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REGIONAL ACTION PLAN ON MARINE LITTER MANAGEMENT (RAPMaLi) FOR THE WIDER CARIBBEAN REGION 2014

UNEP

CARIBBEAN ENVIRONMENT PROGRAMME

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This document provides an update to the 2008 "Marine Litter in the Wider Caribbean: A Regional Overview & Action Plan" (RAPMaLi). The regional overview and development of the 2008 RAPMaLi was part of an initiative conducted by the United Nations Environment Programme-Caribbean Regional Coordinating Unit (UNEP-CAR/RCU) with financial support from UNEP's Regional Seas Programme and the UNEP Global Programme of Action.

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"Only by working together will we be able to develop a strong and effective regional programme that will serve to help protect the valuable marine resources of the Caribbean – for its people and the precious ecosystems and wildlife that occupy this region."

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LIST OF ACRONYMS

AMEP - Assessment and Management of Environmental Pollution
ABWREC - Antigua and Barbuda Waste Recycling Corporation
BARNUFO - Barbados National Union of Fisherfolk Organisations
BAS - Belize Audubon Society
BEST - The Bahamas Environment, Science & Technology
BREEF - The Bahamas Reef Environment Education Foundation
CaMPAM - Caribbean Marine Protected Areas Management Network and Forum
CARICOM - Caribbean Community
CARPHA - The Caribbean Public Health Agency
CAST - Caribbean Alliance for Sustainable Tourism
CERMES - Centre for Resource Management and Environmental Studies
CFH - Cooperative Housing Foundation
CHTA - Caribbean Hotel and Tourism Association
CIBIMA - Research Center for Marine Biology
CNID - Caribbean Network for Integrated Rural Development
CODOPESCA - Dominican Council of Fisheries and Aquaculture
COHPEDA - Haitian Collective for the Protection of Environment and Alternative Development
CSA - Caribbean Shipping Association
CTO - Caribbean Tourism Organization
CYEN - Caribbean Youth Environment Network
CZMA - Coastal Zone Management Act
CZMAI - Coastal Zone Management Authority & Institute
DEHS - Department of Environmental Health Services
ECLAC - Economic Commission for Latin America and the Caribbean
ECOMAR - Environmental Conservation Organization
EEZ - Exclusive Economic Zone
EIA - Environmental Impact Assessment
EPA - Environmental Protection Agency
FCCA Florida - Caribbean Cruise Association
FoProBiM - Foundation for the Protection of Marine Biodiversity
FUNDEMAR - Dominican Foundation of Marine Studies
GCFI - Gulf and Caribbean Fisheries Institute

GESAMP - Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection
GPA - Global Programme of Action for the Protection of Marine Environment from Land-based Activities
GPA/IGR-2 - Global Programme of Action for the Protection of Marine Environment from Land-based Activities/Second Intergovernmental Review Meeting
ICC - International Coastal Cleanup
ICCL - International Council of Cruise Lines
ICZMC - Integrated Coastal Zone Management Committee
IGM - Intergovernmental Meeting on the Action Plan for the Caribbean Environment Programme
IMO - International Maritime Organization
IOC - Intergovernmental Oceanographic Commission
IMO/REMPEITC - International Maritime Organization/Regional Marine Pollution Emergency, Information and Training Center
IOC/IOCARIBE - Intergovernmental Oceanographic Commission/IOC Sub-Commission for Caribbean Sea and Gulf of Mexico
IOC-UNEP/CEPPOL - Intergovernmental Oceanographic Commission - United Nations Environment Programme/Assessment and Control of Marine Pollution of the Caribbean Environment Programme
JANEAP - Jamaica National Environmental Action Plan
LBS - Protocol Concerning Pollution from Land-Based Sources and Activities
MALFF/PU/E/MNIB - Ministry of Agriculture, Lands, Forests & Fisheries/Public Utilities/ Energy/Marketing & Natural Importing Board
MARPOL - International Convention for the Prevention of Pollution from Ships
MBRS - Mesoamerican Barrier Reef Systems Project
MED - Ministry of Environment and Drainage
MPA - Marine Protected Areas
MPPRCA - Marine Plastic Pollution Research and Control Act
MPRSA - Marine Protection, Research and Sanctuaries Act
NCAC - National Coastal Awareness Committee
NCC - National Conservation Commission
NDC - Neighbourhood Democratic Councils

NEAP - National Environmental Action Plan
NEPA - National Environment and Planning Agency
NFWS - National Fish and Wildlife Service
NGO - Non-Governmental Organisation
NMDMP - National Marine Debris Monitoring Program
NMFS - National Marine Fisheries Service
NOAA - National Oceanic & Atmospheric Administration
OBS - Ocean-based sources
OECS - Organisation of Eastern Caribbean States
PACT - Protected Areas Conservation Trust
PADI - Professional Association of Diving Instructors
RAPMaLi - Regional Action Plan for Marine Litter Management in the Wider Caribbean
RFMO - Regional Fishery Management Organisations
SMMR - Soufrière/Scott's Head Marine Reserve
SWEEN - Solid Waste Environmental Educators Network
TIDE - Toledo Institute for Development and the Environment
UNCLOS - United Nations Convention on the Law of the Sea
UNDP - United Nation Development Programme
UNEP-CAR/RCU - United Nations Environment Programme-Caribbean/ Regional Coordinating Unit
UNEP-CEP - United Nations Environment Programme-Caribbean Environment Programme
UNEP-GPA - United Nations Environment Programme-Global Programme of Action
UNESCO - United Nations Educational, Scientific and Cultural Organisation
UNFSA - Fish Stocks Agreement
UNICPOLOS - United Nations Open-Ended Informal Consultative Process on Oceans and the Law of the Sea
WCR - Wider Caribbean Region
WHO - World Health Organisation

EXECUTIVE SUMMARY

Countries of the Wider Caribbean Region (WCR) including coastal and Small Island Developing States (SIDS) are blessed with an abundance of natural assets. These beautiful, yet fragile ecosystems support many endemic species and are ringed by coral reefs and mangrove forests which provide food and shelter for marine life as well as food and livelihoods for humans. The islands in the WCR face special challenges unique to SIDS. These challenges include small land mass (a greater proportion of which is coastal land), poorly developed waste management infrastructure, vulnerability to extreme weather events, and the location of the majority of their populations within 10 kilometres of the ocean.

Vital economic sectors such as tourism, fisheries, and transportation are highly dependent on these vulnerable coastal ecosystems. Unfortunately, the ecosystems that underpin the economic stability of many countries in the WCR are being severely degraded by overuse and anthropogenic impacts resulting in loss of biodiversity and loss of natural storm buffers such as corals and mangroves. In order to achieve greater economic growth in these key areas it is imperative to prioritize the stewardship of our unique natural resources. They must be made an integral focus of all aspects of government policy, business, trade and conservation and a valued driver of economic growth.

In 2007, the problem of marine litter was officially recognized by the United Nations General Assembly as a matter of global concern, and a call for action at the international, regional and national levels was announced. Today, the world is experiencing the fallout of more and more land based litter being swept in our oceans, settling throughout the water column, congregating in floating garbage patches, leaching toxins, and fragmenting into ever smaller particles called microplastics. UNGA declared 2014 to be the Year of SIDS, and as a result, special attention is being placed on threats to the stability of SIDS, specifically including the problems of marine litter.

The Regional Action Plan for Marine Litter (RAPMaLi) for the Wider Caribbean Region was originally developed in 2007 as a project under the directive of the United Nations Environment Programme (through its Regional Seas Program) in response to growing global concerns of litter accumulation in our oceans. The Caribbean Regional Coordinating Unit of UNEP undertook the task of compiling and developing the RAPMaLi. The regional approach of this project promotes problem solving at the national and local levels, recognizing that unique regional characteristics shape a variety of solutions to this endemic problem. A testament to the success of this approach is evidenced in the increased level in participation of 20 countries in 2014, up from 14 countries included in the original report. The RAPMaLi action plan has since been implemented through selected pilot projects in Guyana, Barbados and Saint Lucia

In the publication of **Marine Litter in the Wider Caribbean Region: A Regional Overview & Action Plan**, we have experienced great progress in our understanding of the depth and breadth of the marine litter problem, how trash travels from the land to the sea, as well as our commitment to better management of the underlying anthropogenic causes. RAPMaLi is designed to serve as a comprehensive toolkit to assist SIDS in incorporating components of proper waste management across all sectors. These sectors

include but are not limited to governmental legislation, enforcement, monitoring and research, community engagement, and the business sector. The primary action categories addressed in this document include: a) Legislation, Policies and Enforcement; b) Institutional Frameworks and Stakeholder Involvement; c) Monitoring Programmes and Research; d) Education and Outreach; and e) Solid Waste Management.

Research to update the 2008 RAPMaLi was conducted over the past year by the Caribbean Youth Environment Network. Data were compiled and assessed utilising background research, surveys and interviews with government representatives, UNEP National and Marine Litter Focal Points, non-governmental organisations (NGO's) and regional organisations involved in marine litter monitoring and management. The previous document was reviewed and any changes to organisations and laws were made along with additions or deletions with respect to institutions, legislation, gaps and others where necessary. Compared to the previous RAPMaLi, many of the same issues prevail, but there were some improvements over the years. Also included is a current list of Country Focal Points who serve as an ongoing resource for conservation efforts throughout the WCR. This list will also be updated and available on the UNEP-CEP website.

The work of the United Nations Environment Programme, Caribbean Environment Programme (UNEP-CEP), which is charged with facilitating the implementation of RAPMaLi, is also supported by the adoption of several international agreements with implications for the Wider Caribbean Region, including the Protocol Concerning Pollution from Land-Based Sources and Activities (LBS Protocol) of the Cartagena Convention, the London Convention, MARPOL Annex V in which the WCR was designated a Special Area under Annex V dealing with waste from ships, the Honolulu Strategy, Global Prevention of Marine Litter (GPML), the Global Programme of Action for Protection of the Marine Environment (GPA) and "The Future We Want," an outcome document of the Rio+20 Earth Summit held in Rio de Janeiro, Brazil in 2012.

The challenges faced by SIDS in the WCR are many and varied but not insurmountable. We have the expertise, access to technology, funding and a platform provided through the United Nations Environment Programme - Caribbean Environment Programme (UNEP-CEP), for countries to share experiences, across language, culture and geography. In order to achieve the greatest impact in reducing our damage to the natural environment we need to continue to identify high risk, priority areas and engage policy makers and other stakeholders to create a comprehensive crosscutting approach across multiple sectors and ministries, both individually and collectively.

INTRODUCTION

According to the United Nations Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP), 60 - 80% of the world's marine pollution comes from land-based sources and activities. The analysis of the data collected in the Caribbean region through various beach and underwater clean-up activities conducted by local community groups and government agencies supports this claim (UNEP, 2006). The majority of litter comes from indiscriminate dumping and littering on land, which can end up in drains, rivers and streams, flowing towards coastal areas, and also results from direct littering on the beach by beachgoers. The destructive forces of severe storms, wave action, and hurricane force winds can also move litter from land to sea. The remainder of marine litter comes from deposition of litter directly into the sea from water borne activities such as pleasure boats and cruises, fishing and cargo ships, offshore oil rigs and platforms, fishing piers, jetties and marinas.

In order to manage this pervasive problem effectively, an adequate understanding of the issues is necessary. This includes knowledge about the main types of marine litter, the amount of litter and sources, and also the human behaviours and activities which produce it. Effective management for the reduction and abatement of marine litter can be done through effective and continuous research, documentation, and monitoring to assess the types and amounts of marine litter. Corresponding public education programmes, innovative waste management strategies, implementation of national policies supported by existing international treaties and conventions, combined with national legislation and regulations, and governmental and private sector compliance and enforcement, together can form the foundation for a successful marine pollution prevention initiative.

The Regional Seas Conventions and Action Plans have been established in 18 distinctive regions to serve as a platform for the regional implementation of multilateral environmental agreements and global programmes and initiatives to address shared environmental concerns. UNEP-CEP is the UN agency tasked with oversight and support for the Wider Caribbean Region. UNEP-CEP, through its office of Assessment and Management of Environmental Pollution (AMEP), engages an extensive regional network of stakeholders including national governments, health, environmental, conservation, education, and tourism sectors, waste management agencies, and organisations that have connections with the marine litter issue – its creation, handling, abatement, and prevention. Through regional and local programmes and initiatives for solid waste and natural resource management and other related activities, these organisations form a powerful base for regional interaction and collaboration in dealing with the marine litter problems that plague the region. The Regional Action Plan for Marine Litter (RAPMaLi) pulls together all of this information in a comprehensive format including information related to specific legislation, stakeholders and related activities in each participating country.

The development of the updated RAPMaLi document includes an analysis of the previous RAPMaLi document. Country specific information is now organized into Country Profiles outlining new or amended institutional, legal and policy arrangements for

the management of marine litter at all levels, national legislation and policies; identification of government, quasi-government agencies and NGO's that work with national marine litter problems; and existing national and regional monitoring programmes on marine litter. Also provided is a list of international and regional stakeholders (Appendix B), and an overview of international treaties and conventions relevant to the WCR (Appendix C). A list of WCR countries that participate in the ICC is available (Appendix E), along with a review of recent data on the quantity and composition of marine litter in the WCR based on the International Coastal Cleanup (ICC) which contains important base-line

information for decision making (Appendix F).
Marine litter or debris is one of the most widespread and pervasive pollution problems afflicting the world's most valuable natural resources: its beaches, coral reefs, fisheries, and wildlife.

Marine litter is a global problem due to the multiple access and egress points including direct dumping on the coast, litter dumped at sea which can eventually be deposited on the coast, land-based mismanagement caused by the indiscriminate disposal of waste upriver, and wind and storm driven litter which winds up in the sea. Once in the ocean, this litter can be transported thousands of miles along ocean currents, travelling along vast water highways, through gyres and eddies, destined to remain trapped in an ocean gyre, sink to the ocean floor or eventually be deposited onto a near or distant shore. Approximately 200 million tons of inorganic debris is already floating in our oceans with an estimated 7 million tons being added annually (National Research Center for Ecological Analysis, 2014). Even remote areas completely devoid of human habitation have become inundated with man-made litter.

Figure 1: Polluted Beach in Hellshire Beach, Jamaica.

The main type of litter found in the ocean and along coastal areas comprises plastic materials from food and beverage containers, childrens' toys and other non-biodegradable products. Plastic does not decompose easily and can float and/or sink into the water column, remaining in the environment for years. It can also fragment into ever diminishing particles, called microplastics, which complicates removal from the water column. The steady increase in volume of marine litter is a reflection of the unsustainable production and consumption patterns of people along with improper disposal practices.

The sheer number of international treaties and conventions dealing specifically with the problem of marine litter confirms the dire global situation. From many studies, the various forms of marine litter, their abundance and sources, and the human behaviours producing it have been identified. It is also known that documentation and monitoring to assess the types and amounts of marine litter, culturally-based public education programmes for environmental stewardship, and implementation of policies supported by national and local legislation, and governmental and private sector compliance and enforcement form the foundation for marine pollution prevention initiatives. These programs of action can lead to the reduction and abatement of marine litter impacting all waterways and coastal areas.

At the international level, several prominent global agreements to address marine litter have been produced including:

SAMOA Pathways (2014), SIDS Accelerated Modalities of Action, signed in Apia, Samoa, was the outcome document of the Third

International Conference on Small Island Developing States. This conference affirmed the previous agreements pertaining to SIDS as well as further implementation of actions to promote sustainable development of SIDS ocean-based economies for fisheries and aquaculture, coastal tourism, seabed resources, and renewable energy. It further outlined the need for a reduction in marine pollution that threatens ocean-based economies. As a follow-up to this conference, the SIDS Action Platform was created, providing an internet platform for continued partnership development.

The Mauritius Strategy (2014), developed during the Second International Conference on Small Island Developing States, provides for the continuation of the **Barbados Programme of Action (First International Conference on Small Island Developing States, BPoA,1994)**, which recognised that small islands have limited land space, resources for safe disposal, increased population size, increased imports of polluting and hazardous substances which together make pollution and waste management a critical issue. It added that urbanisation contributes to the problem of marine pollution along with poorly managed garbage dumps. This issue was cited as a major constraint to sustainable development in SIDS.

Barbados Outcome of the Inter-regional Preparatory Meeting for the Third International Conference on Small Island Developing States (SIDS), 2013, further identified the degradation of the coastal marine environment and inadequate waste management systems as major challenges to sustainable development. It also recognised the need for increased investments and technical cooperation in the development of integrated waste management systems and related technologies in order to manage the problem.

"The Future We Want," an outcome document of Rio+20 (2012), calls for urgent action to be taken on unsustainable production and consumption patterns in order to address environmental sustainability and also supports the sustainable management of wastes through waste minimisation activities such as the 3 R's (reduce, reuse and recycle) and also through energy recovery. The green economy approach was cited as a suitable method to reduce waste production. It also calls for the development and enforcement of comprehensive national waste management policies, strategies, laws and regulations.

MARPOL Annex V, (2012) designates the WCR as a "Special Area" for protection. The status of MARPOL Annex V has been assessed and amended by the IMO. Almost all discharges from ships into the sea are now prohibited as enforced in 1st January 2013. These new regulations apply to all ships as well as to fixed and floating offshore installations. Guidelines were created and adopted in 2012 (Annex 24, Resolution MEPC.219 (63)) entitled '2012 Guidelines for the Implementation of MARPOL Annex V'. The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) encompasses the issues associated with land-based sources of marine litter and is working to deal with this global problem through UNEP's Regional Seas Programme.

The Honolulu Strategy (2011) is a framework for a comprehensive and global effort to reduce the ecological, human health, and economic impacts of marine debris which was finalized after the conference. Participants expressed concern at the continued threat and economic costs from marine debris to human health and safety; biodiversity and ecosystem services; sustainable livelihoods; and the boating, shipping, tourism and fishing sectors. (New to

this edition of RAPMaLi, notations have been included identifying RAPMaLi goals and actions that are also set forth in the Honolulu Strategy.)

A comprehensive list of International and Regional Treaties and Conventions for the global management of marine litter and in the WCR is provided in Appendix C with brief descriptions and links to the related websites for more information.

1.1. PROBLEMS AND IMPACTS ASSOCIATED WITH MARINE LITTER

Marine litter is a significant issue since it can negatively affect precious coastal and marine natural resources including endangered wildlife and water quality. If this illicit dumping continues unmitigated, it may certainly affect national economies through the destruction of livelihoods of persons who depend heavily on ocean-based economies such as the fisheries and the tourism industries (representing the primary form of foreign revenue for most islands in the WCR). The health and safety of persons who use the beach and water for recreational activities are also at risk in areas where litter accumulates.

ECONOMY & AESTHETICS

All ocean-based economies depend on sustainable, healthy ecosystems to support livelihoods such as fisheries, coastal tourism, aquaculture, seabed resources, oceanic transportation, and export services (SAMOA Pathways, 2014). These industries represent major contributions to countries' gross domestic product (GDP). For example, international tourism is expected to generate $14 trillion in export earnings in 2014. Tourism ranks 5th globally for overall exports and 1st in exports for many developing countries (UNWTO 2014 Press Release, 2014).

Figure 2: Dumping at River in Lower Haina Basin in the Dominican Republic.

Recovering from a drop in tourism arrivals due to world-wide economic downturn, the WCR's estimated arrivals are expected to top 25.1 million in 2014, bringing in an estimated total contribution of USD51bn, representing 14.2% of regional GDP and 1.9 million jobs (World Travel and Tourism Council, 2014). Marine litter or debris, which accumulates along the beaches and waterways, disrupts the natural aesthetic beauty of the beaches which diminishes the recreational value and tourism quality of these resources (Liu, Wang, & Chen, 2013). Sustaining the tourism sector will require not only trash removal, but also improving solid waste disposal practices on land, and investment in sustaining coastal and reef ecosystems.

The loss of shipping containers at sea, estimated at an average loss of 1,679 containers between 2011-2014 (World Shipping Council, 2014), causes financial losses for economies that depend on a thriving import/export industry. Ships also rely on clean harbours free of debris in order to navigate safely. Countries that do not maintain clean, clear waterways suffer from loss of business. Ships and light craft can be subjected to severe damage caused by submerged debris such as lost shipping containers.

Land-based debris can also damage infrastructure such as bridges and buildings,

storm sewers, and port facilities as the accumulated litter is swept along with storm water and high winds accompanying hurricanes. The dumping of trash in gullies and storm drains significantly reduces water carrying capacity, which in turn contributes to excess flooding and damage to roads and bridges. Damage directly attributable to debris and flooding during the St. Lucia Flood Event of December 2013, resulted in infrastructure losses totalling USD68.8mil (Government of St. Lucia and the World Bank, 2014).

United Nations estimates have determined that marine debris contributes to global economic losses of at least $14 billion a year (Valuing Plastic, 2014).

HUMAN HEALTH & SAFETY

Litter can be a hazard to humans with respect to health and safety. Improperly disposed medical wastes can spread diseases and cause injury from needles if it comes into direct contact with persons. The transference of pathogens from medical waste, sanitary products and discarded diapers also puts swimmers and beach goers at risk for serious bacterial infection. Beach

Figure 3: Boy cycles past river polluted with solid waste, Lower Haina River Basin, Dominican Republic

cleanliness and water quality are issues that are underreported in the WCR, primarily due to potential loss of tourism. However, reluctance to monitor and maintain beach health will increase health risks to humans.

Discarded broken glass or other sharp objects lying on the beach may cut persons walking on the beach. It can contribute to flooding of coastal areas. In addition to being unsightly, discarded cigarette butts (the #1 type of trash collected during the 2013 ICC) contain hundreds of carcinogens and other toxins that leach into the water and are poisonous when ingested (Novotny, 2014). Marine debris can also wrap around and damage boat propellers or engines, as well as entangle swimmers and divers due to submerged or floating debris such as fishing nets and lines.

Discarded litter can also provide a reservoir for stagnant water providing a breeding ground for mosquitoes and flies that spread diseases such as Dengue Fever, Malaria and Chikungunya virus to humans.

Plastics consumed by marine fish and other seafood can leach toxins such as mercury and other suspected carcinogens which can bioaccumulate in animal tissue and be transported up the food web to humans. While there is no clear understanding of the future impact these magnified toxins attributed to microplastics may have on human health, there is enough data to warrant further study (Hollman, Bouwmeester, & Peters, 2013).

HABITAT DESTRUCTION

Coastal ecosystems such as coral reefs are very sensitive and susceptible to small changes in the environmental conditions. Currently, 30% of corals in the WCR are at risk of serious decline from anthropogenic causes, sedimentation, smothering by trash and lost fishing gear. Other marine ecosystems such as mangrove forests and sea grass beds are also affected.

Efforts made by all countries in the WCR have

Figure 4: Net entangled on diffuse ivory bush coral (Oculina diffusa)

succeeded in establishing over 300 marine protected areas. However, litter does not respect these boundaries. All species living in these habitats may most likely be impacted.

The WCR is already dealing with the impacts of climate change, in particular how to protect coastal infrastructure such as homes, roads. Sand and natural buffers such as corals, mangroves have been eliminated in many coastal areas making these areas more vulnerable to sea level rise and coastal surges. Options available to wealthier coastal communities such as engineered breakwaters, and artificial sea walls are not financially viable options for many countries in this region.

EFFECTS ON WILDLIFE

Both aquatic and terrestrial animals can be negatively affected by the presence of marine litter. The species can mistake trash for food, which when ingested may cause damage to the throat and stomach, cause feelings of satiation resulting in starvation, and leach toxins that may be absorbed into the animal tissue. Plastic bags are especially appealing to sea turtles as they masquerade as jellyfish. Abandoned fishing nets and lines may entangle marine wildlife, such as sea turtles, birds and fish, which may hurt or kill them. Many of these animals are threatened or endangered and consequently, the biodiversity of the areas can be significantly impacted. Animals can mistake litter for food and ingest plastics. Animals can also become entangled in nets and bags which can either injure them or permanently damage their ability to fend for themselves (hunt, mate) and hinder movement (Ivar do Sul & Costa, 2007; Liu, Wang, & Chen, 2013).

Beach trash can impede sea turtles from access to nesting sites as well as block access to the sea for hatchlings making them prime targets for predators.

Figure 5: Turtle entangled in a fishing net

1.2. EMERGENCE OF MICROPLASTICS AS A HEALTH CONCERN

While marine litter is an acknowledged and easily recognizable detriment to the beauty of our natural environment, there is an associated, not so easily seen hazard, created especially by plastic litter. Each manmade plastic item that finds its way into the ocean will eventually disintegrate into millions of plastic fragments less than 5mm in diameter, further degrading the health of our ocean ecosystems. The hazard is caused by these vast quantities of small pieces of degraded plastic floating throughout the water column, absorbing toxins and later adsorbing these toxins into the tissue of animals who have mistaken them for food. UNEP, in 2006, estimated the volume of macroplastics

(>5mm diameter) to be roughly 18,000pp km2 (UNEP, 2006). Recent research into the regional detection and volume of microplastics puts this number at 100,000pp km3 (Wright, Thompson, & Galloway, 2013) globally, and roughly 1,000 pp km2 in the western Atlantic oceanic basin (Ivar du Sol, Costa, & Fillmann, 2014).

There are two principal categories of microplastics. Primary plastics are produced for a specific use such as pre-production pellets (nurdles), mini polyethelyne beads used in soaps and cleansers, industrial abrasives for direct use or in the development of other products. These plastics may wind up in the ocean through spillage, improper disposal, or the inability of sewage treatment facilities to capture these minute particles and prevent their discharge into rivers and subsequently the ocean.

Secondary microplastics are formed from the breakdown of larger plastic materials. These include man-made larger plastics such as beverage bottles, textile fibres (Hollman, Bouwmeester, & Peters, 2013), oil containers, fishing gear including filament line and larger nets, etc. Annual production of plastics increased to 280 million tonnes (PlasticsEurope, 2013) in 2012 (not including PET, PA and polyacryl-fibers). In the Caribbean, marine litter collection data from the annual International Coastal Clean-Up Day shows that 67.5% of the items retrieved from coastal areas were made of plastic.

The disintegration process for plastics in the ocean differs from the process that occurs in a landfill. Once plastic enters the marine environment, it is exposed to solar UVB radiation from the sun, chemical interaction with saltwater, wave energy, and other reactants which break down the larger plastic into ever smaller pieces depending on the original characteristics of the plastic. As these plastics disintegrate, they release their chemical binders such as Bisphenol A (BPA) which causes reproductive problems in animals, and styrene monomer (a possible carcinogen) into the water. In addition, these fragments act as a sponge, adsorbing chemicals in the water column.

The rate at which plastic degrades accelerates with warmer water temperatures of 30* Celsius and above, and may be exacerbated by ocean warming due to climate change. This has strong implications for microplastic “hot-spots” in equatorial seas including the Wider Caribbean Region, affecting our fisheries (Possatto, Barletta, Costa, Ivar du Sol, & Dantas, 2011), tourism industries, and the health and welfare of our people.

As recently as 2008, an international gathering of scientists convened to report on microplastic marine debris (NOAA, 2008), acknowledged there was little scientific understanding of the potential implications of these plastic fragments. However, the existing evidence of ingestion by animals mistaking the fragments for a food source and the potential for toxic leaching into the marine food chain has sounded the alarm for further investigation into this impending threat to fragile ecosystems. Since 2009, scientists have amassed over 700 peer-reviewed studies verifying the growing presence of literally innumerable pieces of plastic of varying sizes, not only in the ocean, but in lakes, rivers, and trapped in glacier ice.

These plastic particles range in size from macroplastics of ≥25mm to microplastics of ≤5mm, and are being ingested at every level of the marine food web including by smaller invertebrates (Wright, Thompson, & Galloway, 2013). When ingested, these particles may cause blockage of or damage to the digestive tract, leach sorbed chemicals which are then

adsorbed into the animal's tissue, and may cause starvation due to perceived satiation. New studies being carried out in Australia clearly demonstrate the role that MPPs play as accumulators of persistent organic pollutants (POPs), that then biomagnify up the food chain. The ability for the contaminants to leach within the body tissues depends on if it is hydrophobic or hydrophilic, pore size, chemical size, particle size of the microplastic, pH and ionic strength of the contaminant (Hollman et al, 2013). The health implications seem to indicate that trophic transfer may cause food safety and public health concerns for humans. This is an area that needs further study.

There are currently international efforts underway to manage primary plastics and ban them from household and beauty products. In addition, many countries are assessing consumption patterns in an effort to reduce their dependence on single-use plastics through legislation banning items such as plastic bags and styrofoam take-away containers, and the institution of recycling programs. In the Caribbean, Rincon, Puerto Rico has banned single use plastic bags completely; and BVI has instituted a bag tax on disposable plastic bags.

There is much research to be done to further our understanding of the current and future impact microplastics may have in our world. While there is evidence of microplastics in food sources such as fish and mussels, there is a lack of research into the transference of toxic substances specifically related to the ingestion of micro particles to humans. Further toxicity studies including the potential impact on immune systems and body tissue would provide further insight into any potential long term health threats plastic particles may pose.

1.3. SOURCES, ACTIVITY CATEGORIES AND INDICATORS OF MARINE LITTER

The primary activity for marine litter documentation worldwide, including the Caribbean region, from 1989 to present is the International Coastal Cleanup (ICC) which is an annual event organised by the Ocean Conservancy. The Ocean Conservancy is a United States based marine conservation and advocacy organisation. Their aim is for 'Trash Free Seas' and to keep the oceans and beaches clean. Each participating country is designated an ICC coordinator who coordinates the event. From the latest report, 97 countries participated in 2012 (Ocean Conservancy, 2013). The event occurs once yearly in the month of September and the land and water is cleaned. Many groups, organisations, companies, schools and individuals participate yearly.

The Ocean Conservancy has developed a detailed system for collecting, documenting and reporting on the litter collected each year. Marine litter sources have usually been broadly divided into two categories: Land-Based Sources (LBS) and Ocean or Waterway-Based Sources (OBS) which are determined by their entrance into the water. The items collected are further catalogued by Activity Type: recreational and shoreline activities, ocean and waterway activities, smoking related activities dumping, and medical or personal hygiene material. This sorting and cataloguing of litter assists with the monitoring of trends and with further understanding of the points of origin.

SOURCES

The origin of marine litter is not usually simple, since trash travels for long distances and accumulates in the coastal areas, seas and ocean floors via storm drains and waterways

such as rivers and streams (Ocean Conservancy, 2013). They can also be deposited into these areas from natural disasters such as tsunamis and hurricanes, fishing activities, recreational activities, movement of tides, proximity to urban areas and shipping lanes. These factors will influence the types and amount of debris that are found in the coastal and marine areas.

Land-Based Sources

These are associated with activities which occur on land with the resulting litter being improperly discarded along roads and waterways. This waste can be blown, washed and discharged into the water from land activities. Sources include factories, manufacturers, fishermen, public littering on the beach, trash from street vendors in coastal cities or urban areas, waste processing facilities; sewage treatment plants and legal and illegal dumping.

Improper waste handling in terrestrial areas can increase the volume of marine litter. These include coastal landfills, dumping of garbage into waterways and gullies, recreational and roadside litter in coastal areas and direct dumping of trash into the sea. The mishandling of wastes, presence of non-biodegradable food wrappers and containers among others are the building blocks of the marine litter issue (UNEP-CEP/RCU, 2008).

Ocean or Waterway-Based Sources

These originate from activities done on the ocean and in waterways which are deposited directly in the water. The contributors to marine litter from OBS include the different types of fishing vessels, water sports, cruise and cargo ships, offshore fossil fuel platforms and transportation. Litter can wind up in the water through system or mechanical failure, obsolete waste management practices or through illegal littering and dumping (UNEP-CAR/RCU, 2008).

Figure 6: River in Port-au-Prince, Haiti

Fishing activities can also contribute to marine litter where fishermen dump garbage into the sea intentionally or accidentally. Types of debris associated with fishing activities include nets, fishing lines and ropes, fish hooks, bait containers, forgotten or discarded fish, lobster and crab traps, food and beverage containers, cleaning chemicals containers, clothing and pieces of boats if they crash or capsize. These can all pose a serious threat to wildlife if ingested or entangled, to humans themselves through injury and to the marine and coastal ecosystems.

Pleasure boaters and yachtsmen may also add to the waste stream by improper disposal of garbage such as fishing, diving and snorkelling gear, food and beverage containers and wrappers and cleaning chemicals and oil or lube containers. Large ships such as barges and cruise ships with large crews and passengers, which may travel for several months, also produce large volumes of solid waste. This can end up in the water if it is not properly stored and disposed of. Proper waste management is key on these vessels in order to prevent or reduce pollution.

Extraction and exploration of fossil fuels such as oil and gas can contribute to the marine litter problem. Lubricating oil, drill cuttings, empty chemical containers and clothing are some of the types of garbage produced during the drilling

process, and can enter the marine environment if wastes are not handled properly.

ACTIVITY CATEGORIES

The following activity categories were established by Ocean Conservancy as part of the annual data analysis process. The data collected is sorted into groups based on the types of anthropogenic activities contribute to marine litter deposition over time.

- Recreational and Shoreline Activities– Littering by beachgoers, watersports, festival events, washing, littering from places upstream, drains, gutters and culverts.
- Ocean and Waterway Activities– Improperhandling of solid wastes from recreational, subsistence and commercial fishing, boating and shipping, military ships, cruise ships, and oil and gas offshore rigs.
- Smoking-Related Activities– Improper disposal of smoking-related materials and packaging by smokers.
- Dumping– Improper disposal of construction materials, domestic waste, automobiles and car parts,
- Medical or Personal Hygiene– Discarded material dumped on the roads, in drains and other waterways and litter left on beachgoers.

Conducted on an annual basis, this data may be used as a baseline for marine litter management within each category for each country and regionally.

INDICATORS

The following Table 1 highlights indicators of marine litter sources and their corresponding activities which originate from the ICC's data sheets.

ACTIVITY TYPE	INDICATORS
Shoreline and Recreational Activities	Bags [plastic and paper], balloons, beverage bottles (plastic; 2L or less], beverage bottles [glass], beverage cans, caps and lids, clothing and shoes, eating utensils, cups and plates, food wrappers and containers, pull tabs, 6-pack holders, shot-gun shells and wadding, straws and stirrers, toys
Ocean and Waterway Activities	Bait containers and packaging, bleach and cleaner bottles, buoys or floats, traps, crates, fishing line, fishing lures or light sticks, fishing nets, light bulbs or tubes, oil or lube bottles, pallets, plastic sheeting or tarps, rope, strapping bands
Smoking-related Activities	Cigarettes or cigarette filters, lighters, cigar tips, tobacco packaging or wrappers
Dumping Activities	Appliances, batteries, building materials, car or car parts, 55-gallon drums, tires
Medical or Personal Hygiene Activities	Condoms, diapers, syringes, tampons or tampon applicators

Table 1: Indicators of marine litter sources by activity type
Source: ICC Data Sheets, Ocean Conservancy

2. MARINE LITTER DATA OVERVIEW – WIDER CARIBBEAN REGION

The Wider Caribbean Region (WCR) is made up of small islands and low-lying coastal states within a tropical climate with occasional natural disasters. The region's climate is conducive to year-round beach and water-related activities and therefore more waste production and potential marine litter. Cooperation between the States of the Wider Caribbean Region to combat this issue is urgently needed in order to mitigate this problem.

In the WCR, the dominant debris material reported from a 1990-1991 study by Ocean Conservancy, was plastic. Most of the 70 beaches surveyed were those that were not usually used by beach-goers or had routine clean-ups and were not close to river mouths. Transects were done on each beach where the material found was counted, weighed and recorded. The majority was from land-based sources. The International Coastal Cleanup Day (ICC) was also cited as a good source of monitoring and information gathering for marine litter in the region and the world (Ivar do Sul & Costa, 2007).

According to the ICC data, most of the litter collected usually comes from land-based sources. There is also a lack of monitoring of the volume of waste generated and its composition in most countries. This may cause improper design and siting of non-sanitary landfills, poor planning capacity and ineffective policy frameworks (de Cuba, Burgos, Contreras-Lisperguer, & Penny).

2.1. MARINE LITTER SOURCES IN THE WIDER CARIBBEAN REGION (1989-2012)

Our primary source of data for the occurrence of anthropogenic litter in the near shore and coastal waters of the WRC is that which is catalogued annually as part of the International Coastal Clean-up Day.

During the 7-year period of 2006-2012, marine litter data was documented during the annual ICC in 13 participating countries of the Wider Caribbean Region. A total of 3,990,120 debris items were removed from the coastal and underwater sites with a total weight of 1,913,166 pounds, covering 2,317 miles by 142,957 volunteers. A list of the WCR countries participating in the annual ICC is provided in Appendix E (Ocean Conservancy, 2005-2012).

According to the ICC data, smoking-related activities accounted for 4% of the total marine debris in 2012, which decreased from 7.7% from the previous RAPMaLi (Figure 5). Dumping and Medical and Personal Hygiene Activities were 1% each but this was a decline from the previous assessment report where they accounted for 3.2% and 2.2% respectively (UNEP-CEP, 2008). Marine litter from OBS was 8% of the total collected with the majority originating from crab, lobster and fish traps (23%) followed by bleach and cleaner bottles (19%) and rope (11%). Different factors can contribute to the decrease in the amount of marine litter collected for each category source such as the number of beaches which were cleaned during the ICC, solid waste management policies and strategies in each country, the number of volunteers and the distance cleaned compared to 1989-2005 and 2006-2012.

In the WCR, the principal contributor to marine litter remains Land-Based Sources (LBS) (every category but Ocean and Waterway activities), which totalled 92%, and the remaining 8% from Ocean-Based Sources (OBS) (ocean and waterway

activities) (Figure 6). This has increased from the 1989-2005 total of 89.1% (UNEP-CEP 2008).

Of the LBS, Shoreline and Recreational Activities was the majority contributor and totalled 86% of the marine litter collected between 2006 and 2012. Between 1989 and 2005, the figure was 76%. This resulted in an increase of 10% for that period (UNEP-CEP, 2008).

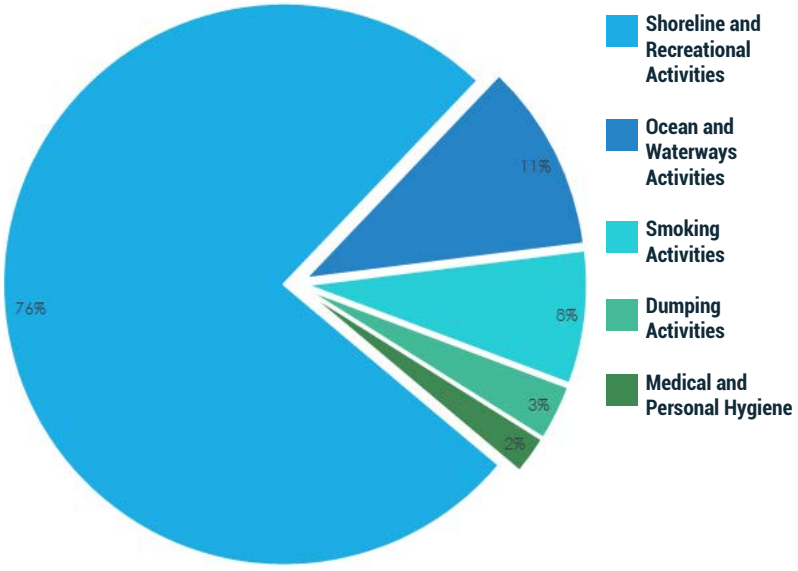

Figure 5: Types and sources of marine litter collected at the ICC in the WCR (1989-2005)

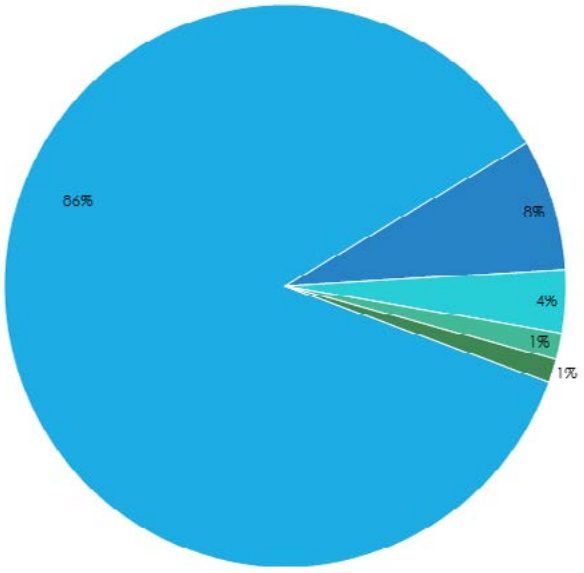

Figure 6: Types and sources of marine litter collected at the ICC in the WCR (2006-2012)

Additional comparison of the data from the two time periods indicates:

- 2.9% reduction in marine debris attributed to Ocean and waterway activities (from 10.9%)
- 2.2% reduction in dumping related activities (from 3.2%)
- 10% increase in shoreline and recreational related activities (86% of all marine debris)

The above data supports some progress being made in the areas of ocean and waterway activities and reduction in dumping activities. Further analysis of country specific data would provide insight into exactly where the numbers are going down and see what those countries are doing in this area in order to identify possible best practices that may be shared with other countries. On the other hand, there is an increasing percentage of debris coming from shoreline activities. It is important to determine whether these increases are due to more tourist arrivals, ineffective education campaigns, or poor enforcement. However, these are issues that individual countries could address using the data provided. This analysis can in turn provide the basis for developing national and local action plans to mitigate one or more sources of litter.

2.2. DOMINANT MARINE LITTER FORMS IN THE WIDER CARIBBEAN REGION

The marine litter data for the WCR was reviewed according to the total number of pieces collected during the annual ICC events for each type. The composition of debris is dominated by the presence of food and beverage packaging and smoking materials. This can be an indicator of the behavioural pattern of the public and the attitudes toward disposal of their waste. Even

in areas which have appropriate receptacles for disposal, persons still engage in littering. The evidence of poor smoker waste-handling practices is also reflected in this listing with improperly disposed of cigarette filters.

The top marine litter form found was plastic beverage bottles accounting for 19.6% of the total items recorded. This reflects a marked increase of discarded single-use beverage bottles up from 10.6% in the period 1989-2005. In the period 2001 – 2005, plastic beverage bottles accounted for 15.1% of trash collected (RAPMaLi, 2008). **The single use beverage bottles has moved from #4 to #1 as the most prevalent debris item and given current consumption patterns this gap will continue to widen.** This information makes a strong case for big impact by creating a recycling program for plastic bottles. Removal of plastic beverage bottles from the waste stream would also remove 20% of the litter from our oceans and coastal areas.

Over the years as production and consumption increased, the different types of materials also increased, especially in plastics, where most of the industries produced the short-lived disposable plastic and plastics contained in packaging. Marine litter collected from this type of activity increased steadily over the period.

The top 10 forms of marine litter originated from Land-Based Sources and they totalled 85.4% of total marine litter forms found. The same trend was seen in the years 2001-2005 where the top 10 are the same but in a different order. For the period 1989-2005, the top litter forms were caps and lids of containers followed by utensils, cups and plates and bags. The top 10 items accounted for 77.4% of all items collected in this period and increased to 85.4% in the 2006-2012 period. This provides evidence of consumption and disposal patters as plastic manufactured disposable products become more ubiquitous in our society.

Number	Item	Percentage (%)
1	Beverage Bottles [plastic]	19.6
2	Bags [plastic and paper]	16.9
3	Caps and Lids	11.4
4	Utensils, Cups and Plates	9.6
5	Beverage Bottles [glass]	6.7
6	Food Wrappers and Containers	6.5
7	Clothing and Shoes	4.6
8	Beverage Cans	4.4
9	Straws and Stirrers	3.5
10	Cigarettes and Cigarette Filters	2.2
Total		**85.4**

Table 2: Top 10 marine litter forms collected in the ICC in the WCR (2006-2012)
Source:Ocean Conservancy, ICC Data Reports

Number	Item	Percentage (%)
1	Beverage Bottles [plastic]	15.1
2	Caps and Lids	11.8
3	Utensils, Cups and Plates	9.0
4	Cigarettes and Cigarette Filters	8.4
5	Beverage Bottles [glass]	8.3
6	Bags [plastic and paper]	7.5
7	Food Wrappers and Containers	6.7
8	Beverage Cans	5.5
9	Straws and Stirrers	4.6
10	Clothing and Shoes	3.1
Total		**80.0**

Table 3: Top 10 marine litter forms collected in the ICC in the WCR (2001-2005)
Source: UNEP-CAR/RCU 2008

3. IDENTIFICATION OF GAPS AND NEEDS FOR MARINE LITTER MANAGEMENT

Through the surveys (Appendix D) conducted with select national consultants, National LBS Focal Points (Appendix H), and other research, the following gaps and needs related to marine litter management in the WCR were determined. The case study in this section highlights some of the work being done in Saint Lucia to address gaps they have prioritized.

National Monitoring Programmes – Many of the islands have programmes to address marine litter. However, there is still the need for the establishment of national marine litter monitoring programmes to provide for a continuous assessment of coastal areas and seas. The collection of regular data would be a positive step for the Wider Caribbean Region and help to conserve the coastal areas more effectively. Instead of having programmes once a year but more programmes such as the clean-ups need to be conducted whether weekly or monthly to monitor the litter on the beaches and be better coordinated. The data collected from the clean-ups are restricted to a few locations and should be expanded. Monitoring can be scaled up to conduct trend analysis to study the effects of marine litter and determine if there are peak periods and to look at how debris returns to the same site. Monitoring of marine debris flow by incorporating the ocean currents to determine if there are areas which will be more prone to marine pollution will be beneficial. Furthermore, many programmes are not focused on studying the abundance and impact of microplastics within the Caribbean Islands. However, Bahamas for example has recently implemented a project called "A Plastic Beach Project" where macro- and microplastics were studied.

Note: The ICC is used as a monitoring programme but it is only done once yearly. All beaches in all countries are not cleaned. In some countries, the ICC is conducted but no data is collected. There are other clean-up programmes called 'Clean up the World' where the garbage is collected but there is no data collection.

Monitoring Recycling Programmes - More recycling programmes need to be created so as to minimise the amount of garbage in the waste stream. There are some programmes which encourage the community to separate their garbage in which companies that collect the recyclables can transport them to other countries to be recycled. The recycling programmes need to be monitored to see how effective they are in minimising the waste.

The case study presented on Saint Lucia's new recycling enterprise, indicates that rebate incentives may encourage more recycling if there is a market for these items overseas.

Recycling Sweeps Saint Lucia, 2014

UNEP, in celebration of the International Year of Small Island Developing States, highlighted Recycle It, a local recycling company in Saint Lucia to demonstrate the significance of efficient waste management for a healthier environment.

Recyclables are collected and bought from persons to divert them from going into the landfill. This increases the space available for non-recyclables at the landfill. The recyclables are then sent to other countries such as China and the United States of America.

The owner, Josephat Small, stated that "the plastic bottles are not collected with a deposit-refund system like other countries and therefore the government could do this to encourage more recycling."
https://www.youtube.com/watch?v=yeq-HNFHw-k

Assessment of Impacts of Marine Litter - More research needs to be conducted to determine the various impacts of marine litter on the coastal ecosystems and other indicators. The economic impacts need to be assessed in order to help develop and prioritise response centers for businesses, industries and the public. Social impacts such as health issues should also be assessed in order to inform policymakers and the public of the need for effective management. Furthermore, there is a lack of corrective measures in dealing with the impacts of marine debris. Analysis of marine litter can used to monitor the impacts and areas that are highly prone to marine debris.

Education and Awareness Campaigns – Educational and awareness campaigns need to be developed and implemented as a way to encourage increased involvement of NGOs and the private sector in the development and programming stages. The use of radio and television advertisements, printed educational materials (brochures, posters) need to be used more effectively to reach government agencies, NGOs, CBOs, business and industry groups. Educational components (curriculum aids/ activity sheets) need to be more accessible to educators in the integration of the solid waste management issue into the school curriculum. There is a lack in the use of social media to aid in delivering the message to the younger audience and other groups so this is an area for further exploration. Education has not been directed to specific user-groups (i.e., fishermen, yachtsmen) who are needed to help address marine litter issues. Education and awareness campaigns should target schools and communities to get into waste minimisation practices such as composting, recycling etc. Some programmes have started in schools in some countries but more can be done. Additionally, the entertainment industry has been growing and most events tend to be held on the or near to the beach area, producing a lot of waste there. Therefore, education should target events managers and organisers to manage waste at the event properly. They could also notify or hire the local solid waste management agencies to clean after the events.

Effective Legislation and Enforcement - Existing waste management legislation needs to be evaluated for its effectiveness and whether or not it is being enforced. Within some countries, legislation does not address marine litter specifically. Some countries such as Suriname do not have a waste management law that addresses waste and are still in the process of the approval of the draft waste act. In most cases, substantial legislation and regulations do exist, but are poorly enforced due to a variety of reasons. MARPOL Annex V needs to be assessed to determine if it is functioning effectively in terms of reduction/prevention of ocean-based sources of marine litter. Islands which have not signed on should be encouraged to do so. Lack of an integrated approach in dealing with different types of waste, and the lack of cooperation between agencies that have jurisdiction for managing the waste, have adversely impacted the enforcement and monitoring of waste.

Establish Responsible Government Authorities – In many of the countries surveyed, the management of marine litter is spread across different agencies or in some cases a specific agency has not been identified. Lines of responsibility and authority need to be streamlined in order for management to be efficient and effective. Many agencies have partial responsibility for select components which leads to a division of resources and ineffectiveness in overall marine litter management. Collaboration between NGOs and government agencies where authority is defined should be encouraged to

strengthen the management and control efforts.

Affordability of Resources – While financing may be available for infrastructural improvements, there is competition for those resources based on hierarchal needs. There are limited finances to develop the educational programmes and to keep the monitoring programmes functioning constantly. Due to budget cuts, some programmes have lost the support for its continuity as well as the loss of certain experts. Funding is also important for providing training for government authority, NGOs and private sector to take part in the monitoring and recycling programmes. Finances for incentives are limited.

CASE STUDY: SAINT LUCIA

Economic Assessment of the Impact of Marine Litter on the Livelihood of Fishers Demonstration Project in Bananes Bay, Castries, 2007

The objective of the project was to assess the impact of land-based pollutants on this coastal area, with emphasis on the impact of such wastes on the livelihood of local fishers. Bananes Bay is located within the Castries Harbour and is identified as a fish landing site with 99 registered fishers. Due to the currents and local tides, various forms of marine litter such as plastic bottles and other floatable debris accumulated in this area causing both aesthetic and environmental impacts.

The Saint Lucia Solid Waste Management Authority (SLSWMA) and the fishermen in Bananes Bay collaborated over the years to clean up the area which has significantly helped to address removal of large debris items that have accumulated. The Castries City Council is responsible for the management of drains and roadside litter in this area. The partners were key stakeholders such as fishers, solid waste management authority, government departments and port authority. Some of the issues and challenges included lack of financial revenue to clean the storm drains in the town regularly and as a result, any waste that enters the nearby river and storm drains are washed into the harbour when it rains. These are usually plastics which build up on the beach and affect the fishing landing site. There is regular waste collection in the study area.

Project activities included an assessment of the study area to determine amount and type of waste (which were mostly plastics, contaminants from agriculture and debris from a past hurricane, pollutants from the main river), conducting a cleanup of the area to document and characterise the types and composition of the marine litter and determine the source of waste (done by members of the public), conduct a campaign on solid waste cleanup with various stakeholders and an assessment of the data collected, and the impacts of the waste on livelihoods of the fishers and economic costs to tourism, water quality testing of the coastal waters, and developing a public awareness and sensitisation campaign.

Results: The fishers did not contribute significantly to the marine debris but a lot of marine litter did impact the area. Locals needed to understand more about marine litter sources which were mainly land-based sources and identifying marine litter impacts such as decreased tourism value. Low quality of life may be a cause of the improper disposal. In general, stakeholders were aware of the impacts and were willing to participate in the project. Generally stakeholders were aware of the impacts of land-based pollutants and they showed a willingness to actively participate in project activities. Effective stakeholder engagement was pertinent to this project along with continuous public sensitisation and awareness during all stages of the project. It was suggested that one agency should be responsible for litter management in order to be successful. Collecting data was also useful to validate the cleanup efforts. There was also an evaluation meeting to gain perspectives of the stakeholders about the success of the project.

Follow-up Activities: the stakeholders agreed that a number of actions would be required to successfully chart the way forward for better management of the solid waste problems within the Castries Harbour. Other activities included, continuous assessment to determine the costs of regular clean-ups, removal of squatters, public advertisements on economic implications of poor solid waste management, more engagement of private sector agencies and creating trap systems to prevent waste from reaching the sea.

4. REGIONAL ACTION PLAN FOR MARINE LITTER MANAGEMENT IN THE WIDER CARIBBEAN REGION (RAPMaLi)

The Cartagena Convention is the only agreement that governs marine litter issues specific to the Caribbean region. It does this through the Protocol Concerning Pollution from Land-Based Sources and Activities (LBS Protocol).

As of 2014, the Cartagena Convention and its LBS Protocol has been ratified by eleven (11) WCR countries. Other countries are in the process of taking these actions and participate regularly in workshops and inter-governmental meetings. This participation contributes valuable information on waste management efforts in the region. The Regional Action Plan for Marine Litter (RAPMaLi) serves as a comprehensive, action oriented toolkit for setting priorities and achieving the objectives of the LBS Protocol.

Participants in the National Survey on Marine Litter (Appendix D), provided information on country specific actions taken to implement best practices for waste management. Programmes have been implemented in a number of countries to address marine debris such as St. Vincent and the Grenadines, Belize, Bahamas, Grenada and Jamaica. Some of the most effective practices were as simple as installing waste and recycling receptacles to providing training to experts within the waste management sector. There have been a number of awareness programmes with respect to the negative impacts of waste and the challenges of waste management. Despite some progress being made, the attitudes and practice which the community and residents express still need to be changed. Other challenges cited were high operating costs, small economies that limit recycling efforts and limited land availability for sanitary landfill siting and operations. These problems can cause increased health risks and pollution.

Based on the review of the 2008 RAPMaLi and the recommendations from member Governments and national experts, the following is presented as an updated framework for marine litter management in the Caribbean region. As revealed in the previous assessment, most of the proposed actions will need to be implemented at the national level, with a select group applicable at the regional level. These actions incorporate a preventive and/or responsive approach for marine litter management in the Caribbean in the following categories: Legislation, Policies and Enforcement; Institutional Frameworks and Stakeholder Involvement; Monitoring Programmes and Research; Education and Outreach; and, Solid Waste Management Strategies.

The following Action Items may be incorporated into a step-by-step planning structure for individual governments to identify gaps in their national strategies and possible legislative opportunities. Appendix A, National and Regional Priority Setting Template for RAPMaLi, provides a compendium of the following Action Items for ease of review; provides guidance on prioritizing certain action items both at the national and regional levels; and, also indicates with an * those action items that are reinforced by the Honolulu Strategy. Input into the priority level of these action items was provided by the UNEP CAR/RCU Focal Points, Marine Litter Focal Points, and other stakeholders in the WCR.

Since 2008, the RAPMaLi has been put into action in several countries through various papers, projects and activities at the regional, national and local levels. Case studies of activities in Guyana, Saint Vincent and the Grenadines, Barbados, Bahamas, Jamaica, and Saint

Lucia, are highlighted in this section to provide examples of how government and community efforts can be tailored to address specific areas of concern by following guidelines of the Action Items outlined below. Many of these projects have cross-cutting themes across all five categories of the Action Plan.

4.1. LEGISLATION, POLICIES AND ENFORCEMENT

Although enforcement and penalties are important, a sense of environmental stewardship by everyone and not only ocean users is essential for laws to be effective. There are several national regulations and policies that are country-specific which address solid waste management and other pollution concerns. However, specific marine litter legislation is very rare or non-existent and even when legislation does exist, poor implementation is due to lack of resources to support enforcement and compliance. Training of designated enforcement officers is necessary and enforcement officers should be trained to deal with public compliance on this issue to help promote compliance and stewardship. In many countries, there are no designated enforcement officers to deal with marine litter infractions. The importance of litter prevention and abatement must be elevated as a priority for coastal management and overall national development.

ACTION 1: Evaluate existing legislation, regulations and enforcement practices that deal with marine litter and strengthen or enact new legislation/regulations as appropriate.

Existing waste management legislation needs to be evaluated for its effectiveness and level of enforcement. In most cases, substantial legislation and regulations do exist, but are poorly enforced. Some of these laws or policies are still in draft phase, some of which for several years, and are yet to be approved. They need to be approved with urgency in order for them to be efficiently implemented and to curb the marine litter impact.

A review of existing legislation at the national level is proposed for amendments to determine if these regulations need to be updated or revised to provide support for marine litter prevention and monitoring efforts. Enforcement practices should be reviewed at the national and local levels to determine how to better address compliance with existing litter laws by both the public and private sectors. The introduction of new legislation, where necessary, dealing specifically with marine litter management is proposed and their effectiveness periodically evaluated.

ACTION 2: Establish and/or enhance government sponsored "litter wardens or patrols" in coordination/collaboration with municipal police/security forces and establish the infrastructure for compliance.

Establish or re-establish government agency-sponsored "litter wardens or patrols" in order to enforce anti-litter regulations at public beaches and parks using educational and outreach campaigns to foster compliance. These agents could also be responsible for conducting public education efforts to help address activities that produce litter problems. Specialised programming would be needed for public beaches and maritime activities engaging boaters, yachters, fishermen and coastal communities. Incentive programmes for community-based enforcement schemes e.g. community litter rangers can also assist in primary level enforcement.

ACTION 3: Implement the 2012 amendment to the MARPOL Annex V and implementation of Annex V Special Area status for the Wider Caribbean region.

For those countries which have ratified Annex V, marine litter and other relevant laws should be modified according to the recommendations of the 2012 amendment of MARPOL Annex V.

ACTION 4: Expand ratification and promote effective implementation of MARPOL Annex V and the LBS Protocol of the Cartagena Convention by ALL States in the Wider Caribbean Region.

Assess and renew efforts for MARPOL Annex V ratification and enforcement throughout the Caribbean region. Currently three States (Costa Rica, Haiti and Grenada) have not yet ratified MARPOL Annex V; and 11 countries (Antigua and Barbuda, Bahamas, Belize, Dominican Republic, France, Grenada, Guyana, Panama, Saint Lucia, Trinidad and Tobago, UK, and USA) have acceded to the LBS Protocol (Appendix G).

ACTION 5: Ensure that debris and ecosystem health issues are integrated into emergency management plans and procedures.

Large amounts of debris can enter the ocean through the effects of natural disasters (e.g., volcanic eruptions, tsunamis, storm surges, flooding and hurricanes). As the WCR is prone to all of these events, this is an urgent issue. Legislation, policy, and emergency procedures need to be put in place. Stockpiles of equipment and access to experts and training of emergency personnel and volunteers are needed. Ecosystem impacts need to be recognised as important effects by disaster management agencies. The value of ecosystem services is a strong argument to justify inclusion of these issues in emergency and disaster preparedness efforts.

ACTION 6: Establish a clearinghouse of information on effective strategies and practices for enforcement of waste management practices.

Sharing Best Management Practices (BMPs) success stories and other activities that have worked in one locality might provide some guidance for use in another locale. Therefore, better communication and knowledge-sharing should occur among countries. This is actually incorporated into the mandate of the Caribbean Environment Programme which serves as a support system and clearinghouse for cross-pollination of ideas and best practices.

ACTION 7: Mobilise resources for improving the capacity for enforcement of appropriate integrated waste management practices.

Innovative ways for providing financial support to improve enforcement capacity should be identified. Related cross-sectoral government interests including tourism, health and environment, could pool limited resources and use them to leverage additional support from regional and international agencies.

CASE STUDY: GUYANA

RAPMaLi Pilot Project – "Improving Marine Litter Management in the Caribbean" (2008)

In collaboration with UNEP CAR/RCU, the Environmental Protection Agency of Guyana undertook the development of a national "Strategy for the Management of Marine Litter in Guyana" (The Guyana Project). Utilizing the action plans set out in the RAPMaLi, a scope of work was designed to focus on two of the key Action Areas, 4.1, Legislation, Policies and Enforcement; and 4.4, Education and Outreach. The outcomes of the project were to identify the gaps in these two priority areas and provide recommendations for future implementation through:

1. A review legal, institutional and policy frameworks; and
2. Assessment of the level of public awareness and education programs in place.

A thorough analysis was conducted of the institutional framework for waste management including the various types of waste being managed in Guyana, landfills and illegal dumping, types of trash, waste management policies, and problems such as fires, toxic runoff, health hazards, etc.

Following the RAPMaLi outline, each Action Item was reviewed and a specific recommendation or commendation was made along with a designation of high or low priority for follow-up action. Key findings determined the strengths and weaknesses of existing programs and made recommendations for improvement. As part of the Project, a Stakeholder Workshop was held to share findings and seek input for further development of a comprehensive marine litter strategy. In order to better effect cross-sectoral communication and collaboration, a Focal Point list was compiled of various stakeholders and agencies contact information.

As a result of this collaborative pilot project, Guyana has implemented many of the recommendation of the RAPMaLi assessment including ratification of the LBS Protocol and MARPOL Annex V. The EPA's "Pick it up Guyana" initiative was initiated in 2012 under the Ministry of Natural Resources and Environment. Its purpose is to increase public awareness and outreach regarding trash and to encourage volunteer clean-up efforts across the country.

The Guyana Project provides a useful template for other countries that are interested in using the RAPMaLi to develop and conduct a thorough assessment of regulatory policies, education programs, solid waste management practices, and create a plan of action to effect change.

4.2. INSTITUTIONAL FRAMEWORKS AND STAKEHOLDER INVOLVEMENT

Government management of marine litter in most States is dispersed among multiple agencies. Some are specifically for marine management or not specifically identified. Many agencies have partial responsibility for selected components, which leads to a division of resources and ineffectiveness in overall management of marine litter-related issues. It has been suggested that there needs to be reduced siloing and duplication of efforts as well as identification of clear lines of responsibility and authority in order to be more effective. Government agencies also need to share information amongst each other in an efficient manner and keep each other up-to-date on the issues and accomplishments.

Further, NGO's and private sector entities can be instrumental in assisting governments to implement marine debris and other related programmes. Linkages between government agencies and the private sector should be made stronger to improve efficiency in the management of marine litter.

ACTION 1: Develop and implement a model of a national management plan for marine litter.

A model for integration of the marine litter issue is needed to promote effective collaboration between agencies and other parties. The following is an example of the steps to be taken to develop a comprehensive National Management Plan:

Guidelines

- Establish country-specific, integrated waste management programmes and projects that are within the context of a National Waste Management Strategy.
- Encourage the development of appropriate industry and/or sector specific guidelines within the framework of National Management Plans.
- Identify the key lead/responsible agency.
- Engage key stakeholders where a national agency is designated as the lead for this national effort.
- Establish or strengthen existing National Committees to ensure representation of all stakeholders and to identify clear roles and responsibilities.
- Conduct research and analyses related to marine litter that will be used to guide future policy decisions.
- Develop and implement an incentives programme to reduce marine litter.
- Develop economic instruments to provide opportunities for marine litter initiatives such as recycling and reuse programmes.
- Provide a user-friendly guide of the marine action plan which can easily be used by NGOs, government departments etc.
- Provide a best practice guide for different sectors.

A concerted effort needs to be made to model collaborative relationships between solid waste management authorities (public and private), government resource management agencies, conservation NGO's, and private sector groups if the Wider Caribbean Region is to successfully and effectively combat this pervasive pollution issue. Better established governmental responsibilities and the prioritisation of the need for marine litter control as part of comprehensive litter management plans are needed so that relevant agencies and cooperating organisations can collaborate effectively. In several Caribbean countries, national waste management strategies currently exist and should be the "umbrella" for inclusion of specific marine litter management strategies.

ACTION 2: Establish the infrastructure for compliance with existing marine litter management legislation at the national and community levels.

Appropriate programmes and waste management practices (i.e., access to receptacles in public areas) need to be established and mainstreamed into other sectors such as tourism, health, education and transportation.

ACTION 3: Establish a Caribbean Marine Litter Regional Working Group to co-ordinate and advise on appropriate actions for marine litter management.

Through the formation of a UNEP-CAR/RCU-coordinated "Marine Litter Regional Working Group", National and Marine Litter Focal Points could facilitate a review of existing government responsibilities for alignment of solid waste management strategies for marine litter control and abatement.

ACTION 4: Provide training for judiciary/ magistrates/enforcement officers and sensitisation of politicians on marine litter issues.

It is essential that the legal community be briefed on the impacts on the economy, natural resources and human public health and safety of marine litter problems. In addition, local politicians need to understand marine litter issues and related national waste management strategies in order to effectively develop policies and legislations.

ACTION 5: Present information on the marine litter issue at key environmental meetings and conferences in the region.

Regional attention should be focused on marine litter through presentations and reviews at Intergovernmental meetings and conferences. UNEP-CAR/RCU's biannual Intergovernmental Meeting (IGM) on the Action Plan for the Caribbean Environment Programme would be one such forum for this discussion. In addition, an annual regional meeting could be implemented to showcase current marine litter issues, trends and interventions (see Education and Outreach section).

CASE STUDY: ST. VINCENT AND THE GRENADINES

RAPMaLi Project: GCFI & CaMPAM: Regional Collaboration for Marine Litter Reduction

The St. Vincent and the Grenadines Project was part of a larger regional effort between the Gulf and Caribbean Fisheries Institute (GCFI), the Caribbean Marine Protected Areas Management Network and Forum (CaMPAM), and the US Department of State to utilize the RAPMaLi Action Plan for Education and Outreach through existing MPAs in the Bahamas, Belize, Jamaica, Grenada, and St. Vincent and the Grenadines.

Spearheaded by a local non-profit organization, the Sustainable Grenadines Project (SusGren), coordinators utilized the RAPMaLI Action Plans 4.2 and 4.5, relating to Institutional Frameworks and Stakeholder Involvement, and Improving Solid Waste management Strategies, as well as Actions 1, 2, and 7 of 4.1, dealing with Legislation, Policies and Enforcement.

Specific project goals were identified through a review of existing national legislation related to litter and a marine litter awareness survey that was presented to the residents of the towns of Ashton and Clifton and residents on Union Island. The project coordinators met with various stakeholders including fishers, water-taxi operators and trash collectors on how to improve compliance with litter laws. Waste collection services and practices were analyzed and gaps were identified as completely lacking from the smaller Grenadines islands and lacking in the marine protected areas. Additionally, improper waste disposal from visiting yachts was identified as a problem area.

Through a series of workshops on environmental stewardship designed for fishers, vendors and water taxi drivers operating near Tobago Cays Marine Park, SusGren raised awareness and responsibility. In response to local suggestions, a litter warden program was implemented with cooperation of the Rangers of the Tobago Cays marine Park and a police youth group to assist with patrols and monitor compliance with waste management laws. A Litter Management Manual was created for these purposes. Informal dumps on the Island of Mayreau, which had no trash removal capacity, were visited for the first time by the Solid Waste Management Authority, and plans were made to improve the infrastructure and provide more support for the sole individual charged with trash management on the

4.3. MONITORING PROGRAMMES AND RESEARCH

A national marine litter monitoring programme can support an expanded understanding of the problem and function as an ongoing component of management strategies that deal with pollution by marine litter. Periodic and consistent monitoring can be used to clarify the problem of marine litter, for example, what are the types, sources, impacts and how widespread is the problem. Data and research on marine litter can be used to help formulate management solutions, which must in turn be implemented by management agencies with support from the community, the private sector and other groups.

The objectives for monitoring programmes must be clearly outlined. Policy could be developed through monitoring efforts to develop legislation or funding for source-reduction programmes, to assess trends, to identify pathways by which debris gains access to the water, to assess wildlife

and habitat impacts, to identify point sources, to quantify economic impacts and to help enforce regulations (UNEP-CAR/RCU, 2008).

Over the years, several countries within the Region have developed and implemented marine litter programmes. However, few formal marine litter "monitoring" programmes exist. Similarly, community clean-up programmes take place regularly, but do not usually include the compilation of any data on the types and amounts of marine litter for programme analysis and management responses.

The leading effort to assess marine debris is conducted annually through the International Coastal Cleanup, which has been conducted since 1989 in 28 countries in the region. Established by Ocean Conservancy in the U.S., the International Coastal Cleanup (ICC) campaign consists of many partners and participating countries that focus on public awareness of the marine debris issue and the collection of data on debris amounts, types and sources. One of ICC's primary goals is to trace pollution to its source and work to prevent it from occurring. Volunteers record marine debris information on data cards that identify the types, sources, and activities that produce the debris found along beaches and waterways. Information on the data card is grouped by the behaviour associated with the debris, including recreational, beach-going activities, smoking-related activities, ocean and waterway activities, activities associated with legal or illegal dumping, or activities resulting from improper disposal or handling of medical or personal hygiene materials.

Data from the ICC provides the base framework for government action to limit marine debris and to educate the public about litter and pollution prevention. The Ocean Conservancy has a Trash Free Seas campaign which is a monitoring programme to focus on the minimising of the amount of litter in the marine environment.

ACTION 1: Design and implement a strategy to develop national marine litter monitoring pilot projects in the WCR, including standardised methods for data collection and reporting within the framework of UNEP Regional Seas Global Marine Litter Monitoring guidelines.

The need for establishing national marine litter monitoring programmes was noted by a majority of the respondents during the regional marine litter research. This information could be collected on a regular basis and used for programme development and assessment of interventions and waste reduction strategies. Strategic national monitoring programmes should be developed to assess marine litter types, abundance, sources and evaluate whether current interventions, practices or policies are being effective. Research should be directed at microplastics in the WCR and assess the health implications to humans and marine life.

ACTION 2: Develop a regional, web-based database as a clearinghouse for marine litter information and research.

A regional database needs to be established so that this information will be accessible throughout the Region. Coordinated and maintained by UNEP-CAR/RCU, this database will promote the use and value of marine litter monitoring for programme development and assessments of interventions. This database would be used as a repository of the marine debris data collected annually through the ICC, allowing for a direct processing of this information. This information would then be shared with the Ocean Conservancy for compilation into their global report.

ACTION 3: Engage all stakeholders at community (Local), national and regional levels in monitoring and research efforts.

Communication efforts to engage NGO's, government agencies, and regional intergovernmental organisations will be needed to develop a good foundation of interested parties in this regional effort. UNEP-CAR/RCU has developed a web-based communications foundation for engaging these groups and sharing information related to the implementation of the RAPMaLi.

ACTION 4: Solicit information/research from fisheries, wildlife, and other resource management agencies and programmes throughout the region on the environmental impacts of marine litter on wildlife and ecosystems.

Further research needs to be conducted to determine the various impacts of marine litter on wildlife, habitats and other indicators (e.g. invasive species transport and toxicity due to ingestion of materials). This information would be included in the marine litter regional database. In addition, efforts to conduct this type of research could be promoted to facilitate the acquisition of updated information for management programmes.

ACTION 5: Conduct and assess the economic impacts of marine litter including costs for clean-up efforts, maintenance of recreational beach areas, costs for lost or abandoned fishing gear, and the costs associated with the loss of recreational uses of coastal areas (e.g. tourism).

Research needs to be carried out on the economic impacts of marine litter and valuation of threatened natural resources can aid in justifying the need for adequate appropriations based on tourism and coastal management concerns. In addition, the economic impacts of marine litter need to be assessed to help prioritise and quantify the economic impact of marine litter within government programmes, business and industry groups, and the public.

Economic information, such as via a cost-benefit analysis, that tracks the costs associated with solid waste management activities, special clean-ups and maintenance of beach areas, and costs associated with loss of recreational usage of coastal areas, and lost commercial fishing nets and gear would be useful to government agencies dealing with solid waste, fisheries and marine litter, as well as the tourism industry.

Sufficient resources (e.g. financial, equipment and human resources) will be essential to support management and educational efforts to address marine litter and provide support for the development and implementation of suitable economic instruments and incentives. In most countries of the WCR, the Ministry responsible for Finance is the critical Ministry to be engaged in financing conservation efforts.

ACTION 6: Conduct a GAP analysis of overlap of high density Marine Litter areas with areas of high sensitivity (endangered species, key habitats, etc.) in order to prioritise clean-up and mitigation efforts.

Areas which are hotspots for marine debris in the Caribbean should be identified and mapped, so that monitoring can be conducted. Areas which are known to have marine debris accumulating should be monitored frequently and identified as the marine litter hotspots. The public can be encouraged to clean up such areas.

ACTION 7: Review and disseminate research on the identification, removal and disposal of marine litter information to enable more effective recovery efforts and disposal of marine litter.

4.4. EDUCATION AND OUTREACH

A regional strategy needs to be developed for a marine litter education and awareness campaign

CASE STUDY: BARBADOS

RAPMaLi Pilot Project: "Improving Marine Litter Management in the Caribbean – The Barbados Project"

This demonstration project was developed by the Government of Barbados, Ministry of Family, Youth Sports and Environment – Environmental Protection Department (EPD) and UNEP CAR/RCU, with the goal of designing and implementing a Marine Litter Monitoring and Assessment Programme as well as a Public Education and Awareness Programme.

Barbados already had an existing "Adopt-a-beach" programme which they wanted to further develop and expand upon ad-hoc cleanup efforts to encompass the seven Action items of the RAPMaLI 4.3, Monitoring Programmes and Research, and incorporating the data collection and analysis models of the ICC.

The EPD selected four beach locations and engaged stakeholder groups within the surrounding communities to participate in training provided by EPD, on how to conduct marine litter monitoring efforts. A training booklet "Barbados Marine Litter Monitoring Guide" was created to provide information on causes of marine litter, proper data collection techniques and guidelines for conducting beach cleanups. A newsletter "Litter Buzz" was published and delivered to the community, as an education and outreach tool on marine litter and pollution prevention tips.

Community partnership building was seen as the key ingredient to successful continuation of awareness of the problems and impacts of marine litter. Further efforts by the EDP to create a clearinghouse for information and data collected as part of ongoing monitoring efforts is recommended.

that can be accessed by government agencies, NGO's and other related organisations in the Caribbean. This campaign would incorporate an expansion in promotion and participation in the annual International Coastal Cleanup (ICC) and be implemented through a variety of venues, including radio and television advertisements (PSAs), web-accessible materials, social media use and printed educational materials (brochures, posters) that can be used by government agencies, NGOs, and business and industry groups. In addition, specialised educational components (curriculum aids/ activity sheets) are needed for use by traditional educators to support the integration of this issue into the school curriculum.

Many organisations and government groups routinely conduct public education campaigns to support their missions and programme objectives. Over the years, outreach materials for marine litter have been developed by many coastal zone management and solid waste management programmes, and conservation NGO's. These valuable educational tools are still in existence in varying States, but are not readily available to a wide range of potential users. An effort to obtain these materials and compile them for access in the region would be an effective strategy to help groups target this pervasive issue through outreach and education activities.

ACTION 1: Develop and implement community-based public education campaigns for marine litter prevention, including specialised marine litter prevention programmes for key user-groups and stakeholders.

Community-based education programmes are necessary if the public is to become fully engaged in the process to protect their own environment and existence. Cultural issues have a significant role in addressing the public behaviour regarding anti-litter laws and compliance. In any educational campaign, the cultural aspects of the audience being addressed must be taken into account and should include coordination with law enforcement agencies. If an education campaign is to be successful, it must be directed to the groups that are viewed as part of the

problem and/or solution. Development of a stewardship ethic in the public requires that the public be reached on their terms so that they have an incentive for compliance. Also education should focus on sustainable consumption and production patterns which can inform the public on the selection of better choices before buying products. This should also be directed at different industries involved in production and distribution.

Specialised educational programmes for subsistence and commercial fishing could be developed to help address derelict fishing gear and equipment issues related to wildlife entanglements and habitat damage. Other outreach programming for recreational boaters and beach-goers has been shown to be effective in addressing specific marine litter issues. Public education campaigns are suggested for public beach areas, boating and marinas, and parks where the impacts of littering could be demonstrated in posters and billboards showing the impacts of marine litter on wildlife and habitat areas. Other user-groups can be identified based on local issues and activities.

ACTION 2: Develop a regional campaign for the International Coastal Cleanup (ICC).
Since 1989, on average, 28 countries in the WCR have participated on various levels in the ICC. UNEP-CAR/RCU supported this event for several years, assisting with clean-up activities in Jamaica and more recently in collaboration with the Jamaica Environment Trust for the 2013 ICC. Not all of the countries in the WCR take part in the ICC and some of those that do take part do not record data for submission to the Ocean Conservancy. Lack of participation may be an issue of adequate funding sources which may be resolved through sponsorship by companies as is accomplished in a variety of countries.

ACTION 3. Incorporate cultural concepts, including use of popular culture icons in outreach programming to promote behavioural change at the national level.
Use popular cultural icons to draw awareness and compliance to the issues. Behavioural change happens over time and this project must be evaluated and updated according to the effectiveness of the programme.

ACTION 4. Incorporate marine litter issues into national and community calendars and environmental events.
At the national level, government departments and agencies responsible for marine litter management and conservation NGO's need to incorporate marine litter issues into community calendars and environmental events in order to improve public awareness. Share calendars with UNEP-CAR/RCU on a regular basis to help promote opportunities to share information on marine litter issues.

ACTION 5. Integrate issues on marine litter into formal education curricula and programming.
Coordinate efforts with regional and national education associations to assist in development of curriculum support materials and activity guides on marine litter prevention.

ACTION 6. Collate best management practices, case studies and lessons learnt on marine litter management at the community and national levels and communicate these with UNEP-CAR/RCU for regional compilation and dissemination.
Existing examples of programmes and strategies need to be compiled and sent to UNEP to be made available and accessible across the WCR via their website where the different government agencies and departments, NGOs and other agencies can have easy access.

CASE STUDY: BAHAMAS

RAPMaLi Project: GCFI & CaMPAM: Regional Collaboration for Marine Litter Reduction

The Bahamas Project was part of a larger regional effort between the Gulf and Caribbean Fisheries Institute (GCFI), the Caribbean Marine Protected Areas Management Network and Forum (CaMPAM), and the US Department of State to utilize the RAPMaLi Action Plan for Education and Outreach through existing MPAs in the Bahamas, Belize, Jamaica, Grenada, and St. Vincent and the Grenadines.

With the assistance of these larger organizations, and in collaboration with the other participating countries, the Bahamas National Trust partnered with several local partners including Bahamas Ferries, Bahamas Waste, Stuart Cove Department of Environmental Health, Ministry of the Environment and Department of Marine Resources. The specific problems addressed in the Bahamas were the persistent accumulation of marine debris on beaches and the impact on tourism.

Outreach and education and training materials were developed and distributed to schools and businesses, and signage placed along heavily trafficked beach and coastal areas. The educational tools created have now been integrated into the MPA's regular education and outreach programs. These manuals and materials have been shared among other MPA networks and in the Dutch Caribbean and the Grenadines.

4.5. SOLID WASTE MANAGEMENT STRATEGIES

Although the islands of the region are seen as places of great beauty, the standards of waste management are unfortunately perceived as poor internationally. In some communities, there are a shortage of facilities and equipment for collection and disposal. In some countries, waste collection is only done in the larger urban areas. In the region, there are also very few formal programmes or initiatives for waste minimisation. In the sea, land-based sources of marine debris are the major cause of pollution but it may also come from waste disposal from ships (Edghill, 2006).

While marine litter is primarily a result of poor solid waste management, existing solid waste management strategies for many countries of the region do not include specific activities relating to marine litter management. It is critical to integrate marine litter management strategies within existing and/or proposed national solid waste management strategies. An effort to coordinate programme activities, waste management strategies, and resources would prove beneficial for the people and environment of the WCR.

ACTION 1. Maintain or develop specialised marine litter waste management strategies for public events (either as a separate strategy or part of an existing waste management strategy).

Improve and/or expand waste management strategies for the public at local beaches, sporting events and festivals where appropriate receptacles are used with coordinating and efficient removal and processing activities implemented. New and existing solid waste management agencies or companies should be employed by the organisers of the events to ensure the proper collection and disposal of garbage either during or at the end of the event.

ACTION 2. Research Best Management Practices in the hotel, restaurant and the marine transport industries for waste management and strengthen the collaboration with the tourism sector for sharing of best practices and lessons learnt.

Review how the tourism industry handles their commercial waste management practices to determine if any updates in practices are needed. A sharing of information on their strategies

would be helpful to other groups working on waste management issues in coastal areas.

ACTION 3. Develop and promote activities for national/regional waste minimisation.

For effective waste minimisation, reuse and recycling programmes need to be developed and/or expanded to handle generated waste materials (plastics, glass, metal and other materials). For those countries that have not yet implemented waste minimisation strategies, programmes then need to be created based on the best practices from successful programmes implemented throughout the region. These programmes must also include an educational strategy for implementation and support an integrated waste management approach.

ACTION 4. Identify/promote international environmental certification programmes which include waste management and minimisation.

Identify and review existing regional and international waste minimisation programmes for possible inclusion into national marine litter/ waste management strategies (e.g. Blue Flag and Green Globe Certifications).

ACTION 5. Maintain/develop specialised waste management strategies for marine litter problems associated with natural disasters.

Establish emergency response waste management strategies, where necessary, that deal with the aftermath of natural disasters such as, heavy storms and hurricanes, earthquakes, floods and tsunamis and the debris that is produced during these disasters. The adverse effects of climate change, as published in the recently released IPCC's Fifth Assessment Report, regarding natural disasters in Small Island Developing States (SIDS) need to be taken into consideration when developing national or regional waste management strategies.

ACTION 6. Improve port reception facilities to effectively manage ship-generated waste.

A survey of the adequacy of existing Port Reception Facilities of all the countries in the WCR is necessary to identify priority areas for improvement. Based on such a survey, targeted intervention may be enacted by some countries to improve their facilities. This will respond directly to the concerns of some shipping/cruise industry partners who have highlighted deficiencies with the current operating procedures and reception infrastructure in some ports in the region.

CASE STUDY: JAMAICA

RAPMaLi Project: GCFI & CaMPAM: Regional Collaboration for Marine Litter Reduction

The Jamaica Project was part of a larger regional effort between the Gulf and Caribbean Fisheries Institute (GCFI), the Caribbean Marine Protected Areas Management Network and Forum (CaMPAM), and the US Department of State to utilize the RAPMaLi Action Plan for Education and Outreach through existing MPAs in the Bahamas, Belize, Jamaica, Grenada, and St. Vincent and the Grenadines.

Activities related to Action 6 above, identified the Montego Bay Marine Park as a hot-spot for marine debris ingress through a highly sensitive marine protected area and then to the ocean. Thus, this area became the focus of the Jamaica Project. The Montego Bay Marine Park has been the recipient of regular, massive debris events resulting from storms that wash the illegal trash, dumped within the upriver gullies, into Montego Bay.

Lack of proper solid waste management infrastructure and collection within the informal communities of North Gully and Canterbury has resulted in an ingrained culture of simply dumping garbage into the gullies. Security concerns and poor to non-existent roads contribute to the inability to institute traditional waste collection services. Initial efforts included assembling a work group including the Citizen Security and Justice Programme, the National Works Agency, the Urban Development Corporation, the St. James Health Department, Western Parks & Markets, and the Social Development Commission, to engage the local community, raise awareness and direct focus toward a massive cleanup effort of the local gully. The gully cleanup served to engage the community and waste management authorities to work cooperatively.

Subsequent to the community-wide cleanup, garbage cans and garbage skips were purchased and installed in accessible locations and regular waste collection services were established. Ongoing trash remediation efforts to reduce the amount of trash entering the sea from gullies have had some success in protecting the fragile ecosystems within and outside the Montego Bay Marine Park.

5. RECOMMENDATIONS FOR THE DEVELOPMENT OF NATIONAL AND REGIONAL STRATEGIES FOR MARINE LITTER MANAGEMENT

1. Engage Relevant Stakeholders

To effectively reduce and control marine litter and its environmental impacts, key stakeholders from diverse groups must be involved. This includes local citizens; governments, agencies and authorities (national, regional, and municipal); organisations (international/national, civic, religious, nongovernmental, and consumer); institutions (research, education, and medical); businesses (hotels and restaurants, outdoor recreation, manufacturers, and vendors); and industries (fisheries, dive, tourism, and waste management). This is important as marine litter management starts with people.

2. Monitoring and Education/Outreach Programmes

Globally there is an outreach effort and a national scientific monitoring programme which has been established by Ocean Conservancy known as the International Coastal Cleanup (ICC) and the National Marine Debris Monitoring Programme (NMDMP). The ICC campaign consists of a vast grouping of partners and participating countries that focus on public awareness of the marine debris issue and the collection of data on debris amounts, types and sources. One of the ICC's primary goals is to trace pollution to its source and work to prevent it from occurring.

The frameworks used for beach and coral reef monitoring strategies could be used to also develop marine litter monitoring efforts. National programmes need to be developed in the Caribbean region to monitor marine litter types, abundance and occurrence patterns. An ongoing, scientific assessment would be useful in establishing or updating waste management policies and conservation strategies in the region. These monitoring programmes must be evaluated and monitored frequently to assess whether they are actually effective in bringing across the desired message.

3. Corporate (Business/Industry) Involvement

A review of the available data and other information on debris found worldwide indicates that the dominant types and sources of debris come from what we consume (including food wrappers, beverage containers, cigarettes and related smoking materials), what we use in transporting ourselves by sea, and what we harvest from the sea (fishing gear). Industries affiliated with the aforementioned products and services must play a critical role in debris management and abatement.

Corporate involvement is important in the management of marine litter as well as in the education and outreach. The mission policy of the corporate sector includes an ethic of social and environmental responsibility related to how their products might affect the environment and how they address those issues within their industry and the communities in which they reside. Many examples currently exist where corporate involvement in a pollution issue has led to strategies to reduce and eliminate the impact; they have assisted in developing education programmes for their employees, as well as the communities where their activities take place. They have also changed the products to address the pollution issue. They also provide financial assistance to help these programmes improve. Examples can be sited in the plastics, hospitality, and waste management industries as demonstrated through programmes supported or implemented by Dow Plastics, Omni International, Royal Caribbean Cruise Lines, and Waste Management, Inc. among others.

4. Implement Legislations and Enforce Regulations

There are many national laws, regulations and policies that are country specific for addressing solid waste, marine litter and other pollution concerns. Several international and regional policy frameworks also exist such as IMO MARPOL Annex V, the UNEP's Cartagena Convention and LBS Protocol, and the UNEP Global Programme of Action for the Protection of the Marine Environment from Land-based Activities. Unfortunately, such laws and policies do not guarantee compliance. Enforcement of legislation has always been an issue. Therefore, there needs to be adequate institutional mechanisms for enforcing national laws. In addition to enforcement and penalties, a sense of environmental stewardship among ocean users is essential for these laws to be effective.

5. Specific recommendations for Improving Marine Litter Management

- Improve and/or expand waste management strategies for the public at local beaches, sporting events and festivals where appropriate receptacles are used with coordinating and efficient removal and processing activities implemented. Establish emergency response waste management strategies that deal with debris produced during natural disasters. Hotels and restaurants should be reviewed to assess how they handle their commercial waste management to determine if any changes need to be made, with successful activities being promoted and shared within their industries. Furthermore, specific medical waste management issues for public health and safety, including an educational campaign should be developed.
- Establish government agency litter wardens or patrols to enforce anti-litter regulations at public beaches and park areas using educational campaigns to build compliance. Expand governmental support for wardens/patrols that can help address maritime activities where marine litter is produced, including the development of an educational campaign that staff can deliver when they encounter boaters, yachters, and fishermen, tourists.
- Public education campaigns should be targeted at beach areas, public boating and marinas, and public parks where the impacts of littering could be demonstrated in posters and bill boards showing the impacts of marine litter on wildlife and habitat areas. Community-based education programmes are necessary to fully engage the public in protecting their own environment and existence. Cultural issues have a significant role in addressing the public's behaviour towards littering laws and compliance and if there is no compliance then this behaviour will continue. In any educational campaign, the cultural aspects of the audience being addressed must be taken into account and should include coordination with law enforcement agencies.
- Specialised educational programmes for subsistence and commercial fishing are needed to help address derelict fishing gear and equipment issues related to wildlife entanglements and habitat damage.
- Recycling programmes need to be developed to handle plastics and other materials in the waste stream. These programmes must include an educational strategy for implementation and supporting waste management resources as well as an entrepreneurship programme should be in place to encourage residents to start their own business in the recycling field.

- The existing legislation at the national level needs to be reviewed to determine if they need to be modified or revised to provide support for prevention and monitoring efforts. In line with that, enforcement practices at the national and local levels also need to be addressed for compliance of existing litter laws by the public and private sectors.
- Establish strategic national monitoring programmes and a database assessing marine litter types, abundance, sources and whether current interventions, practices or policies are being effective. Include economic information in this database tracking the costs associated to solid waste management, special clean-ups and maintenance of beach areas, and costs associated with recreational usage of coastal areas.
- Detection and prosecution of illegal dumping activities where revised strategies are developed to improve access to receptacles and assistance with removal.
- Roadside litter control, as this is a source of litter entering the marine environment.
- Assess and renew efforts for MARPOL Annex V ratification and enforcement throughout the Wider Caribbean Region.
- Increase governmental responsibilities and prioritize the need for marine litter control with the establishment of comprehensive litter management plans where all the relevant agencies and cooperating organisations are collaborating.
- Promote existing regional and international waste minimization programmes for inclusion into national strategies, including Blue Flag and Green Globe Certifications.
- A concerted effort needs to be made to model collaborative relationships between solid waste management authorities (public and private), government resource management agencies, UN agencies, Government, IMO and regional bodies such as CARICOM, conservation NGOs, and other groups if the Caribbean region is to successfully and effectively combat this pervasive pollution issue.
- Research should look into the impacts of microplastics within the WCR.
- Greening the waste sector can lead to the creation of more jobs, a cleaner environment, economic savings from the costs of cleaning up and awareness campaigns among others.

CASE STUDY: GCFI & CAMPAM: REGIONAL COLLABORATION FOR MARINE LITTER REDUCTION

RAPMaLI Project: Marine Litter Reduction in the Caribbean, A Collaborative Effort Between the Bahamas, Belize, Jamaica, Grenada, and St. Vincent and the Grenadines.

The objective of this project was to reduce the amount of marine litter released into waters of the Caribbean region in and around several high profile areas managed for ecosystem values. The project was grounded in the recommendations of the UNEP Caribbean Environment Programme's Action Plan for Marine Litter.

In response to a call for proposals from the U.S. Department of State to work on marine debris reduction efforts, GCFI and CaMPAM consulted with its members about their concerns in relation to marine litter and the perceived need for local projects for marine litter reduction. The resulting discussion revealed a number of shared interests and common needs among members of the MPA network. GCFI and CaMPAM selected the most promising local ideas

arising from the consultation process and advanced with a joint proposal to collaborate with MPA partners in five countries.

Local MPA partners identified marine litter issues that were particular to the unique social and environmental conditions of their area. With the broad goal of developing greater appreciation of, and personal responsibility for, the management of litter that would likely end up as marine debris, the project enabled MPA managers to launch the strongest and most innovative of their ideas on litter prevention and reduction. Through a combination of public education, teacher training, the development of litter warden programs, and the installation of well-placed waste and recycling stations, the project established a number of visible and practical litter reduction programs. Results included 1) increasing public awareness of the impact of marine litter, 2) developing best litter management practices, and 3) improving compliance with anti-littering laws and regulations

Participating countries were The Bahamas, Belize, Grenada, Jamaica, and St. Vincent and the Grenadines. The leading representative in each country was a member of the CaMPAM network and nearly all had participated in the CaMPAM regional 'Training of Trainers' course on marine protected area management. The project provided a platform for in-country partners to engage with local NGOs, community-based organizations, and relevant government agencies to implement on-the-ground marine litter projects relevant to their own priority needs in marine conservation. Each project partner shared a common interest in pursuing the proposed efforts related to marine litter reduction and all were well-positioned to take part in the proposed project thanks to a solid in-country network. Each project partner stimulated action by helping to build bridges between relevant organizations and agencies, by sharing educational materials and technical advice, and by lending much-needed support and guidance in the application of best practices. The in-country project partners were instrumental in providing the necessary insight for the selection of approaches and materials that had the greatest chance of successful application in their local communities.

GCFI and CaMPAM provided direction and regional context for each country's marine litter project priorities. They also assisted the project partners by preparing joint press releases and by sharing information and approaches between partner organizations in different countries. GCFI and CaMPAM liaised with staff working on regional marine litter initiatives at UNEP's Caribbean Environment Programme, and shared their progress with project partners.

In this way, individual project partners did not have to reinvent methods or develop educational materials from scratch, rather they could assess and adapt the approaches that worked in other locations and avoid repeating approaches that had been found less effective by other programs. In 2010, GCFI hosted a regional meeting for the project managers to come together and share about their progress on the project.

There was a high degree of recognition and understanding of marine litter issues in most communities, but there was a substantial disconnect surrounding the local communities contribution to marine debris. So although education campaigns were effective at increasing awareness of marine litter, there remained a practical disconnect in the ability to prevent waste from becoming marine litter. Most communities lacked appropriate resources for waste management. The lack of infrastructure appeared to be a major impediment to waste manage-ment. This appeared to be particularly relevant on small islands that lack the capacity to support basic waste management services. However, small islands, like Mayreau, have the capacity for great improvement in waste management with minor infrastructure assistance. Diverse educational activities can be employed to increase public awareness about marine litter, improve compliance, and change behavior, but these need to be appropriate to unique local cultures. Coastal cleanups were well recognized and have high participation in many communities. Although cleanups are of questionable long term litter-reduction value, they remain a go-to activity for local NGOs and MPAs. The less tangible community education potential of coastal cleanups to engage people in environ-mental protection should be given greater priority and linkages to local litter management should be highlighted when possible. MPAs can serve as ambassadors for marine litter education and reduction to bring together the range of stakeholders. It is unlikely that local NGOs or MPAs have staff available for specialized activities like litter manage-ment. This capacity is likely more efficiently

provided by regional organizations, like GCFI and CaMPAM. Global or regional policy initiatives by organizations like UNEP require dissemination to the local level for implementation.

GCFI and CaMPAM facilitated the implementation of numerous aspects of UNEP's marine litter policy at the local level.

Without the leadership and guidance of GCFI and CaMPAM, the five participating countries would likely never have come together to work on this topic, nor would the MPAs involved likely have individually secured the funding for the project from the U.S. Department of State. Regional oversight by the CaMPAM network provided for sharing of lessons learned between the MPA partners, as well as among the 600+ members of CaMPAM across the Wider Caribbean.

Excerpt taken from:
Matthews, Thomas R., Doyle Emma, Marine Litter Reduction in the Caribbean: Five Case Studies, presented during the proceedings of the 64th Gulf and Caribbean Fisheries Institute, October 31-November 5, 2011, Puerto Morelos, Mexico

(Country specific case studies are highlighted elsewhere in the document. The full report may be reviewed on the UNEP-CEP website.)

6. CONCLUSION

The presence of marine debris still persists in the coastal environment. However, by conducting consistent education programmes to the public, government, NGOs and community groups, this major issue could be solved. Research and monitoring should now include microplastics as plastics are the most common items found littering the beaches and oceans and can have serious health implications for wildlife and humans. Recycling programmes should be encouraged within communities and especially amongst the young citizens as they play a major role in waste management and are more likely to change their behaviour much faster than the adults. There is still a lack of proper enforcement of existing legislation as well as the lack of specific legislation to address marine litter issues. Furthermore, education and awareness programmes should also encourage persons to dispose of waste properly and address the issues of illegal dumping on abandoned beaches and gullies. Also, more collaboration needs to occur among UN agencies, government agencies and departments, IMO and regional bodies such as CARICOM to address marine debris and for further implementation of the Regional Action Plan on Marine Litter.

To fight these problems, we must create national strategies and opportunities that will encourage people to reduce and eliminate marine litter. Current efforts must be continued by governments and the private sector to increase awareness, establish debris abatement programmes, and change behaviours that ultimately lead to marine litter impacting our ocean. Successful management of the problem requires a comprehensive understanding of both marine litter and human behaviour.

More of the programmes need to be coordinated as some have been started. All in all, education and outreach programmes, strong laws and policies, and governmental and private enforcement are the building blocks for a successful marine pollution prevention initiative.

Next steps include:

- Working with the 11 contracting parties to the LBS Protocol to improve policies and legislation that will ensure compliance with the Protocol, in particular those policies which address prevention of waste ending up in the marine environment;
- Further development of national marine pollution monitoring programs for contaminants and pollutants through partnerships with research and academic institutions;
- Secure funding and partnerships for development and/or improvements of waste management infrastructure;
- Share best practices and lessons learned for while each country is unique culture, challenges, priorities, sharing of information can save time otherwise wasted by recreating mistakes or flawed policies;
- Introduce new concepts and solutions based on greening the waste sector at SCP that are appropriate for SIDS;
- Ensure that specific issues are considered at global forums such as the GPA/GPML and other technical waste management forums;
- Pilot projects of resource recovery especially of plastics at national, sub-regional or regional levels.

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8. COUNTRY PROFILES

Marine litter complications are a recognised problem in the region and consequently, several institutional arrangements have been developed to remedy the problem. This is done mainly through solid waste management strategies, environmental and natural resource agency conservation and management programmes, port authority operations, tourism board programmes, and maritime activities. Also public-private partnerships are also necessary in order to have effective and successful natural resource management. It can also form linkages between the government and the public, and public education and involvement is important in solving environmental issues. NGOs have also been helpful in engaging the public in proper solid waste management as well as conducting programmes which gets persons involve in recycling and other waste minimisation strategies.

Many laws do exist to combat against the problem of marine litter in the WCR. These include laws which deal with solid waste collection and disposal by specific agencies, the clean-up of beaches by specified agencies, laws dealing with the cleaning of waterways, biodiversity and human health. The nature of marine litter as it comes from various sources, makes it difficult for these laws to be enforced. There are also not many laws that deal with marine litter explicitly. These laws may be amended over time to include particular regulations for marine litter management.

Within the WCR, there are national and regional programmes conducted by the government departments, NGOs and community groups or organisations which focus on education and outreach, clean-up activities, recycling and waste minimisation, to address the marine litter issues. Some countries such as the Bahamas and Barbados have NGOs and a government department that encourages community recycling programmes. Within the Bahamas, the Plastic Bottle Movement is one citizen's blog which gets the public involved in the surveying of the plastics found on the beaches which would be helpful for research.

The following Country Profiles provide brief descriptions of various institutional arrangements, NGOs and various laws and policies that have been implemented in select States that aid in the management of marine litter.

Anguilla

Government Agencies and Departments
Anguilla National Trust (statutory body) - Facilitate the organisation of beach clean-up campaigns with the Environmental Health Unit. Department of Environment – responsible for environmental management and coordination. Department of Fisheries and Marine Resources – responsible for fisheries management, coastal resources monitoring and marine parks management. Department of Physical Planning – Sustainable development of Anguilla's natural resources and infrastructure. Environmental Health Unit, Department of Public Health – Lead agency for solid waste management and removal of solid waste from roadsides and beaches. Zenaida Haven Youth Rehabilitation Centre – Assists with beach clean-up campaigns.
Legislations and Policies
Litter (Abatement) Ordinance (1987)–Prevents litter disposal in a public place. Marine Park Regulations (1993) – Prohibits the discharge of any bilge or sewage or dumping of any form of litter or pollutant within Marine Park Areas. National Biodiversity Policy – Protection of key ecosystems and species at the national level. Public Health Act (1969) and Public Health Nuisance Regulations –Provides instructions on dealing with the methods of removal of garbage and other waste for public health purposes. Watercourses and Waterworks Ordinance (Cap. 185; 1956) and Watercourses and Waterworks Regulations –It is an offence to dump waste into a watercourse or to pollute water flowing into or out of a watercourse.
NGOs and Community Groups
Anguilla Hotel and Tourist Association–Sponsors of and participants in Clean Up Anguilla campaigns (2009-2011) Church Groups – Community Clean-ups Junior Optimist Club of Anguilla –Beach Clean-Ups Scouts of Anguilla – Community Clean-ups
Marine Litter Awareness Programs/ Activities
Awareness programme- The Soroptomist International Club has a campaign to reduce the use of plastic bags and to educate the public about the harmful impacts of plastic bags. Beach and roadside clean-ups – These are usually club-based, community-based initiatives, focusing on various beaches and roadsides across the island. Hotels and resorts are also engaged in daily clean-ups (conducted by staff), focusing on the areas in front of their respective hotels/resorts. Clean-ups also organised by the Anguilla National Trust (ANT) every September in celebration of International Coastal Clean-up Day and periodical island clean-ups are conducted by the Anguilla Hotel and Tourism Association. Also, some daily clean-up programmes are conducted by the Department of Health Protection's Environmental Health Unit as well as periodical clean-ups during particular events. The Department of Fisheries and Marine Resources also conduct clean-up programmes by removing ghost traps from nearshore waters. Bulky waste removal programme–This is organised and facilitated by the Environmental Health Unit and they remove bulky waste (for free) from private property (upon request). School-based recycling programme – A programme was conducted by the Sixth Form Environmental Science Class in 2013 located on the Albena Lake Hodge Comprehensive School campus.

Antigua and Barbuda

Government Agencies and Departments
Antigua and Barbuda Waste Recycling Corporation (ABWREC) - Assist in bulk waste reduction through collection and removal of non-biodegradable materials through recycling. Education or sensitisation of the public about recycling. National Solid Waste Management Authority (NSWMA) – Provide storage facilities for solid waste, collect and transport solid waste. Convert dumps to sanitary landfill sites. Environment Division of the Ministry of Agriculture, Lands, Housing and the Environment – Oversight of environmental issues and development of projects and programs for environmental protection.
Legislations and Policies
Antigua and Barbuda Merchant Shipping Act (Cap. 28) - Part 8 of the Act deals with pollution of the marine pollution from oil. Dumping at Sea Act (Cap. 141) - Section 3 outlines that no person shall dump any materials within the sea other than those needed for mooring a ship. Fisheries Act (Cap. 173; 2006) - Section 39 entitled 'Fisheries (Marine Reserve Area)' governs the protection of the marine environment, such as marine reserves, from pollution or any form of discharge. Anyone caught in such act will be convicted or fined. National Solid Waste Management Act (1995)–Gives the National Solid Waste Management Authority the responsibility of the collection, disposal, treatment and management of solid waste. Oil Pollution of Maritime Areas Act (1995) - An act against the discharge of oil within the marine environment and anyone caught will be subject to conviction or be fined. Litter Act (Cap. 250; 1983)–Governs the management of litter in public places. Marine Areas (Preservation and Enhancement) Act (Cap. 259) - Protection of the marine environment. Maritime Areas Act (Cap. 260) – Includes a section which outlines the preservation of the marine environment and the control of pollution within the environment.
NGOs and Community Groups
Environmental Awareness Group (EAG) - Focused on efforts to raise public awareness of the values of – and threats to - natural resources and to promote their sustainable management.
Marine Litter Awareness Programs/ Activities
Coastal clean-ups – The ICC occurs every year where volunteers collect marine litter and record the data on the quantity and types of debris at beaches, waterways and the ocean by community groups, schools and private sector.

Bahamas

Government Agencies and Departments
Department of Environmental Health Services (DEHS) – The DEHS advises the Minister of Health and is advised by the Environmental Health Board, and also enforces environmental laws and regulations. They also evaluate the effectiveness of pollution control measures and initiatives to protect the health and safety of workers and the natural environment. It also ensures the conservation and maintenance of the environment through the prevention of actions taken in the environment that negatively impact human health, such as pollution. Department of Marine Resources, Ministry of Agriculture & Marine Resources – It is responsible for the administration, management, and development of fisheries in The Bahamas as stipulated by the Fisheries Resources (Jurisdiction and Conservation) Act. It also enforces the Fisheries Regulations, Marine Mammal Regulations and the Seafood Processing and Inspection Regulations. Ministry of Health and the Environment – Responsible for the monitoring, regulating and controlling of pollution. The Bahamas Environment, Science & Technology (BEST) Commission – Manages the implementation of multilateral environmental agreements (MEA's) by the government and reviews EIAs and Environmental Management Plans for development projects in Bahamas. The Port Department – Regulates all maritime and environmental issues within the port. The Royal Bahamas Defence Force – Enforces and maintains the laws.
Legislations and Policies
Environmental Planning and Protection Act (2000) - Already enacted to address any and all contaminant or pollutant in the form of solid, liquid or gas. Local Government Act (No. 5 of 1996) - This Act mandates each district council to provide community services, such as water, health care, sanitation, and waste collection and disposal. Environmental Health Services Act (Cap. 217; No. 4 of 1987) - Promotes conservation and maintenance of the environment and also addresses the control of contaminants and pollutants that may adversely affect the environment and human health. The Act also outlines regulations with respect to water supplies, solid and liquid waste, beaches, seaports, harbours and marinas. Merchant Shipping (Oil Pollution) Act (Cap. 253; 1976)- Provides for the proper registration of ships, control, regulation and systematic development of merchant shipping in The Bahamas. These provide for the prevention of shipping accidents. Water and Sewerage Corporation Act (Cap. 184; 1976) - This Act establishes the Corporation with functions which include the application of appropriate standards and techniques for investigation, use, control, protection, management and administration of water. The Corporation is also mandated to oversee waste disposal, water treatment and water quality. Forest Legislation – Promotes the protection of forested areas, including mangrove forests, by designating them as 'conservation forests'. National Land Use Policy (Draft) - Being formulated to address the competing demands for limited land use needs. Policy on Marine Protected Areas (Draft) - A national policy on oceans and MPA's which will be integrated into the National Sustainable Development Plan. Pollution Control and Waste Management Legislation - Already enacted to address any and all contaminants or pollutants in the form of solid, liquid or gas. Coast Protection Act (Cap. 190; 1968) - To regulate the development of the coastline for the purpose of the protection of land and against encroachment and erosion by the sea. Port Authorities Act (Cap. 247; 1962) - This Act provides for the regulation and control of all ports, harbours and navigational aids and the regulation of dredging activities for harbours and ports. The Act also prevents discharge of ship ballast water into harbours.

NGOs and Community Groups
Friends of The Environment - Conserve habitats and protected areas as well as conduct clean-up campaigns and educational programmes. The Bahamas National Trust - Manages the Bahamas National Park System and conducts marine litter campaigns. The Bahamas Reef Environment Education Foundation (BREEF) - Addresses the issues relating to the marine environment. As well as conduct public education outreach and school programmes. The Nature Conservancy - Protects priority land areas and marine habitats.
Marine Litter Awareness Programs/ Activities
Bahamas National Trust's (BNT) National Parks Clean-Up - Throughout the year, the Parks Department along with the Environmental Education Division of the BNT collaborate with private groups and schools throughout various communities around the island to teach the importance of National Marine Parks and clean them up of debris, invasive species, and etcetera. Citizen Science Debris Surveys - Research on marine and terrestrial debris can be gathered using the help of citizens. This initiative gets locals involved in collecting quantitative data which can be used to mitigate solid waste issues. Community/Beach Clean-ups–This gets local community involved in cleaning there community and/or a local beach on a monthly basis. Community Recycling– This implements community recycling programmes. National Coastal Awareness Committee (NCAC), Coastal clean-up initiative - The Committee along with private citizens come together at different periods of the year and participate in beach clean-up activities throughout The Bahamas. Social science surveys- Conduct surveys to identify local perceptions on solid waste and views on mitigation. The Cape Eleuthera Institute/ Bahamas Plastic Movement – The Plastic Beach Project is a citizen science based initiative that studies macro and micro plastic concentrations between windward and leeward beaches of South Eleuthera, The Bahamas. This project is the first of its kind for The Bahamas and was launched in April of 2013. This volunteer based research project has welcomed over 350 volunteers from across The Bahamas and The United States, representing plastic surveys performed on 16 beaches. Coastal clean-ups -Removal of derelict boats, debris such as tires and batteries from the waters that surround the ports by the Ministry of the Environment and the Departments of Marine Resources and Environmental Health.

Barbados

Government Agencies and Departments
Barbados Tourism Authority - Promotes Barbados as an environmentally sound destination. Coastal Zone Management Unit (CZMU) – Responsible for the preparation and revision of the Coastal Management Act and coastal management strategies, conducts oceanographic assessment, coastal research, engineering, development control on the coast, and education, timely drafting and submission to Parliament or the Minister for consideration, provide advice on policy and research education planning and environmental impact assessment. Drainage Unit, Ministry of Environment and Drainage (MED) – Responsible for the design and construction of marine structures, dredging and maintenance of coastal culverts, drains and wells. Environmental Health Officers, Ministry of Health - Assist in monitoring and enforcement aspects of solid waste management and also responsible for the study, design and construction of sewerage collection, treatment and outfall works. Environmental Protection Department (EPD) – Enforces the Marine Pollution Control Act 199-40. Develops projects and programmes to prevent, reduce and control marine pollution, as well as conduct water quality assurance, monitoring programmes, sampling and analysis. Policy Research, Planning and Info Unit – Drafts and provides advice on policies and administer Environmental Conventions. The unit is also responsible for education planning and education awareness. Fisheries Department, Ministry of Agriculture, Fisheries and Water Resources – Responsible for sports and commercial fisheries regulations. Ministry of Environment and Drainage (MED) - Conducts oceanographic assessment, coastal research, engineering, development control on the coast, and education, timely drafting and submission to Parliament or the Minister for consideration, provide advice on policy and research education planning and environment impact assessment. Design and construction of marine structures, dredging and maintenance of coastal culverts, wells, and drains. Ministry of Tourism and International Transport – Responsible for the port control, marinas, safety and pollution in territorial waters, as well as promote the coastal environment as a tourism asset and Barbados as a clean, environmentally friendly destination. National Conservation Commission (NCC) - Development and management of marine parks, reserves and beach accesses. Operation of beach and park facilities, provide advice on coastal rehabilitation and provide life guard service. Responsible for the Adopt-A-Beach Programme. Sanitation Service Authority (SSA), Ministry of Health - Responsible for non-hazardous solid waste collection and disposal from homes and government agencies island-wide and government agencies. Solid Waste Project Unit (SWPU), Ministry of Environment and Drainage – Policy and education. Implementation of the Integrated Solid Waste Management Programme and manage solid waste in Barbados. Town and Country Development Planning Office – provide consultations on coastal development and planning.
Legislations and Policies
Coastal Zone Management Act (No.39 of 1998) -The Act provides a comprehensive, statutory basis for coastal zone management and planning. It seeks to coordinate and update the existing, fragmented statutes relevant to coastal management, and makes provision for the protection of coral and other marine reserves, the creation of marine reserves and the identification of critical areas of concern to the marine environment. Any person that fouls any part of the beach or foreshore by the deposit of offal, garbage or other waste, or in any other manner whatsoever, is guilty of an offense and penalties are defined e.g. first offense $200,000 fine or imprisonment of up to five years, or both, second offense $400,000 fine or imprisonment of up to five years, or both. Health Services Act (Cap. 44) – The Act is associated with the collection and disposal of refuse regulations. The act defines the regulatory framework for solid waste management in Barbados while the regulations address landfill sitting, littering and dumping, waste containment and waste collection and transportation.

Health Services Act (Cap. 44) – The Act is associated with the collection and disposal of refuse regulations. The act defines the regulatory framework for solid waste management in Barbados while the regulations address landfill sitting, littering and dumping, waste containment and waste collection and transportation.
Integrated Coastal Zone Management (1998) – Certain sections address the issues of land use and resource use in the agricultural sector. The concern has been expressed that run-off containing toxic substances originating from the misuse of pesticides from agricultural production contaminate water supplies and affect marine life.
Marine Pollution Control Act (1998) - Makes provision for the prevention, reduction and control of pollution of the marine environment from any source. One section stipulates that any person that releases any pollutant, or causes a pollutant to be released into the environment is guilty of an offense, leaves ascertaining, characterisation and description of the extent and significant sources of pollution to the Director, defines the main sources of pollution as: i) land-based, ii) sea-bed activities, iii) dumping activities; and iv) airborne sources; and defines penalties of offense under Section 3 as first offense on indictment ($2000,000 fine or imprisonment for 5 years); second or subsequent offense ($100,000 fine or imprisonment for 2 years).
MARPOL 73/78 Annex V – This international treaty regulates the types and quantities of operational and cargo wastes (solid wastes) that may be discharged from ship to sea, taking into account the ecological sensitivity of different sea areas. It dictates the specific distances from land, and manner in which different types of garbage may be disposed of and places a ban on dumping any forms of plastic into the sea.
Fisheries Act (Cap. 391; 1993) – Based on the OECS harmonised legislation, this Act specifies relevant conservation measures such as prohibiting use of any explosive, poison or other noxious substances, covers formulating and reviewing fisheries management (closed seasons, gear restrictions), registration of fishing vessels, fisheries research, fisheries enforcement, and other related issues.
Fisheries (Management) Regulation – Regulations include mesh size restrictions for seine nets and fish traps; mandatory installation of escape panels and identification marks on fish traps; prohibiting the use of trammel nets and other entangling nets.
Returnable Containers Act (Cap. 395A; 1987) – This act provides the control of the sale of beverages in beverage containers (plastic or non-plastic) whereby a deposit is paid on sale and a refund is provided when returned to a suitable centre. All beverage containers (plastic and non-plastic) have a deposit-refund. This encourages recycling.
National Conservation Commission Act (Cap 393; 1985) – The Act provides for the conservation of public parks, beaches, caves, and related matters, and to make provision for the conservation of sites and buildings of national interest. It provides for the establishment of the National Conservation Commission (NCC) and outlines its functions. The NCC deals with the maintenance of the cleanliness of beaches and public parks. Persons found littering or dumping in these areas and found guilty can be liable to a fine of up to$500 or imprisonment for 6 months or both.
Sanitation Services Authority Act – Gives the Sanitation Service Authority the right to remove refuses from any premise and to carry out other functions within the Act.
Territorial Waters Act - Any ship that deems prejudicial to the peace or good order if it causes harm to the marine environment through pollution.
Territorial Waters Act, Oil in Navigable Waters Act - Any person who allows the discharge of oil from a ship would be committing an offence.
Town and Country Planning Act – Defines coastal setback lines for construction and establishes all planning requirement for development.
Underground Water Control Act – It regulates the disposal of sewerage or waste into the ground via water wells.

NGOs and Community Groups

Barbados Blue –Dive operator at the Hilton, Needham's Point that organises beach clean-ups in partnership with PADI Project AWARE and has a zero litter policy.
Barbados Hotel and Tourism Association (BHTA) – Umbrella group of hotels and tourist attractions working towards Green Globe certification.
Barbados Marine Trust –Dedicated to promoting environmentally and socially-sustainable use of marine areas of Barbados.

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Barbados Marine Trust –Dedicated to promoting environmentally and socially-sustainable use of marine areas of Barbados.
Barbados National Union of Fisherfolk Organisations (BARNUFO) –An association of subsistence fishermen that participate in local conservation programmes.
Barbados Sea Turtle Project –Conserving and protecting endangered sea turtle populations in Barbados through education and awareness programmes, beach monitoring and the monitoring of the marine turtle populations on the island.
Bellairs Research Institute of McGill University –Teaching and research facility in the tropics offering conservation programmes.
Centre for Resource Management and Environmental Studies (CERMES), University of the West Indies (UWI) –Promotes and facilitates sustainable development in and outside the Caribbean.
Caribbean Youth Environment Network (CYEN) - The organisation promotes education and training, Caribbean integration and community empowerment as tools to develop an ethic amongst young people that assists in the conservation and protection of natural resources within the Wider Caribbean. Coordinates the International Coastal Cleanup hosted by the Ocean Conservancy annually as part of their Let's Do It Barbados initiative.
Future Centre Trust – Organisers of Clean-Up Barbados as well as conduct recycling programmes across the island.
Underwater Barbados - enables education and awareness of the environment through the dive shops, swimming school and youth educational programme.

Marine Litter Awareness Programs/ Activities

4 R's Fair – This is organised by the Solid Waste Project Unit and promotes the 4 R's of waste minimisation to the public; Reduce, Reuse, Recycle and Recover.
Adopt-Your-Beach Project - This project nurtures relationships by encouraging all interested individuals, communities, organisations and agencies to adopt beaches. It involves taking part in a range of educational and creative conservation activities. Those who adopt beaches are encouraged to participate in one or more of the following activities:

- Regular beach and underwater clean-ups.
- International Coastal Cleanup Day.
- Certified First-Aid courses.
- Design and provision of creative and effective garbage receptacles, benches and tables.
- Re-vegetation initiatives.
- Development and execution of community awareness programmes for beach users.

Clean Up Barbados, CoRe Network and Green Business – These are initiatives done by the Future Centre Trust which promote clean and healthy environment.
Government Information Service (G.I.S) – the G.I.S is used by the Ministry of Environment and Drainage to promote environmental awareness via television commercials, short documentaries and skits.
International Coastal Cleanup Day – Organised by the Caribbean Youth Environment Network-Barbados, the ICC brings together hundreds of volunteers from different organisations, businesses and schools to participate in underwater and/or beach clean-ups.
Ministry adoption of schools –M.E.D along with EPD and CZMU have adopted schools and assist the schools Environment Club programmes and activities and also provide extra education on environmental issues.
Ministry of Environment and Drainage (M.E.D)- The gullies programme has projects to curb illegal dumping by involving the community so that they can conduct clean-up activities.
Solid Waste Project Unit's Litter Management Campaign – Involves the posting of signs which state Don't Dump Don't Litter as well as using television commercials, skits and school programmes educating on waste management.

Belize

Government Agencies and Departments
Belize Fisheries Department – Manages the rules and regulations of activities that occur in marine reserves related to litter. Belize Solid Waste Management Authority – It ensures that solid waste is managed in an environmentally sound way. Manages three solid waste management facilities in the Western Corridor (Belize City, San Ignacio/Santa Elena/Bemque Viejo, San Pedro Ambergris Caye and Caye Caulker). Coastal Zone Management Authority & Institute (CZMAI) – Supports the allocation, sustainable use and planned development of Belize's coastal resources through increased knowledge and the building of alliances for the benefit of all local people and the global community. This is done through the efforts of several monitoring and research programmes. Department of the Environment – Regulates the disposal of litter from vessels and coastal communities. Fosters the use and proper management of natural resources of Belize, the preservation, protection and improvement of the environment and the control of pollution. Also, conducts clean-ups and public awareness campaigns.
Legislations and Policies
Belize Port Authority Act (Cap. 233; revised 2003) – Prohibits depositing, placing or discharging pollution into coastal waters. Solid Waste Management Authority Act (1991 revised in 2000 and 2003) - Responsible for proper management and disposal of waste throughout the country. Forest Act (Cap. 213; revised 2003) -Empowers the ability to declare Forest Reserves, administer reserves, set and collect royalties and to make regulations for protection and disposal of forest produce. Land Utilisation Act (1981 and 1990 revised in 2000 and 2003) - Controls the subdivision of any public or private land in Belize. It establishes the Lands Utilization Authority which makes recommendations on subdivision applications. It also establishes Special Development Areas which limit the types of development permissible within these zones. National Lands Act (Cap. 191, 1992 revised in 2003) -Addresses all rules and regulations in relation to all lands and sea beds, other than reserved forest within the meaning of the Forests Act, including cays and parts thereof not already located or granted, and includes any land which has been, or may hereafter become, escheated to or otherwise acquired by the Government of Belize. Coastal Zone Management Authority Act (1998)/(Cap. 329 in 2000) - Provides the Coastal Zone Management Authority the mandate for the protection of the coastal and marine environment. Protected Areas Conservation Trust (PACT) (1996) – This initiative developed and implemented a trust fund for protected areas in Belize dedicated to the promotion, conservation and sustainable development. This strategic model for proper management and conservation is based on revenues produced through a conservation tax paid by foreign tourists upon departure, protected entry fees, and taxes paid by cruise ships visiting Belize. Pollution Regulation (1995) –Responsible for the regulation of pollution and effluent discharge into the environment including the marine area. Environmental Impact Assessment Regulations (Cap. 328; 1995) –Gives the guidelines and requirements for Environmental Impact Assessments for developments. Mines and Minerals Act (1988) and Regulations (1994) - Gives the Minister the responsibility for taking into account the need to conserve the natural and cultural resources in or on the land over which the mineral right is sought, or on any neighbouring lands. The Minister has the right to require EIAs to be conducted and impose conditions for prevention, limitation or treatment of pollution, protection of natural resources, minimising effects of mining on surface water and groundwater. Environmental Protection Act (Cap 328; No. 22 of 1992) –It sets out the mandate of the Department of the Environment and prohibits the dumping of garbage, toxic substances or hazardous waste and other sources of marine pollution. Responsible for regulating developments and other activities in an environmental friendly manner. Any person who commits these offences are subject to a fine or imprisonment.

Maritime Areas Act (Cap. 11; 1992) - Provides for the compliance of vessels exercising the right of innocent passage within the territorial waters of Belize to comply with all laws relating to the conservation of resources and preservation of the environment and the prevention, reduction and control of pollution.
Littering Offences (Violation of Tickets) Regulations (S.I. 130) (1991) –Empowers authorised officers (police, public health officers, Justice of the Peace, clerks to City Councils or Boards and bus conductors) to issue violation tickets to people committing littering offences.
Registration of Merchant Ships (Pleasure Vessels) Regulations 1991 (S. I. No. 148 of 1991) -Provides that all vessels over 400 gross registered tons shall comply with the International Regulations for the Prevention of Pollution at Sea (MARPOL 73/78).
Merchant Shipping Act (No. 32 of 1989) - Requires that every tanker of 150 gross register tons or above comply with the International Convention for the Prevention of Pollution of the Sea by Oil.
Merchant Shipping (Oil Pollution) Act, Dumping at Sea Act -Makes the owner of a ship from which oil escapes liable to damage and clean-up costs.
National Park Systems Act (Cap. 179; 1981) -To provide for the preservation and protection of highly important natural and cultural features, for the regulation of the scientific, educational and recreational use of the same and for all other matters connected therewith or incidental thereto.
MARPOL 73/78 –Prohibits marine pollution by oil and petroleum.
Dumping at Sea Act (1974)(U.K.) - Prohibits dumping of substances at sea by vessels.
Public Health Act (1958) – Mandates the local authority responsible for public health to deal with any noxious matter and wastewater flowing or discharged from any premises or watercourse.
Public Health (Amendment) Act - Empowers Minister to make regulations to prevent, control or reduce pollution or contamination of the air, soil or water subject to affirmative resolution by the National Assembly.
Removal of Refuse By-Laws (Local Government) – Mandates the senior health officer has the authority to arrange the removal of household refuse from a district or where the senior health officer does not arrange for the removal, then the occupier of the premises must remove the refuse and dispose of that refuse.
Solid Waste Management Act – Responsible for proper management and disposal of waste throughout the country.
Summary Jurisdiction (Offenses) Act (Cap. 99) -Makes illegal the throwing of rubbish in any street, watercourse, pond, reservoir, thoroughfare or seashore and requires that private premises be kept clean.
Wrecks and Salvage Act (Cap. 196) -Provides for regulations to be made to restrict and control the deposit of substance, solid matter, etc. that may cause pollution of a port.

NGOs and Community Groups

Belize Audubon Society(BAS) – The BAS has facilitated the passage of legislation for the protection of wildlife and establishment of protected areas. The BAS proposed areas that should be protected and lobbied until wildlife sanctuaries, natural monuments, nature reserves and national parks and helps to manage the protected areas.
Belize Tourism Board or Belize Tourism Industry Association – Regulates tour operators' collection and disposal of garbage during tours, especially coastal areas.
Environmental Conservation Organization (ECOMAR) – Created in 1995, this non-profit organisation specialises in marine conservation practices, research and education and outreach activities in order to preserve Belize's marine environment.
Environmental Research Institute, University of Belize – Increase the local capacity for research and monitoring that exists in Belize with respect to the sustainable management of Belize's natural resources.
Mesoamerican Barrier Reef Systems Project (MBRS) – Enhance the protection of the marine ecosystems comprising of the Mesoamerican Barrier Reef System and to help associated countries to strengthen and coordinate regional policies, regulations and institutional arrangements for the conservation and sustainable use of the reef.
Protected Areas Conservation Trust (PACT) – PACT provides funds for conservation and sustainable management of natural and cultural resources in Belize.
Toledo Institute for Development and the Environment (TIDE) – TIDE's mission is 'to foster community participation in resource management and sustainable use of ecosystems within the Maya Mountain Marine Corridor.' With the help of the government, TIDE manages 3 protected areas including a marine reserve (Port Honduras Marine Reserve). They also do research and monitoring, education and outreach programmes and resource management.

Marine Litter Awareness Programs/ Activities
Coastal and River Clean-ups – These are conducted by many NGO's which work together. Some of these activities are conducted on Earth Day. Litter Warden and Recycling Programme – Aids in the installation of garbage and recycling bins at schools. Multimedia Education Programme – These are done to inform and engage the public about marine litter and the impacts.

British Virgin Islands

Government Agencies and Departments
Department of Conservation and Fisheries, Ministry of Natural Resources and Labour -Provide environmental education and awareness, monitors the marine and terrestrial ecosystems as well as provide regular maintenance and clean-up of the coastlines and beaches. Department of Solid Waste, Ministry of Health and Social Development – Responsible for the collection and disposal of solid waste from communities, public roads, develop educational programmes, beautification topics and recycling programmes. Environmental Health Division - Ensures that all aspects of the environment with the potential to negatively impact health are managed efficiently to enable all persons in the BVI to attain and maintain optimal health and social well-being. Ministry of Communications and Works - Deals with hazardous material and marine transport.
Legislations and Policies
Merchant Shipping (Oil Pollution) (Amendment) Order (1981) - The Order amends the 1975 Merchant Shipping (Oil Pollution) Order which governs oil pollution at sea. Dumping at Sea Act 1974 (Overseas Territories) Order (1975) - Provides legislation which governs the management of dumping in marine waters.
NGOs and Community Groups
Green VI - Is an NGO which develops and conducts solid waste management programmes and recycling programmes within the BVI.
Marine Litter Awareness Programs/ Activities
International Coastal Cleanup – The Departments of Conservation and Fisheries collaborate to organise this event and schools and the BVI Tourist Board participate.

Cayman Islands

Government Agencies and Departments
Department of Environment, Ministry of Financial Services, Commerce and the Environment – Responsible for natural resources management, marine park management and marine pollution. Department of Environmental Health – Responsible for solid waste collection, recycling and disposal, beach clean-ups, public education and promotion programmes. Recreation, Parks and Cemetery Unit – Responsible for litter control of public parks, beaches and cemeteries. Water Authority (Statutory body) –Responsible for water quality and effluent control and protection and management of water resources.
Legislations and Policies
Marine Conservation & Water Authority Laws – It is illegal to put effluents, sewage or similar wastes into Cayman waters. These regulations are active but hard to enforce as violators must be caught in the act for prosecution. Litter Law – It is illegal to litter anywhere on Cayman land, including waterways, but these regulations are hard to enforce effectively. MARPOL 73/78 Annex V – Ratification of Annex V prohibits the dumping of plastics and garbage from ships in territorial waters. Port Law – It is illegal to discharge sewage or dump garbage into Cayman's territorial waters, also hard to enforce.
NGOs and Community Groups
Cayman Islands Tourism Association – Conducts beach and reef clean-ups. National Trust for the Cayman Islands – Conducts the Earth Day Beach Clean-up and establishes protected areas.

Cuba

Government Agencies and Departments
The Environment Agency, Ministry of Science, Technology and Environment – Responsible for environmental management in Cuba.
Legislations and Policies
Law of the Environment (No. 81 of 1997) – This Act provides the principles of environmental policy and the basic rules governing the environmental management of Cuba in order to protect the environment and contribute to achieving sustainable development. Article 147states that the dumping of wastes that may affect human health or harm the quality of life of the population is prohibited. Public Health Law (No. 41 of 1983) – This law governs the management of public health in Cuba. With respect to environmental health, Section 5 states that the Ministry of Health dictates the measures related to environmental health control concerning the prevention and control of air, soil and water, and solid waste among others. Environment and Rational Use of Natural Resources Act (No. 33 of 1981) – This law embodies natural resource conservation and protection and includes proper waste management. Article 35 highlights that dumping in any watercourse or water body and on land is prohibited. In Section 4, Article 75 states that dumping of garbage or rubbish onto the coastal areas and waters is prohibited.
Marine Litter Awareness Programs/ Activities
Recycling Programmes - Conducted in the city of Santiago de Cuba.

Dominica

Government Agencies and Departments
Dominica Solid Waste Management Corporation – Responsible for collection of garbage and debris island-wide. Collection Schedule, Fond Cole Landfill Location & Hours of Operation, Recycling and Legislation. Environmental Health Department – Responsible for Dominica's sanitation of collection system, monitors the proper dumping sites which are administered. They identify the location of legal/approved dump sites which works to ensure that healthy communities are maintained. Solid Waste Environmental Educators Network (SWEEN) – Provides discussions on waste disposal and other environmental issues. Solid Waste Management Cooperation and Anti-Litter Lifestyle Beautification Committee – Responsible for the management of the Anti- Litter Beautification Project.
Legislations and Policies
Solid Waste Management Act (No. 1 of 2002) – An Act to establish a National Solid Waste Management Corporation (NSWMC) and to provide for the management of solid waste in conformity with best environmental practices. It gives the NSWMC the rules for the management, transport and handling of solid waste and prohibits the unauthorised disposal of solid waste and provides for the licensing of waste management facilities. Environmental Health and Services Act (No. 8 of 1997) – Gives the Department of Environmental Health the mandate to investigate problems and institute preventative measures in relation to environmental pollution, the management and disposal of solid, liquid and gaseous wastes and also general sanitation. Litter Act (1990amended No. 20 of 1997) – Legislation that provides authority to control litter in public places and private premises. Beach Control Act (Cap 42.; No. 21 of 1966 and 1990)–An act for the control and protection of beaches. Water and Sewerage Act (Cap. 43; No. 17 of 1989) – Provides for a National policy for water, for the granting of an exclusive licence to the Dominica Water and Sewerage Company Limited for the development and control of water supply and sewerage facilities in Dominica and for connected or incidental purposes.
NGOs and Community Groups
Community Youth Groups – Participate in the annual National Beach and Waterway Cleanup Campaign and ICC, organises clean-up campaign across the island. Dominica Youth Environment Organisation, Inc. – Coordinates the annual National Beach and Waterway clean-up as part of the International Coastal Cleanup (ICC) and conducts Coastal Zone Management workshops. Soufrière/Scott's HeadMarine Reserve(SMMR) – Maintaining a healthy reef system & organising underwater clean-ups. Village Councils – Local community groups that conduct projects for the cleaning of drains and storm drains to help maintain a healthy community.
Marine Litter Awareness Programs/ Activities
"National Community Day of Service" - Local Government Departments/Community Development – As part of the Beautification Projects, they manage the collection of debris. 3-RProgramme - Conducted by the Dominica Solid Waste Management Corporation which is done within schools. The students are taught the importance of solid waste management, in order to change behaviours and attitudes towards having a clean and green Dominica. Dive Fest - Conducted annually by the Dominica Watersports Association which promotes public awareness and education about the marine environment. International Coastal Cleanup (ICC) – Conducted by the Dominica Youth Environment Organisation Incorporation. Soufriere-Scott's Head Marine Reserve (SMMR) Day - Conducted in June where the residents are exposed to educational information about the marine environment and includes tours, quizzes and other activities.

Dominican Republic

Government Agencies and Departments
Ministry of the Environment and Natural Resources - Manage protected areas and biodiversity, marine and coastal plans, quality management for the natural environment, forestry and management of the terrain and waters. Dominican Council of Fisheries and Aquaculture (CODOPESCA) – Promotes sustainable fisheries. Santo Domingo National District Municipality – Responsible for the management of solid waste (i.e. collection and disposal). They design, evaluate and propose waste reduction programmes as well as recycling, and education and awareness programmes.
Legislations and Policies
Law on Environment and Natural Resources (Cap. 64; 2000) – Provides rules for the protection, improvement and restoration of the environment and natural resources, by ensuring the sustained development thereof. National Policy for Integrated Municipal Solid Waste Management Norm for Environmental Management of Non-Hazardous Solid Waste - Outlines that the Department of Environment and Natural Resources has the responsibility for the collection, treatment, transport and disposal of non-hazardous municipal solid waste, as well as the establishment of a management mechanism to prevent pollution from solid waste. Coastal and Marine Resources Draft Act Solid Waste Management Draft Act Solid Waste Draft Act
NGOs and Community Groups
Research Center for Marine Biology (CIBIMA), Autonomous University of Santo Domingo – Conducts research on marine and freshwater science, provides and promotes solutions aimed at improving the environmental conditions and contributions to sustainable development. Currently ongoing is a project on environmental assessment and monitoring of coastal and marine resources. Dominican Foundation of Marine Studies (FUNDEMAR) – FUNDEMAR is an organisation which promotes the sustainable use of marine ecosystems and resources through research,education and conservation policies. Fundación Vida Azul (Blue Life Foundation) – Non-profit organisation which coordinates the ICC in the Dominican Republic. ProgramaEcoMar, Inc. – Created in 2001, this institution conducts research on environmental education, management, biodiversity, fisheries and coastal marine ecology. It offers postgraduate research projects. Reef Check, Dominican Republic – Non-profit organisation which work in coral reef education and awareness and also practice coral reef conservation.
Marine Litter Awareness Programs/ Activities
International Coastal Cleanup (ICC) – Conducted by the Vida Azul Foundation and is an annual clean-up event that garbage is collected and recorded. Recycling Programmes – Done by the Vida Azul Foundation.

Grenada

Government Agencies and Departments
Environmental Health Department, Ministry of Health and Social Security – Does waste management. Environmental Department, Ministry of Agriculture, Lands, Forestry, Fisheries & Environment - Manages the natural resources in Grenada. Fisheries Division (MALFF/PU/E/MNIB) – Ministry of Agriculture, Lands, Forests & Fisheries/Public Utilities/Energy/Marketing & National Importing Board manage fisheries. Grenada Ports Authority – Control of litter associated with the port areas. Grenada Solid Waste Management Authority – Associated with Ministry and responsible for the control of land-based sources of pollution (solid waste).
Legislations and Policies
Draft Environmental Management Act (2005) – Provides for the establishment of an Environmental Management Agency, a Sustainable Development Council and related Committees and for matters related thereto. It promotes sustainable development should be encouraged and provide a clean and healthy environment for Grenada. Grenada Solid Waste Management Authority Act (No.11 of 1995, amended by Act No.30 of 1995 and in 2001) – This Act establishes a Solid Waste Management Authority charged with the duty of developing the solid waste management facilities and improving the coverage and effectiveness of solid waste storage, collection and disposal facilities. Waste Management Act (No. 16 of 2001) – States that an EIA is needed when designating waste disposal sites and in the decision making processes of waste management. It is an offence to litter and other wastes on coastal areas, territorial waters, terrestrial water bodies, national parks and protected areas via this Act. Environmental Levy Act (1997) – Makes provision for the payment of a Levy by persons and Goods and Services and serves to support the financial operations of the Grenada Solid Waste Management Authority. Abatement of Litter Act (No. 10 of 1990) – Prohibits dumping of garbage in public areas. If found guilty, there is a fine of EC$ 1500 and 6 months imprisonment. Fisheries Act (No. 25 of 1989) – Has regulations for proper gear storage after use which may prevent pollution. It also prohibits dumping of garbage in coral reef ecosystems and marine protected areas.
NGOs and Community Groups
Caribbean Youth Environment Network - Conducts clean ups and awareness programmes. Grenada Fund for Conservation (GFC) – Beach clean-ups and mangrove restoration. Grenada Green Group (G3) – Beach clean-ups Education Conservation Outreach (ECO) – Conducts International Coastal Cleanup. Ocean Spirits – Conducts education programmes and sea turtle conservation. St. Patricks Environmental and Community Tourism Organisation (SPECTO) – Non-profit environmental and community advocacy group. Woburn/Woodland Development Organisation (WWDO) – NGO for development of the communities in the area.
Marine Litter Awareness Programs/ Activities
The Grenada Young Entrepreneurs Project (GYEP) - Is a project which aims at supporting sustainable businesses within the environmental sector. The recycling of glass and other materials are one of the focus so that the young entrepreneurs can create new economical and viable materials. International Coastal Cleanup (ICC) - The annual clean-up event that garbage is collected and recorded.

Guyana

Government Agencies and Departments
Environmental Management Consultants (EMC) –Conducts environmental and Social Impact Assessments, do environmental monitoring and auditing and also biodiversity assessments, monitoring and management plans. Environmental Protection Agency – Responsible for establishing the regulatory frameworks and enforcement for the reduction of waste and the discharge of waste generation. EPA also offers technical and environmental advice and is also the lead Agency for the Land Based Sources Protocol to the Cartagena Convention and focal point for the Basel Convention on Hazardous Wastes. The Agency also coordinates an Integrated Coastal Zone Management Programme and is currently executing a coastal zone management system project funded by the Caribbean Development Bank. Georgetown Mayor and City Council (Anna Regina, New Amsterdam and Rose Hall Municipalities) – Deals with solid waste management in the city of Georgetown. They have an anti-litter campaign with litter wardens where if caught, persons can be charged up to GUY$10, 000 under the Municipal and Districts Councils Act. Guyana Advisory Solid Waste Management Association – Responsible for keeping the Georgetown seawall clean and developing a programme for maintenance and sustainability of clean-up in the area. Guyana Drainage and Irrigation Authority – Functions as the nation's apex organisation dealing with all public matters pertaining to management, improvement, extension and provision of drainage, irrigation and flood control infrastructure and services in declared areas of the country. Guyana Water Inc. – Responsible for the provision of potable water and sewage management. Integrated Coastal Management Committee and Environmental Protection Agency (EPA) - Effectively fulfil its mandate for Integrated Coastal Zone Management, establishment of the Integrated Coastal Zone Management Committee (ICZMC), which recommends policies for the identification, monitoring, utilisation and management of resources within the coastal zone. Advises the EPA on priorities for research, management and monitoring of activities within the coastal zone and strategies, plans and programmes relating to coastal zone management. Maritime Administration Department – Management of harbours and ports of Guyana and for river navigation, including marine environmental aspects relating to pollution and damage. Ministry of Fisheries Crops and Livestock – Enforcement of safe fishing practices. Environmental Health Department, Ministry of Health – Monitoring and health risk assessments. Offers advice to NDCs and Municipalities on Solid Waste Management. Ministry of Local Government – Regional Democratic Councils and Neighbourhood Democratic Councils (NDCs) collaborated with the EPA in drafting new solid waste legislation and has the overall jurisdiction under the Local Government Act CAP 28:02 for the management of waste in Guyana. Ministry of Natural Resources and the Environment – Responsible for forestry, mining, environmental management, wildlife, protected areas, land use planning and coordination, and climate change. Neighbourhood Democratic Councils (NDC) – Management of local solid waste. Protein Recovery Project – Collection of fish waste. Sea and River Defence Board – Legally responsible for all declared man-made and natural coastal defences in accordance with the Guyana Sea Defences Act. Solid Waste Management Department, Mayor and City Council Georgetown -– Manage solid waste in and around Georgetown, in addition to collection, disposal and to develop new and innovative ways in addressing waste management.
Legislations and Policies
Maritime Zones Bill (2009) – The Maritime Boundaries Act (1977) predated the United Nations (UN) Convention on the Law of the Sea (1982). The Act needed to take full advantage of its rights under the UN Convention thus a draft Maritime Zones Bill 2005 was prepared. This Bill is proposed to address trans-boundary pollution issues and the protection and preservation of the marine environment.

National Environmental Action Plan (NEAP, 2001-2005) – The NEAP sets out an environmental development strategy for Guyana, for five (5) years. It includes a framework for integrating cross-sectoral environmental concerns into the broader context of the country's development both economically and socially. One such concern that is covered in the NEAP is integrated waste management, which analyses some of the issues behind waste and actions that can be taken to remedy such issues.

Water and Sewerage Act (Cap. 30; No. 5 of 2002) – Introduced through primary legislation a definition of waste which omits any classification and qualifies itself by entry in to the system, via spillage. This waste is any solid or liquid spilled or deposited into a water way likely to cause pollution. This Act creates a power of the Authority to make agreements with persons regarding the reception, treatment and disposal of sewage as defined within the Act.

Environmental Protection Regulations (Water Quality and Waste Management) (2000) – Seeks to protect Guyana's waters by controlling discharges of any effluent (waste matter) into any coastal and inland waters. The Hazardous Wastes Management Regulations address issues related to storage, transportation, disposal of hazardous materials/waste and classification of such.

Integrated Coastal Zone Management Action Plan (2000) – This Action Plan intends to guide the work of all stakeholders involved in Coastal Zone Management in Guyana, in an effort to advance a more coordinated and integrated approach to management of the Coastal Zone.

Local Government Act (Cap. 28:02) – Has the overall jurisdiction under the Act for the management of waste in Guyana. The Regional Development Authorities Act (No. 14 of 1977) and the Local Democratic Organs Act (No. 12 of 1980) gives authority to the Region and the communities for waste management.

East Demerara Water Conservancy Act (Cap. 55; 1998) – The Board established under this Act controls the surface water supplied to the Georgetown Municipality and many Coastal NDCs. This Act creates an offence which is monitored be the Board, for any person who throws any earth, dirt, stones, broken bottles, filth and any other substance likely to contaminate conservancy water or water in a reservoir.

Occupational Health & Safety Act (Cap. 99; No. 32 of 1997) – Introduced a duty on employers to conduct work in a manner which does not cause the discharge of any noxious, hazardous, or polluting matter into the air, water, or soil. This Act can serve as a tool to hold liable persons who may dump materials indiscriminately, as a product of the work process.

Regional Development Authorities Act (No. 14 of 1977) and the Local Democratic Organisations Act (No. 12 of 1980) - Gives authority to the region and the communities for waste management.

Environmental Protection Act (No. 11 of 1996) – This Act provides for the management, conservation, protection and improvement of the environment and also the prevention or control of pollution, the assessment of the impact of economic development on the environment, the sustainable use of natural resources and for matters incidental thereto or connected therewith.

Public Health (Amendment) Act (No. 31 of 1991) – This Act amends the Public Health Ordinance Act of 1953 which represents the oldest laws in Guyana regulating Solid Waste Management. It is still used today to enforce several offences including littering.

Guyana National Development Strategy – This sets out priorities for Guyana's economic and social development policies for the next decade. It is based on a careful technical analysis of the problems and prospects in all the sectors of the economy, in major areas of social concern and at the level of the macro economy. Specific policies are formulated in all areas with the aim of fulfilling the fundamental national objectives and the supporting objectives in each sector and area.

Municipal and District Councils Act – This Act covers the governing of municipalities and District Councils generally and includes how these bodies deal with solid waste management.

NGOs and Community Groups

- Caribbean Youth Environment Network- Conducts clean-ups and organise environmental awareness programmes.
- Friends for Sustainable Coastal Management– Cleaning of seawalls, replanting of mangroves, securing birds and wildlife habitat.
- Guyana Marine Turtle Conservation Society – Promotes in-situ conservation and restoration of the four species of marine turtles that nest along Guyana's coastline.

• Guyana Safer Injection Project – Provides guidance for injection and medical waste safety in Guyana.GuyberNet– National coordinator that organises the annual beach clean-up (ICC, also conducts regular public awareness programmes.)
Marine Litter Awareness Programs/ Activities
International Coastal Cleanup (ICC) – Conducted by the Vida Azul Foundation and is an annual clean-up event that garbage is collected and recorded. Recycling Programmes – Done by the Vida Azul Foundation.

Haiti

Government Agencies and Departments
Division of Quality of Life and Pollution Management, Ministry of Environment – Responsible for the control of pollution and waste management and the preparation of the guidelines for the collection, disposal and treatment of waste. Ministry of Public Health and Population (Ministère de la Santé Publique et de la Population)– Responsible for solid waste management and public health in Haiti. Ministry of the Public Works, Transport and Communications – Partners with waste management departments to fulfil their mission. Port Authority– Responsible for Solid waste management. Service Metropolitain de Collecte des Residus Solides (SMCRS), Ministry of Public Works, Transport and Communications - Responsible for the collection and disposal of municipal waste.
Legislations and Policies
Waste and Public Health Laws: Presidential Decree (1981) – Provides for the creation of a Solid Waste Metropolitan Collection Service and laws governing the management and the elimination of wastes and appropriate sanctions for perpetrators.Fishing and Settlements and Urbanism Laws: Presidential Decree (1978) – Sub-project B outlines regulations relative to the collection and storage of garbage in the metropolitan area of Port-au-Prince. Sub-project C relates to the clean-up, distribution and rectification of the pluvial waters existent evacuation system. Marine Laws: Le Moniteur (No. 29 of 1975) – Sanctions the Washington Convention (1972) on the prevention of the pollution of the seas resulting from the immersion of wastes.
NGOs and Community Groups
Cooperative Housing Foundation (CFH) – Conducts a solid waste management programme in the Port-au-Prince metropolitan area. EnviroSynergy - Focuses on environmental awareness, education and conducts recycling programmes. Foundation for the Protection of Marine Biodiversity (FoProBiM) – Conducts annual beach clean-ups as part of the International Coastal Cleanup and the development of educational materials. Friends of the Earth - Campaign for environmental issues. Haitian Collective for the Protection of Environment and Alternative Development (COHPEDA)-Umbrella organisation that deals with toxic waste disposal in Haiti. Haiti Survie - Develops solid waste management programmes and conducts awareness campaigns. Oxfam America – Conducted a pilot project to support the waste collection system in the Carrefour Feuilles Community in Port-au-Prince.
Marine Litter Awareness Programs/ Activities
International Coastal clean-ups – The ICC is conducted annually on the coastlines and in waterways within Haiti. The UN Stabilization Mission in Haiti (MINUSTAH) also conducts beach clean-ups and educates and informs the residents of Cap Haitien, Les Cayes and Lully about protecting and cleaning their marine and coastal environment.

Jamaica

Government Agencies and Departments
Ecosystems Management Branch, National Environment and Planning Agency – Improves the coastal zone with methods which produce long-term positive effects on the environment and humans. Local Parish Councils – Collection of waste from some waterways. Ministry of Health –Provision of quality health services and promote healthy lifestyles and environmental practices in Jamaica. Maritime Authority of Jamaica, Ministry of Transport and Works–Responsible for the inspection of ships for the purposes of maritime safety and prevention of marine pollution. National Environment and Planning Agency - Monitors, reports and assesses the marine environment to minimise over-exploitation and depletion of the living marine resources, including fisheries and conducts recycling programmes in local schools. Also conducts a beach clean-up annually. National Solid Waste Management Authority – Manages solid waste, raises awareness of the problem of litter and removal of litter from the drainage system. National Works Agency - Collection of waste from waterways, especially gullies, to prevent waste from entering the marine environment. Ocean and Coastal Zone Council, Ministry of Foreign Affairs & Foreign Trade – its responsibility is to oversee the implementation of the Ocean and Coastal Zone Management Policy.
Legislations and Policies
National Solid Waste Management Authority Act (No. 27 of 2001; amended 2002) – Provides for the regulation and management of solid waste, to establish the National Solid Waste Management Authority and for matters connected therewith. It also provides for the protection and conservation of the country's natural resources as well as safeguard public health from pollution. National Solid Waste Management Authority Policy (2000) – This policy articulates the overall framework for the management of solid waste. Policy framework for the management of plastic packaging materials (short term strategy) – Developed in 2001; documents the recommendations for the management of plastic packaging materials. Maritime Areas Act (No. 25 of 1996)–Includes a section for controlling and reducing pollution from ships. Public Health Act (No. 22 of 1996) – The act includes provision for environmental health, waste management and pollution control. Natural Resource Conservation Authority Act (No. 9 of 1991) - This Act provides for the protection and conservation of the country's natural resources as well as safeguards public health from pollution. Makes regulations to ensure clean beaches and foreshore areas. Draft National Environmental Policy - To promote efforts, this will prevent or eliminate damages to the environment and stimulate the health and welfare of man to enrich their understanding of the ecological systems/natural resources. Draft National Sanitation Policy – To be approved by the Natural Resources Subcommittee then sent to the Cabinet for approval. Jamaica Coral Reef Action Plan - One of the aims of this Action Plan is the prevention and reduction of sources of marine pollution. Jamaica National Environmental Action Plan (JANEAP)-Identifies the major environmental issues recognized in Jamaica and is geared towards action in environmental protection. Actions outlined in JANEAP also aim to protect and preserve the marine environment and territorial waters (The Exclusive Economic Zone). Public Health Regulations – Regulates the collection, storage and disposal of waste. Solid Waste Management Policy – To improve management of Solid Waste, the National Solid Waste Management Act (2001) was an outcome of the National Solid Waste Management Authority Policy.

NGOs and Community Groups
Jamaica Environment Trust (JET) – operates Jamaica's largest environmental education program, the Schools Environment Programme, which has been in continuous operation since 1997. JET delivers a legal programme, providing legal advice to communities affected by environmental issues, and conducts campaigns to protect specific natural resources. They organize field trips, environmental events Also, coordinates the ICC in Jamaica.
Marine Litter Awareness Programs/ Activities
International Coastal Cleanup (ICC) -Removal and recording of data on the quantity and types of debris found at beaches across Jamaica. Plastic Separation Pilot Project - Aims to resolve Jamaica's problem of improper plastic disposal and recycling. It aims to investigate, while promoting, the separation of plastics in households. Public Education and Awareness - The promotion of proper waste disposal and waste reduction techniques through public education and awareness. Dissemination of information through television, radio and print ads; social media as well as through the distribution of flyers electronically. Social Development Commission (SDC) Community Outreach Programmes –Uses participatory processes to guide communities to effectively plan and develop strategies to achieve their desired future. Their approach to community planning is influenced by the sustainable development framework. It helps communities with the hosting of various expositions and sporting events that serve to engage the public on the matter of interest.

Saint Kitts and Nevis

Government Agencies and Departments
Department of Physical Planning and the Environment, Ministry of Sustainable Development – Regulates the development of land and buildings. They prevent, mitigate and/or reverse environmental degradation. Ministry of Health and the Environment –Responsible for the removal of garbage from beaches. Solid Waste Management Corporation – Responsible for waste collection and disposal. Nevis Solid Waste Management Authority – Agency responsible for the collection and disposal of domestic waste in Nevis.
Legislations and Policies
Development Control and Planning Act (No. 14 of 2000) - Provides for the protection of the environment and improvement of associated amenities with regard to land use planning and management. MARPOL 73/78 – Protects the health of the ocean and Caribbean people. National Conservation and Environmental Protection Act (No. 5 of 1987) – This Act provides for the establishment of a National Conservation Commission and an amendment provided for the establishment of a Department of the Environment which would manage the environment through the design and implementation of environmental strategies, policies etcetera. Preserve biodiversity of endemic species and their land and marine habitats. Public Health Act (No. 22 of 1969) - The Act is the main legislative instrument for managing environmental health issues in St. Kitts and Nevis. It mainly governs the maintenance of general sanitary conditions and cleanliness. St. George's Declaration of Principles for Environmental Sustainability in the OECS – Principle 10 relating to marine litter and toxic waste needs to be enforced. For example, toxic medical waste and garbage is regularly found on the shores of Nevis, traced to Antigua. Solid Waste Management Corporation Act (1996) - Provides for the management of solid waste in conformity with the best environmental practices. The Act provides the legislative framework for the storage, treatment and disposal of solid waste, in order to prevent environmental degradation. Section 28 (1a) of the Act, requires that no individual shall not deposit or knowingly cause the deposit of solid waste in or on land, beach, foreshore, marine waters or river banks. Water Courses and Water Works Ordinance (Cap. 185; 1956) - Regulates the supply of water to consumers, prevent waste, misuse and pollution of water and control sanitation of watersheds. Under this legislation, it is an offence to put any rubbish or offensive solid or liquid matter into a watercourse, or to pollute water flowing into or out of a watercourse.
NGOs and Community Groups
Caribbean Hotel & Tourism Association - Promotes tourism in the Caribbean and urges citizens to maintain clean environments through annual contests, meetings and incentive programmes (e.g. “Green Hotels”).
Marine Litter Awareness Programs/ Activities
Sandwatch Programme- Encourages young people to monitor beaches and marine environment. International Beach Clean-up Day - The ICC and National Beach Clean-ups are conducted to clean the coastlines of St. Kitts and Nevis as well as to provide the statistical data for the secondary school students School-Based Assessment for Geography and Social Studies. The St. Kitts Tourism Authority is also involved.

Saint Lucia

Government Agencies and Departments
Castries City Council – Responsible for the day to day management of the capital city including the regular cleaning of the small drains in the city area. Department of Environmental Health, Ministry of Health, Wellness, Human Services and Gender Relations – Regulates the country's waste management activities. Ministry of Communications, Works and Public Utilities – Cleans the storm drains and Castries River in Castries. Ministry of Sustainable Development, Energy, Science and Technology– Oversees environmental management in the island. Ministry of Tourism, Heritage and Creative Industries – Supervises the National Conservation Authority which clean communities daily and monitors several beaches. St. Lucia Solid Waste Management Authority – Collection of garbage island-wide and recycling programmes in schools.
Legislations and Policies
Coastal Zone Management Policy – Maintain the integrity and productivity of the coastal zone and resources therein. National Environmental Policy & National Environmental Management Strategy – Arrest and reverse the trends of environmental degradation and ensure that sound environmental management is fully integrated into the national development policy framework. Waste Management Act (No. 8 of 2004) – Addresses littering & illegal dumping of waste and any person found guilty of littering will be fined or imprisoned. Physical Planning Act (2001) – Regulation of physical developments and provision for environmental impact assessments. Fisheries Regulations (No. 9 of 1994) – Contains a provision for prohibition against pollution of aquatic environment. Litter Act (1993) – Establishes a penalty for littering.
NGOs and Community Groups
Caribbean Youth Environment Network – Coordinate the ICC, builds awareness and educates the public on proper disposal habits and conducts a recycling programme in secondary schools. St. Lucia National Trust (SLNT) – Established in 1975 under the Saint Lucia National Trust Act to conserve the natural and cultural heritage of St. Lucia. They also create and manage environmental protection areas and nature reserves.
Marine Litter Awareness Programs/ Activities
International Coastal Cleanup - The ICC which is conducted by the Caribbean Youth Environment Network in St. Lucia.

Saint Vincent and the Granadines

Government Agencies and Departments
Solid Waste Management Unit (SWMU) –Established in 1999, the SWMU is responsible for the collection and disposal of solid waste in the territory. It is governed by the St. Vincent and the Grenadines Waste Management Act and Regulations Act (No. 31 of 2000) and Solid Waste Regulations (No. 11 or 2005). It executes activities under the OECS Solid and Ship-generated Waste Management Project. Environmental Health Division, Ministry of Health, Wellness and the Environment –Promote sound environmental health practices including the provision of expenses associated with the removal of garbage and upkeep of public latrines and baths.Also to coordinate and implement local, regional and international activities relating to environmental conventions, agreements and protocols. Central Water and Sewerage Authority (CWSA) – Provides solid waste management services. Manages the SWMU.
Legislations and Policies
Dumping at Sea Act (No. 53 of 2002) – One must obtain a licence to deposit substances and sink marine vessels or structures. Management of Ship-Generated Solid Waste Act (No. 16 of 2002) – Provides the guidelines for the prevention of pollution be solid waste from ships. All crew must be trained on the proper disposal of solid wastes, have a proper solid waste management plan and record book. Persons breaching this law may be liable to an EC$ 500,000 fine or imprisonment of 1 year. The Waste Management Act (No. 31 of 2000) – Provides the regulations for waste management in St. Vincent and the Grenadines. Central Water and Sewerage Authority Act (1991)–Makes better provision for the conservation, control, appointment and use of water resources of Saint Vincent and the Grenadines and for the purposes incidental thereto and connected therewith. Litter Act (No. 15 of 1991) – Prohibits the littering of public places or private property and states that all buses, taxis, ships or boats must have sufficient receptacles. Environmental Health Services Act (No. 14 of 1991) – Through the Act, one has to ensure that their surroundings are clean. It also prohibits dumping in public places. Fisheries Act (No. 8 of 1986 amended by No. 32 of 1986 and No. 25 of 1989) – Prohibits the deposition of harmful waste into a marine reserve.
NGOs and Community Groups
Sustainable Grenadines Inc. – Promotes the conservation of the coastal and marine environment and sustainable livelihoods for the people in the Grenadine islands. Caribbean Youth Environment Network - Conducts clean ups and environmental awareness programmes.
Marine Litter Awareness Programs/ Activities
Sandwatch Programme - Encourages young people to monitor the beaches and marine environment. International Coastal Cleanup - which is conducted annually where the public is involved in the removal of marine litter is and it is quantified.

Suriname

Government Agencies and Departments
Department of Solid waste Collection and Disposal, Ministry of Public Works - Responsible for the collection and disposal of solid waste. Directorate Milieubeheer - Responsible for the management of crude waste, clearing of illegal dumping sites and maintaining public gardens. Ministry of Regional Development - Responsible for waste collection in the respective districts. National Institute for Environment and Development - Initiates the development of national and legal frameworks for environmental policy and management and also provides environmental awareness and education.
Legislations and Policies
Nature Preservation Law (1954 revised in 1992 and 1998) –Forms the basis for the establishment of nature reserves. Hindrance Act (1930, 1944 and 1972) - Address industrial pollution by permit requirements.
NGOs and Community Groups
University of Suriname - Responsible for environmental activities and conducts research. Pan American Health Organisation (PAHO) - Provides support on proper solid waste disposal and collection as well as environmental awareness. Foundation for Clean Suriname - Responsible for clean-ups and environmental projects.
Marine Litter Awareness Programs/ Activities
Cleanup the World Campaign - A global initiative which involves communities in the removal of refuse.

Trinidad and Tobago

Government Agencies and Departments
Chaguaramas Development Authority (CDA) – Responsible for the management, maintenance and beautification of beach facilities. Community-based Environmental Protection and Enhancement Programme (CEPEP),Ministry of Housing & Urban Development – Responsible for reducing the amount of refuse accumulated and deposited on the coastline and inland water bodies. Environmental Management Authority (EMA) – Mandated to develop and implement policies and programmes for the effective management and use of the environment according to the Environmental Management Act, including the Water Pollution Rules 2001. Responsible for taking all appropriate action for the prevention and control of pollution and conservation of the environment and actively participates in the ICC. Environmental Policy and Planning Division (EPPD), Ministry of the Environment and Water Resources – Responsible for facilitating sound environmental management through developing and monitoring and coordinating the implementation of national policies, programmes and obligations under the multilateral environmental agreements. Participates and sponsors in the annual ICC. Fisheries Division, Ministry of Food Production, Land and Marine Affairs – Responsible for assessment, management and conservation of the fisheries resources. Institute of Marine Affairs (IMA) – Conducts ecosystem and wildlife research regarding all aspects of marine affairs and formulate and implement specific projects or programmes. It is also a Regional Activity Centre for the LBS Protocol. Marine Resources and Fisheries Department, Tobago House of Assembly – The Marine Areas Unit of this department is responsible for management of marine resources in Tobago. Maritime Services Division, Ministry of Transport – Responsible for implementing the regulatory functions and administering the provisions of Primary Legislation. Also they control and prevent marine pollution from vessels through the detection of unsafe vessels, investigate shipping accidents, adoption and implementation of Maritime Conventions. Municipal Corporations – In the respective localities are tasked with the provision of several services including, maintenance of drains, public parks and community facilities, collecting garbage and overseeing public health and sanitation. They also perform regular clean-up operations on coastlines. Tourism Development Company (TDC) – A state enterprise mandated to develop and market the country's tourism product and improve the tourism sector. TDC actively participates and coordinates the ICC.
Legislations and Policies
National Solid Waste or Resource Management Policy (2012) – This is a 10 year strategy with an overall objective of achieving affordable, sustainable and socially acceptable integrated waste management of solid wastes (exclusive of liquid waste), including hazardous wastes, and substances, in the municipal, commercial and industrial waste streams, in a manner that is protective of human health and the environment. Beverage Containers Bill (2012) – Legislation that will institute a return deposit system for beverage containers that are sold in Trinidad & Tobago. Waste Management Rules (draft) (2008) – The draft rules seek to address the proper management of hazardous wastes by any person who generates, handles or disposes of any hazardous waste in the country. Water Pollution Rules (2007) - These Rules were implemented by the EMA with a primary goal of encouraging industries in Trinidad and Tobago to control, reduce and prevent the levels of water pollutants in their effluent (point-source discharges), thereby improving the overall quality of inland and coastal water resources. National Environmental Policy (2006) – Umbrella policy that provides the overarching environmental policy directives for Trinidad and Tobago. The goal is environmentally sustainable development or a balance between economic development and environmental use that neither compromises, but rather enhances

the quality of life of current and future generations.
Certificate of Environmental Clearance (2001) & Environmental Impact Assessment (EIA) - These are a suite of legislation that guide the construction and operation of certain types of small and large-scale developmental projects which may have both positive and negative environmental effects by defining their conditions for operation. If potential significant environmental and human health impacts have been identified, then an Environmental Impact Assessment (EIA) is conducted to determine the environmental, social and economic consequences. Provisions are made if marine pollution is probable.
Environmental Management Act (2000) - The goal is to ensure the protection, conservation, enhancement and wise use of the environment of Trinidad and Tobago and designating environmentally sensitive areas (ESA). The EM Act established the Environmental Management Authority (EMA) and also provides for an Environmental Trust Fund and the establishment of a tribunal, known as the Environmental Commission.
Municipal Corporation Act (1990) – The Act regulates the activity at the local government level to administer the functions under the Litter and Public Health Acts.
Pesticides and Toxic Chemicals Act (1979) and Regulations – This Act regulates pesticides and toxic chemicals and defines them as a "controlled product". Pesticides are to be registered and must be safe, not constitute a hazard to humans, wildlife, soil, air, water or be so persistent that it may result in long lasting pollution. Reference is made to contaminants of the marine environment.
Litter Act (1973) amended by Act No. 10 of 1981 and the Public Health Act (1950) – Governs solid waste disposal by hotels, restaurants, private businesses and the general public. It prohibits littering in public places and govern solid waste management in the country, including marine litter, with related regulations.
Marine Areas Preservation and Enhancement Act (No.1 of 1970) - The Act has provisions for designating specific marine areas as a restricted area to facilitate the preservation and enhancement of the natural beauty, the protection of the flora and fauna in respect of such areas, the promotion of the enjoyment of the public and the promotion of scientific study and research.
National Wetland Policies - The Wetland Policy inter alia intends to promote awareness and understanding of the wetland resources in Trinidad and Tobago and actively encourage participation of landowners, non-governmental organisations and institutions in wetland conservation. There is no specific policy regarding marine litter within this policy.
Oil Pollution of Territorial Waters Act - An Act to make provisions against the discharge or escape of oil into the waters of Trinidad and Tobago. There is a specific policy with reference to oil as a marine pollutant within this Act.
Water and Sewerage Act – This Act relates to the development and control of water supply and sewerage facilities in Trinidad and Tobago and matters of sanitation, the promotion of the conservation and proper use of water resources, and the establishment of an Authority to administer these functions. It refers to inland watercourses such as groundwater, rivers, streams, dykes, drains etc. Two areas are protected under this Act in so far as potentially polluting activities are prohibited within the designated area.

NGOs and Community Groups

Buccoo Reef Trust – To assist in the responsible development of Tobago's marine tourism sector and in the conservation of its natural resources. One of its aims is marine conservation through research, education and outreach programmes, restoration and the provision of scientific, technical and human resources for marine park management. This includes marine litter management.
Caribbean Network for Integrated Rural Development (CNIRD) – Coordinates the ICC as part of its Sustainable Ecological Management section in conjunction with the National Planning Committee (NPC).
Caribbean Youth Environment Network (CYEN) - Conducts recycling programmes and clean-up activities.
Heroes Foundation –Non-profit organisation established to promote youth development in the country and coordinates schools across the country to participate in the annual ICC.
Nature Seekers– To conserve and protect natural organisms by developing the natural and cultural resources in the Matura community in Trinidad. The group cleans the Matura beach to facilitate successful nesting of leatherback turtles. Waste glass is recycled within the Matura community and modified into crafts. Every year, during turtle nesting period, there is a turtle viewing programme where locals and visitors are allowed to see the turtles and learn more about the endangered species.

St. James Empowerment Foundation –Proposed a project for the implementation and use of bio-engineering techniques (environmental, drainage and landscaping) to reduce the incidence of pollution in the rivers and waterways that lead into the Gulf of Paria from land-based sources in the St. James area. It is a community-managed project with the aim to engage, educate and build capacity via the training of persons in the techniques and effective garbage collection.
Yacht Services Association of Trinidad and Tobago (YSATT) – Coordination of an annual coastal clean-up day to coincide with the ICC, provides assistance in the clean-up of oil spills, establishment of a Marine Environment Fund to address environmental issues and encourages proper waste disposal and/or recycling facilities for garbage, oil, glass and batteries by all mariners.

Marine Litter Awareness Programs/ Activities

International Coastal Cleanup (ICC) - The main objective of the ICC is to engage citizens to remove trash and debris from beaches and waterways, identify the sources of debris and change the behavioural patterns that contribute to pollution.
Project Tomorrow - 'Project Tomorrow' is a 6-month national clean-up exercise funded by the Green Fund, National Environmental Fund of Trinidad and Tobago. The project is under the directive of the EMA and is the precursor to the implementation of the Beverage Containers Bill in Trinidad and Tobago. This Bill is intended to encourage the suitable disposal of beverage receptacles and thus avoid or reduce their adverse environmental effects both on land and in waterways. The main objectives of Project Tomorrow are:

- To remove the existing beverage containers in the environment prior to the introduction of the bottle deposit and refund system.
- To inform the public, through an aggressive public education and awareness campaign and to solicit citizens' participation and cooperation in maintaining a litter-free environment.
- To analyse and collate environmental data with the use of Geographic Information Systems (GIS), and guide future waste management policy.

The Plastikeep Project - A project created by the Greenlight Network and was initiated to treat the growing problem of indiscriminate disposal of plastics in the environment. Through the Plastikeep Project, plastics are collected and disposed of in an environmentally friendly manner and converted into a useful resource. Through the project, several recycling bins have been installed at strategic locations across the north-western peninsula of Trinidad, a recycling system has been established and the public has been educated on plastic recycling.

United States

Government Agencies and Departments
Federal institutions addressing marine debris issues in the Caribbean region (including Puerto Rico &U.S. Virgin Islands): U.S. Environmental Protection Agency (EPA) Office of Water (OW) – It restores and maintains oceans and aquatic ecosystems to protect human health and provides a healthy habitat for wildlife. It is also responsible for the implementation of various legislation pertaining to marine pollution (http://www2.epa.gov/aboutepa/about-office-water). Office of Wastewater Management (OWM) – Manages several programmes which enhance the well-being of the nation's waters and watersheds. Through its programs and initiatives, it supports the Federal Water Pollution Control Act by promoting effective and responsible water use, treatment, disposal and management and by encouraging the protection and restoration of watersheds. This office also funded the Ocean Conservancy's National Marine Debris Monitoring Program (2001-2006) and supports the International Coastal Cleanup Campaign. Office of Wetlands, Oceans and Watersheds (OWOW) - Aims to protect the marine and fresh water ecosystems of the United States including the regulation and monitoring of ocean dumping, managing dredged materials, and reducing marine debris. It also controls polluted runoff and restores impaired waters. Office of Solid Waste and Emergency Response (OSWER) - Provides policy, guidance and direction for the Agency's emergency response and waste programmes. Also develops guidelines for the land disposal of hazardous waste and underground storage tanks and provides technical assistance to the government to establish safe practices in waste management (http://www2.epa.gov/aboutepa/about-office-solid-waste-and-emergency-response-oswer). Office of Resource Conservation and Recovery (ORCR) - Protects human health and the environment by ensuring responsible national management of hazardous and non-hazardous waste. It uses conservation through waste minimisation techniques, enforcing regulations to manage disposal problems and clean up polluted areas. National Oceanic & Atmospheric Administration (NOAA) (Dept. of Commerce) National Ocean Service (NOS) Marine Debris Division, Office of Response and Restoration – Provides comprehensive solutions to environmental hazards including marine debris and manages NOAA's Marine Debris Program and supports Ocean Conservancy's International Coastal Cleanup (http://response.restoration.noaa.gov/). Office of Ocean and Coastal Resource Management – Oversees many programmes that assist states in managing, preserving and developing their marine and coastal resources. Some programmes include conservation of coral reefs, have a system of National Estuarine Research Reserves, implement the National Coastal Zone Management Programme and develop a system of marine Protected Areas (MPAs) (http://coastalmanagement.noaa.gov/about/welcome.html). Office of National Marine Sanctuaries – Acts as a trustee for a network of 14 MPAs in America. They also manage and protect these sanctuaries to protect the resources (http://sanctuaries.noaa.gov/management/welcome.html). National Marine Fisheries Service (NMFS) – It is a division of the Department of Commerce which conducts research and outreach efforts related to marine debris, and debris removal activities – NW Hawaiian Islands (NWHI) http://www.nmfs.noaa.gov/aboutus.htm Office of Habitat Conservation Coral Reef Ecosystem Division – NOAA/Oceanic & Atmospheric Research (OAR) & Sea Grant Program. Minerals Management Service (MMS) (Dept. of the Interior)– Works in partnership with the petroleum industry to conduct marine debris education training for personnel working on offshore platforms, mobile drilling rigs, and other facilities in the Gulf of Mexico (http://www.eoearth.org/view/article/154631/).

U.S. Army Corps of Engineers– The Corps works in projects to demonstrate the effects of pollution on our waterways, including marine debris sources and flow patterns.
U.S. Coast Guard (Dept. of Homeland Security, Environmental Standards Division) – Develop USCG's policies for marine debris, participate in the development of interagency policy, participation at IMO, and participates in and supports marine debris removal projects in the NWHI.
U.S. Department of State – Representative to the United Nations and works on regional derelict fishing gear issues.
U.S. Navy (Dept. of Defense) – Participates in and supports debris removal activities in NWHI.

Legislation and Policies

Marine Plastic Pollution Research and Control Act (MPPRCA) – The Environmental Protection Agency must consult the NOAA to the study the adverse effects of improper disposal of plastics on the environment and waste disposal. The MPPRCA gives EPA, NOAA and the US Coast Guard the authority to develop volunteer groups to conduct feasibility study on floating debris.
Act to Prevent Pollution from Ships (APPS) – Amended in 2000, this law gives implements the Protocol of 1978 relating to the International Convention for the Prevention of pollution from Ships 1973.The U.S. Coast Guard has the authority to develop regulations and enforce MARPOL Annex V, including the discharge of garbage and plastics from ships.
Federal Water Pollution Control Act Amendments of 1972 or the Clean Water Act –Amended in 1977, this law became commonly known as the Clean Water Act established the basic structure for regulating discharges of pollutants into U.S. waters. It gave the U.S. Environmental Protection Agency (EPA) the authority to implement pollution control programs such as setting wastewater standards for industry and for controlling non-point pollution. The Clean Water Act also continued requirements to set water quality standards for all contaminants in surface waters. The Act prevents any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions.
Shore Protection Act of 1994 – relates to the transportation of municipal waste and commercial waste and provides the control of those wastes from depositing into the coastal waters. The EPA and the U.S. Coast Guard is responsible for governing regulations in relation minimising the disposal of the waste.
Beaches Environmental Assessment and Coastal Health Act of 2000 (B.E.A.C.H. Act) – This Act reduces the risk of disease to users of the coastal waters. It also provides the Administrator provide grants to develop and implement programmes for monitoring the recreational waters which are used by the public. The public is notified when contamination levelsmake the beach water unsafe for swimming, surfing, and other activities.
Coastal Zone Management Act (CZMA) – Established in 1972 this act regulates land-based discharges of pollution and established a voluntary partnership between the federal government and U.S. coastal states and territories to preserve, protect, develop, and, where possible, restore and enhance the resources of the nation's coastal zone for this and succeeding generations.
Marine Protection, Research and Sanctuaries Act (MPRSA) – also known as the Ocean Dumping Act prohibits the transporting and dumping of materials into the ocean waters which would endanger or cause harm to the marine environment and to human health Established in 1972 gives the U.S. Coast Guard a statutory role for MARPOL Annex V and the London Convention in regulating the dumping of materials into ocean waters. This legislation distinguishes between ships normal operational discharges (regulated in MARPOL) and dumping of wastes from vessels (covered by the London Convention). The USCG cooperates with the EPA on these issues.
Coral Reef Conservation Act of 2000 – This Act seeks to maintain and preserve the coral reef ecosystem and promote the management of the coral reef ecosystem. It also authorizes that NOAA is to provide assistance to States (any State/Territory/Possession of the U.S. that contains a coral reef ecosystem within its seaward boundaries) in removing abandoned fishing gear, marine debris, and abandoned vessels from coral reefs to conserve living marine resources as an activity to conserve coral reefs and coral reef ecosystems.

NGOs and Community Groups
Ocean Conservancy (OC) – OC is the U.S. leading marine conservation organisation that has spearheaded marine debris policy, research and prevention programming for over 20 years, leading a global effort through the International Coastal Cleanup through numerous regional and national campaigns and programmes. Keep America Beautiful (KAB) – KAB is the U.S. largest volunteer-based community action organisation dedicated to litter and graffiti prevention, beautification, waste minimisation and community improvement.
Marine Litter Awareness Programs/ Activities
The Ocean Conservancy coordinates the global International Coastal Cleanup (ICC), which is conducted in 28 countries in the Caribbean region. The ICC is an annual event which has both a public awareness component as well as a data collection exercise to assess the amount, types and sources of marine debris found along beaches and waterways.

Appendix A

Regional Action Plan for Marine Litter Management
National and Regional Priority Setting Template

1.	Legislation, Policies & Enforcement	Issue Priority National Level	Issue Priority Regional level	Costs/Source
Action 1*	Evaluate existing legislation, regulations and enforcement practices that deal with marine litter and strengthen or enact new legislation/regulations as appropriate.	HIGH	LOW	Determined at the National Level
Action 2	Establish and/or enhance government sponsored "litter wardens or patrols" in coordination/collaboration with municipal police/security forces and establish the infrastructure for compliance.	HIGH	LOW	Determined at National Level
Action 3*	Implementation of the 2012 Revised MARPOL Annex V and Special Area status for the Wider Caribbean Region.	MEDIUM	HIGH	Subject to Country Ratification
Action 4*	Expand ratification and promote effective implementation of MARPOL Annex V and LBS Protocol of the Cartagena Convention by all Caribbean states.	HIGH	HIGH	No cost
Action 5	Ensure that debris and ecosystem health issues are integrated into emergency management plans and procedures.	HIGH	MEDIUM	Determined at the National and Regional Level
Action 6*	Establish a clearinghouse of information on effective strategies and practices for enforcement of waste management practices.	HIGH	MEDIUM	US$11,500 pa (Regional)
Action 7*	Mobilise resources for improving the capacity for enforcement of appropriate integrated waste management practices.	HIGH	LOW	No cost
2.	**Institutional Frameworks and Stakeholder Engagement**	**Issue Priority National Level**	**Issue Priority Regional level**	**Costs/Source**
Action 1	Develop and implement a model of a national management plan for marine litter.	HIGH	LOW	Determined at National Level
Action 2	Establish the infrastructure for compliance with existing marine litter management legislation at the national and community levels.	HIGH	LOW	Determined at National Level
Action 3	Establish a Caribbean Marine Litter Regional Working Group to coordinate and advise on appropriate actions for marine litter management.	LOW	MEDIUM	No cost
Action 4	Provide training for judiciary/magistrates/ enforcement officers and sensitisation of politicians on marine litter issues.	HIGH	LOW	US$34,500 per Training Course
Action 5	Present information on the marine litter issue at key environmental meetings & conferences in the Region.	LOW	MEDIUM	No cost

3.	Monitoring Programmes & Research	Issue Priority National Level	Issue Priority Regional level	Costs/Source
Action 1*	Design and implement a strategy to develop national marine litter monitoring pilot projects in the WCR, including standardised methods for data collection and reporting within the framework of the UNEP Regional Seas Global Marine Litter Monitoring Guidelines.	HIGH	HIGH	US$5,750 per pilot project
Action 2*	Develop a regional, web-based database as a clearinghouse for marine litter information and research.	LOW	HIGH	US$23,000
Action 3	Engage all stakeholders at community (local), national and regional levels in monitoring and research efforts.	MEDIUM	MEDIUM	No cost
Action 4	Solicit information/research from fisheries, wildlife, and other resource management agencies and programmes throughout the region on the environmental and economic impacts of marine litter on wildlife and ecosystems.	LOW	HIGH	US$23,000
Action 5	Conduct an assessment of the economic impacts of marine litter, including costs for clean-up efforts, maintenance of recreational beach areas, costs for lost or abandoned fishing gear and the costs associated with loss of recreational uses of impacted coastal areas.	LOW	HIGH	US$86,250
Action 6	Conduct a GAP analysis of overlap of high density marine litter areas with areas of high sensitivity (endangered species, key habitats, etc.) in order to prioritise clean-up and mitigation efforts.	HIGH	MEDIUM	US$57,500
Action 7*	Review and disseminate research on the identification, removal and disposal of marine litter to enable more effective recovery efforts and disposal of marine litter.	MEDIUM	MEDIUM	US$23,000
4.	**Education & Outreach**	**Issue Priority National Level**	**Issue Priority Regional level**	**Costs/Source**
Action 1*	Develop and implement community-based public education campaigns for marine litter prevention, including specialised marine litter prevention programmes for key user-groups and stakeholders.	HIGH	HIGH	US$23,000 for Design of Strategy
Action 2	Develop a regional campaign for the International Coastal Cleanup.	LOW	MEDIUM	US$11,500 pa
Action 3	Incorporate cultural concepts, including use of popular culture icons in outreach programming to promote behavioural change.	LOW	MEDIUM	Determined at National Level
Action 4	Incorporate marine litter issues into other community calendar and environmental events.	MEDIUM	MEDIUM	No cost
Action 5*	Integrate issues of marine litter into formal educational curricula and programming.	HIGH	HIGH	No cost
Action 6	Collate best management practices, case studies and lessons learnt on marine litter management at the community and national levels and communicate these with UNEP CAR/RCU for regional compilation and dissemination.	LOW	HIGH	Included in clearinghouse costs

5.	Solid Waste Management Strategies	Issue Priority National Level	Issue Priority Regional level	Costs/Source
Action 1	Maintain/develop specialised marine litter waste management strategies for public events (either as a separate strategy or part of an existing waste management strategy).	HIGH	LOW	No cost
Action 2	Research BMP's for waste management practices in the hotel, restaurant and marine transport industries and strengthen collaboration with the tourism sector for sharing of best practices and lessons learned.	MEDIUM	LOW	US$11,500 (Regional Study)
Action 3*	Develop and promote activities for national/regional waste minimisation.	HIGH	HIGH	Determined at National Level
Action 4	Identify/promote international environmental certification programmes which include waste management and minimisation.	MEDIUM	LOW	Determined at National Level
Action 5	Maintain/develop specialised waste management strategies for marine litter problems associated with natural disasters.	HIGH	LOW	Determined at National Level
Action 6*	Improve Port Reception Facilities to effectively manage ship generated waste.	HIGH	LOW	Determined at National Level

*** Indicates an Action that is specifically reflected in the Honolulu Strategy (2011)**

Appendix B

International and Regional Stakeholders

INSTITUTION	BRIEF DESCRIPTION
Caribbean Alliance for Sustainable Tourism (CAST)	CAST is a non-profit organisation formed by members of the Caribbean Hotel Association in 1997 to promote responsible environmental and social management of natural and heritage resources within the hotel and tourism sector. The strategic focus of CAST includes sustainable tourism certification and standards development and access to environmental management tools for best practice resources – guides, manuals, videos and DVDs. (http://www.caribbeanhotelandtourism.com/CAST.php)
Caribbean Public Health Agency (CARPHA)	The Caribbean's regional public health institution was established in July 2011 by the Inter-governmental Agreement by CARICOM Member States. CARPHA is the combined body of five (5) institutions. These are the Caribbean Environmental Health Institute (CEHI), Caribbean Epidemiology Centre (CAREC), The Caribbean Food and Nutrition Institute (CFNI), The Caribbean Health Research Council (CHRC) and the Caribbean Regional Drug Testing Laboratory (CRDTL). The Agency has a collective responsibility to deal with natural disasters in terms of emergency responses, surveillance and management of communicable and non-communicable diseases, prevention and surveillance of injuries, crime and violence, as well as contribute to global health agreements. (http://carepha.org/)
Caribbean Hotel & Tourism Association (CHTA)	Previously called the Caribbean Hotel Association (CHA), the CHTA was formed in 1962 and brings together Members of the Caribbean hospitality industry "to optimise the full potential of the Caribbean hotel and tourism industry by serving member needs and building partnerships." The impacts of marine litter on the health and aesthetics of the region's beaches and ocean resources are critical to the economic sustainability of this industry. (https://www.caribbeanhotelandtourism.com/)
Caribbean Network for Integrated Rural Development (CNIRD)	CNIRD, founded in 1988, is an independent regional NGO which focuses on networking with national and sub-regional intermediaries in the Caribbean. Its' mission is to be the main organisation which promotes sustainable development in the region, through involving communities and using pertinent technology to improve quality of life, while maintaining the traditions and cultures of the people. The primary areas addressed by CNIRD are: sustainable communities and livelihoods, human development, sustainable ecological management and promotion of culture and heritage. A representative from CNIRD has been named by Ocean Conservancy as the national coordinator in Trinidad and Tobago for the International Coastal Cleanup(ICC) and coordinates their annual beach clean-up activities, collaborating with a host of government and NGO partners. (http://cnirdregional.org/)
Caribbean Shipping Association (CSA)	The CSA, established in 1971, aims to facilitate development of an efficient, viable Caribbean shipping industry. The CSA's mission is "to promote and foster the highest quality service to the maritime industry through training development; working with all agencies, groups and other associations for the benefit and development of its members and the peoples of the Caribbean region." The CSA supports environmental programme training opportunities for its Members at its annual meetings and conferences and could be involved in renewed activities to address marine litter issues associated with ship operations and waste management. (http://www.caribbeanshipping.org/)

INSTITUTION	BRIEF DESCRIPTION
Caribbean Tourism Organization (CTO)	The Caribbean Tourism Organization (CTO) was established in 1989, as a merger of the Caribbean Tourism Association and the Caribbean Tourism Research and Development Center. The CTO's main objective "is the development of sustainable tourism for the economic and social benefit of Caribbean people." The environmental issues associated with marine litter and solid waste management play a substantial role the foundation of the tourism economies of the Region. (http://www.onecaribbean.org/)
Caribbean Youth Environment Network (CYEN)	The Caribbean Youth Environment Network (CYEN) is a regional organisation whose membership comprises youth groups and individual youth. It aims to promote and empower youth to take positive action on issues related to the environment and sustainable development. The group is a non-profit and non-governmental charitable body which has members and affiliates in eighteen (18) Caribbean territories. The organisation promotes education and training, Caribbean integration and community empowerment as tools to develop an ethic amongst young people that assists in the conservation and protection of natural resources within the Wider Caribbean Region. Since its creation in 1992, CYEN has coordinated or participated in a number of activities and projects at the national, regional and international levels. CYEN is also actively involved in advocacy as well as environmental education and public awareness programmes. CYEN chapters in Barbados, Dominica, Guyana, and Saint Lucia have been designated by the Ocean Conservancy as national coordinators for the International Coastal Cleanup (ICC) in their respective countries. As ICC Coordinators, they coordinate with government agencies, local community groups, schools, NGOs, and other partners to conduct this annual event that focuses on data collection, education and awareness of marine litter issues and impacts, and source reduction. (www.cyen.org)
Cruise Lines International Association, Inc. (CLIA)	CLIA, formerly the International Council of Cruise Lines (ICCL), is the world's largest cruise industry trade association. Two of its primary roles are to "actively protect the marine environment with minimal impact on the ocean, marine life and destinations." and "monitor and participate actively in the development of domestic and international maritime policies and regulations." To minimise environmental impact, they have wastewater treatment systems that can rival land-based ones. Environmental programmes are implemented and these ensure compliance with international regulations. They also encourage passengers to partake in on-board resource conservation programmes which include recycling trash. (http://cruising.org/)
Florida-Caribbean Cruise Association (FCCA)	The FCCA is a not-for-profit trade organisation representing 15 Member Lines operating over 100 vessels in Florida, Caribbean, and Latin American waters. It was formed in 1972, with a mandate to provide a forum for discussion on cruise operations, tourism development, safety, security and other cruise industry issues. FCCA conducts an Outreach Programme which incorporates environmental projects such as, beach and road clean-ups, hurricane clean-ups and community projects. At the request of the destination partner, the FCCA can conduct beach clean-ups. (http://www.f-cca.com/)

INSTITUTION	BRIEF DESCRIPTION
Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA)	The GPA is a sector of UNEP which was established in 1995 and addresses the impacts of land-based sources and activities on coastal and marine environments and human well-being. Its goal is to prevent, reduce, control or eliminate and/or recover from the impacts of the degradation of the marine environment from land-based activities by facilitating the duty of States to preserve and protect the marine environment. In the Wider Caribbean, the Protocol on the Prevention, Reduction and Control of Land-based Sources and Activities adopted in 1999 in Oranjestad, Aruba was the first agreement of its kind to be established following the development of the GPA. This protocol, which falls within the legal framework of the Cartagena Convention, establishes the platform for the development of a regional strategy for addressing marine litter sources, impacts and interventions. (http://www.gpa.unep.org/)
Intergovernmental Oceanographic Commission (IOC)	The IOC is a branch of UNESCO founded in 1960 based on the recognition that oceans cover about 70% of the Earth's surface. It is responsible for ocean science, observatories, data and information exchange and services. Its mission is "to promote international co-operation and to coordinate programmes in research, services and capacity building to learn more about the nature and resources of the oceans and coastal areas, and to apply this knowledge to improved management, sustainable development and protection of the marine environment and the decision-making processes of States." (http://ioc-unesco.org/)
IOCARIBE Sub-Commission:	The IOCARIBE is a regional subsidiary body of the IOC which governs the Caribbean and adjacent regions. It was created in 1982 and is responsible for the promotion, development and co-ordination of IOC marine scientific research programmes, the ocean services, and related activities, including capacity development at a regional level for the benefit of its Member States. Resulting from the 1993 declaration of the Wider Caribbean as a "Special Area" under MARPOL, it was determined that a coordinated approach needed to be developed between governments, international organisations, NGO's and others to address marine debris problems in the Caribbean. The "Marine Debris Waste Management Action Plan" was developed collaboratively by the IOCARIBE, UNEP, several NGO's and the World Bank. (http://iocaribe.ioc-unesco.org/)
Organisation of Eastern Caribbean States (OECS)	The OECS, founded in 1981, is a regional institution which has a mission to contribute to the sustainable development of the Member States by assisting them with policy and programme formulation and execution in terms of regional and international issues, and by the facilitation of bilateral and multilateral co-operation. In 1990, OECS though its Environment and Sustainable Development Unit (ESDU) implemented the project – Solid and Ship Generated Waste Management Project – to protect the environmental integrity of coastal and ecosystems in the Caribbean Sea by facilitating compliance with the "Special Area" designation related to MARPOL Annex V. The work of OECS in marine litter is consistent with the revised Saint George's Declaration of 2006 (SGD) of Principles for Environmental Sustainability in the OECS and Goal 3 on the Productivity of Ecosystems and Natural Resources. The nine OECS Member States include: Anguilla, Antigua & Barbuda, British Virgin Islands, Dominica, Grenada, Montserrat, Saint Lucia, Saint Kitts & Nevis, and Saint Vincent & the Grenadines. (http://www.oecs.org/)
Caribbean Tourism Organization (CTO)	The Caribbean Tourism Organization (CTO) was established in 1989, as a merger of the Caribbean Tourism Association and the Caribbean Tourism Research and Development Center. The CTO's main objective "is the development of sustainable tourism for the economic and social benefit of Caribbean people." The environmental issues associated with marine litter and solid waste management play a substantial role the foundation of the tourism economies of the Region. (http://www.onecaribbean.org/)

INSTITUTION	BRIEF DESCRIPTION
Caribbean Youth Environment Network (CYEN)	The Caribbean Youth Environment Network (CYEN) is a regional organisation whose membership comprises youth groups and individual youth. It aims to promote and empower youth to take positive action on issues related to the environment and sustainable development. The group is a non-profit and non-governmental charitable body which has members and affiliates in eighteen (18) Caribbean territories. The organisation promotes education and training, Caribbean integration and community empowerment as tools to develop an ethic amongst young people that assists in the conservation and protection of natural resources within the Wider Caribbean Region. Since its creation in 1992, CYEN has coordinated or participated in a number of activities and projects at the national, regional and international levels. CYEN is also actively involved in advocacy as well as environmental education and public awareness programmes. CYEN chapters in Barbados, Dominica, Guyana, and Saint Lucia have been designated by the Ocean Conservancy as national coordinators for the International Coastal Cleanup (ICC) in their respective countries. As ICC Coordinators, they coordinate with government agencies, local community groups, schools, NGOs, and other partners to conduct this annual event that focuses on data collection, education and awareness of marine litter issues and impacts, and source reduction. (www.cyen.org)
Cruise Lines International Association, Inc. (CLIA)	CLIA, formerly the International Council of Cruise Lines (ICCL), is the world's largest cruise industry trade association. Two of its primary roles are to "actively protect the marine environment with minimal impact on the ocean, marine life and destinations." and "monitor and participate actively in the development of domestic and international maritime policies and regulations." To minimise environmental impact, they have wastewater treatment systems that can rival land-based ones. Environmental programmes are implemented and these ensure compliance with international regulations. They also encourage passengers to partake in on-board resource conservation programmes which include recycling trash. (http://cruising.org/)
Florida-Caribbean Cruise Association (FCCA)	The FCCA is a not-for-profit trade organisation representing 15 Member Lines operating over 100 vessels in Florida, Caribbean, and Latin American waters. It was formed in 1972, with a mandate to provide a forum for discussion on cruise operations, tourism development, safety, security and other cruise industry issues. FCCA conducts an Outreach Programme which incorporates environmental projects such as, beach and road clean-ups, hurricane clean-ups and community projects. At the request of the destination partner, the FCCA can conduct beach clean-ups. (http://www.f-cca.com/)
Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA)	The GPA is a sector of UNEP which was established in 1995 and addresses the impacts of land-based sources and activities on coastal and marine environments and human well-being. Its goal is to prevent, reduce, control or eliminate and/or recover from the impacts of the degradation of the marine environment from land-based activities by facilitating the duty of States to preserve and protect the marine environment. In the Wider Caribbean, the Protocol on the Prevention, Reduction and Control of Land-based Sources and Activities adopted in 1999 in Oranjestad, Aruba was the first agreement of its kind to be established following the development of the GPA. This protocol, which falls within the legal framework of the Cartagena Convention, establishes the platform for the development of a regional strategy for addressing marine litter sources, impacts and interventions. (http://www.gpa.unep.org/)
Intergovernmental Oceanographic Commission (IOC)	The IOC is a branch of UNESCO founded in 1960 based on the recognition that oceans cover about 70% of the Earth's surface. It is responsible for ocean science, observatories, data and information exchange and services. Its mission is "to promote international cooperation and to coordinate programmes in research, services and capacity building to learn more about the nature and resources of the oceans and coastal areas, and to apply this knowledge to improved management, sustainable development and protection of the marine environment and the decision-making processes of States." (http://ioc-unesco.org/)

INSTITUTION	BRIEF DESCRIPTION
IOCARIBE Sub-Commission:	The IOCARIBE is a regional subsidiary body of the IOC which governs the Caribbean and adjacent regions. It was created in 1982 and is responsible for the promotion, development and co-ordination of IOC marine scientific research programmes, the ocean services, and related activities, including capacity development at a regional level for the benefit of its Member States. Resulting from the 1993 declaration of the Wider Caribbean as a "Special Area" under MARPOL, it was determined that a coordinated approach needed to be developed between governments, international organisations, NGO's and others to address marine debris problems in the Caribbean. The "Marine Debris Waste Management Action Plan" was developed collaboratively by the IOCARIBE, UNEP, several NGO's and the World Bank. (http://iocaribe.ioc-unesco.org/)
Organisation of Eastern Caribbean States (OECS)	The OECS, founded in 1981, is a regional institution which has a mission to contribute to the sustainable development of the Member States by assisting them with policy and programme formulation and execution in terms of regional and international issues, and by the facilitation of bilateral and multilateral co-operation. In 1990, OECS though its Environment and Sustainable Development Unit (ESDU) implemented the project – Solid and Ship Generated Waste Management Project – to protect the environmental integrity of coastal and ecosystems in the Caribbean Sea by facilitating compliance with the "Special Area" designation related to MARPOL Annex V. The work of OECS in marine litter is consistent with the revised Saint George's Declaration of 2006 (SGD) of Principles for Environmental Sustainability in the OECS and Goal 3 on the Productivity of Ecosystems and Natural Resources. The nine OECS Member States include: Anguilla, Antigua & Barbuda, British Virgin Islands, Dominica, Grenada, Montserrat, Saint Lucia, Saint Kitts & Nevis, and Saint Vincent & the Grenadines. (http://www.oecs.org/)
United Nations Development Programme (UNDP)	The UNDP is an organisation, created in 1966, which advocates for change and connecting countries to resources to assist with the development of UN Member States. It works to help countries to achieve the Millennium Development Goals (MDGs) and to build and share tangible solutions to the various development challenges which they may face, including democratic governance, poverty reduction and achievement of the MDGs, crisis prevention and recovery, energy and the environment and HIV/AIDS. With respect to energy and the environment for sustainable development, the UNDP supports the sustainable use of marine, coastal and freshwater resources and improved access to water supply and sanitation services. (http://www.undp.org/)
United Nations Environment Programme/Caribbean Environment Programme (UNEP-CEP)	UNEP/CEP is one of the Regional Seas Programmes administered by UNEP which was initiated in 1976 by UNEP and ECLAC (Economic Commission for Latin America and the Caribbean) at the request of the governments of the Wider Caribbean Region. It is managed by and for the countries of the Wider Caribbean Region through the Caribbean Action Plan (1981) which outlines the regional environmental challenges. The Action Plan led to the 1983 adoption of the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention). The Cartagena Convention provides the only legal framework for marine litter management the Wider Caribbean Region. There are three protocols under the Convention which deal with specific environmental issues (oil spills, specially protected areas and wildlife and land-based sources of marine pollution). CEP also provides the programmatic framework for the Convention. The LBS Protocol, a protocol concerning marine litter management from land-based sources and activities, was adopted in 1999 and is legally-binding. The Caribbean Regional Co-ordinating Unit (CAR/RCU) was created in1986 and is the Secretariat to the CEP. It has three main sub-programmes which are: the Assessment and Management of Environment Pollution (AMEP); Specially Protected Areas and Wildlife (SPAW); and Communication, Education, Training and Awareness (CETA). Activities under CEP are also in accordance with the Barbados Programme of Action (BPoA), Mauritius Strategy of Implementation (MSI), which are for Small Island Developing States (SIDS), and the Johannesburg Programme of Implementation. (http://www.cep.unep.org/)

Appendix C

International and Regional Treaties and Conventions for the Management of Marine Litter in the Wider Caribbean Region

INSTITUTION	BRIEF DESCRIPTION
Basel Convention – Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal	It was adopted in Basel, Switzerland in 1989 and enforced in 1992. There are currently 180Parties to the Convention. The main objective of the Basel Convention is 'to protect human health and the environment against the effects of hazardous wastes.' It was created after the realisation that developed countries were dumping hazardous wastes into the waters of developing countries. It aims to reduce the production and toxicity of hazardous wastes, promote environmentally sound management at the source, restrict transboundary movements of hazardous wastes and provide regulations for these movements. The Convention provides for the creation of regional or sub-regional centres for training and technology-transfer with respect to the management of hazardous and other wastes and also waste minimisation. (http://www.basel.int/)
Cartagena Convention – Cartagena Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region	Adopted in Cartagena, Colombia in 1983 and enforced in 1986, the Cartagena Convention is specific to the Wider Caribbean Region (WCR) and is the only legally binding treaty in the WCR as well. There are 26 Parties out of the 28 countries in the WCR. It is a legal commitment which requires the Parties to adopt measures to prevent, reduce and control pollution from different activities. The main objective is to reduce pollution through the establishment of restrictions and/or best management practices, information exchange on land-based pollution through monitoring and research. The three (3) Protocols under the Convention are The Protocol Concerning Co-operation in Combating Oil Spills in the Wider Caribbean Region, Protocol Concerning Specially Protected Areas and Wildlife (SPAW), and Protocol Concerning Pollution from Land-Based Sources and Activities. (http://www.cep.unep.org/cartagena-convention)
FAO Code of Conduct for Responsible Fisheries	The Code was adopted in 1995, to promote long-term fisheries. It sets out the principles and international standards of behaviour for responsible practices with a view to ensuring the effective conservation, management and development of living aquatic resources while respecting the marine environment. It recognises the environmental importance of fisheries among others as well as the interests of all relevant stakeholders. It incorporates the biological characteristics of the resources and their environment and the interests of all users. All States and fishing industry personnel are encouraged to apply for the Code and implement it. Within the Code, Principle 6.7 states that the management of fish harvesting processes should be carried out in a manner which reduces waste and minimises negative impacts on the environment. Principle 6.8 promotes the protection of critical habitats from destruction, degradation and pollution from human activities. (http://www.fao.org/docrep/005/v9878e/v9878e00.htm)
Fish Stocks Agreement (UNFSA)	The UNFSA, adopted in 1995 and enforced in 2001, is based on the general provisions of the UNCLOS, applicable to high seas fishing for straddling stocks and highly migratory species such as tuna. Currently, 80 States are Parties to the Agreement. It sets out the legal regime for the conservation and management of straddling and highly migratory fish stocks to ensure longevity through sustainable use. It states that fishing should be conducted in accordance with IMO's requirements (e.g., MARPOL Annex V) to protect the marine environment and prevent loss of fishing gear. It builds on the principles of the UNCLOS and promotes international co-operation to ensure conservation and promote the best use of fisheries resources both within and beyond the EEZs. It also requires the management of fish stocks on a sub-regional basis through RFMOsas the primary mechanism for ensuring compliance. (http://www.un.org/Depts/los/convention_agreements/convention_overview_fish_stocks.htm)

INSTITUTION	BRIEF DESCRIPTION
Honolulu Strategy	The Honolulu Strategy was created in 2011 at the NOAA Fifth International Marine Debris conference (5IMDC) along with the UNEP and other agencies and organisations. It is a framework for a comprehensive and global effort to reduce the many impacts of marine debris. The aim is for it to be used as a planning tool, common frame of reference for collaboration and a monitoring tool at all levels including civil society, government and intergovernmental organisations and the private sector. There are three main goals which are reducing the amount and impact of land-based and ocean-based sources of marine debris introduced into the sea and lastly, reducing the amount and impact of accumulated marine debris on shorelines. (http://marinedebris.noaa.gov/solutions/honolulu-strategy)
International Conference on Small Island Developing States (SIDS)	**First International Conference on Small Island Developing States, Barbados Programme of Action (BPoA,1994)**, formally recognised that small islands have limited land space, resources for safe disposal, increased population size, increased imports of polluting and hazardous substances which together make pollution and waste management a critical issue. It added that urbanisation contributed to the problem of marine pollution along with poorly managed garbage dumps. This issue was cited as a major constraint to sustainable development in SIDS. **Second International Conference on Small Island Developing States The Mauritius Strategy (2014)**, from the, which provided for the continuation of the recommendations of the BPOA while acknowledging the constraints posed by limited financial resources and a decline in assistance funds **Barbados Outcome of the Inter-regional Preparatory Meeting for the Third International Conference on Small Island Developing States (SIDS), 2013**, further identified the degradation of the coastal marine environment and inadequate waste management systems as major challenges to sustainable development. It also recognised the need for increased investments and technical cooperation in the development of integrated waste management systems and related technologies in order to manage the problem. **Third International Conference on Small Island Developing States: SAMOA Pathways (2014)** SIDS Accelerated Modalities of Action, signed in Apia, Samoa, was the outcome document of the This conference affirmed the previous agreements pertaining to SIDS as well as further implementation of actions to promote sustainable development of SIDS ocean-based economies for fisheries and aquaculture, coastal tourism, seabed resources, and renewable energy. It further outlined the need for a reduction in marine pollution that threatens ocean-based economies. As a follow-up to this conference, the SIDS Action Platform was created, providing an internet platform for continued partnership development.
London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter	It is an international treaty, created in 1972, that limits the discharge of wastes that are generated on land and disposed of at sea. Enforced In 1975, it is one of the first global conventions to protect the marine environment from human activities. Currently (2013) there are 87 Parties to the Convention. The 1996 London Protocol, enforced in 2006, is a separate agreement that further modernised and updated the London Convention and will eventually replace the Convention. So far, 44 States have acceded to the Protocol. Under the Protocol, all dumping is prohibited except for possibly acceptable wastes. http://www.imo.org/OurWork/Environment/LCLP/Pages/default.aspx

INSTITUTION	BRIEF DESCRIPTION
MARPOL 73/78 – International Convention for the Prevention of Pollution from Ships	MARPOL is the main international convention which deals with the prevention of pollution of the marine environment by ships. It was adopted 1973 at the IMO and the MARPOL Protocol of 1978 was adopted in 1978. Since the 1973 Convention was not yet enforced, the 1978 Protocol absorbed the parent Convention. The combined MARPOL 73/78 was enforced in 1983. At present, there are Parties to the Convention and it was enforced and ratified in 1978. It highlights the guidelines for pollution prevention and minimisation related to ships. There are 6 Annexes which regulations which deal with specific pollutants, which are: Annex I – Regulations for the Prevention of Pollution by Oil (1983) Annex II – Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk (1983) Annex III – Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form (1992) Annex IV – Prevention of Pollution by Sewage from Ships (2003) Annex V – Prevention of Pollution by Garbage from Ships (1988) Annex VI – Prevention of Air Pollution from Ships (2005) In most annexes, there are Special Areas with strict controls on operational discharges. In Annex V, the WCR including the Gulf of Mexico and the Caribbean Sea have Special Area status in effect from 2011. Annex V is the most relevant to marine litter management. It seeks to prevent and reduce the amount of debris being discharged into the sea from ships. It applies to all ships and floating platforms. 195 countries have ratified this annex. The Annex has been amended in 2011 and enforced in January 2013 and 2 new resolutions entitled '2012 Guidelines for the Implementation of MARPOL Annex V' and '2012 Guidelines for the development of garbage management plans' have been adopted. (http://www.imo.org/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx)
United Nations Convention on the Law of the Sea (UNCLOS)	The UNCLOS was signed in Montego Bay, Jamaica in 1982 and was enforced in 1994 and currently 166 Parties have ratified the Convention. Some of the key features of the Convention relevant to prevention of marine pollution are the following: - Coastal States have sovereign rights in a 200-nautical mile exclusive economic zone (EEZ) with respect to natural resources and certain economic activities, and exercise jurisdiction over marine science research and environmental protection; - Coastal States have sovereign rights over the continental shelf (the national area of the seabed) for exploring and exploiting it; the shelf can extend at least 200 nautical miles from the shore, and more under specified circumstances; - All Parties enjoy the traditional freedoms of navigation, over flight, scientific research and fishing on the high seas; they are obliged to adopt, or cooperate with other Parties in adopting measures to manage and conserve living resources; - Parties bordering enclosed or semi-enclosed seas are expected to cooperate in managing living resources, environmental and research policies and activities; Parties are bound to prevent and control marine pollution and are liable for damage caused by violation of their international obligations to combat such pollution; - All marine scientific research in the EEZ and on the continental shelf is subject to the consent of the coastal State, but in most cases they are obliged to grant consent to other States when the research is to be conducted for peaceful purposes and fulfils specified criteria. (http://www.un.org/depts/los/convention_agreements/texts/unclos/UNCLOS-TOC.htm)

INSTITUTION	BRIEF DESCRIPTION
Western Central Atlantic Fishery Commission (WECAFC)	WECAFC is the regional fisheries body under the auspices of the FAO covering the Western Central Atlantic region including the Caribbean region. The commission works to promote conservation, and sustainable management of fisheries stocks in accordance with the FAO Code of Conduct for Responsible Fisheries. It also works to ensure adequate attention is placed on supporting artisanal, small-scale and substance fisheries. This commission covers all living marine resources within the region. (http://www.fao.org/fishery/rfb/wecafc/en)

Appendix D

UNEP CAR/RCU
National Survey on Marine Litter

With support from UNEP's Regional Seas Programme, the UNEP Caribbean/Regional Coordinating Unit will develop a "Regional Action Plan on the Sustainable Management of Marine Litter in the Wider Caribbean" (RAPMaLi) for the environmental protection and sustainable development of the Wider Caribbean Region. The following survey is a tool to gather relevant information on programmes, policies and needs related to marine litter waste management.

NOTE: ***In each section additional spaces may be added as needed.***

Name of Country/Territory: _____

Name of Respondent to Survey & their Organisation/Affiliation:

_____

Contact Information of Respondent completing this Survey:

Address: _____

_____

Phone Number: _____ Fax Number: _____

Email Address: _____

Section A. National Activities and Programmes Dealing with Marine Litter Issues

1. Identify the governmental bodies and other agencies that have a mandate for addressing marine litter issues in your country or territory. (i.e. Solid Waste Management Authority, Dept. of Fisheries Management, Coastal Zone Management Program/Authority)

Name of Agency	Contact Information	Activities

2. Identify local or regional non-governmental organizations (NGOs) including conservation and other civic groups that are working with projects or programmes that address marine litter issues.

Name of Agency	Contact Information	Activities

3.Identify national programmes and/or activities that engage the public in marine litter and solid waste management practices. (i.e. beach/river cleanups, recycling programs, etc.)

Programme/Activity	Description

4.Identify potential programmes or activities that could be used to engage the public in dealing more effectively with marine litter and solid waste problems. (i.e. including major tourism events and other activities that engage the public in festivals or cultural events)

Name of Programme	Purpose/Description

Section B. National Policies, Legislation & Institutional Arrangements Focusing on Marine Litter Issues

1. Identify policies and legislation that address waste management practices related to the generation, storage, treatment and disposal of marine litter and other related solid wastes. *(In some areas there may be no specific policies implemented to address marine litter issues, others may have marine litter issues integrated into general waste management practices, or some may have specific marine litter management policies enacted. Please specify the status of each listed policy or legislation.)*

Policy/Legislation	Purpose & Status

2. Identify institutional arrangements or mechanisms that help to manage or prevent marine litter.(Identify national coordinating committees or intra-sectoral groups that have a mandate for working with marine litter waste management & public programming – i.e. Tourist Boards, other regional advisory boards)

Institutional Arrangements	Description and Function

Section C. Information on monitoring programmes and gaps in other information related to marine litter management.

1. Identify recognized impacts of marine litter on tourism, fishing & boating, habitat, wildlife and human health & safety that are being addressed through local/national/ regional programmes and those not being addressed.

Litter Form/Type	Description of Impact	Are impacts being addressed, if so – identify programme

2. Identify (Yes or No) and rate the following sources of marine litter related to your country/territory.
1) Least problematic 2) More problematic 3) Most problematic

Sources	Y or N + Rating
Shoreline & Recreational Activities: debris from beach visitors, sports/games, festivals, litter from streets and gutters	
Ocean/Waterway Activities: debris from recreational and commercial fishing and boating, including vessel operations/maintenance	
Smoking-Related Activities: cigarettes, cigarette filers, cigarette lighters, cigar tips, and other tobacco related packaging/wrappers	
Dumping Activities: old appliances, used batteries, building materials, cars/car parts; 55-gallon drums, & tires	
Medical Waste & Personal Hygiene Wastes: condoms, diapers, syringes, and tampon applicators	

3. Identify existing monitoring activities/programmes of marine litter, what is being done and by whom, location of activity and frequency of sampling – weekly, monthly, annually, etc.

Activity & Group Managing	Description & Location of Monitoring Activities	Frequency

4. Identify areas of information on marine litter management that are lacking.

Information GAP	Why Needed

5. Identify recommendations for improvement of marine litter management that relate to the marine litter sources listed in Section C. # 2.

Type of Litter	Recommendation	Description

6.Provide any additional comments related to the development of the Regional Action Plan for Marine Litter management.

ICC participation in the wider Caribbean Region (2006-2013)

Caribbean Countries	2006	2007	2008	2009	2010	2011	2012	2013
Anguilla (UK)						X		
Antigua & Barbuda								
Aruba (NL)		X	X	X	X		X	
Bahamas	X	X	X	X	X	X	X	X
Barbados	X	X	X	X	X	X	X	X
Belize	X	X	X	X	X	X	X	X
Bonaire (NL)	X	X	X	X	X		X	X
British Virgin Islands (UK)	X		X	X	X	X	X	X
Cayman Islands (UK)	X	X	X	X			X	
Columbia	X	X	X	X	X		X	X
Costa Rica	X	X	X	X	X	X	X	X
Cuba	X	X					X	
Curacao (NL)	X	X	X	X	X		X	X
Dominica	X	X	X	X	X	X	X	X
Dominican Republic	X	X	X	X	X	X	X	X
Grenada	X	X	X	X	X	X	X	X
Guadeloupe (FR)								
Guatemala		X	X	X	X			
Guyana	X	X	X	X	X			X
Haiti								
Honduras	X	X	X	X	X	X	X	X
Jamaica	X	X	X	X	X	X	X	X
Martinique (FR)								
Mexico	X	X	X	X		X	X	X
Montserrat (UK)								
Nicaragua			X	X	X	X	X	X
Panama	X	X		X	X	X	X	X
Puerto Rico (US)			X	X	X	X	X	X
Saba (NL)	X	X		X	X	X	X	X
St. Barthelemy (FR)								
St. Eustatius (NL)	X	X	X					
St. Kitts & Nevis	X	X	X	X	X	X	X	X
St. Lucia		X			X			X
Saint Martin (FR)								
Saint Maarten (NL)	X	X	X	X	X	X	X	X
St. Vincent & the Grenadines		X	X	X	X	X	X	X
Suriname								
Trinidad & Tobago	X	X	X	X	X	X	X	X
U.S. Virgin Islands (US)			X	X	X	X	X	X
Venezuela	X	X	X	X	X	X	X	X

Source: ICC data reports (2006-2013)

Appendix F

Marine Litter Data for the Wider Caribbean Region (1989-2012)

Types of Marine Debris Items	Total (1989-2005)	Total (2006-2012)	Percentage (%) (1989-2005)	Percentage (%) (2006-2012)
Shoreline & Recreational				
Bags (Paper & Plastic)	716,182	674, 865	10.6	16.9
Balloons	23,333	20, 586	0.3	0.5
Beverage Bottles (Glass)	467,801	266, 187	6.9	6.7
Beverage Bottles (Plastic) 2 litres or less	716,070	781,574	10.6	19.6
Beverage Cans	289,825	175,081	4.3	4.4
Caps, Lids	805,165	455,499	11.9	11.4
Clothing, Shoes	211,548	184,080	3.1	4.6
Cups, Plates, Forks, Knives, Spoons	768,745	384,314	11.3	9.6
Food Wrappers/Containers	514,281	257,809	7.6	6.5
Pull Tabs	129,019	21,605	1.9	0.5
Shotgun Shells/Wadding	7,125	8,595	0.1	0.2
Six-Pack Holders	127,066	21,605	1.9	0.5
Straws, Stirrers	327,278	139,965	4.8	3.5
Toys	52,463	40,882	0.8	1.0
Ocean & Waterway				
Bait Containers/Packaging	10,394	13,804	0.2	0.3
Bleach/Cleaner Bottles	140,924	58,544	2.1	1.5
Buoys/Floats	43,974	12,394	0.6	0.3
Crab/Lobster/Fish Traps	18,309	5,664	0.3	0.1
Crates	14,516	8,454	0.2	0.2
Fishing Line	32,648	10,709	0.5	0.3
Fishing Lures/Light Sticks	41,001	10,501	0.6	0.3
Fishing Nets	30,931	12,130	0.5	0.3
Light Bulbs/Tubes	47,914	30,347	0.7	0.8
Oil/Lube Bottles	140,359	59,004	2.1	1.5
Pallets	50,865	10,152	0.8	0.3
Plastic Sheeting/Tarps	61,493	22,729	0.9	0.6
Rope	84,753	32,111	1.2	0.8
Strapping Bands	22,350	15,290	0.3	0.4

Types of Marine Debris Items	Total (1989-2005)	Total (2006-2012)	Percentage (%) (1989-2005)	Percentage (%) (2006-2012)
Smoking Materials				
Cigar Tips	26,257	15,943	0.4	0.4
Cigarette Lighters	35,185	18,455	0.5	0.5
Cigarettes/Cigarette Filters	427,933	89,037	6.3	2.2
Tobacco Packaging/Wrappers	29,683	20,818	0.4	0.5
Dumping				
55-Gallon Drums	27,341	4,104	0.4	0.1
Appliances (refrigerators, washers, etc.)	3,544	5,723	0.1	0.1
Batteries	7,481	8,921	0.1	0.2
Building Materials	141,688	25,620	2.1	0.6
Cars/Car Parts	11,505	9,993	0.2	0.3
Tires	28,223	6,863	0.4	0.2
Medical & Personal Hygiene				
Condoms	22,269	19,692	0.3	0.5
Diapers	74,311	22,073	1.1	0.6
Syringes	23,056	7,282	0.3	0.2
Tampons/Tampon Applicators	26,729	4,806	0.4	0.1
TOTALS	6,781,537	3,990,120	100.0	100.0
Diapers	74,311	22,073	1.1	0.6
Syringes	23,056	7,282	0.3	0.2
Tampons/Tampon Applicators	26,729	4,806	0.4	0.1
TOTALS	6,781,537	3,990,120	100.0	100.0

Compiled from ICC data reports, www.oceanconservancy.org/ICC

Appendix G

Ratification of MARPOL Annex V (May 2014) and LBS Protocol (October 2014) in the Wider Caribbean Region

Caribbean States	MARPOL Annex V	LBS Protocol
Antigua & Barbuda	X	X
Bahamas	X	X
Barbados	X	
Belize	X	X
Colombia	X	
Costa Rica	◊	
Cuba	X	
Dominica	X	
Dominican Republic	X	X
France (Guadeloupe, Martinique, Saint Barts, Saint Martin)	X	X
Grenada	◊	X
Guatemala	X	
Guyana	X	X
Haiti	◊	
Honduras	X	
Jamaica	X	
Mexico	X	
Netherlands (Aruba, Bonaire, Curacao, Saba, St. Eustatius, Saint Maarten)	X	
Nicaragua	X	
Panama	X	X
Saint Kitts and Nevis	X	
Saint Lucia	X	X
St. Vincent & Grenadines	X	
Suriname	X	
Trinidad & Tobago	X	X
United Kingdom (Anguilla, British Virgin Is., Cayman Is., Montserrat)	X	
United States (Puerto Rico, U.S. Virgin Is.)	X	X
Venezuela	X	

X = Ratified

◊ = Status Pending

Compiled from International Marine Organisation's website and the U.S. Environmental Protection Agency website (http://www.imo.org, www.epa.gov)

UNEP CAR/RCU LBS Focal Points in the Wider Caribbean Region

Country	Name/Title	Affiliation	Contact Information
Anguilla	Mr. Osbourne Fleming, Chief Minister	Chief Minister's Office	P.O. Box 60, Unit 12 2nd Floor, Brooks & Sans Complex The Valley AT-2640, Anguilla Tel: 264-497-2518/ 0217
Antigua and Barbuda	Ms. Paulette Otto, Permanent Secretary	Ministry of Agriculture, Lands, Marine Affairs, Agro Industry Physical Planning and Environment	1 Prime Minister's Office Drive, Factory Road St. John's, Antigua & Barbuda Tel: 1-268-462-1213/4625/ 065
Aruba	Mr. Gisbert R. Boekhoudt	Ministry of Integration, Infrastructure and Environment	Bernhardstraat 75 San Nicholas, Aruba Tel: 297-584-1199
Bahamas	Mr. Philip Weech, Director	The Bahamas Environment, Science and Technology Commission (THE BEST)	Dockendale House, 2nd Floor, West Wing West Bay Street, P.O. Box N-7132 Nassau, The Bahamas Tel: (242) 397-5508; (242) / 397-5513/20
Barbados	Ms. Lorna Inniss, Director	Coastal Zone Management Unit	9th Floor Warrens Towers II Warrens, St. Michael Tel: 246 622-1610
Belize	Mr. Martin Alegria, Chief Environmental Officer	Department of the Environment Ministry of Forestry, Fisheries and Sustainable Development	Market Square Belmopan City, Cayo District Belize Tel:501-822-2816/2542
British Virgin Islands (U.K)	Hon. Kendrick Pickering, Minister	Ministry of Natural Resources and Labour	33 Admin Drive Central Administration, Complex, Road Town Tortola, BVI Tel:284-494-3701 ext.2147
Cayman Islands	Mrs. Gina Ebanks-Petrie	Cayman Islands Department of Environment	P.O. Box 486, Cayman Islands, Environmental Centre, 580 North Sound Road George Town Grand Cayman, KY1-1106, Cayman Islands Tel: 345-949-8469
Colombia	Dra Adriana MejiaHernandez Viceministra de Asuntos Multila- terales	Ministerio de Relaciones Exteriores	Carrera 5 No. 9-03, Bogotá, Colombia La Cancillería Colombiana: Tel: 571-381-4050/52/4265/ 381-4265
Costa Rica	Jorge Bonilla Cervantes, Director	Ministerio del Ambiente y Energia	Apartado Postal 10.104-1000 San Jose, Costa Rica Tel: 506-2221-7514 ext 109/110
Cuba	Lic. Mario Abo Balanza, Director	Centro de Información, Gestión y Educación Ambiental	18-A, No. 4114 entre 41 y 47 Playa 11300, La Habana, Cuba Tel: 537-209-6014

Dominica	Hon. Kenneth Darroux, Minister	Ministry of Environment, Natural Resources, Physical Planning and Fisheries	Government HQ, 2nd Floor Kennedy Avenue Roseau, Dominica Tel: 767-266-3544/3282
Dominican Republic	Lic. Zoila Gonzalez de Gutierrez, Vice Minister of Environmental Management	Ministerio de Medio Ambiente y Recursos Naturales	Ave. Luperon, Esq. Cayetano Gertmosen, Mirador Sur., Santo Avenida Tiradente Edificio La Cumbre, 10mo Piso, Santa Domingo República Dominicana Tel: 809-567-4300 ex.501/666170
France	MmeLéa Gerard M. Ralid AJABBOUNE	Ministère de l'écologie, du développement durable et de l'énergie	Tel : 33 (01) 4081-3382 Tél : [33] 1 40 81 86 37
Grenada	The Hon. Dennis Lett, Minister	Ministry of Agriculture, Lands, Forestry, Fisheries, Public Utilities, Energy & Marketing	Ministerial Complex, Botanical Gardens, Tanteen St. Georges, Grenada Tel: 473-440-2708/3078/2722/ 440-2741
Guatemala	Marcia Roxana Sobenes, Ministra	Ministerio de Ambiente y RecursosNaturales	20 calle 28-58 Zona 10 Ciudad de Guatemala, Guatemala Tel: 502-2-512-2595/2654
Guyana	Dr. Roger F. Luncheon, Secretary to the Cabinet, Head of the Presidential Secretariat	Office of the President	New Garden Street, Georgetown, Guyana Tel: 592-225-7051
Haiti	Mme. Jean-Francois Thomas, Minister	Ministère de l'Environnement	181 Haut Turgeau, Ave. Jean Paul II Boite Postale 19260 Port-au-Prince, Haiti Tel:509-2-245-7585/72/0504/3717-0507
Jamaica	Mr. Peter Knight, Chief Executive Officer	National Environment and Planning	10 Caledonia Avenue Kingston 5, Jamaica Tel:876-754-7540/7526
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Caribbean Netherlands	Mr. Ben D. Whtieman, Director	Directorate of Public Health of the Netherland Antilles	Schouwburgweg 26 Willemstad, Curacao Netherlands Antilles Tel: 599-9-466-9300/9301/9307
Nicaragua	Sra. Juanita Argeñal, Ministra	Ministerio del Ambiente y los Recursos (MARENA)	Apartado 5123, Km. 121/2 CarreteraNorte, Managua, Nicaragua Tel: 505-2-263-22862/2830/2599/1994/1504
Panama	Billy Ubillus, Director de Protection e la Calidad Ambiental	Autoridad Nacional del Ambiente Autoridad Marítima de Panamá	Apartado 592, Balboa, Ancon Ciudad de Panamá, Panama
St. Kitts & Nevis	Hon. Nigel Carty, Minister	Ministry of Sustainable Development	P.O. Box 186, Bladen Commercial Development Basseterre, St. Kitts & Nevis Tel: 869-465-2521/2277/8045

St. Lucia	Mr. George James, Permanent Secretary	Ministry of Sustainable Development, Energy, Science & Technology	Greaham Louisy Administrative Building, P.O. Box 709, Waterfront, Castries, St. Lucia Tel:758-468-4419 Tel: 758-451-5803
Saint Maarten	Mr. Louis Brown, Section Head Disaster Management	Saint Maarten Fire Department	Jackal Road 5, Cay Hill Saint Maarten , Dutch Caribbean Tel: 721-542-669/721-542-1215
St. Vincent & the Grenadines	Mr. Luis deShong, Permanent Secretary	Ministry of Health, Wellness and the Environment	Ministerial Building, Kingstown, St Vincent & the Grenadines Tel: 784-457-2586 / 784-456-1111 ext. 511 / 512
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Trinidad & Tobago	Mrs. Vidiah Ramkhelawan, Permanent Secretary	Ministry of the Environment and Water Resources	Level 26, Tower D, International Waterfront Complex 1A Wrightson Road Port of Spain, T&T Tel: 868-623 3158
Turks & Caicos	Hon. Mr. Staven Rigby, Minister	Ministry of Environment & District Administration	Government Compound, Pond Street, Grand Turk Turks & Caicos Tel: 649-946-2894/2970
United Kingdom	Mr. Sion Griffiths	Foreign and Commonwealth Office	King Charles Street, London SW1 2AH, London, UK Tel: 44-207-008-2725 44-207 270-2725
Venezuela	Dr Alejandro Hitcher, Ministro	Dirección General de Calidad Ambiental Ministerio del Ambiente y de los Recursos Naturales (MARN)	Torre Sur, Piso 28 Centro Símon Bolivar, A.A. 6623 Caracas 1010, Venezuela Tel: 58-212-861-0574

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