-2013)	DATA (2009-2013)	DATA (2009-2013)	DATA (2009-2013)
Theme/Sub-Theme: Coastal and Marine Resources								
Total and protected marine area (2009 - 2013)								
Total marine area	DATA (2009)	MD	MD	DATA (2009-2013)	MD	MD	DATA (2010)	DATA (2009-2014)
Protected marine area	MD	MD	MD	DATA (2009-2013)	MD	MD	DATA (2010)	DATA (2009-2014)
Fish landings (metric tonnes)	MD	MD	MD	MD	MD	DATA (2009-2013)	DATA (2009-2013)	DATA (2009-2013)
Fish landing by type	MD	MD	MD	MD	MD	DATA (2009-2013)	MD	DATA (2009-2013)
Number of families and population of coastal area	MD	MD	MD	MD	MD	MD	MD	MD
Theme/Sub-Theme: Biodiversity								
Protected Area as a Percentage of Total Area (2009 - 2013)								
Total area	MD	DATA (2009 2010)	MD	MD	MD	MD	DATA (2010)	DATA (2009-2013)
Protected area	MD	DATA (2009 2010)	MD	DATA (2010)	MD	MD	DATA (2010)	DATA (2009-2013)
Protected area as a percentage of total area	MD	DATA (2009 2010)	MD	MD	MD	MD	DATA (2010)	DATA (2009-2013)
Forest Area								

Table 3 : Environmental indicators data gaps presented by Participating States and themes/sub-themes¹

DESCRIPTION OF INDICATORS	DATA GAP FOR INDICATORS AND DATA ELEMENTS (2009 – 2014) <i>{being updated to 2019/2020}</i>							
	Antigua and Barbuda	Barbados	Grenada	Jamaica	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines	Trinidad and Tobago
Forest Area (2009 - 2013)								
Total land area	DATA (2009)	DATA (2009)	MD	DATA (2009-2013)	MD	MD	MD	DATA (2009-2013)
Total forest area	DATA (2009)	DATA (2009)	MD	DATA (2009-2013)	MD	MD	MD	DATA (2009-2013)
Protected forest area	DATA (2009)	DATA (2009)	MD	DATA (2009-2013)	MD	MD	MD	DATA (2009-2013)
Protected forest area as a percentage of total forest area	DATA (2009)	DATA (2009)	DATA (2009, 2010 & 2011)	DATA (2009-2013)	MD	MD	MD	DATA (2009-2013)
Protected forest area as a percentage of total land area	DATA (2009)	DATA (2009)	MD	DATA (2009-2013)	MD	MD	MD	DATA (2009-2013)
Theme/Sub-Theme: Air								
Air Emissions (2009 - 2013)								
Emissions of Sulfur Dioxide (SO ₂)	MD	MD	MD	MD	MD	MD	MD	MD
Emissions of Nitrogen Oxides (NO _x)	MD	MD	MD	MD	MD	MD	MD	MD
Emissions of Non-Methane Volatile Organic Compounds (NM-VOCs)	MD	MD	MD	MD	MD	MD	MD	MD
Emissions of Carbon Dioxide (CO ₂)	DATA (2009, 2010 & 2011)	DATA (2009, 2010 & 2011)	DATA (2009, 2010 & 2011)	DATA (2009, 2010 & 2011)	DATA (2009, 2010 & 2011)	DATA (2009, 2010 & 2011)	DATA (2009, 2010 & 2011)	DATA (2009, 2010 & 2011)
Emissions of Methane (CH ₄)	MD	MD	MD	MD	MD	MD	MD	MD
Emissions of Nitrous Oxide (N ₂ O)	MD	MD	MD	MD	MD	MD	MD	MD

Table 3 : Environmental indicators data gaps presented by Participating States and themes/sub-themes¹

DESCRIPTION OF INDICATORS	DATA GAP FOR INDICATORS AND DATA ELEMENTS (2009 – 2014) <i>{being updated to 2019/2020}</i>							
	Antigua and Barbuda	Barbados	Grenada	Jamaica	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines	Trinidad and Tobago
Emissions of Lead (P _b)	MD	MD	MD	MD	MD	MD	MD	MD
Consumption of Leaded Petrol	MD	MD	MD	MD	MD	MD	MD	MD
Theme/Sub-theme: Waste								
Generation of Waste by Source (2009 - 2013)								
Agriculture, forestry and fishing (ISIC 01-03)	MD	MD	MD	MD	DATA (2009-2012)	MD	DATA	MD
Mining and quarrying (ISIC 05-09)	MD	MD	MD	MD	DATA (2009-2012)	MD	MD	MD
Manufacturing (ISIC 10-33)	DATA (2009-2012)	MD	MD	MD	DATA (2009-2012)	MD	MD	MD
Electricity, gas, steam and air conditioning supply (ISIC 35)	MD	MD	MD	MD	DATA (2009-2012)	MD	MD	MD
Construction (ISIC 41-43)	DATA (2009-2012)	MD	MD	MD	DATA (2009-2012)	DATA (2009-2012)	MD	MD
Other economic activities excluding (ISIC 38)	DATA (2009-2012)	MD	MD	DATA	DATA (2009-2012)	MD	MD	MD
Households	DATA (2009-2012)	MD	MD	MD	DATA (2009-2012)	MD	MD	MD
Total waste generation (Tonnes)	DATA (2009-2012)	MD	MD	MD	DATA (2009-2012)	DATA (2009-2012)	MD	MD
Management of Hazardous Waste (2009 - 2013)								
Stock of hazardous waste at the beginning of the year	MD	MD	MD	MD	MD	DATA (2009-2012)	MD	MD

Table 3 : Environmental indicators data gaps presented by Participating States and themes/sub-themes¹

DESCRIPTION OF INDICATORS	DATA GAP FOR INDICATORS AND DATA ELEMENTS (2009 – 2014) <i>{being updated to 2019/2020}</i>							
	Antigua and Barbuda	Barbados	Grenada	Jamaica	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines	Trinidad and Tobago
Hazardous waste generated during the year	MD	MD	MD	MD	MD	MD	MD	MD
Hazardous waste imported during the year	MD	MD	MD	MD	MD	DATA (2009-2012)	MD	MD
Hazardous waste exported during the year	MD	MD	MD	MD	MD	DATA (2009-2012)	MD	MD
Hazardous waste treated or disposed of during the year:								
Recycling	DATA (2009-2012)	MD	MD	MD	MD	DATA (2009-2012)	MD	MD
Incinerated	MD	MD	MD	MD	MD	DATA (2009-2012)	MD	MD
Landfilled	DATA (2009-2012)	MD	MD	MD	MD	DATA (2009-2012)	MD	MD
Other	MD	MD	MD	MD	MD	DATA (2009-2012)	MD	MD
Total	MD	MD	MD	MD	MD	DATA (2009-2012)	MD	MD
Stock of hazardous waste at the end of the year	MD	MD	MD	MD	MD	DATA (2009-2012)	MD	MD
Management of Municipal Waste (2009 - 2013)								
Municipal waste collected from households	DATA (2009-2012)	MD	MD	MD	MD	MD	MD	MD
Municipal waste collected from other origins	DATA (2009-2012)	MD	MD	MD	MD	MD	MD	MD
Total amount of municipal waste collected	DATA (2009-2012)	MD	MD	MD	MD	DATA (2009-2012)	MD	MD

Table 3 : Environmental indicators data gaps presented by Participating States and themes/sub-themes¹

DESCRIPTION OF INDICATORS	DATA GAP FOR INDICATORS AND DATA ELEMENTS (2009 – 2014) <i>{being updated to 2019/2020}</i>							
	Antigua and Barbuda	Barbados	Grenada	Jamaica	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines	Trinidad and Tobago
Municipal waste imported for treatment/ disposal	DATA (2009-2012)	MD	MD	MD	MD	DATA (2009-2012)	MD	MD
Municipal waste exported for treatment/ disposal	DATA (2009-2012)	MD	MD	MD	MD	DATA (2009-2012)	MD	MD
Municipal waste managed in the country (2009 - 2013), amounts going to:								
Recycling	DATA (2009-2012)	MD	MD	MD	MD	MD	MD	MD
Composting	DATA (2009-2012)	MD	MD	MD	MD	MD	MD	MD
Incineration	DATA (2009-2012)	MD	MD	MD	MD	DATA (2009-2012)	MD	MD
Landfilling	DATA (2009-2012)	MD	MD	MD	MD	MD	MD	MD
Controlled landfilling	DATA (2009-2012)	MD	MD	MD	MD	MD	MD	MD
Other	DATA (2009-2012)	MD	MD	MD	MD	MD	MD	MD
Total	DATA (2009-2012)	MD	MD	MD	MD	DATA (2009-2012)	MD	MD
Total population served by municipal waste collection (%)	DATA (2009-2012)	MD	MD	MD	MD	DATA (2009-2012)	MD	MD
Urban population served by municipal waste	MD	MD	MD	MD	MD	DATA (2009-2012)	MD	MD
Rural population served by municipal waste	MD	MD	MD	MD	MD	DATA (2009-2012)	MD	MD

Table 3 : Environmental indicators data gaps presented by Participating States and themes/sub-themes¹

DESCRIPTION OF INDICATORS	DATA GAP FOR INDICATORS AND DATA ELEMENTS (2009 – 2014) <i>{being updated to 2019/2020}</i>							
	Antigua and Barbuda	Barbados	Grenada	Jamaica	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines	Trinidad and Tobago
Composition of Municipal Waste (2009 - 2013)								
Paper, paperboard	MD	MD	MD	DATA (2013)	MD	MD	MD	MD
Textiles	MD	MD	MD	DATA (2013)	MD	MD	MD	MD
Plastics	MD	MD	MD	DATA (2013)	MD	MD	MD	MD
Glass	MD	MD	MD	DATA (2013)	MD	MD	MD	MD
Metals	MD	MD	MD	DATA (2013)	MD	MD	MD	MD
Other inorganic material	MD	MD	MD	DATA (2013)	MD	MD	MD	MD
Organic material	MD	MD	MD	DATA (2013)	MD	MD	MD	MD
Organic material of which food and garden waste	MD	MD	MD	MD	MD	MD	MD	MD
Management of Municipal Waste – City Data (2009 - 2013)								
Total population of the city	MD	MD	MD	MD	MD	MD	MD	MD
Percentage of city population served by municipal waste collection (%)	MD	MD	MD	MD	MD)	MD	MD	MD
Municipal waste collected from households	MD	MD	MD	MD	MD	MD	MD	MD
Municipal waste collected from other origins	MD	MD	MD	MD	MD	MD	MD	MD

Table 3 : Environmental indicators data gaps presented by Participating States and themes/sub-themes¹

DESCRIPTION OF INDICATORS	DATA GAP FOR INDICATORS AND DATA ELEMENTS (2009 – 2014) <i>{being updated to 2019/2020}</i>							
	Antigua and Barbuda	Barbados	Grenada	Jamaica	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines	Trinidad and Tobago
Total amount of municipal waste collected	MD	MD	MD	MD	MD)	MD	MD	MD
Municipal waste imported for treatment/disposal	MD	MD	MD	MD	MD	MD	MD	MD
Municipal waste exported for treatment/disposal	MD	MD	MD	MD	MD)	MD	MD	MD
Municipal waste (City Data) managed in the country (2009 - 2013), amounts going to:	MD	MD	MD	MD	MD	MD	MD	MD
Recycling	MD	MD	MD	MD	MD)	MD	MD	MD
Composting	MD	MD	MD	MD	MD	MD	MD	MD
Incineration	MD	MD	MD	MD	MD)	MD	MD	MD
Landfilling	MD	MD	MD	MD	MD	MD	MD	MD
Controlled landfilling	MD	MD	MD	MD	MD)	MD	MD	MD
Other	MD	MD	MD	MD	MD	MD	MD	MD
Total	MD	MD	MD	MD	MD)	MD	MD	MD
Theme/Sub-Theme: Water								
Renewable Freshwater Resources (2009 - 2013)								
Precipitation	MD	MD	MD	DATA	DATA	MD	DATA	MD

Table 3 : Environmental indicators data gaps presented by Participating States and themes/sub-themes¹

DESCRIPTION OF INDICATORS	DATA GAP FOR INDICATORS AND DATA ELEMENTS (2009 – 2014) <i>{being updated to 2019/2020}</i>							
	Antigua and Barbuda	Barbados	Grenada	Jamaica	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines	Trinidad and Tobago
Actual evapotranspiration	MD	MD	MD	MD	MD	MD	MD	MD
Internal flow	MD	MD	MD	MD	MD	MD	MD	MD
Inflow of surface and groundwaters	MD	MD	MD	MD	MD	MD	MD	MD
Total renewable fresh water resources	MD	MD	MD	MD	MD	MD	MD	MD
Outflow of surface and groundwaters to neighboring countries	MD	MD	MD	DATA	MD	MD	MD	MD
Freshwater Water Abstraction and Use (2009 - 2013)								
Fresh surface water abstracted	MD	MD	MD	MD	MD	MD	MD	DATA
Fresh groundwater abstracted	MD	MD	MD	MD	MD	MD	MD	DATA
Freshwater abstracted	MD	MD	MD	MD	MD	MD	MD	DATA
Freshwater abstracted by:								
Water supply industry (ISIC 36)	MD	MD	MD	DATA	MD	MD	MD	MD
Households	MD	MD	MD	MD	MD	MD	MD	MD
Agriculture, forestry and fishing (ISIC 01-03)	MD	MD	MD	MD	MD	MD	MD	MD
Manufacturing (ISIC 10-33)	MD	MD	MD	MD	MD	MD	MD	MD

Table 3 : Environmental indicators data gaps presented by Participating States and themes/sub-themes¹

DESCRIPTION OF INDICATORS	DATA GAP FOR INDICATORS AND DATA ELEMENTS (2009 – 2014) <i>{being updated to 2019/2020}</i>							
	Antigua and Barbuda	Barbados	Grenada	Jamaica	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines	Trinidad and Tobago
Electricity industry (ISIC 351)	MD	MD	MD	MD	MD	MD	MD	MD
Other economic activities	MD	MD	MD	MD	MD	MD	MD	MD
Desalinated water	MD	MD	MD	MD	MD	MD	MD	DATA
Reused water	MD	MD	MD	MD	MD	MD	MD	DATA
Imports of water	MD	MD	MD	MD	MD	MD	MD	DATA
Exports of water	MD	MD	MD	MD	MD	MD	MD	DATA
Total freshwater available for use	MD	MD	MD	MD	MD	MD	MD	DATA
Losses during transport	MD	MD	MD	MD	MD	MD	MD	DATA
Total freshwater use	MD	MD	MD	MD	MD	MD	MD	DATA
Total freshwater use by:								
Households	MD	MD	MD	MD	MD	MD	MD	MD
Agriculture, forestry and fishing (ISIC 01-03)	MD	MD	MD	MD	MD	MD	MD	MD
Manufacturing (ISIC 10-33)	MD	MD	MD	MD	MD	MD	MD	MD
Electricity industry (ISIC 351)	MD	MD	MD	MD	MD	MD	MD	MD

Table 3 : Environmental indicators data gaps presented by Participating States and themes/sub-themes¹

DESCRIPTION OF INDICATORS	DATA GAP FOR INDICATORS AND DATA ELEMENTS (2009 – 2014) <i>{being updated to 2019/2020}</i>							
	Antigua and Barbuda	Barbados	Grenada	Jamaica	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines	Trinidad and Tobago
Other economic activities	MD	MD	MD	MD	MD	MD	MD	MD
Water Supply Industry (ISIC 36) for 2009 - 2013								
Gross freshwater supplied by water supply industry (ISIC 36)	MD	MD	MD	DATA	MD	MD	MD	MD
Losses during transport by ISIC 36	MD	MD	MD	DATA	MD	MD	MD	MD
Net freshwater supplied by water supply industry (ISIC 36)	MD	MD	MD	DATA	MD	MD	MD	MD
Net freshwater supplied by water supply industry (ISIC 36) supplied to:	MD	MD	MD	MD	MD	MD	MD	MD
Households	MD	MD	MD	MD	MD	MD	MD	MD
Agriculture, forestry and fishing (ISIC 01-03)	MD	MD	MD	MD	MD	MD	MD	MD
Manufacturing (ISIC 10-33)	MD	MD	MD	MD	MD	MD	MD	MD
Electricity industry (ISIC 351)	MD	MD	MD	MD	MD	MD	MD	MD
Other economic activities	MD	MD	MD	MD	MD	MD	MD	MD
Population (%) supplied by water supply industry (ISIC 36)	MD	MD	MD	MD	MD	MD	MD	MD
Population connected to Wastewater Treatment (2009 - 2013)								
Population connected to wastewater (% of pop)	MD	MD	MD	MD	DATA (2009-2012)	MD	MD	MD

Table 3 : Environmental indicators data gaps presented by Participating States and themes/sub-themes¹

DESCRIPTION OF INDICATORS	DATA GAP FOR INDICATORS AND DATA ELEMENTS (2009 – 2014) <i>{being updated to 2019/2020}</i>							
	Antigua and Barbuda	Barbados	Grenada	Jamaica	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines	Trinidad and Tobago
Population connected to wastewater Treatment:	MD	MD	MD	MD	DATA (2009-2012)	MD	MD	MD
Total (%)	MD	MD	MD	MD	DATA (2009-2012)	MD	MD	MD
Of which at least secondary treatment (%)	MD	MD	MD	MD	DATA (2009-2012)	MD	MD	MD
Population with independent wastewater (% of pop)	MD	MD	MD	MD	DATA (2009-2012)	MD	MD	MD
Population not connected to wastewater (% of pop)	MD	MD	MD	MD	DATA (2009-2012)	MD	MD	MD

Multilateral Agreements and Associated Indicators

4.0 Multilateral Agreements and Associated Indicators

This section captures over twenty-two Multilateral Agreements (MEAs) and their associated environment related indicators. Multilateral Agreement is used generically to refer to global, regional or bi-lateral environmental-related agreements, conventions, commitments, initiatives, goals, inter-governmental mechanisms, plan of action, standards, strategies and multilateral treaties.

Specifically, the MEAs covered include:

- 1) The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES);
- 2) The Convention on Biological Diversity (CBD);
- 3) FAO Code of Conduct;
- 4) CARICOM Single Market and Economy (CSME);
- 5) Caribbean Tourism Organisation (CTO);
- 6) The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA);
- 7) The International Atomic Energy Agency (IAEA);
- 8) The Sustainable Development Goals (SDGs);
- 9) The Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention);
- 10) Agenda 21;
- 11) The Association of Caribbean States;
- 12) Barbados Programme of Action for the Sustainable Development of SIDS (BPOA):
 - (i) Mauritius Strategy of Implementation (MSI);
- 13) Latin American and Caribbean Initiative for Sustainable Development (ILAC);

- 14) The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention);
- 15) Caribbean Alliance for Sustainable Tourism (CAST);
- 16) The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (the Chemicals Weapons Convention-CWC);
- 17) The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (The London Protocol and London Convention);
- 18) The Montreal Protocol on Substances that Deplete the Ozone Layer (The Montreal Protocol);
- 19) The Stockholm Convention on Persistent Organic Pollutants (The Stockholm Convention);
- 20) The St. George's Declaration of Principles of Environmental Sustainability in the OECS (SGD);
- 21) The Ramsar Convention on Wetlands of International Importance Especially as Waterfowl (Ramsar Convention /Convention on Wetlands);
- 22) The United Nations Convention to Combat Desertification (UNCCD);
- 23) The United Nations Framework Convention on Climate Change (UNFCCC);
- 24) The United Nations Conference on Sustainable Development (UNCSD);
- 25) World Trade Organization (WTO).

The themes and sub-themes covered are as follows:

1) Atmosphere:

- a) Climate,
- b) Air quality.

2) Biodiversity:

- a) Habitats,
- b) Species.

3) Coasts and Seas:

- a) Fisheries,
- b) Coastal ecosystems,
- a) Water quality,
- b) Sea Level.

4) Freshwater resources:

- a) Water quality,
- b) Water availability/use.

5) Land and Land Cover :

- a) Forest,
- b) Urbanization,
- c) Agriculture,
- d) Land degradation.

6) Natural Disasters:

- a) Occurrence,
- b) Human, economic environmental impacts.

7) Sanitation and Human Health:

- a) Access to sanitation and freshwater,
- b) Related illnesses.

8) Waste:

- a) Waste generation,
- b) Waste management.

9) Tourism:

- a) Tourism intensity,
- b) Environmental impacts.

10) Socio-economics and Governance:

- a) Population,
- b) Economic development,
- c) Human development,
- d) Institutional and policy setting.

11) Environment and Sustainable Development

The MEAs are presented by themes and sub-themes in table 3 below. A detailed presentation of each MEA and its associated indicators or reporting requirements/obligations is covered below.

Table 4: Regional and international agreements/obligations frameworks presented by themes and sub-themes

Description of regional and international agreements/obligations	Theme: Atmosphere Sub-theme: Climate, Air quality	Theme: Biodiversity Sub-theme: Habitats, species	Theme: Coasts & Seas Sub-theme: Fisheries, coastal ecosystems, water quality, sea level	Theme: Freshwater resources Sub-theme: Water quality, availability/use	Theme: Land and Land Cover Sub-theme: Forest, urbanization, agriculture, land degradation	Theme: Natural disasters Sub-theme: Occurrence; human, economic environmental impacts	Theme: Sanitation and Human Health Sub-theme: Access to sanitation and freshwater, related illnesses	Theme: Waste Sub-theme: Waste generation, waste management	Theme: Tourism Sub-theme: Tourism intensity, environmental impacts	Theme: Socio-economics & Governance Sub-theme: Population, economic development, human development, Institutional and policy setting	Theme: Environment & sustainable development
ACS The Association of Caribbean States									√	√	√
Agenda 21	√	√	√	√	√	√	√	√	√	√	√
BPOA Barbados Programme of Action for the Sustainable Development of SIDS	√	√	√	√	√	√	√	√	√	√	√
Basel Convention The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal	√	√	√	√	√	√	√	√	√	√	√

Table 4: Regional and international agreements/obligations frameworks presented by themes and sub-themes

Description of regional and international agreements/obligations	Theme: Atmosphere Sub-theme: Climate, Air quality	Theme: Biodiversity Sub-theme: Habitats, species	Theme: Coasts & Seas Sub-theme: Fisheries, coastal ecosystems, water quality, sea level	Theme: Freshwater resources Sub-theme: Water quality, availability/use	Theme: Land and Land Cover Sub-theme: Forest, urbanization, agriculture, land degradation	Theme: Natural disasters Sub-theme: Occurrence; human, economic environmental impacts	Theme: Sanitation and Human Health Sub-theme: Access to sanitation and freshwater, related illnesses	Theme: Waste Sub-theme: Waste generation, waste management	Theme: Tourism Sub-theme: Tourism intensity, environmental impacts	Theme: Socio-economics & Governance Sub-theme: Population, economic development, human development, Institutional and policy setting	Theme: Environment & sustainable development
Cartagena Convention and Protocols (LBS and SPAW) The Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region	√	√	√	√	√		√	√	√	√	√
CAST Caribbean Alliance for Sustainable Tourism									√		√
Chemical Weapons Convention The Convention on the Prohibition of the Development, Production, Stockpiling and Use											√

Table 4: Regional and international agreements/obligations frameworks presented by themes and sub-themes

Description of regional and international agreements/obligations	Theme: Atmosphere Sub-theme: Climate, Air quality	Theme: Biodiversity Sub-theme: Habitats, species	Theme: Coasts & Seas Sub-theme: Fisheries, coastal ecosystems, water quality, sea level	Theme: Freshwater resources Sub-theme: Water quality, availability/use	Theme: Land and Land Cover Sub-theme: Forest, urbanization, agriculture, land degradation	Theme: Natural disasters Sub-theme: Occurrence; human, economic environmental impacts	Theme: Sanitation and Human Health Sub-theme: Access to sanitation and freshwater, related illnesses	Theme: Waste Sub-theme: Waste generation, waste management	Theme: Tourism Sub-theme: Tourism intensity, environmental impacts	Theme: Socio-economics & Governance Sub-theme: Population, economic development, human development, Institutional and policy setting	Theme: Environment & sustainable development
of Chemical Weapons and on their Destruction											
CBD The Convention on Biological Diversity		√	√	√	√					√	√
UNCCD Convention on Combating Desertification				√	√					√	√
CITES The Convention on International Trade in Endangered Species of Wild Fauna and Flora		√	√							√	√
CSD	√	√	√	√	√	√	√	√	√	√	√

Table 4: Regional and international agreements/obligations frameworks presented by themes and sub-themes

Description of regional and international agreements/obligations	Theme: Atmosphere Sub-theme: Climate, Air quality	Theme: Biodiversity Sub-theme: Habitats, species	Theme: Coasts & Seas Sub-theme: Fisheries, coastal ecosystems, water quality, sea level	Theme: Freshwater resources Sub-theme: Water quality, availability/use	Theme: Land and Land Cover Sub-theme: Forest, urbanization, agriculture, land degradation	Theme: Natural disasters Sub-theme: Occurrence; human, economic environmental impacts	Theme: Sanitation and Human Health Sub-theme: Access to sanitation and freshwater, related illnesses	Theme: Waste Sub-theme: Waste generation, waste management	Theme: Tourism Sub-theme: Tourism intensity, environmental impacts	Theme: Socio-economics & Governance Sub-theme: Population, economic development, human development, Institutional and policy setting	Theme: Environment & sustainable development
CSME CARICOM Single Market and Economy			√	√		√	√	√			
CTO Caribbean Tourism Organization									√	√	√
FAO Code of Conduct			√		√						
GPA The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities		√	√				√	√		√	√

Table 4: Regional and international agreements/obligations frameworks presented by themes and sub-themes

Description of regional and international agreements/obligations	Theme: Atmosphere Sub-theme: Climate, Air quality	Theme: Biodiversity Sub-theme: Habitats, species	Theme: Coasts & Seas Sub-theme: Fisheries, coastal ecosystems, water quality, sea level	Theme: Freshwater resources Sub-theme: Water quality, availability/use	Theme: Land and Land Cover Sub-theme: Forest, urbanization, agriculture, land degradation	Theme: Natural disasters Sub-theme: Occurrence; human, economic environmental impacts	Theme: Sanitation and Human Health Sub-theme: Access to sanitation and freshwater, related illnesses	Theme: Waste Sub-theme: Waste generation, waste management	Theme: Tourism Sub-theme: Tourism intensity, environmental impacts	Theme: Socio-economics & Governance Sub-theme: Population, economic development, human development, Institutional and policy setting	Theme: Environment & sustainable development
IAEA The International Atomic Energy Agency								√			√
Kyoto Protocol	√									√	√
London Convention The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter								√		√	√
Montreal Protocol The Montreal Protocol on Substances that Deplete the Ozone Layer	√							√		√	√

Table 4: Regional and international agreements/obligations frameworks presented by themes and sub-themes

Description of regional and international agreements/obligations	Theme: Atmosphere Sub-theme: Climate, Air quality	Theme: Biodiversity Sub-theme: Habitats, species	Theme: Coasts & Seas Sub-theme: Fisheries, coastal ecosystems, water quality, sea level	Theme: Freshwater resources Sub-theme: Water quality, availability/use	Theme: Land and Land Cover Sub-theme: Forest, urbanization, agriculture, land degradation	Theme: Natural disasters Sub-theme: Occurrence; human, economic environmental impacts	Theme: Sanitation and Human Health Sub-theme: Access to sanitation and freshwater, related illnesses	Theme: Waste Sub-theme: Waste generation, waste management	Theme: Tourism Sub-theme: Tourism intensity, environmental impacts	Theme: Socio-economics & Governance Sub-theme: Population, economic development, human development, Institutional and policy setting	Theme: Environment & sustainable development
ILAC Latin American and Caribbean Initiative for Sustainable Development	√		√	√	√		√	√			
MSI Mauritius Strategy of Implementation	√	√	√	√	√	√	√	√	√	√	√
SDGs The Sustainable Development Goals	√	√	√	√	√	√	√	√	√	√	√
RAMSAR The Ramsar Convention on Wetlands of International Importance Especially as Waterfowl		√	√		√				√	√	√

Table 4: Regional and international agreements/obligations frameworks presented by themes and sub-themes

Description of regional and international agreements/obligations	Theme: Atmosphere Sub-theme: Climate, Air quality	Theme: Biodiversity Sub-theme: Habitats, species	Theme: Coasts & Seas Sub-theme: Fisheries, coastal ecosystems, water quality, sea level	Theme: Freshwater resources Sub-theme: Water quality, availability/use	Theme: Land and Land Cover Sub-theme: Forest, urbanization, agriculture, land degradation	Theme: Natural disasters Sub-theme: Occurrence; human, economic environmental impacts	Theme: Sanitation and Human Health Sub-theme: Access to sanitation and freshwater, related illnesses	Theme: Waste Sub-theme: Waste generation, waste management	Theme: Tourism Sub-theme: Tourism intensity, environmental impacts	Theme: Socio-economics & Governance Sub-theme: Population, economic development, human development, Institutional and policy setting	Theme: Environment & sustainable development
Stockholm Convention The Stockholm Convention on Persistent Organic Pollutants	√							√		√	√
St. George's Declaration The St. George's Declaration of Principles of Environmental Sustainability in the OECS	√	√	√	√	√	√	√	√		√	√
UNFCCC The United Nations Framework Convention on Climate Change	√		√		√	√		√		√	√

Table 4: Regional and international agreements/obligations frameworks presented by themes and sub-themes

Description of regional and international agreements/obligations	Theme: Atmosphere Sub-theme: Climate, Air quality	Theme: Biodiversity Sub-theme: Habitats, species	Theme: Coasts & Seas Sub-theme: Fisheries, coastal ecosystems, water quality, sea level	Theme: Freshwater resources Sub-theme: Water quality, availability/use	Theme: Land and Land Cover Sub-theme: Forest, urbanization, agriculture, land degradation	Theme: Natural disasters Sub-theme: Occurrence; human, economic environmental impacts	Theme: Sanitation and Human Health Sub-theme: Access to sanitation and freshwater, related illnesses	Theme: Waste Sub-theme: Waste generation, waste management	Theme: Tourism Sub-theme: Tourism intensity, environmental impacts	Theme: Socio-economics & Governance Sub-theme: Population, economic development, human development, Institutional and policy setting	Theme: Environment & sustainable development
UNCSD The United Nations Conference on Sustainable Development	√	√		√		√	√	√			√
UN-ECLAC									√	√	√
WTO World Trade Organization	√								√	√	√

Convention for the Protection and Development of the Marine Environment of the Wider Caribbean (Cartagena Convention) and Protocols

The Cartagena Convention² is a regional legal agreement for the protection of the Caribbean Sea and was adopted in 1983 and entered into Force in 1986. Specifically, the convention focus on prevention, reduction and control of pollution from ships, sea-bed activities, land-based sources/activities; as well as airborne and dumping pollution. In addition, Contracting Parties are required to:

- protect and preserve rare or fragile ecosystems and habitats of depleted, threatened or endangered species; and
- develop technical and other guidelines for planning and environmental impact assessments of important development projects².

The Convention's three supporting technical agreements/protocols include:

- Oil Spills protocol – adopted in 1983 and entered into Force in 1986;
- Specially Protected Areas and Wildlife Protocol (SPAW Protocol) – adopted in 1990 and entered into Force in 2000;
- Land-based Sources of Marine Pollution Protocol (LBS Protocol) – adopted in 1999 and entered into Force in 2010.

Table 5 summaries the ratification/accession dates for Antigua and Barbuda, Barbados, Grenada, Jamaica, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines and Trinidad and Tobago.

The reporting measures are qualitative and countries are required to submit national reports every two years. Table 6 presents the reporting requirements for the convention and its protocols.

² Source: <https://www.unep.org/cep/who-we-are/cartagena-convention>

Table 5: Ratification/Accession dates for eight Caribbean States

State	Date of Ratification/Accession		
	Cartagena Convention on Oil Spills Protocol	SPAW Protocol	LBS Protocol
Antigua and Barbuda	11-Sept-86	-	13-July-10
Barbados	28-May-85	14-Oct-02	29-Jun-19
Grenada	17-Aug-87	05-Mar-12	05-Mar-12
Jamaica	01-Apr-87	-	05-Nov-15
Saint Lucia	30-Nov-84	18-May-00	30-Jan-08
St. Vincent and the Grenadines	11-Jul-90	26-Jul-91	-
St. Kitts and Nevis	15Jun-99	-	-
Trinidad and Tobago	24-Jan-86	10-Aug-99	28-Mar-03

Table 6: Cartagena Convention and Protocols - Indicators

No.	Description of Indicator	Section
1	Does your country have a designated National Focal Point for the Cartagena Convention?	Section 1: Designated National Focal Point, Institution and Implementation Plans - Articles 4, 15
2	Does your country have a designated National Agency/Ministry/Institution or other appropriate authority for coordinating the implementation of the Cartagena Convention (Article 15, paragraph 2)?	
3	Has your country developed an implementation plans(s) to carry out the general obligations of the Cartagena Convention? (Article 4)	
4	Has your country received any external financial assistance to develop and/or implement existing plan(s)?	
5	Has your country received any external financial assistance to develop and/or implement existing plan(s)?	
1	Is there a national definition within existing pollution related legislation or regulations for “Pollution from Ships”, “Discharging or Dumping of wastes at sea”, “Exploration or Exploitation of the Sea-Bed Activities”, and “Discharges (emissions) to the Atmosphere” (Articles 5, 6, 8, 9)?	Section 2: Measures to Reduce Marine Pollution from Ships, Caused by Discharges or Dumping, from Exploration or Exploitation of the SeaBed, or from Discharges to the Atmosphere - Articles 5, 6, 8, 9
2	Has your country taken any measures since the last reporting period necessary to prevent, reduce and control the abovementioned sources of pollution in the Convention area?	
3	Are there any other sources and/or types of pollution that may affect marine resources in the Convention area which require special consideration in your country?	
4	Does your country have any national policies, laws, or plans for marine pollution prevention, reduction and control for these activities requiring special consideration?	
1	Has your country experienced any pollution emergencies in the Convention area (including emergencies in which the Convention area is in imminent danger of being polluted or already polluted)?	Section 3: Cooperation in Cases of Emergency – Article 11

No.	Description of Indicator	Section
2	In regards to the question above, did your country respond to the situation through any of the following:	
1	Has your country, jointly with another country or with other countries, developed and promoted any contingency plans for responding to incidents involving pollution or the threat thereof in the Convention area?	
1	Does your country currently have any technical and other guidelines (e.g., EIAs) to assist the planning of major development projects in such a way as to prevent or minimize harmful impacts on the Convention Area?	Section 4: Environmental Impact Assessment – Article 12
1	Does your country have technical cooperation agreements with any other Contracting Parties relating to the purposes of the Convention?	Section 5: Scientific and Technical Cooperation – Article 13
1	Please indicate the status of ratification/accession of the existing Protocols to the Cartagena Convention.	Section 6: Adoption/Amendment of the Convention and its Protocols – Articles 17,18
2	Does your country currently have any plan to propose any amendments to the Cartagena Convention?	
The Protocol Concerning Cooperation in Combating Oil Spills in the Wider Caribbean Region		
1	Does your country have a designated Focal Point for the Oil Spills Protocol?	Section 7: The Protocol Concerning Cooperation in Combating Oil Spills in the Wider Caribbean Region
2	Does your country currently have any national policies, laws, or plans for prevention, reduction and control of oil spill pollution?	
3	Has your country established any national operational measures such as establishing national oil spill contingency plans for responding to oil spill incidents (Article 7 of the Oil Spills Protocol)?	
4	Has your country experienced any oil-spill incidents since 1986 (Article 1, paragraph 4)? Please indicate whether any of these incidents resulted in major consequences to the marine environment.	
The Protocol Concerning Specially Protected Areas and Wildlife (SPAW)		
1	Does your country have a designated Focal Point for the SPAW Protocol?	Section 8: The Protocol Concerning Specially Protected Areas and Wildlife (SPAW) - Article 4, 10, 11, 20, 21
2	Does your country currently have any national policies, laws, mechanisms or measures for the protection of Wild Flora and Fauna? (Article 10 of the SPAW Protocol)	

No.	Description of Indicator	Section
3	Has your country established any protected areas pursuant to the SPAW Protocol? (Article 4 of the SPAW Protocol)	
4	Has your country identified all of the endangered / threatened species listed in Annexes I, II, and III of the SPAW Protocol that are within your country (i.e. within areas over which your country exercises sovereignty, sovereign rights, or jurisdiction)?	
5	Has your country taken measures to ensure strict protection of the endangered/threatened species listed in Annexes I and II (Article 11.1(a) and 11.1(b) of the SPAW Protocol)?	
6	Has your country formulated, adopted, and implemented any plans for the management and use of species listed in Annex III (Article 11.1 (c) of the SPAW Protocol)?	
7	Has your country adopted exemptions to species protection (Articles 11.2 and 14 of the SPAW Protocol)?	
8	Did your country proceed to any changes in the delimitation of protected areas and/or to changes in their status (Article 15 of the SPAW Protocol)?	
9	Did your country proceed to any changes in the legal status of species listed in Annexes I, III, or III (Article 15 of the SPAW Protocol)?	
10	Has your country incorporated into its law or policy the common guidelines or criteria adopted under Article 21 of the SPAW Protocol?	
The Protocol Concerning Pollution from Land-Based Sources (LBS) and Activities		
1	Does your country have a designated Focal Point for the LBS Protocol?	Section 9: The Protocol Concerning Pollution from Land-Based Sources (LBS) and Activities - Articles I, III, VI, VII
2	Is there a national definition of pollution from “Land-based sources and activities” (Article I (d))?	
3	Does your country currently have any legislation for the prevention, reduction and control pollution from land-based sources in the Convention area (Article III)?	
4	Has your country developed any implementation plans, programs, and measures to carry out the general terms of [or: meet the objectives of] the LBS Protocol, including National Programmes of Action (NPAs)? (Article III)	

No.	Description of Indicator	Section
5	Has your country developed new and/or amended existing national policies, laws, regulations, plans, for reducing LBS pollution over the reporting period?	
6	Are there any other types and/or sources of LBS pollution other than those listed in Annex I of the LBS Protocol that require special consideration in your country?	
7	Does your country have any existing environmental pollution monitoring and assessment programmes as outlined in LBS Protocol Article VI?	
8	Has your country developed and adopted guidelines concerning environmental impact assessments (EIAs) or has your country generated EIAs consistent with the LBS Protocol, Article VII (2)?	
9	Does your country have a total annual estimate of the pollutant loads to the marine environment for LBS activities?	
10	Has your country experienced any difficulties in the implementation of the LBS protocol?	
11	What are three major areas of assistance required to assist your country in implementing the obligations of the Cartagena Convention and its Protocols.	

Chemical Weapons Convention (CWC)

The Chemical Weapons Convention (CWC)³ on the prohibition of the development, production, stockpiling and use of chemical weapons entered into force on April 29, 1997. The CWC consists of a Preamble, twenty-four (24) Articles and three (3) Annexes. Specifically these include:

-
- Preamble;
 - Article I – General Obligations;
 - Article II – Definitions and Criteria;
 - Article III – Declarations;
 - Article IV– Chemical Weapons;
 - Article V – Chemical Weapons Facilities;
 - Article VI – Activities not Prohibited Under this Convention;
 - Article VII – National Implementation Measures;
 - Article VIII – The Organisation;
 - Article IX – Consultations, Cooperation and Fact-Finding;
 - Article X – Assistance and Protection Against Chemical Weapons;
 - Article XI – Economic and Technological Weapons;
 - Article XII – Measures to Redress a Situation and to Ensure Compliance including Sanctions;
 - Article XIII – Relation to Other International Agreements;
 - Article XIV – Settlement of Disputes;
 - Article XV – Amendments;
 - Article XVI – Duration and Withdrawal;
 - Article XVII – Status of the Annexes;
 - Article XVIII – Signature;
 - Article XIX – Ratification;

³ Source: <https://www.opcw.org/>

- Article XX – Accession;
 - Article XXI – Entry Into Force;
 - Article XXII – Reservations;
 - Article XXIII – Depositary;
 - Article XXIV – Authentic Texts;
 - Annex on Chemicals;
 - Confidentiality Annex;
 - Verification Annex.
-

The States Parties to the CWC established the Organisation for the Prohibition of Chemical Weapons (OPCW) to administer the treaty and to ensure the international implementation of its provisions. According to OPCW⁴, 193 States committed to the Chemical Weapons Convention, 98% of the global population live under the protection of the Convention, 98% of the chemical weapons stockpiles declared by possessor States have been verifiably destroyed.

The Convention's Caribbean Member States include: Antigua and Barbuda, The Bahamas, Barbados, Belize, Cuba, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname and Trinidad and Tobago.

The Convention's reporting requirements and associated reporting key are presented in table 7 below.

⁴ Source: <https://www.opcw.org/>

Table 7: Chemical Weapons Convention (CWC) Indicators

No.	Description of Indicator
1	What chemicals are subject to declaration and reporting requirements under the CWC as follows:
	(a) Schedule 1 <i>(covers known CW agents and their immediate precursors. These have very limited industrial and medical applications.)</i>
	(b) Schedule 2 <i>(covers chemical and precursors that have some industrial uses.)</i>
	(c) Schedule 3 <i>(covers chemical and precursors that have with broader applications.)</i>
2	What is the estimated total number of declarable facilities (i.e., sites subject declaration requirements) ?
3	What are the thresholds that trigger declaration and reporting requirements and on-site inspections?
4	The declaration instructions for UDOCs indicate that plant sites should aggregate production of all UDOCs, including PSF chemicals. The declaration instructions also request specific information on the production of PSF chemicals. Does this procedure double-count PSF chemicals?
5	Are there exemptions from the declaration and reporting requirements?
6	What is the exact location (longitude and latitude in degrees, minutes, and seconds) of the plant or plant site?
7	Are there any trade restrictions?
8	Are all companies subject to inspections?

Source: <http://www.cwc.gov/>

INDICATOR KEY:

DESCRIPTION	SCHEDULE 1	SCHEDULE 2	SCHEDULE 3	Unscheduled Discrete Organic Chemicals (UDOCs)
CHEMICALS	CW agents; key final-stage CW precursors.	Potential CW agents; other CW precursors; and certain dual-use chemicals.	Old CW agents; other CW precursors; and certain dual-use chemicals.	UDOCs and UDOCs containing phosphorus, sulfur, or fluorine, (PSF chemicals).
COMMERCIAL USES	Low or none	Low or moderate	High	High
ANNUAL THRESHOLD FOR DECLARATIONS AND REPORTS	>100 grams aggregate (<10kg) aggregate production of all Schedule 1 chemicals.	Production, consumption, or processing > 1kg (for BZ); 100kg (for other Part A chemicals); 1 metric ton (for Part B chemicals).	Production > 30 metric tons.	Production > 200 metric tons aggregate for UDOCs. Production > 30 metric tons for each PSF chemical.
THRESHOLD FOR INSPECTION	>100 grams (<1 kg) aggregate production.	Production, consumption, or processing > 10kg BZ; 1 metric ton other Part A chemicals; 10 metric tons Part B chemicals.	Production > 200 metric tons.	Production > 200 metric tons aggregate UDOCs. Production > 200 metric tons of a PSF-chem

CARICOM Single Market And Economy (CSME)

The CARICOM Single Market and Economy (CSME) was established in 1989, with the aim of strengthening integration movement in response to globalization challenges and opportunities. Specifically, it establishes a single market space in CARICOM and seeks to facilitate the free movement of people and capital. Key aspects of the CSME include: consumer affairs, competition policy, social security, contingent rights, immigration arrangements for free movement of persons, administrative arrangements for commercial establishment, government procurement and trade and competitiveness in CARICOM.

The Single Market component has been implemented in the Member States of Antigua and Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago. The CSME indicators are presented below under the areas of population and households, tourism, environmental health and natural disaster, energy, land use, agriculture, waste, freshwater and biodiversity.

(A) Population and Households

Indicator #	Indicator Description
1	Annual population growth rate
2	Population size urban / rural
3	Distribution of households by type of dwelling
4	Distribution of households by type of tenure
5	Distribution of households by type of materials of outer walls
6	Distribution of households by type of roof

(B) Tourism

Indicator #	Indicator Description
1	Tourist intensity/growth
2	Number of tourist nights
3	Tourist penetration ratio
4	Number of cruise passenger arrivals
5	Number of cruise ships arrivals
6	Number of rooms, beds and employees
7	Room occupancy rate
8	Estimates of visitor expenditure

(C) Environmental Health

Indicator #	Indicator Description
1	Number of reported cases and incidence of environmentally related diseases (gastroenteritis, typhoid, malaria, dengue, cholera, accidental pesticide poisoning, respiratory diseases).
2	Distribution of households by main source of drinking water (Note: Proportion of population with sustainable access to an improved water source, urban / rural - MDG).
3	Distribution of households by type of toilet facilities (Note: Proportion of urban population with access to improved sanitation -MDG).

(D) Natural Disaster

Indicator #	Indicator Description
1	Frequency and type
2	Economic loss
3	Human loss

(E) Energy

Indicator #	Indicator Description
1	Consumption of energy and renewable energy (import/export) (Note: Energy use (kilogram oil equivalent) per US\$1 gross domestic product (PPP) - MDG)
2	Distribution of households by fuel used for type of cooking (Note: Proportion of population using solid fuels - MDG)
3	Distribution of households by type of lighting

(F) Land Use

Indicator #	Indicator Description
1	Total area
2	Land use
3	Land use change

(G) Agriculture

Indicator #	Indicator Description
1	Use of fertilizer by type (N,P,K), weight
2	Use of pesticides by type (weight)
3	(Total arable area and total area under Slash/Burn is covered under Land Use" section)

(H) Waste

Indicator #	Indicator Description
1	Disposal of waste
	(a) Landfill
	(b) Incineration
	(c) Composting
	(d) Re-cycling
2	Generation of waste by type and source / sector (household, industrial)
3	Toxic / Hazardous material (imported / exported)

(I) Freshwater

Indicator #	Indicator Description
1	Quantity of water available
2	Water abstraction, water supply and water use
3	Domestic consumption of water per capita
4	Water quality of rivers and lakes (concentration)

(J) Biodiversity

Indicator #	Indicator Description
1	Ratio of area protected (as defined in IUCN classification) to maintain biological diversity to surface area - MDG
2	Total land area
3	Protected land area
4	Protected land area as % of total land area

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

Table 8: The Basel Convention Indicators

No.	Description of Indicator	Objective	Goal
1	<p>The number of agreed technical guidelines that assist Parties in reaching a common understanding on definitions, interpretations and terminologies covered by the Basel Convention.</p>	<p>Objective 1.1: To reach a common understanding among parties of the definition, interpretation and terminology of wastes covered by the Convention, including the distinction between wastes and non-wastes.</p>	<p>Goal 1: Effective implementation of parties' obligations on transboundary movements of hazardous and other wastes</p>
2	<p>Parties have reached an adequate level of administrative and technical capacity (in the form of Customs, police, environmental enforcement and port authorities, among others) to prevent and combat illegal traffic and judicial capacity to deal with cases of illegal traffic.</p>	<p>Objective 1.2: To prevent and combat illegal traffic in hazardous and other wastes.</p>	
	<p>Number of parties that develop and execute training programmes for the staff involved</p>		
	<p>Number of controls and inspections carried out</p>		

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

Table 8: The Basel Convention Indicators

No.	Description of Indicator	Objective	Goal
3	Percentage of parties that have notified national definitions of hazardous wastes to the Secretariat in accordance with Article 3 of the Basel Convention.	Objective 1.3: To improve performance in meeting requirements pertaining to, among other things, notifications of national definitions of hazardous and other wastes, prohibitions and other control measures.	
4	Percentage of parties reporting information to the Secretariat under Article 13.	Objective 1.4: To generate, provide, collect, transmit and use reliable qualitative and quantitative information and data regarding export, import and generation as required under Article 13 of the Convention.	
5	Number of parties with national hazardous waste management strategies or plans in place.	Objective 2.1: To pursue the development of environmentally sound management of hazardous and other wastes, especially through the preparation of technical guidelines, and to promote its implementation in national legislation.	
	Number of guidelines on environmentally sound management of wastes developed.		
6	Number of parties that have developed and implemented national strategies, plans or programmes for reducing the generation and hazard potential of hazardous and other wastes.	Objective 2.2: To pursue the prevention and minimization of hazardous waste and other waste generation at source, especially through supporting and promoting activities designed to	Goal 2: Strengthening the environmentally sound management of hazardous and other wastes

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

Table 8: The Basel Convention Indicators

No.	Description of Indicator	Objective	Goal
	Number of parties that have implemented systems for measuring hazardous waste generation in order to assess progress in selected hazardous waste streams and to reduce the generation and hazard potential of hazardous wastes and other wastes.	reduce at the national level the generation and hazard potential of hazardous and other wastes.	<p>Goal 2 cont'd: Strengthening the environmentally sound management of hazardous and other wastes</p>
7	Number of parties that have developed and implemented national strategies, plans or programmes for hazardous waste minimization.	<p>Objective 2.3: To support and promote capacity-building for parties, including technological capability, through technology needs assessments and technology transfer, so as to reduce the generation and hazard potential of hazardous and other wastes.</p>	
	Number of parties receiving capacity-building support that report reductions in hazardous waste generation.		
	Number of parties receiving capacity-building support for hazardous waste minimization.		
8	Number of programmes, projects or activities carried out by parties, jointly with other parties or together with other stakeholders (regional and international organizations, conventions, industry bodies, etc.), aimed at the environmentally sound management of priority waste streams that have been monitored and assessed to achieve this goal.	<p>Objective 2.4: To facilitate national, regional and international commitment with regard to the management of priority waste streams, as identified in the programme of work of the Convention, taking into consideration the priorities of developing countries and countries with economies in transition and in accordance with the requirements of the Convention.</p>	

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

Table 8: The Basel Convention Indicators

No.	Description of Indicator	Objective	Goal
9	<p>Percentage of parties that collect information on the generation, management and disposal of hazardous and other wastes.</p>	<p>Objective 2.5: To enhance and promote the sustainable use of resources by improving the management of hazardous and other wastes and to encourage the recognition of wastes as a resource, where appropriate.</p>	<p>Goal 2 cont'd: Strengthening the environmentally sound management of hazardous and other wastes</p>
	<p>Number of training and awareness-raising activities undertaken to enhance and promote the sustainable use of resources;</p>		
	<p>Percentage of parties that require the separation of hazardous wastes from non-hazardous other wastes;</p>		
	<p>Percentage of parties that have national inventories on the generation and disposal of hazardous wastes and other wastes;</p>		
	<p>Percentage of selected Convention waste streams reused, recycled or recovered.</p>		
10	<p>Number of parties reporting, through the Secretariat, to the Conference of Parties on the integration of waste and hazardous waste issues into their national development plans or strategies</p>	<p>Objective 3.1: To develop national and regional capacity, particularly through the Basel Convention regional and coordinating centres, by integrating waste management issues into national sustainable development strategies and plans for sustainable livelihood.</p>	<p>Goal 3: Promoting the implementation of environmentally sound management of hazardous and other wastes as an essential contribution to the attainment of sustainable livelihood, the Millennium Development Goals and the protection of human health and the environment</p>

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

Table 8: The Basel Convention Indicators

No.	Description of Indicator	Objective	Goal
11	Number of activities on common issues undertaken by the bodies under the three Conventions.	3.2 To promote cooperation with national, regional and international bodies, in particular cooperation and coordination between the Basel, Rotterdam and Stockholm conventions, to improve environmental and working conditions through the environmentally sound management of hazardous and other wastes.	

Convention on the Prevention of Marine Pollution by Dumping Waste and Other Matter (London Convention /London Protocol)

Table 9: London Convention/London Protocol Indicators

No.	Description of Indicator
	Parties to the London Convention and the Protocol are required to report annually on dumping activities. This report includes:
1	Country of origin
2	Port of loading
3	Process from which waste is derived
4	Potential sources of contamination
5	Total amount
6	Form in which waste is presented for disposal
7	Average composition

Table: 10: Latin American and Caribbean Initiative for Sustainable Development (ILAC) Indicators

No.	Description of Indicator	Goal	Indicative Purpose
Biological Diversity			
1	Proportion of land area covered by forest (Indicator 1.1.1.1)	Goal 1.1: Increase land area covered by forest.	Indicative purpose 1.1.1: Ensure the sustainable management of the region's forest resources, significantly reducing the current rate of deforestation.
2	Proportion of terrestrial and marine areas protected (Indicator 1.2.1.1)	Goal 1.2: Increase amount of protected areas.	Indicative purpose 1.2.1: Significantly increase the amount of regional land under protection, including under this category transition zones and biological corridors
3	Existence of laws and/or decrees and national regulations relating to access to genetic resources and distribution of their benefits (Indicator 1.3.1.1)	Goal 1.3: Genetic resources – establish equitable distribution of benefits.	Indicative purpose 1.3.1: Adopt regulatory frameworks for access to genetic resources, as well as fair and equitable participation in the benefits derived from their use, consistent with the Convention on Biological Diversity.
4		Goal 1.4: Ensure marine diversity.	Indicative purpose: 1.4.1: Ensure the appropriate use and conservation of marine resources,

Table: 10: Latin American and Caribbean Initiative for Sustainable Development (ILAC) Indicators

No.	Description of Indicator	Goal	Indicative Purpose
			particularly the coastal-marine ecosystems, in the countries of the Caribbean Watershed.
Water Resources Management			
5	Proportion of total water resources used (Indicator 2.1.1.1)	Goal 2.1: Improve water supply.	Indicative purpose 2.1.1: Improve technology to increase efficiency in water use in industry, agriculture and for domestic consumption.
6	Proportion of watersheds with management committees (Indicator 2.2.1.1)	Goal 2.2: Improve watershed management	Indicative purpose 2.2.1: Improve and strengthen institutional capacity for the integrated management of watersheds and aquifers, through, inter alia, the establishment of watershed committees, and the participation of all governments at the sub-national level and of civil society, the private sector and all concerned stakeholders.

Table: 10: Latin American and Caribbean Initiative for Sustainable Development (ILAC) Indicators

No.	Description of Indicator	Goal	Indicative Purpose
7	Amount of fish catches (Indicator 2.3.1.1)	Goal 2.3: Improve management of coastal-marine areas and their resources.	Indicative purpose 2.3.1: Implement action plans for the integrated management of coastal and ecosystem resources, with particular attention to the small island developing states.
8	Proportion of population using improved sanitation facilities (Indicator 2.4.1.2)	Goal 2.4: Improve the quality of inland waters.	Indicative purpose 2.4.1: Improve the quality of effluents and reduce the discharge of contaminants into surface and underground bodies of water and into coastal waters.
Vulnerability, Human Settlements and Sustainable Cities			
9	Proportion of national territory with land use plans (Indicator 3.1.1.1)	Goal 3.1: Improve land-use planning.	Indicative purpose 3.1.1: Implement land-use plans and policies, from the perspective of sustainable development.
10	Annual change in land use (Indicator 3.1.2.1)	Goal 3.1: Improve land-use planning.	Indicative purpose 3.1.2: Incorporate instruments for risk management in land-use planning

Table: 10: Latin American and Caribbean Initiative for Sustainable Development (ILAC) Indicators

No.	Description of Indicator	Goal	Indicative Purpose
11	Amount of area affected by degradation (Indicator 3.2.1.1)	Goal 3.2: Reduce amount of area affected by degradation.	Indicative purpose 3.2.1: Significantly reduce the regional land area prone to erosion, salinity and other soil degradation processes
11	Amount of carbon dioxide emissions (Indicator 3.3.1.2)	Goal 3.3: Reduce air pollution.	Indicative purpose 3.3.1: Reduce the concentration of polluting emissions in the air.
12	Proportion of population using an improved drinking water source (Indicator 3.4.1.1)	Goal 3.4: Reduce water pollution.	Indicative purpose 3.4.1: Expand the coverage of drinking water services and the treatment of waste water
13	Proportion of population with access to garbage collection services (Indicator 3.5.1.1)	Goal 3.5: Reduce generation of solid waste.	Indicative purpose 3.5.1: Significantly reduce the generation of solid waste (domestic and industrial) and promote measures such as recycling and reuse.
14	Collection and appropriate disposal of urban solid waste (Indicator 3.5.2.1)	Goal 3.5: Reduce generation of solid waste.	Indicative purpose 3.5.2: Implement integrated solid waste management, including treatment and appropriate final disposal.

Table: 10: Latin American and Caribbean Initiative for Sustainable Development (ILAC) Indicators

No.	Description of Indicator	Goal	Indicative Purpose
15	Existence of National Emergency Commissions and rapid-response teams (Indicator 3.6.1.1)	Goal 3.6: Reduce vulnerability to disasters caused by natural phenomena or human activity.	Indicative purpose 3.6.1: Implement and strengthen regional cooperation mechanisms for risk management and mitigation of anthropogenic disasters and those caused by natural phenomena, including the establishment of a regional early-warning system and the formation of rapid-response teams.
16	Occurrence of natural disasters, by type of event (Indicator 3.7.1.2)	Goal 3.7: Reduce vulnerability and improve risk management.	Indicative purpose 3.7.1: Refine and implement vulnerability indicators.
Social Issues, Including Health, Inequality and Poverty			
17	HIV/AIDS prevalence in persons aged 15 to 49 years (Indicator 4.1.1.1)	Goal 4.1: Improve health and reduce environmental risks to health.	Indicative purpose 4.1.1: Implement comprehensive measures to control and reduce the spread of the AIDS virus, including the development of a coordinated approach to research, education, treatment and access to retroviral drugs.

Table: 10: Latin American and Caribbean Initiative for Sustainable Development (ILAC) Indicators

No.	Description of Indicator	Goal	Indicative Purpose
18	Rate of morbidity attributable to acute respiratory diseases (Indicator 4.1.2.1)	Goal 4.1: Improve health and reduce environmental risks to health.	Indicative purpose 4.1.2: Implement policies and plans to reduce the risk of harmful environmental effects on health, particularly waterborne diseases, vectors, atmospheric pollution and exposure to chemical substances.
19	Rate of morbidity attributable to waterborne diseases (Indicator 4.1.2.2)	Goal 4.1: Improve health and reduce environmental risks to health.	Indicative purpose 4.1.2: Implement policies and plans to reduce the risk of harmful environmental effects on health, particularly waterborne diseases, vectors, atmospheric pollution and exposure to chemical substances.
20	Hectares of green urban areas in relation to size of urban population (Indicator 4.1.3.1)	Goal 4.1: Improve health and reduce environmental risks to health.	Indicative purpose 4.1.3: Increase the number of green and safe areas per capita.
21	Proportion of urban population living in precarious settlements (Indicator 4.3.1.1)	Goal 4.3: Reduce poverty and inequality.	Indicative purpose 4.3.1: Drastically reduce poverty levels in the region's countries.
22	Proportion of people living on less than US\$1 (PPP) per day (Indicator 4.3.1.2)	Goal 4.3: Reduce poverty and inequality.	Indicative purpose 4.3.1:

Table: 10: Latin American and Caribbean Initiative for Sustainable Development (ILAC) Indicators

No.	Description of Indicator	Goal	Indicative Purpose
			Drastically reduce poverty levels in the region's countries.
23	Social expenditure as a percentage of gross domestic product (Indicator 4.3.3.1)	Goal 4.3: Reduce poverty and inequality.	Indicative purpose 4.3.3: Formulate and implement strategies for women, youth, indigenous people, Afro descendant communities and other minority groups of the region, based on fundamental human rights and freedoms.
Economic Issues, Including Competitiveness, Trade and Production and Consumption Patterns			
24	Renewable energy use as a proportion of total energy used (Indicator 5.1.1.2)	Goal 5.1: Increase use of renewable energy.	Indicative purpose 5.1.1: Increase the use of renewable energy in the region to at least 10% of total energy use by 2010.
25	Energy use per US\$1,000 of gross domestic product (PPP) (Indicator 5.1.1.3)	Goal 5.1: Increase use of renewable energy.	Indicative purpose 5.1.1: Increase the use of renewable energy in the region to at least 10% of total energy use by 2010.
26	Consumption of ozone-depleting chlorofluorocarbons (Indicator 5.2.1.1)	Goal 5.2: Promote cleaner production.	Indicative purpose 5.2.1:

Table: 10: Latin American and Caribbean Initiative for Sustainable Development (ILAC) Indicators

No.	Description of Indicator	Goal	Indicative Purpose
			Establish Cleaner Production Centres in all the countries of the region.
27	Companies with ISO 14001 certification (Indicator 5.2.2.2)	Goal 5.2: Promote cleaner production.	Indicative purpose 5.2.2: Incorporate the cleaner production concept in a significant percentage of major industries, with emphasis on small- and medium-sized industries.
28	Existence of economic instruments implemented by the country (Indicator 5.3.1.1)	Goal 5.3: Create beneficial economic instruments	Indicative purpose 5.3.1: Establish an economic incentive system for productive and industrial processing projects that preserve natural and energy resources, and bring about a reduction in effluents released into water, land and air
Institutional Arrangements			
29	Net enrolment rate in primary school (Indicator 6.2.1.1)	Goal 6.1: Improve environmental education.	Indicative purpose 6.2.1: Eradicate illiteracy and make enrolment in basic and secondary education universal.
30	Reports on the state of the environment (Indicator 6.3.1.1)	Goal 6.3:	Indicative purpose 6.3.1:

Table: 10: Latin American and Caribbean Initiative for Sustainable Development (ILAC) Indicators

No.	Description of Indicator	Goal	Indicative Purpose
		Implement evaluation measures and adopt indicators.	Develop and implement an evaluation process to monitor progress towards achieving sustainable development and meeting the goals set forth in the Johannesburg Plan of Action, adopting sustainability indicator systems at the national and regional levels that address the social, economic and political characteristics of the region.
31	Existence of an environmental statistics system (Indicator 6.3.1.2)	Goal 6.3: Implement evaluation measures and adopt indicators.	Indicative purpose 6.3.1: Develop and implement an evaluation process to monitor progress towards achieving sustainable development and meeting the goals set forth in the Johannesburg Plan of Action, adopting sustainability indicator systems at the national and regional levels that address the social, economic and political characteristics of the region.

Table: 10: Latin American and Caribbean Initiative for Sustainable Development (ILAC) Indicators

No.	Description of Indicator	Goal	Indicative Purpose
32	Existence of national councils for sustainable development (Indicator 6.4.1.1)	Goal 6.4: Increase participation by the society.	Indicative purpose 6.4.1: Create and strengthen participation mechanisms in the area of sustainable development, with governmental and nongovernmental representation and participation by the major groups in each of the region's countries.

United Nations Convention on Biological Diversity (UNCBD)

The Convention on Biological Diversity is a multilateral agreement, which seeks to promote the conservation of biodiversity, the sustainable use of its components and the egalitarian distribution of benefits arising from genetic resources. At the United Nations Conference on Environment and Development, held in Rio de Janeiro, on June 5, 1992, the Convention was opened for signatures and the treaty enacted into law on December 29, 1993.

The Convention represents an amalgamation of two agreements: the Cartagena Protocol on Biosafety and the Nagoya Protocol on Access and Benefit Sharing (ABS). The Cartagena Protocol, an international treaty-adopted on 29th January 2000, governs the movement of living modified organisms from one region to the next. The Nagoya Protocol, adopted on 29th October 2010, provides a legal framework for the effective implementation of fair and equitable sharing of benefits arising from genetic resources.

The international convention on biodiversity was conceptualized at a United Nations Environment Programme (UNEP) Working Group of experts on Biological Diversity, in November 1988, work commenced on the draft document in 1989, and in 1991 the Convention's text was finalized. Close to 197 countries are signatories to the Convention, including 12 from CARICOM, Antigua and Barbuda, Bahamas, Barbados, Cuba, Grenada, Guyana, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines and Trinidad and Tobago.

Biodiversity within the region is severely impacted by pollution, exploitation, deforestation, urbanization, agricultural and commercial developments. The UNCBD indicators are presented in table 11 below.

Latin American and Caribbean Initiative for Sustainable Development (ILAC)

Table 11: United Nations Convention on Biological Diversity (UNCBD) Indicators

No.	Description of Indicator	Indicator Type
1	Trends in Extent of Biomes, Ecosystem and Habitats	Core
	Forest cover by year	Core
	Changed in habitat or ecosystem	Core
	Area of change per ecosystem type or habitat	Core
2	Trends in Abundance and Distribution of Species	Core
	Change in different species over time	Core
3	Coverage of Protected Area	Core
	Area of each protected area and total area	Core
4	Change in Status of Threatened Species	Core
5	Trends in Genetic Diversity	Core
6	Trends in Invasive and Alien Species	Core
7	Trends in Awareness and Attitudes to Biodiversity	Core
8	Connectivity/Fragmentation of Ecosystem	Core
9	ABS Requests	Core

United Nations Framework Convention Climate Change (UNFCCC)⁵

The United Nations Framework Convention on Climate Change is an international environmental treaty, enacted on March 24, 1994, aimed at ensuring atmospheric stability of greenhouse gases, in levels that discourage disruption of the climate system. One hundred and ninety seven (197) countries are signatories to the Convention.

Under the agreement, industrialized and developed countries, who are members of the Organization for Economic Cooperation and Development (OECD) should ensure a reduction in greenhouse gas emissions within their geographic areas, provide financial assistance to combat climate change and provide technical expertise to under-developed countries.

The Kyoto Protocol, signed in 1997 and enacted into law in 2005, represents the first piece of legislation to be implemented by the UNFCCC, and later, the Paris Agreement, which was enacted in 2016, in efforts to combat climate change. The Kyoto Protocol focuses on greenhouse gasses such as carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF₆). The Paris Agreement⁵ aims to reduce global warming below 1.5 degrees Celsius compared to pre-industrial levels.

The United Nations Framework Convention on Climate Change core indicators are presented in table 12 below.

⁵ Source: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

Table 12: United Nations Framework Convention on Climate Change (UNFCCC) Indicators

No.	Description of Indicator	Indicator Type
1	Total Energy Sector GHG Emissions by Sector in CO2E	Core
2	Total Agriculture CH4 Emissions	Core
3	Total GHG Emissions for LULUCF	Core
4	Wind Speed by location and month	Core
5	Temperature	Core
6	Rainfall by location and month	Core
7	Coastal Erosion: Beach and Land Loss From Sea Level Rise	Core
8	Observed and Global Climate Model (GCM) Projected Changes in Temperature	Core
	Observed Temperature	Core
	Average Sea Surface Temperature (SST) over time (trend)	Core
	Sea Level Rise	Core
	Precipitation	Core
	Increase in Atmospheric Temperature	Core
	Increase in Average Sea Surface Temperature (SST) over time (trend)	Core
	Increase in Sea Level Rise	Core
	Increase in Precipitation	Core

Table 12: United Nations Framework Convention on Climate Change (UNFCCC) Indicators

No.	Description of Indicator	Indicator Type
9	Drought Risk Based on Watershed Zone	Core
10	Waste GHG Emissions (CH4)	Core
	Amount of GHG Emissions from CH4 from solid and liquid waste in specific time period (yrs)	Core
11	Emissions Reductions For All Mitigation Actions	Core
	Emission reductions by mitigation measures over time (trend)	Core
12	Vulnerability	Core
	Heat stress,	Core
	Extreme rainfall,	Core
	Dry spells and droughts,	Core
	Tropical cyclones,	Core
	Sea level rise,	Core
	Changes in ocean temperature,	Core

United Nations Convention to Combat Desertification (UNCCD)⁶

The United Nations Convention to Combat Desertification (UNCCD) was adopted in June 1994 and entered into force in December 1996. UNCCD is an international agreement linking environment and development to sustainable land management.⁶ Its 2018-2030 Strategic Framework focuses on restore the productivity of degraded land, improving the livelihoods of billions and reducing the impacts of drought on vulnerable populations.⁶

Currently it has 115 Signatories and 197 Parties⁷ including Antigua and Barbuda, Barbados, Grenada, Jamaica, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines and Trinidad and Tobago-further details are provided in table 13.

The national reporting requirements, under the UNCCD 2018 – 2030 Strategic Framework, involves two main types of information: data on the progress towards the five strategic objectives related to the condition of ecosystems and populations, drought, global environmental benefits and the mobilization of financial and non-financial resources to support the implementation of the Convention, and narratives.⁸

The reporting frequency has been increased from biennial to every four years. The core UNCCD indicators are presented in table 13 below and the UNCCD progress indicators to report on Strategic Objectives 1–5 (UNCCD 2018 – 2030 Strategic Framework) are presented in table 14.

⁶ Source: <https://www.unccd.int/convention/about-convention>

⁷ Source: https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-10&chapter=27&clang=_en#1

⁸ Source: <https://www.unccd.int/convention/reporting-process-and-prais>

Table 13: UNCCD Signature and Ratification/Accession/Acceptance dates for eight Caribbean States

State	Date of Signature and Ratification/Accession/Acceptance	
	Signature	Ratification/Accession(a)/Acceptance(A)
Antigua and Barbuda	04-Apr-95	06-Jun-97
Barbados	-	14-May-97a
Grenada	-	28-May-97a
Jamaica	-	12-Nov-97a
Saint Lucia	-	02-Jul-97a
St. Vincent and the Grenadines	15-Oct-94	16-Mar-98
St. Kitts and Nevis	-	30-Jun-97a
Trinidad and Tobago	-	10-Jun-00a

Table 14: United Nations Convention on Combating Desertification (UNCCD) Indicators

No.	Description of Indicator	Indicator Type
1	Land Cover and Trends in Land Use and Land Cover Change (LULCC)	Core
2	Land Productivity and Changes in Productivity	Core
3	Soil Organic Carbon Stock and Changes in Stock	Core
4	Degraded Land	Core
	Amount /Area of degraded land	Core
	Change in area of land cover types over time (trend)	Core
5	Trends in Population Living Below the Poverty Line	Core
6	Trends in Access to Safe Drinking Water in Affected Places	Core
7	Public Awareness of Land Degradation Neutrality (LDN) and Land Degradation	Core
8	Implementation - Policy and Planning: Progress with the Promotion and Implementation of Sustainable Land Management (SLM)	Core
	List of Policy Initiatives Related to Sustainable Land Management (SLM)	Core

Table 15: United Nations Convention on Combating Desertification (UNCCD) Progress Indicators to Report on Strategic Objectives 1–5

No.	Description of Indicator	Strategic Objective
SO 1-1	Trends in land cover	<p>Strategic Objective 1: To improve the condition of affected ecosystems.</p>
SO 1-2	Trends in land productivity or functioning of the land	
SO 1-3	Trends in carbon stocks above and below ground	
SO 2-1	Trends in population living below the relative poverty line and/or income inequality in affected areas	<p>Strategic Objective 2: To improve the living conditions of affected populations.</p>
SO 2-2	Trends in access to safe drinking water in affected areas	
SO 3-1	Monitored through qualitative information	<p>Strategic Objective 3: To mitigate, adapt to, and manage the effects of drought in order to enhance resilience of vulnerable populations and ecosystems</p>

Table 15: United Nations Convention on Combating Desertification (UNCCD) Progress Indicators to Report on Strategic Objectives 1–5

No.	Description of Indicator	Strategic Objective
SO 4-1	Trends in carbon stocks above and below ground	<p>Strategic objective 4: To generate global environmental benefits through effective implementation of the United Nations Convention to Combat Desertification</p>
SO 4-2	Trends in abundance and distribution of selected species	
SO 5-1	Trends in international bilateral and multilateral official development assistance	<p>Strategic objective 5: To mobilize substantial and additional financial and non-financial resources to support the implementation of the Convention by building effective partnerships at global and national level</p>
SO 5-2	Trends in domestic public resources	
SO 5-3	Trends in number of co-financing partners	
SO 5-4	Resources mobilized from innovative sources of finance, including from the private sector	
SO 5-5	Total amount of approved funding for developing countries and countries with economies in transition to promote the development, transfer, dissemination and diffusion of environmentally sound technologies.	Indicators to report on achievements made towards reaching the Sustainable Development Goal (SDG) 17 “Strengthen the means of implementation and revitalize

Table 15: United Nations Convention on Combating Desertification (UNCCD) Progress Indicators to Report on Strategic Objectives 1–5

No.	Description of Indicator	Strategic Objective
SO 5-6	Number of science and/or technology cooperation agreements and programmes between countries, by type of cooperation.	the global partnership for sustainable development" and particularly SDG targets related to technology and capacity-building.
SO 5-7	United States dollar value of financial and technical assistance, including through North–South, South–South and triangular cooperation, committed to developing countries and countries with economies in transition.	

**UNSD in collaboration with UNFCCC:
Global Climate Change Statistics and Indicators**

Table 16: Global Climate Change Statistics and Indicators

Description of Indicator

Common Indicators for Drivers (17)
Overall GHG emissions (includes emissions from CO ₂ , CH ₄ , N ₂ O, PFCs, HFCs, SF ₆ and from production activities)
Waste generation (including wastewater)
Total energy consumption (indicates overall energy used by transport sector, household/capita, commercial and residential)
Area under land cover categories (land use/cover change)
Use of pesticides/fertilizers
Livestock/cattle stock
Emission of NMVOC
Number of vehicle
Energy intensity of the economy
Deforestation
Total energy efficiency of the economy
SO ₂ emissions

**UNSD in collaboration with UNFCCC:
Global Climate Change Statistics and Indicators**

Table 16: Global Climate Change Statistics and Indicators

Description of Indicator

Emissions of ozone depleting substances (ODS)
GHG emissions from land use/LULUCF
GHG emissions from households
Carbon intensity of energy for the economy
CO2 emissions from fuel combustion
Common Indicators for Impacts (34)
Occurrence of natural extreme events and disasters
Impact of natural extreme events and disasters
Agricultural production
Air temperature
Precipitation
Freshwater availability
Land degradation
Water-related diseases and conditions
Vector-borne diseases
Airborne diseases and conditions

**UNSD in collaboration with UNFCCC:
Global Climate Change Statistics and Indicators**

Table 16: Global Climate Change Statistics and Indicators

Description of Indicator

Concentration of particulate matter or dust(PM10, PM2.5)
Sea level rise
Insolation/ Cloudiness
Surface winds
Increase in forest area
List of protected reserves to mitigate (forest/land/species/water etc.)
Renewable energy use in overall consumption
Share of climate change mitigation expenditure
Share of energy and transport related taxes
Sustainable practices and other preventive measures to mitigate
Environmental monitoring (early warning systems, regulations)
Progress towards reducing GHG emissions
Common Indicators for Mitigation (16)
Increase in forest area
List of protected reserves to mitigate (forest/land/species/water etc.)
Renewable energy use in overall consumption

**UNSD in collaboration with UNFCCC:
Global Climate Change Statistics and Indicators**

Table 16: Global Climate Change Statistics and Indicators

Description of Indicator

Share of climate change mitigation expenditure
Share of energy and transport related taxes
Sustainable practices and other preventive measures to mitigate
Environmental monitoring (early warning systems, regulations)
Progress towards reducing GHG emissions
Research and development (R&D) on mitigation efforts
Various developments related to mitigation
Total CC related subsidies and similar transfers/GDP
Policies in place to enhance climate change mitigation
Carbon sequestration and trading
Use of hybrid and electric vehicles
Pro-environment activities and NGOs
Resilience
Common Indicators for Adaptation (24)
Distribution and status of known species
Energy production or supply

**UNSD in collaboration with UNFCCC:
Global Climate Change Statistics and Indicators**

Table 16: Global Climate Change Statistics and Indicators

Description of Indicator

Use of water
Expenditure for adaptation
Area which is protected
Early warning systems, mitigation strategies, published forecasts accessible to the public
Number of climate-change-relevant plans/policies developed
Population accessibility to water
Population living in hazard-prone areas
List & description of green/environmental taxes
Utilization of adaptive agricultural methods or crops
Energy intensity of economy or sectors
Use of renewable water resources
Progress in GHG emission reduction
Population accessibility to food
Production of food
Carbon stock in soil
Common Indicators for Vulnerability (20)

**UNSD in collaboration with UNFCCC:
Global Climate Change Statistics and Indicators**

Table 16: Global Climate Change Statistics and Indicators

Description of Indicator

Population living in coastal areas
Threats to crops and vegetation
Affects on fish production
Vulnerability to the ecosystems
Vulnerability to water management
Electricity price
Population living below the poverty line
Occurrences of extreme events/disasters
Endangered/vulnerable species
Affects on Mortality rate (both infant and maternal)
Various forms of risks (to species, water bodies and soil quality)
Vulnerability due to Exposure to various elements (consists of exposure to UV/electromagnetic radiations, noise, degraded air, PM and Ozone)
Threats to Vegetation Cover
Vulnerability to Food Security
Incidence of vector borne diseases

UNSD in collaboration with UNFCCC:
Global Climate Change Statistics and Indicators

Table 16: Global Climate Change Statistics and Indicators

Description of Indicator

Population living in slums
Population living in hazard-prone areas
National vulnerability index
Homeless population
Population with inadequate sanitation

5.0 Recommendations

Arising from the work done during this assignment, it is apparent that the recommendations presented below will further improve the process of environmental indicators data collection, analysis, management and reporting. The recommendations are as follows:

- critical to improving the current situation of environmental indicators in the Region is the need to extend this assignment to the other CAPHA Participating States that were not a part of this current assignment.
- continuation and completion of country consultations and the capture of these as section three of this compendium to provide a comprehensive guide that can be utilised in improving the current situation of environmental indicators' data collection, management, analysis and reporting– including reporting on the MEAs.
- continuation and extension, to the regional level, of the work started in Saint Lucia and Antigua and Barbuda to have a web-based environmental indicators information system/s linking all the national partners and producing the required national and regional reports and data sets. The success of this will depend on the ability to allow for seamless integration, cost effectiveness and sustainability.
- to produce a version of the compendium populated with the most current data(2019/2020/2021) for each indicator and where data is not available propose innovative solutions to solve the current data challenge.
- The need for international, regional and national partners to continue the work in Member States to improve the environmental indicators data collection, management, analysis and reporting processes in an integrated and cost effective and sustainable manner; utilising ICT to achieve economies of scale.

6.0 Conclusion

Indicators provide a means of assessing natural and anthropogenic impacts on the environment and activities aimed at mitigating negative impacts. Over the years, several indicators have been developed as a means of monitoring anthropogenic activities, natural events and the exacerbating impacts of climate change on these; as well as processes and policies aimed at strengthening mitigating activities⁹.

National, regional and global indicators have also been developed to support monitoring of the achievements of environmental targets associated with country visions, development plans and strategies as well as regional and global Multilateral Environmental Agreements (MEAs)⁹.

The Compendium of Indicators speaks to causal linkages in human-environment systems such as those captured in conceptual frameworks like the driver-pressure-state-impact-response model; as well as identification of any new indicators that would assist with national reporting on the status of the environment and fulfilment of various Multi-lateral Environmental Agreements (MEAs)⁹.

Section one of the Environmental Indicators Compendium speaks to the routine indicators that are currently compiled into national environmental datasets or reports/compendiums and the CARICOM Environment in Figures (2014); covering the areas of population and households, tourism, environmental health, natural disasters, energy and minerals, land use and agriculture, coastal and marine resources, biodiversity, forests, air, waste and water. Accounting for over 94 indicators, with a few MEA indicator overlap, across all the categories. There are data gaps, with the coastal and marine resources, biodiversity, air, waste and

⁹ Source: TOR and CARPHA documents.

water indicators having the highest percentage of missing data. Section 2 presented the Multi-lateral Environmental Agreements (MEAs) and their associated indicators/reporting requirements. There seem to be no central compilation of MEA indicators/reporting requirements and an assessment of the current exact data gaps is required.