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Concerning Pollution from Land-Based Sources
and Activities in the Wider Caribbean.

Panama City, Panama, 18th to 20th July 2018

**EXECUTIVE SUMMARY AND RECOMMENDATIONS OF THE
FEASIBILITY STUDY ON THE DEVELOPMENT OF A REGIONAL
RECEPTION FACILITIES PLAN FOR THE SMALL ISLAND
DEVELOPING STATES OF THE WIDER CARIBBEAN REGION**

For reasons of economy and the environment, Delegates are kindly requested to bring their copies of the Working and Information documents to the Meeting, and not to request additional copies.

Executive Summary

This feasibility Study was conducted by RAC/REMPEITC-Caribe for the possible development of a regional reception facilities plan for the Small Island Developing States (SIDS) of the Wider Caribbean Region. The study includes a detailed analysis of shipping data, site visits and assessments of ports in 16 U.N. Member SIDS, and identification of possible measures to address the inadequacy of port reception facilities (PRFs) throughout the Wider Caribbean Region (WCR). The outputs of this report complement other strategies for improving management of ship generated wastes (SGW) and cargo residues within the WCR, and contributes to efforts towards improving the ability of WCR States to effectively fulfil their obligations under MARPOL, or to accede to MARPOL where a State is not already a Party.

The project was funded by the International Maritime Organization (IMO) through the support of The Government of Norway, following: a series of workshops conducted by IMO, United Nations Environment and RAC/REMPEITC-Caribe; requests made by WCR maritime authorities; and a proposal submitted by RAC/REMPEITC-Caribe. The premise and proposal for this project was presented by Keith Donohue of RAC/REMPEITC-Caribe and received support by the respective Government representatives at the *Regional IMO Workshop for Senior Maritime Administrators held in Bridgetown, Barbados from 7-8 Feb 2017*; and the *Seventeenth Intergovernmental Meeting on the Action Plan for the Caribbean Environment Programme and Fourteenth Meeting of the Contracting Parties to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region that was held in Cayenne, French Guiana, on Mar15-17, 2017*.

Description of Region:

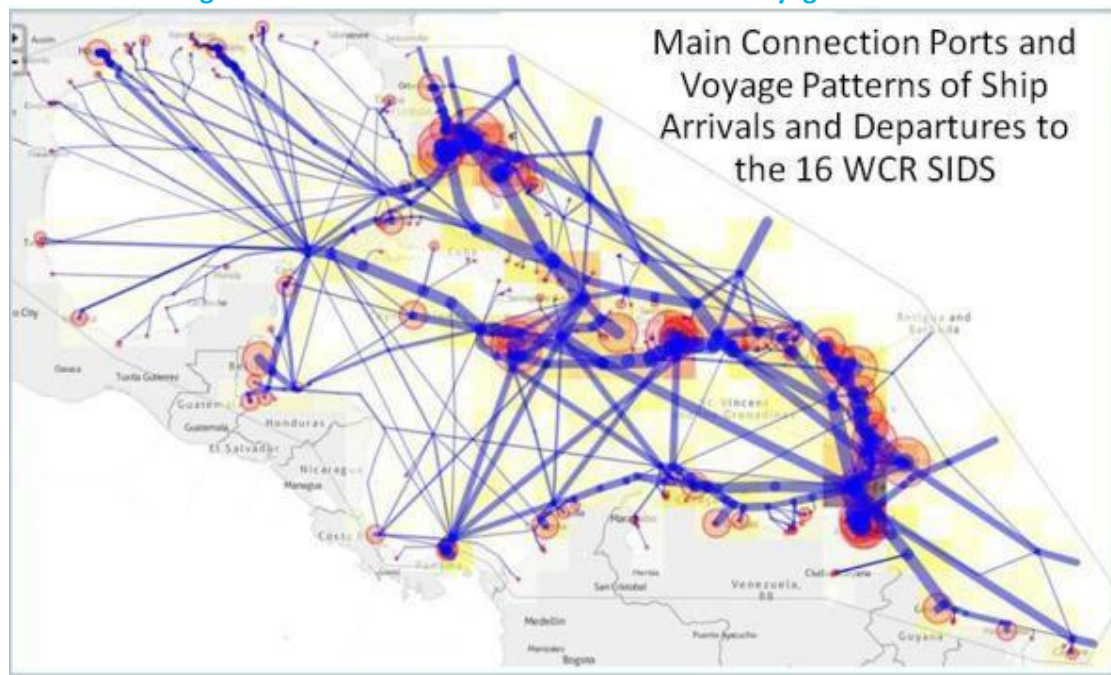
The WCR comprises 28 insular and coastal states, and 10 territories bordering the Caribbean Sea and Gulf of Mexico, for a combined area of 5.3 million square kilometres. This region holds 23 of the world's 52 Small Island Developing States (SIDS) as recognized by the United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLD). Of those SIDS in the WCR, 7 are non-U.N. Members or Associate Members of the Regional Commissions (Anguilla, Aruba, British Virgin Islands, Montserrat, Netherlands Antilles, Puerto Rico and the U.S. Virgin Islands) and 16 are independent U.N. Members. The focus of this study is the 16 independent U.N. Member SIDS of the WCR: Antigua and Barbuda, Bahamas, Barbados, Belize, Cuba, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and Grenadines, Trinidad and Tobago, and Suriname.

Figure 1: Chart of the Wider Caribbean SIDS Study Area



¹(DeGraff and Ramlal, 2014)

Figure 2: WCR SIDS Main Connection Ports & Voyage Patterns



Basis for the Study:

The International Convention for the Prevention of Pollution from Ships (MARPOL) imposes obligations on the Governments of each Contracting Party to include ensuring that adequate port reception facilities are available to receive the ship-generated waste from vessels calling in ports, without causing undue delays for those ships. Of the 16 U.N. Member SIDS, all except for Haiti and Grenada are Party to MARPOL. Meeting these obligations for *adequate* port reception facilities by signatory countries still remains a significant challenge to the SIDS of the WCR as described in the 30

¹ DeGraff, A. and Ramlal, B. (2014). *Participatory Mapping: Caribbean Small Island Developing States*. [online] Saint Augustine: Department of Geomatics Engineering and Land Management, Faculty of Engineering, University of the West Indies, p.6. Available at: https://www.researchgate.net/publication/275036119_Participatory_Mapping_Caribbean_Small_Island_Developing_States [Accessed 9 May 2018].

November 2016 RAC/REMPEITC-Caribe *Activity Report for the Regional Workshop on Port Reception Facilities and Waste Management, 04-06 October 2016 in Port of Spain, Trinidad and Tobago*. Many States are restricted in their capacities and capability to properly process waste streams generated on their islands, let alone process additional waste offloaded from vessels calling upon their ports. IMO has recognized the unique challenges that SIDS experience in providing adequate reception facilities for ship waste. This was first recognized in 2000 in IMO Resolution MEPC.83 (44), *Guidelines for Ensuring the Adequacy of Port Waste Reception Facilities*, then given a firm legal basis through MARPOL amendments in 2011.

Guidelines for Developing a Regional Reception Facility Plan (RRFP)

Based on IMO guidance, SIDS may satisfy waste reception facilities regulations through regional arrangements (RAs) when, because of those States' unique circumstances, such arrangements are the only practical means to satisfy these requirements. Parties proposing to participate in such regional arrangements shall develop a Regional Reception Facility Plan (RRFP) to present to IMO's Marine Environmental Protection Committee (MEPC), taking into account the guidelines set out in *Resolution MEPC.221(63), 2012 Guidelines for the Development of a Regional Reception Facilities Plan*. While the majority of States participating in a RRFP should be Small Island Developing States (SIDS), non-SIDS may also participate but so only as their ports may be Regional Waste Reception Centers (RWRCs), and not to satisfy their own obligations to provide adequate reception facilities in all ports and terminals. For the purposes of an RRFP, the guidelines prescribe that the development of a RRFP should:

- Identify the region to be covered and include a map that clearly shows the participating States and all ports within the region;
- Identify the nature of the unique circumstances that impact the ability to provide adequate port reception facilities in each SIDS within the region;
- In demonstrating the compelling need for a RA, explore alternatives, costed and assessed in terms of their environmental risk;
- Document how Regional Arrangements will contribute to efforts to improve the ability of SIDS to effectively fulfil its obligations under MARPOL, or to accede to MARPOL where a State is not already a Party;
- Identify and quantify the types of ships operating in each of these SIDS;
- Describe the overall voyage patterns of ships calling at ports in each of the SIDS;
- Describe all aspects of routing and voyage planning that might affect the amount of ship generated wastes and cargo residues on board ships arriving in each of the SIDS;
- Describe other relevant *additional considerations* that may influence the demand for port reception facilities in each of the SIDS;
- Identify which ports, if any, may be good candidates for *Regional Ships Waste Reception Centers (RSWRC)* in each of the SIDS;
- Identify *ports with limited facilities (PLF)*, if any, in each of the SIDS; and
- Identify any potential options suited to the vessels calling at ports in these SIDS that will not encourage any illegal discharge into the sea;

Findings

The results of this feasibility study indicate that a regional approach to port reception facilities is necessary for the 16 WCR SIDS as there are unique circumstances in these States and throughout the Region that significantly impacts the ability of the regional governments to ensure adequate port reception facilities. These circumstances, discussed in detail in Chapter 4.5 to 4.6 and Annexes A-P, fall in the three primary categories: 1) Administrative and Legal Matters; 2) Enforcement, Control and Monitoring Systems; and 3) Technology, Infrastructure and Alternatives for Collecting, Storing, Treating and Disposing of SGW.

The stakeholder meetings and port visits conducted in this study yielded deep passion discussions with specific examples in each port of why this issue is of SGW is of great concern throughout the WCR. Some of the notable comments included references to:

- Past experiences when food and utensils taken off of ships as SGW ended up in residential homes and on street markets;
- Service provider crewmembers being injured after pumping out a noxious liquid substance wrongfully reported as oily waste;
- Incineration ash taken off of ships blowing throughout a downtown area as open waste hauler trucks travel on routes from a primary port to the national dumpsites;
- Oily waste containing heavy metals and other materials being used for street pavements;
- Exuberant charges by service providers to receive SGW that should be quarantined, when the same waste just ends up unclassified and dumped un-segregated into municipal landfills along with domestic wastes;
- An inefficient port incinerator that sends its smoke into the local community every night;
- A service barge used to collect SGW out of compliance with safety inspections;
- A national minister prohibiting the receipt of SGW due to ship pollution concerns;
- The reception of garbage being prohibited due to concerns of smuggling activities;
- Widespread concerns that landfills have reached their capacities to accept domestic waste, let alone SGW;
- Numerous entrepreneurs struggling against price undercutting, unreliable volumes, and non-existent regulations to try to make businesses from recycling wastes;
- Failed recycling businesses becoming their own dumpsites;
- Safety concerns with dump pickers and dumpsite fires;
- Reoccurring criminal charges and large penalties on major shipping companies for illegal oil discharges, while large gaps exist in availability of adequate port reception facilities for Annex I oils and Annex II noxious liquid substances.

Table 1: Summary of Annex I and Annex II PRFs available at WCR SIDS ports.

Country	Availability of Annex I and Annex II PRFs	
	Annex I - Oil	Annex II - NLS
Antigua & Barbuda	Only sometimes at Deep Water Harbor St. Johns for cruise ships	No
The Bahamas	Only at Grand Bahamas Shipyard Ltd, Freeport	No
Barbados	No	No
Belize	No	No
Dominican Republic	Yes	Officially no however hazardous material response and cleanup capabilities are available
*Grenada (Not a Party)	Not officially, but due to the high demand local recycling/reusing of oil occurs	No
Guyana	Some commercial operators with business exclusive for offshore operators	No
*Haiti (Not a Party)	Not officially, may take place	No
Jamaica	Yes	Yes, but guideline framework still to be developed
St. Lucia	Yes	No
St. Vincent	No	No
St. Kitts & Nevis	No	NO
Suriname	Only at commercial ports & vessels associated with offshore oil & gas exploration	NO
Trinidad	Unable to ascertain degree of adequacy but oil reception does occur	On a case by case basis NLS has been removed in unique situations

Some primary factors and unique circumstances identified in this study that may stimulate the delivery of SGW to SIDS ports, and or lead to possible improper disposal of SGW include:

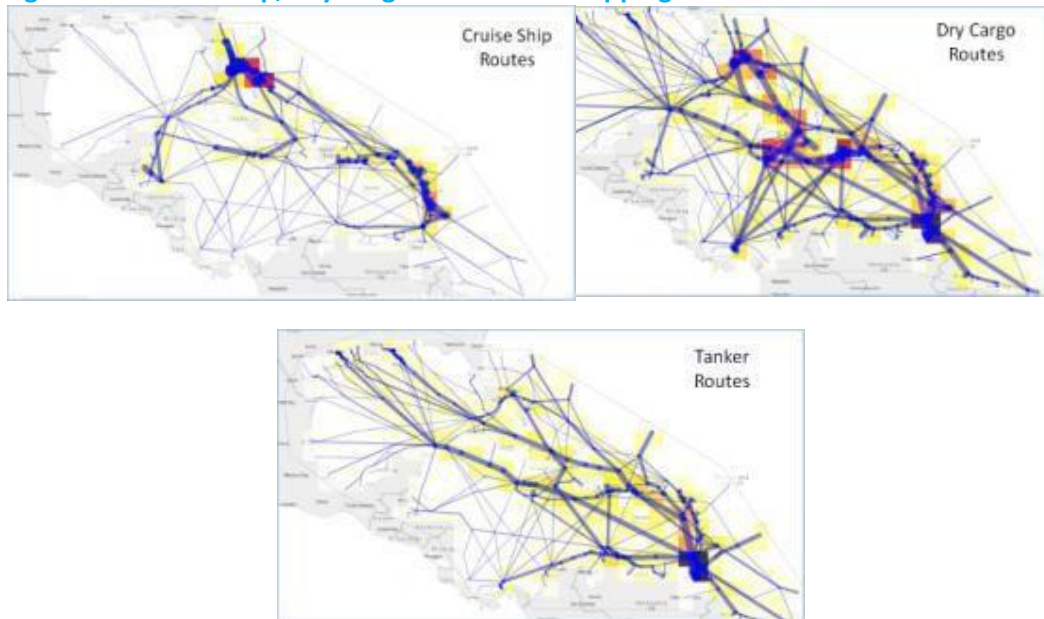
- The absence of MARPOL implementation legislation and other applicable laws, regulations and guidelines pertaining to the management of SGW;
- Little or no government tracking, monitoring or enforcement of the process of receiving, transporting and disposing of SGW;
- Use of unlicensed service providers and nonstandard reception costs that do not fully reflect the “polluter pays” principle;
- Outdated or non-existent national waste management strategies, limited capacities to dispose of international wastes, and the reception of SGW not being linked to existing waste management strategies;
- Lack of facilities in ports through the WCR for receiving Annex I oily bilge water, sludge and used lube oils;
- Minimal facilities and expertise available for receiving and properly disposing Annex II noxious liquid substance wastes;
- The lack of national or port requirements for ships to utilize reception facilities for Annex IV sewage wastes; and
- The varying and inconsistent port and national policies for receiving or prohibiting different categories of Annex V garbage wastes.

Two consistent concerns were predominantly expressed in the stakeholder discussions throughout the study area pertaining to the consideration for Regional Arrangements. In the larger government ports and amongst commercial port operators, service providers and shipping agents, there is interest in creating business opportunities through the receipt and disposal of SGW to meet the demands of ships calling at their ports, while striving to become maritime logistics hubs that can provide all ships services. Impediments to such successful entrepreneurs in the Region include: inconsistent or too small volumes of each specific wastes to make reliable business operations; and a lack of standardized reception fees and service provider license systems that allow low cost improper waste disposal by non-legitimate waste handlers.

On another standpoint, many government stakeholders discussed the challenges they face just in trying to properly manage their own domestic waste. Some stakeholders stated that as small islands, they should not be required to accept SGW at all. Some expressed fear of WCR SIDS becoming a dumping ground for SGW originating from around the world, as well as concerns for international wastes bringing invasive species, pests and infectious diseases. It is this concern that led government bodies of one SIDS to prohibit the reception of any international SGW all together; and another from not ratifying MARPOL until the criteria for adequate reception facilities are first met.

Three primary categories of ships make port calls throughout the WCR: Cruise Ships, Dry Cargo Ships and Tankers: These ships were analyzed in detail (as discussed in Chapter 4 and Annexes A-P) in terms of port calls, shipping routes, voyage patterns and main connection ports. From the data analyzed, further inferences were made regarding the potential SGW demand of the Region.

Figure 3-5: Cruise Ship, Dry Cargo and Tanker Shipping routes to the 16 SIS of the WCR.



The study was unable to ascertain true demands for port reception facilities, in terms of volumes of SGW that is actually received at port facilities in the Region because accurate records for SGW received and disposed are widely not available by government maritime or port authorities. The absence of this data is due in part to: a lack of MARPOL implementation legislation throughout the Region; the non-use of the IMO or other advance notice documentation for the reception of SGW by government maritime or port authorities; the absence of requirements for service providers/waste hauler to track their wastes from reception to final disposal; and inadequate enforcement of any requirements that are in place pertaining to the management of SGWs. Therefore, in an attempt to quantify the overall regional demand for PRFs, calculated estimates were generated of the potential volumes of Annex I and Annex V SGW that ship operators may have expected available PRFs, based on 2016 ship arrival data. (see Table 2).

Table 3 - Calculated estimates of Annex I and V SGW that may be expected to port of the 16 SIDS

WCR SIDS	Total 2016 Port Calls	Calculated estimate of total SGW that may be expected at PRFs in each WCR SIDS (m ³ /yr)						
		For Non-Tankers					For Tankers	
		Annex V Domestic	Annex V Maintenance	Annex I Cargo Related	Annex I Sludge tank residue	Annex I Oily bilge waters	Annex I Liquid oil residues	Wash water
Trinidad & Tobago	10,412	182,560	1,129,936	342.9	5,321	69,760	164,641	1,646,414
Dominican Republic	5,453	3,865	624,461	487.1	4,874	31,947	44,467	444,668
Bahamas	5,028	46,348	1,224	129.3	8,729	29,193	286,654	2,866,543
Jamaica	3,742	19,468	120,440	418.8	5,202	29,730	59,646	596,455
Haiti	2,011	1,872	22,501	282.7	1,308	9,889		
St Kitts & Nevis	1,680	14,465	6,749	7.1	1,692	4,805		
Suriname	1,549	133	7,844	96.5	516	5,887		
Barbados	1,312	25,493	10,224	46.2	2,094	7,985	13,896	138,962
Cuba	1,268	814	20,335	511.6	1,059	7,450	45,072	450,720
Guyana	1,233	173	29,916	168.9	585	6,382		
St Lucia	1,230	9,283	7,982	9.1	1,561	6,230	54,395	538,403
Antigua & Barbuda	975	9,780	128	34.9	1,336	4,374		
Belize	797	11,927	2,216	10.2	1,253	3,486		
St Vincent & Grenadines	767	1,038	1,128	2.8	252	1,014		
Dominica	637	4,021	1,914	6.7	773	2,412		
Grenada	591	4,800	1,714	12.9	867	3,167		

Further analysis of the shipping data, combined with assessments of available PRFs and the unique circumstances that may impact the ability to provide adequate facilities in each SIDS, yielded insight as to: which SIDS may contain potential Regional Ships Waste Reception Centers (RSWRC); which may contain Ports with Limited Facilities (PLF); and what might be the most likely partner countries for regional arrangements based on regional voyage patterns (see Table 2, Chapter 4.7, and Annexes A-P).

Table 4 - Summary of Ship and Voyage Analysis

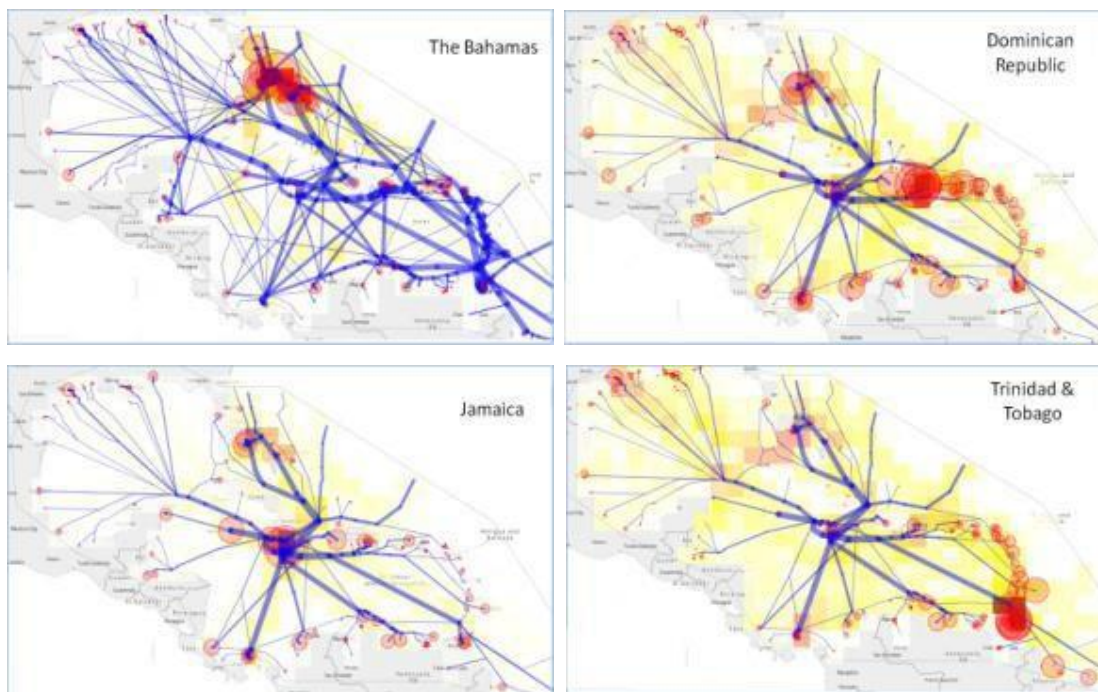
WCR SIDS	Summary of Ship and Voyage Analysis	Contains Potential Regional Ships Waste Reception Centers (RSWRC) Or Ports with Limited Facilities (PLF)	Most likely partners for regional arrangements based on voyage patterns
Trinidad & Tobago	Trinidad & Tobago is a regional hub for dry cargo shipping as well as a tanker hub for Guyana, Suriname and most of the Lesser Antilles. As a result, connections to these countries are frequent. Additionally, connections exist with Jamaica, Colombia and Dominican Republic.	Potential RSWRC	Guyana Suriname Barbados St. Vincent Grenada St. Lucia Jamaica Dominican Republic USA St. Maarten/ St. Martin Colombia
Dominican Republic	The Dominican Republic, being a regional hub for dry cargo shipping and an oil importing country, mainly has shipping connections with WCR countries. The countries most visited shortly before or after calls to the Dominican Republic are mainly non-SIDS WCR countries and include Colombia, Jamaica, Puerto Rico and the USA. Routes are also related to those to nearby Haiti.	Potential RSWRCs	Haiti Jamaica Colombia Trinidad & Tobago USA Panama Puerto Rico Cuba Costa Rica
Bahamas	As a global hub for oil transshipment and dry cargo shipping as well as a major cruise destination due to its vicinity to the USA. The Bahamas has relatively limited connectivity to the other SIDS in the WCR.	Potential RSWRCs & May contain PLFs	USA
Jamaica	Jamaica is a regional hub for dry cargo shipping and a significant cruise destination. Connections therefore include SIDS and non-SIDS countries in the WCR. The main SIDS connections include Dominican Republic, Haiti and Trinidad & Tobago. The USA is the main connected destination, which is attended by 28% if the ships shortly before or after attending a Jamaican port.	Potential RSWRCs	USA Dominican Republic Haiti Trinidad & Tobago Cuba Colombia Panama Cayman Islands
Haiti	The connectivity of Haiti in terms of ship voyage patterns is mainly determined by dry cargo shipping and mainly concerns connections with Dominican Republic, and Jamaica.	May contain PLFs	Dominican Republic Jamaica USA
St Kitts & Nevis	Large number of cruise calls with strong connectivity to other Lesser Antilles. Especially connected to the nearby islands of St. Maarten/ St. Martin, Antigua & Barbuda and Dominica. Connectivity to larger non-SIDS countries is very limited.	May contain PLFs	St. Maarten/ St. Martin Antigua & Barbuda Dominica St. Lucia Barbados British Virgin Islands US Virgin Islands
Suriname	Both dry cargo and tanker shipping in Suriname is strongly related to calls in Guyana and Trinidad & Tobago.	Potential RSWRCs & May contain PLFs	Guyana Trinidad & Tobago Barbados

WCR SIDS	Summary of Ship and Voyage Analysis	Contains Potential Regional Ships Waste Reception Centers (RSWRC) Or Ports with Limited Facilities (PLF)	Most likely partners for regional arrangements based on voyage patterns
Barbados	<p>Large number of cruise calls with strong connectivity to other Lesser Antilles as well as a relatively high number of dry cargo ships.</p> <p>The overall main connections identified are those with the nearby islands of St. Lucia, Grenada and St. Vincent & Grenadines as well as with Trinidad & Tobago. Connectivity to larger (non-SIDS) countries is very limited.</p>	<p>Potential RSWRCs & May contain PLFs</p>	<p>St. Lucia Trinidad & Tobago Grenada St. Vincent & Grenadines St. Kitts & Nevis Antigua & Barbuda Guyana Suriname Trinidad & Tobago</p>
Cuba	<p>The ship traffic in Cuba consists mainly of dry cargo ships & tankers, considerably involved in domestic trade. The main international connections include Dominican Republic, Mexico, Jamaica and Colombia.</p>	<p>Undetermined</p>	<p>Dominican Republic Jamaica Mexico Colombia</p>
Guyana	<p>Both dry cargo and tanker shipping in Guyana is strongly related to calls in Suriname and Trinidad & Tobago.</p>	<p>May contain PLFs</p>	<p>Trinidad & Tobago Suriname Barbados</p>
St Lucia	<p>St. Lucia is a secondary hub for tanker shipping in the southern Lesser Antilles and receives large numbers of cruise calls. Therefore, it has substantial connections with surrounding islands as well as Trinidad & Tobago. Connectivity to larger non-SIDS countries is very limited.</p>	<p>Potential RSWRCs & May contain PLFs</p>	<p>Barbados Trinidad & Tobago St. Maarten/ St. Martin Grenada Dominica St. Kitts & Nevis St. Vincent & Grenadines Antigua & Barbuda</p>
Antigua & Barbuda	<p>Large number of cruise calls with strong connectivity to other Lesser Antilles. Especially connected to the nearby islands of St. Kitts & Nevis, St. Maarten/ St. Martin and Dominica. Connectivity to larger non-SIDS countries is very limited.</p>	<p>May contain PLFs</p>	<p>St. Kitts & Nevis St. Maarten/ St. Martin Dominica Barbados British Virgin Islands US Virgin Islands St. Lucia</p>
Belize	<p>The calls in Belize concern mainly dry cargo ships and cruise ships. The main connections for cruise ships are the USA and Mexico. Dry cargo routes are particularly associated with Honduras and the Cayman Islands.</p>	<p>May contain PLFs</p>	<p>USA Mexico Honduras Cayman Islands Jamaica</p>
St Vincent & Grenadines	<p>Dry cargo and cruise calls with strong connectivity to other Lesser Antilles. Especially connected to the nearby islands of Barbados, Grenada and St. Lucia as well as Trinidad & Tobago. Connectivity to larger non-SIDS countries is very limited.</p>	<p>May contain PLFs</p>	<p>Barbados Trinidad & Tobago Grenada St. Lucia</p>

WCR SIDS	Summary of Ship and Voyage Analysis	Contains Potential Regional Ships Waste Reception Centers (RSWRC) Or Ports with Limited Facilities (PLF)	Most likely partners for regional arrangements based on voyage patterns
Dominica	The calls in Dominica concern mainly dry cargo ships and cruise ships. Especially connected to the nearby islands of St. Maarten/ St. Martin, St. Kitts & Nevis, Antigua & Barbuda, St. Lucia and Barbados. Connectivity to larger (non-SIDS) countries is very limited.	May contain PLFs	St. Maarten/ St. Martin St. Kitts & Nevis Antigua & Barbuda St. Lucia Barbados
Grenada	The calls in Grenada concern mainly dry cargo ships and cruise ships. Especially connected to the nearby islands of Barbados, St. Lucia, and St. Vincent & Grenadines as well as Trinidad & Tobago. Connectivity to larger (non-SIDS) countries is very limited.	May contain PLFs	Barbados St. Lucia Trinidad & Tobago St. Vincent

Looking specifically at The Bahamas, Dominican Republic, Jamaica, and Trinidad and Tobago, it can be deduced that since the ports in these SIDS receive the most ship arrivals, have the most capability (with some exceptions) to accept all categories of SGW, and have the most regional connections, that improvements at PRFs in these locations could have the biggest impact on waste reception throughout the WCR. It may also be concluded that ports in these four SIDS could have the highest potential to serve as Regional Waste Reception Centers in future Regional Arrangements within a WCR Regional Port Reception Plan.

Figure 6-9: Cruise Ship, Dry Cargo and Tanker Shipping routes to the 16 SIS of the WCR



Finally, Chapter 5 identifies overall potential options suited to vessels calling at ports in these SIDS that will not encourage any illegal discharge into the sea. Important recommendations for how WCR SIDS may improve the adequacy of PRFs are also contained in Annexes A-P. Chapter 4.2, Appendix 3 and Annexes A-P also identify the primary stakeholders and describes what their roles may be in implementing or operating within any future Regional Reception Facility Plan.

Following this report, it is highly recommended that future efforts focus first on:

- 1) Establishing robust cradle to grave waste management techniques for SGW using stakeholder collaboration, market-based mechanisms and reduction, prevention, waste to energy and recycling methods in the key rotational ports of Jamaica, Trinidad and Tobago, Dominican Republic, and The Bahamas, Barbados
- 2) Encouraging the governments of the United States, Netherlands, United Kingdom, France, Mexico, Panama and Colombia to become part of and RRF process due to their authorities over other major rotational and home ports in the WCR, with possible greater capacities to receive SGW from the 16 SIDS of the Region;
- 3) Establishing for all WCR countries that may become port of a RPRFP, a standardized minimum for reception and disposal fees; as well as standardized licenses for service providers to receive SGW within the Regional plan;
- 4) Securing international funding to revise or develop new National Waste Management Strategies for all WCR SIDS, taking into account the reception of SGW and changes in maritime commerce and tourism that have may impact the ability of these SIDS to accept and/or properly manage international waste concurrently with current and projected domestic waste management challenges.
- 5) Continued stakeholder engagement, with facilitated assistance by international bodies towards adopting and implementing national guidelines for reception, tracking, monitoring, licensing, enforcing and proper disposal of SGW, even in lieu of the adoption of national legislation.
- 6) An initiative to establish Annex I (oil) reception facilities, in all ports throughout the Wider Caribbean Region, and additional Annex II capabilities in key regional areas.

5 Potential Options

The following recommendations garnered from this study are potential options suited to vessels calling at ports in these SIDS that will not encourage any illegal discharge into the sea:

5.1 Shipboard-level Recommendations

1. Investigate possibilities of how vessels on worldwide shipping routes may best store waste on board and plan to deliver waste ashore to proper PRFs in non-SIDS ports.
2. When possible, manage SGW on board to minimize delivery to Ports with Limited Facilities and maximize delivery to those ports identified as being potential Regional Waste Reception Centers.
3. When possible, segregate, compact, prepare and store all wastes on board to be ready for efficient, effective and environmentally sound disposal at proper PRFs.
4. Always encourage best practices to reduce, reuse and recycle SGW (especially plastics) onboard vessels operating in the WCR.
5. Ensure adequate crewman training to educate on: the shipboard requirements under MARPOL, the Special Area Designations for the Caribbean, as well as best practices for efficiently managing, disposing of SGW.
6. Ship management should employ the following practices:
 - a. require the receipt of manifests indicating final disposal of all SGW sent to PRFs
 - b. require that SGW is only received by those service providers properly authorized for receiving specific categories of wastes each ports of arrival.
7. Encourage and facilitate the use of the Standard Format of the Advance Notification Form for Waste Delivery to Port Reception Facilities (MEPC.1/Circ.644), with shipping agents, port facilities, service providers and maritime authorities when not already in use.
8. When adequate port reception facilities are not available, ensure the Master of a ship having encountered difficulties in discharging waste to reception facilities, forwards the IMO Revised Consolidated Format for Reporting Alleged Inadequacies of Port Reception Facilities Form, together with any supporting documentation, to the Administration of the flag State and, if possible, to the competent Authorities in the port State. The flag State shall notify the IMO and the port State of the occurrence.

5.2 National-Level Recommendations

1. Each State should implement the necessary legal authorities to enforce compliance by ships with the MARPOL Convention;
2. National Waste Management plans should be developed, updated and/or revised; and not done so already, the issue of ship-generated waste should be fully integrated into the plans and policies for land-generated wastes, including manifests and certificates of disposal to ensure cradle to grave tracking.

3. Recommend continued Stakeholder engagements to develop and implement guidelines for the receipt, disposal, handling, tracking, enforcement, and funding for adequate port reception facilities and the handling of SGW. Stakeholders are encouraged to look to the IMO guidebook: Port Reception Facilities – How to do it for guidance as well as material found in the following best practice documents produced by other WCR SIDS:
 - a. The National Guidelines on the Collection of MARPOL 73/78 ANNEX 1 Waste, and National Guidelines on the Collection of MARPOL 73/78 ANNEX 1 Waste, (SEE) developed by Jamaica’s National Guidelines Subcommittee of the National Oceans & Coastal Zone Management (NOCZM) Committee;
 - b. Government of Saint Lucia Strategy on the Management of Used Oil, Prepared by the Saint Lucia Solid Waste Management Authority;
 - c. Final Draft, National Waste Management Strategy for Grenada; and
 - d. Belize National Solid Waste Management Strategy & Plan – Draft Final Report v1 25 June 2015
4. Employ the use of the IMO Advanced Notification Forms for ship arrivals and requests to discharge waste to help identify, classify and track the types, amounts and nature of SGW received from the international “generator” to final disposal, or reuse.
5. Each State should consider the implementation of a service provider/ SGW hauler license system that could help control the different waste handling operations, with respect to: types of operations; requirements for obtaining licenses; applicable fees; public review; and industry appeal provisions.
6. The data collected in this report should be used by the relevant authorities in each SIDS to generate appropriate Port Waste Management Plans;
7. Further consider alternatives to reuse, recycle and reduce impacts of SGW in all SIDS, which can be found in IMO guidebook: Port Reception Facilities – How to do it.
8. Ensure there is a proper costs structure in place, with appropriate fees, that follows the polluter pays principle.
9. Ensure robust market incentives for entrepreneurship, with adequate oversight, are in place to further encourage business opportunities for receiving, handling, disposing, and recycling SGW.
10. Complete assessments of all Port Reception Facilities and Waste Haulers /Service Providers that may have been left out of the study, and ensure all PRF data, and lists of all Service Providers, are entered into IMO’s GSIS;
11. Consider opportunities that may be available with a regional plan to best handle SGW.

5.3 Regional-Level Recommendations

1. As per the guidance in Paragraph 16 of the IMO Resolution MEPC.83 (44), *Guidelines for Ensuring the Adequacy of Port Waste Reception Facilities, and as indicated in Chapter 4.2.1.*, consideration should be made on making RAC/REMPEITC-Caribe the *Regional*

Central Point of Contact for the development and implementation of any future WCR RRFP.

2. Initiate a campaign to improve the reception of Annex I Oil wastes at all port and port facilities throughout the WCR.
3. Conduct technical assistance focused on assisting WCR States in implementing the necessary legal measures to enable their government to confidently ratify, implement and then enforce the MARPOL Convention.
4. Further discussions and considerations of a regional plan that may allow those SIDS with Limited Port Facilities, due primarily to limited land space and capacity for final disposal of wastes, to secure regional arrangements with other ports that may be able to better meet the obligations for providing adequate facilities.
5. Focus initial efforts, and international assistance, on improving Annex I, II and V PRF capabilities, oversight and enforcement mechanisms in those SIDS that have ports identified in this report as potential Regional Waste Reception Centers. In most all cases, these ports are also regional hubs, whereby the biggest impacts on receiving SGW throughout the WCR can be made.
6. Further discussions and possible agreements for common costs structures for the reception of different types of SGW throughout the WCR to prevent low cost location from becoming dumping sites at the expense of the investments needed to develop and operate proper waste management systems.
7. Further discussions and encourage innovative solutions for possible regional arrangements that may allow for environmentally and legally sound aggregation of different categories of ANNEX IV garbage wastes when doing so would help generate the necessary volumes of waste needed for economic entrepreneurship with sound market mechanisms.
8. Initiate a MARPOL Training Campaign that educates all levels of port and shipboard mariners, operators and managers on: the shipboard requirements under MARPOL, the Special Area Designations for the Caribbean, as well as best practices for efficiently managing, disposing of SGW.
9. Deliver ANNEX II PRF training to those ports identified as Regional Port Reception Centers and any others having shipyards or ship repair facilities.
10. Further investigate the needs for Annex IV PRFs throughout the region, and any potential environmental impacts on the region associated with the limited availability of such facilities throughout the WCR.
11. Initiate a regional outreach campaign, through internationally recognized organizations, to encourage reduction, prevention and recycling of waste (especially plastic wastes) on board passenger ships operating in the WCR.
12. International funding should be identified to help develop, update and/or revise the National Waste Management Plans of each WCR SIDS.