GOVERNANCE IN THE CARIBBEAN SEA IMPLICATIONS FOR SUSTAINABLE DEVELOPMENT

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The United Nations - Nippon Foundation Fellowship Programme
2007-2008

20th DECEMBER, 2008

DIVISION FOR OCEAN AFFAIRS AND LAW OF THE SEA OFFICE IF LEGAL AFFAIRS, THE UNITED NATIONS
NEW YORK, 2008

THE NIPPON FOUNDATION
AKASAKA 1-2-2 MINATO TOKYO

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Abstract

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Governance in the Caribbean Sea: Implications for Sustainable Development

In the Caribbean Sea, 36 States (Independent and Overseas Territories of France, Netherlands, UK and USA) have jurisdiction over its marine space, of which many of them have claimed by

Acknowledgements

My gratitude and appreciation to The United Nations and the Nippon Foundation of Japan for granting me this fellowship award to conduct this research. I also would like to thank Dalhousie University's Marine Affairs Programme and the United Nations Department of Oceans and Law of the Sea (DOALOS) for hosting me during this fellowship.

During the tenure of this fellowship, many colleagues shared and exchanged ideas, provided reviews of this work and offered clarifications to many legal issues and nuances. These discussions have in many ways further my understanding of ocean affairs. To all of you, my sincere gratitude especially Drs. Francois Bailet, Mark Griffith, Lucia Fanning, David Vanderzaag and Andre Tahindro also other staff members at Dalhousie and UNDOALOS. I would also like to acknowledge the technical support provided to me by staff members of both Dalhousie University and UNDOALOS especially Esperenza Francois, Robert Sandev, Shawn Stanley, Becky Fields and Heather Frausell.

During my stay at UNDOALOS, I had the privilege to exchange ideas and to share many lights moments with the 2008-2009 Fellows, both in the office and on our visits exploring New York. I will have these cherished memories for a very long time. All the best 2008-2009 crew!

Thank you is not enough to the say to my family and friends for the 'always' unwavering and countless support.

List of Acronyms

CARICOM	Caribbean Community Secretariat
CEHI	Caribbean Environmental Health Institute
CIDA	Canadian International Development Agency
DFID	United Kingdom Department for International Development
GPA	Global Plan of Action for the Protection of the Marine Environment from Land Based Sources of Pollution
IWCAM	Integrated Watershed and Coastal Zone Management
OECS	Organisation of Eastern Caribbean States
PAHO	Pan American Health Organisation
SIDS	Small Island Developing States
UNCLOS	United Nations Convention on Law of the Seas
UNEP	United Nations Environmental Programme

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1.2 Geo-physical Characteristics

1.2.1 Geographic Location

The Caribbean Sea is located between 9-22ºN and 89-60ºW and is the second largest sea in the world.[7]. It is semi-enclosed by nine South and Central American countries (commonly referred to as Latin America) and an archipelago of twenty–five island States of which some are independent Sates and others are overseas territories of either France, Netherlands, United Kingdom (UK) and United States of America (USA). A few other islands governed by Netherlands are scattered within the sea. Collectively, the study area (hereon referred to as 'the Caribbean Sea') comprises a total of thirty-six States[8] and the Caribbean Sea as shown in Figure 1.

[7] Richards, W. J. and J. A. Bohnsack (1990). The Caribbean Sea: A Large Marine Ecosystem.in Large Marine Ecosystem: Patterns, Processes and Yields. K. Sherman, L. M. Alexander and B. D. Gold. Washington, American Association for the Advancement of Science**:** 44-53.

[8] Refer to Footnote 4 for list of States in the study area.

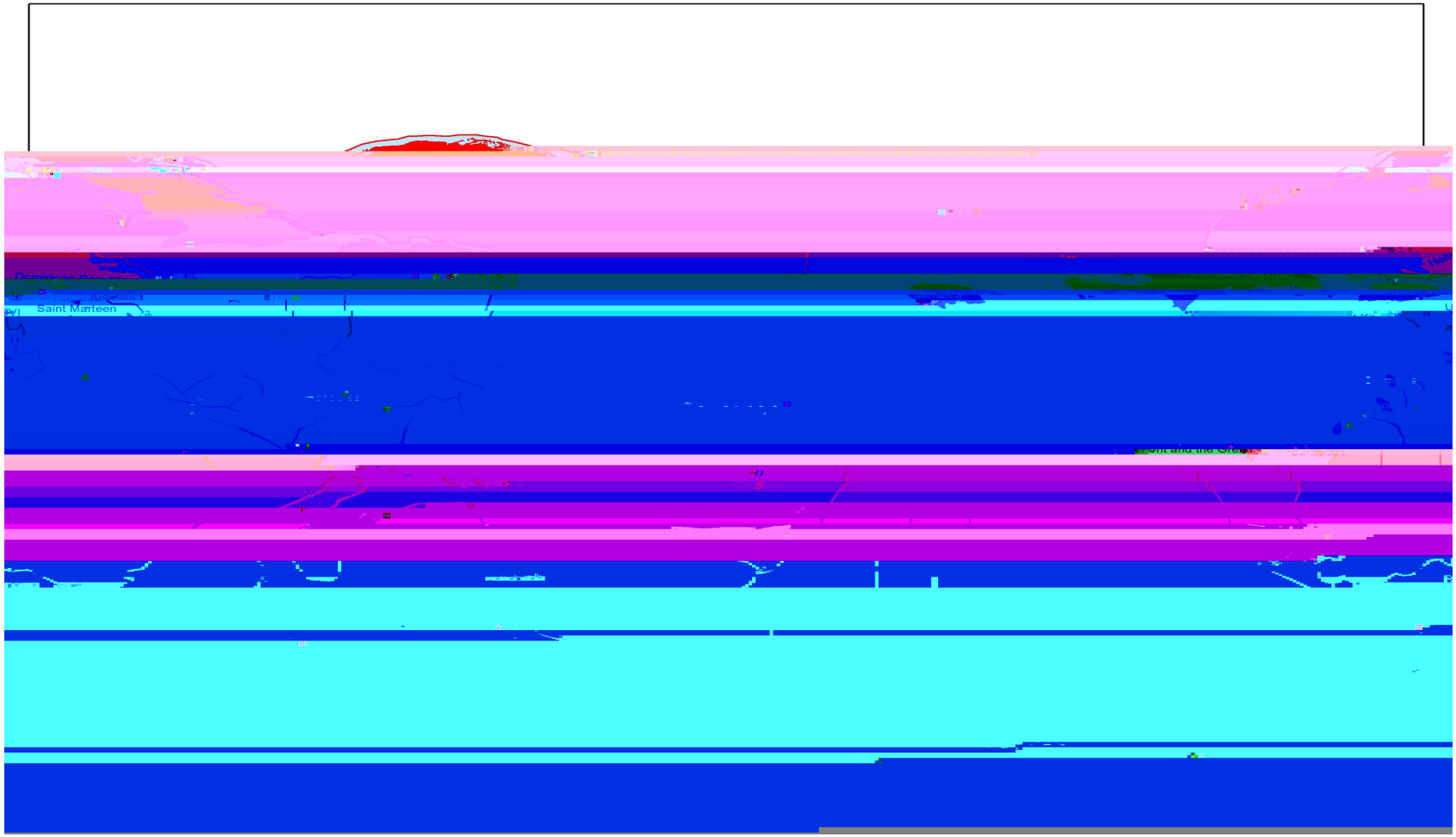

Figure 1: Map of the Study Area
Source: Derived and Compiled by the author, 2008. Spatial data was derived using information from Encarta Maps "Caribbean Sea" http://www.encarta.msn.com

1.2.2 Bathymetry

This Caribbean Sea covers an area of 2,515, 900 sq km and has many basins/troughs, which were formed in the Cenozoic era.[9] The Cayman trough is one of the many basins and is the deepest vertical depression in the sea. There are also many passages and straits of which the Anegada passage, serves as one of the principal shipping lanes in the

1.3 Bio-Physical Characteristics and the Importance to Human Wellbeing

The highly stratified nature of the water in the Caribbean Sea makes it one of the lesser productive seas in the world. This Sea is highly stratified in the upper 1,200m, weakly stratified between 1,200-2,000m and almost uniform below 2,000m.[15] It is relatively nutrient deficient (nitrates and phosphates) except for isolated areas of upwelling[16] which are mainly coastal upwellings occurring on the northern coast of South America.[17] The National Ocean and Atmospheric Agency (NOAA) in 1995 using SeaWifs global index, calculated the productivity index of the Caribbean Sea to be less than 150 g C/m^2-yr, thereby falling into the 111 Class - low productivity.[18] The generally low productivity n( )-150.304( )-40.55

beds[21] and mangroves forests[22], which in turn support many species of marine life thereby supporting vibrant fishery sectors in all the States. The importance of the ecosystem services provided by way of fisheries to the people of the region range in sig

region and in its jurisdiction in the Caribbean Sea, preliminary surveys have identified significantly large oil and gas deposits.[38] In May 2004, Petrobras from Brazil teamed up with Exxon Mobil Corp (XOM) and Colombia's State-owned company Ecopetrol to explore Tayrona, an area of more than 4.4 million hectares off Colombia's northern coast in the Caribbean waters. Colombia has not ratified UNCLOS, but is currently delimiting its boundaries with neighbouring jurisdictions. Venezuela, a non party to UNCLOS, is one of the largest oil producers in the western hemisphere, and in 2006, ranked as the world's sixth largest net oil exporter.[39] Although, most of Venezuela's oil reserves are in

The attributes of the Caribbean Sea, such as, poor nutrient and low productivity, which increases its vulnerability to abnormal anthropogenic pressures, the presence of important habitats which provide ecosystem services[42] for human well-being both regionally and internationally, the various activities and uses of major economic significance, which has

Figure 2: A Causal-Link Approach for illustrating the inter-linkages between Humans and the Caribbean Sea. Source:
Source: Compiled by the author using referenced sources[46]

[46] Singh, A. (2005). "SIDS, Sustainability and the Caribbean Sea " SEOES Plymouth PhD: 391.pp. Kremer, H. H., W. Salomons and C. J. Crossland (2004) *Human Dimension of Land-Based fluxes to the Coastal Zone:LOICZ Approach*. EUROCAT 13.

1.5 Recognition of the Problem

The degradation of the Caribbean Sea is linked to inadequate and ineffective waste management of all forms (land and marine based) and the over-exploitation of both living and non-living resources.[47] These three areas have implications for sustainable management of the Sea and must therefore be addressed. In addition, there is a disconnect between the way the region manages its terrestrial and marine resources.

However, within the last two decades, a few countries in Latin America and the Caribbean have started closing the gap between their policies for land and maritime resources. This is particularly true of countries whose economies are closely linked to environmental quality in the coastal zone. Recent inventories highlight the considerable scope of management efforts in the region, within countries and the upsurge of regional initiatives responding to these issues and causes. [48]

Among the responses are many programme implementations targeting various sectors or particular issues, the establishment of regional institutions, initiatives and legal agreements including Multilateral Agreements (MAs). However, the degradation of the Caribbean Sea continues and many have pointed to the sea being in crisis.[49] Therefore, there is a need to promote a paradigm of ocean governance, which can respond more effectively to the issues that are affecting the Sea. In this regard, governance and its role in the Caribbean Sea will be discussed in the following section.

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[47] GESAMP (2001) *Protecting the Oceans from Land based Activities: Land-based sources and activities affecting the quality and uses of the marine, coastal and associated freshwater environment*. GESAMP 162;GESAMP (2001) *A Sea of Troubles*. United Nations Environment Programme 2001.

[48] Lemay, M. H. (1998) *Coastal and Marine Resources Management in Latin America and the Caribbean*. World Bank 62; Singh, A. (2005). "SIDS, Sustainability and the Caribbean Sea " SEOES Plymouth PhD: 391.pp;Singh, A. and L. D. Mee (2008). Examination

Part Two: Governance of the Caribbean Sea

2.1 Introduction

For many people who have lived, worked or spent time in the Caribbean and in particular those who happened to view the Caribbean Sea from above, often described it as “the water wilderness" or "a vast commons." It is neither. Civilization has left its mark for centuries in the itineraries of ships, the use and misuse of its resources, the records of trade and exploration, and the interactions of nations particularly those that hold jurisdiction over it, but also many others outside the region. Today, the challenge of governance faces the Caribbean Sea with all the complexity and contradiction faced on land in the many Latin America and Caribbean nations.

As evident in the previous section, the need to respond is defined and many calls for improved governance and progressive action are sanctioned for the Caribbean Sea. In this section, governance and in particular, ocean governance will be explored in an effort to add to the current understanding and to examine the current structure of governance in the Caribbean Sea. In addition, the governance structure as it relates to sustainable development will be examined.

2.2 A Review of Governance and its role in Marine Management

The academic literature on governance is eclectic and relatively disjointed, but evidently, governance has various roots in many fields of study and application. This includes institutional, economic, international relations, organisational studies and a range of economic analysis. Governance in its traditional use and dictionary entry s, ennt417( )-90.6517(i“)3.160
governan157.436417(c)-6.86125(e)3.15789( )-70.6134(a)157.436436( )-180.823(a)3.15785(-2.53597(o)-0.95

> means by which society defines goals and priorities and advances cooperation; be it globally, regionally, nationally or locally. The arrangements are expressed through legal and policy frameworks, strategies and action plans and monitoring performance." [57]

> "the development of governing styles in which boundaries between the sectors are blurred or in an effort to develop a more effective synergy."[58]

In all attempts to define governance, no single definition is agreed and as evident with the examples provided above, the iterations are numerous. What has emerged however is that governance is multi-dimensional and its definition are based on other aspects, such as the situation to which it is applied.[59]

Given the many usages of governance, it therefore seems plausible to acknowledge that governance is a concept, which points to a structure or an order resulting from the

2.2.2 Ocean Governance and its Interpretation

A search on the literature has not revealed a common definition of ocean governance and like governance, it is rather loosely defined. Professor Anderson refers to ocean

whole AND ‘governance’ which implies the inclusive nature of decision making and implementation.[71]

These examples cited above have demonstrated the nuances of what governance is and particularly what ocean governance really means. These definitions have all attempted to cover ocean governance in its broadest sense. These definitions also suggest that ocean governance is ‘everything’ that is influencing the

there must be interventions, which will assist in executing the rights and meeting the obligations (responsibility). These interventions can be in the form of programmes, policies and guidelines among others.

3. In order for the legal instruments and interventions to be effective, there must be institutions (implementing mechanisms), which are used to execute and facilitate the various mandates prescribed.

4. The above three components can only be executed by taking into consideration the multitude of stakeholders and the social, economic and cultural aspects of society.

These components then form the foundation for ocean governance (shown in Figure 3). Therefore, in descriptive terms, ocean governance is "the ability to govern the ocean as prescribed in forms of legal instruments and/or customary international law and supplemented by policy, programme and institutional interventions at the international, regional and national levels, all done in a holistic manner with effective synergies among the various entities, taking into consideration the social, cultural and economic factors."

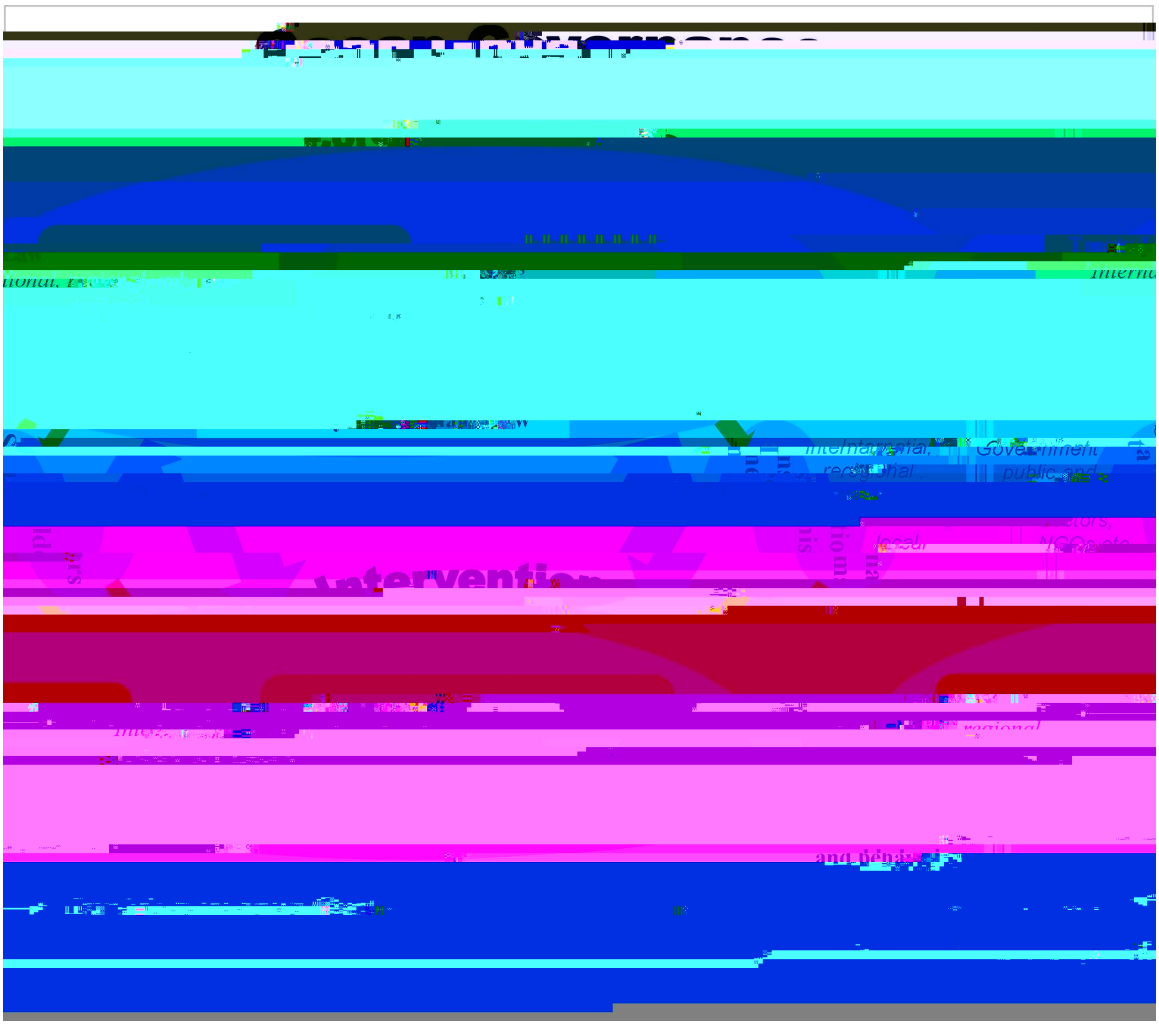

Figure 3: A Conceptual Framework of Ocean Governance. The core of governance shows the various legal agreements, which provide the legal basis/right to govern and the Interventions show the various instruments which support the core. Both core of governance and interventions are effected by a large number of implementing mechanisms facilitated by various institutions and stakeholders. These take into account society norms and behaviours.
Source: Created by the author, 2008

Ocean governance is advocated throughout the world, occurring within national, regional or international boundaries as a way of resolving tension and to seek coherence between

1. It provides the rights to Coastal States of the Caribbean Sea by granting jurisdiction up to a maximum of 200 NM (EEZ) where possible.[75] The EEZ give rights to the Coastal States in the Caribbean Sea to exploit, explore, conserve and manage all the living resources and the non-living too. In addition, UNCLOS give rights to the seabed, subsoil and super adjacent waters.[76] However, Coastal States have limited rights with regard to establishing islands and artificial islands.[77]

2. It elaborates many responsibilities, which includes pollution[78] prevention and the sustainable use and management of both living and non-living marine resources.[79]

3. Given the nature of the living resources of this semi-enclosed sea, which are often shared, UNCLOS articulates the need for cooperation.[80]

[75] This 200 NM includes the territov5(i)0.35660 Tf 0.99803-2.956603(o)-7(va-7(v5(i)0(0)500]TJ /R16 12 Tf 0.99809a)3.15789( )-5

Figure 3: The legal, political and diplomatic governance mechanism in the Caribbean Sea with respect to three core sustainable development issues. The institutions and stakeholders, which are an integral part of governance, are not represented in this diagram.
Source: Created by the author, 2008.

In the Caribbean, UNCLOS has the highest ratification rate than any other international environmental agreements (refer to Table 1).

Convention	Status	States	Signed	Ratified or Acceded	# of Non Party members
United Nations Convention on Law of the Sea (UNCLOS)	Adoption: 1982 Entry into force: 1994	Independent States (total of 21)	2+	18	1*
		OTs (total of 16)		8++	7^

Table 1: The Status of UNCLOS in the Caribbean Sea . Refer to footnote 4 for the list of States in the Independent States and OTs categories.
Source: Compiled by the author using referenced sources[81]

* Venezuela is not a Party to UNCLOS but bbecame party to the 1958 Convention on the Territorial Sea and the Contiguous Zone
+ Colombia and Dominican Republic signed but yet to ratify
^ THE Netherlands ratified UNCLOS, but for its Kingdom in Europe, hence not applicable to its OTs in the Caribbean Sea
The USA is not party to UNCLOS, but has signed the Vienna Convention on Law of the Treaty (referred to article 18 and 29), hence the Conventions it ratify are also applicable to its OTs.
++ UK acceded/ the Convention on behalf of its OTs

recommendations, were sanctioned in support of these agreements, for example Agenda 21. In addition, a number of Caribbean wide projects dealing with specific issues were initiated to further augment these agreements.

Resolutions are another component of Caribbean Sea governance. In the late 1990s, a significant development emerged in the Caribbean Sea, which is the UNGA sanctioned resolutions (hereon refer to as the resolution)[82] for sustainable management of the Caribbean Sea.[83] This resolution which is an initiative of the Association of Caribbean States (ACS) is an attempt at seeking recognition of the 'specialness' of the Caribbean Sea in addition, to augmenting UNCLOS, especially in protection of the sea.

Political/Diplomatic Agreements: At the regional level and sub-regional levels, there are also a number of politically initiated agreements, which have bearings on the protection and use of the Caribbean Sea.[84] These agreements in turn influence sub-regional agreements and national laws[85] of its members.

Collectively, these various components form the current governance mechanisms in the Caribbean Sea. Given the region's attempt at using the resources in the context of integrated sustainable management, this current governance mechanism will be examined further to determine its effectiveness in this regard. Three thematic areas will be used which are pollution, sustainable use and management of both living resources and non-living resources. Such examination is important because these instruments may be either complimentary of each other, or in some cases conflicting or simply inadequate to respond to these core environmental issues, thereby having implication for sustainable management of the Caribbean Sea.

[82] Refer to Section 2.4.2.2 for information on the nature of the resolutions
[83] Refer to Part 3 for an analysis of the effectiveness of this initiative
[84] Refer to Section 2.4.1.1.2 for more information on these Agreements.
[85] In this paper, the national laws of the 36 States will not be discussed. However, their implications and significance for ocean governance where necessary will be examined.

discharge is also compounded by the lack of waste r

Another form of waste is solid waste and the cruise industry plays a significant role in this regard. The most visited destination in the world[97] "the Caribbean" also means the highest amount of waste generation in the cruise industry and according to the International Maritime Organisation (IMO), each tourist generates about 3.5 kilos of waste per day. In 2000, the Caribbean had 21,510,142 beddays [98] and generated in excess of 75 metric tons of waste.[99] In comparison, the Mediterranean had 6,277,064 beddays and generated close to 22 metric tons for the corresponding year.[100] This data suggest that the Caribbean cruise industry produced close to four times more waste than the Mediterranean. If the waste generated by the cruise industry is not disposed properly, there can be far reaching consequences to marine life such as diseases, and physical damage.[101]

Sewage and grey water are other forms of ship generated waste and although container shipping and other forms of commercial ships do contribute to this problem, the cruise industry is significant because of its cargo. According to Ocean Conservancy, a typical cruise ship plying the Caribbean Sea has a 3,000 capacity, which is capable of producing 30,000 gallons of sewage and 255,000 gallons of grey water per day.[102] How much of sewage, grey water and solid waste ends up in the marine system of the Caribbean Sea is generally unknown, except for a few cases of prosecution[103,] as there is no major policing in the Caribbean Sea for the cruise industry.[104]

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[97] Refer to Section 1.4 for additional information on the cruise industry in the Caribbean Sea.

[98] It is a common measurement used in the cruise industry. Beddays are calculated by multiplying the number of beds occupied on a ship by the number of days; Ocean Conservancy (2002) *Cruise Control: a report on how cruise ships affect the marine environment*. The Ocean Conservancy 68..

[99] ibid.

[100] ibid.

[101] In response, the Caribbean Sea has being granted special area status under the MARPOL Convention Annex V which was entered into force in 1994, but has yet to be implemented. Refer to IMO. (2002). "Special Area." 2004, http://www.imo.org/home.asp.

[102] Ocean Conservancy (2002) *Cruise Control: a report on how cruise ships affect the marine environment*. The Ocean Conservancy 68.

[103] GESAMP (2001) *A Sea of Troubles*. United Nations Environment Programme 2001.pg 14. This report notes that about one third of the wasted dumped by cruise ships in the Caribbean is done deliberately. In the recent past, Norwegian Cruise Lines, Carnival Corp. and Royal Caribbean Cruises all have faced fines ranging from $1 million to $27 million for illegal pollution of the marine environment. Further these companies have engaged in production of fraudulent documents to cover up their wrong-doing. In November, 2002 Norwegian was given the smallest fine of $1 million because of its efforts to report, cooperate and change its operating procedures. Adams, M. (2002). *US Keeps Wary Eye on Cruise Ships for*

The consequences of ship-generated pollution cannot be overstated because it pose a serious threat to the sea's water quality, ecosystems, habitats and even single species. This in turn, affects the long-term viability of the Caribbean Sea to provide the valuable goods and services to humankind.

2.4.1.1.2 The Current Governance Structure in the for Ship Generated Pollution Management in the Caribbean Sea

Governance regarding ship-generated waste is sanctioned at the international and regional levels via conventions, treaties and programmes, which in some instances are translated to the sub-regional and national levels, enshrined in laws, regulations and programmes. Over the last few decades, a number of legal instruments and programmes have responded, including UNCLOS. Many of these international agreements have influenced the governance, as evidenced by the number of States in the region that have signed, ratified or acceded to them as shown in Table 1. The applicable provisions in each initiative regarding ship-generated waste are discussed below.

More Pollution. Miami USA Today. Miami, www.usatoday.com/travel/news/2002/2002-11-08-cruise-dumping.htm.

[104] The surveillance in the Caribbean Sea is weak, because of limited financial and technical capabilities. For more information on surveillance in the Caribbean Sea. See Mitchell, C. (2007). "Countering Maritime Terrorism in the Caribbean Sea and the Atlantic Ocean: Implications of Possible Maritime Terrorism in the Caribbean " *U.S Army Command and General Staff Collage* MSc.: 76.pp.

UNCLOS: This convention has within its provisions, laws governing pollution which are enforceable by the coastal States from vessels.[106] As such, ships using transit passages must comply with generally acceptable standards and regulations for the prevention, reduction and control of pollution from ships.[107] UNCLOS also states that coastal States [108] may adopt internationally acceptable laws to prevent pollution from ships in areas

of this convention, certain types of waste are permissible for dumping, subject to the granting of either a special permit or a general permit.[117]

1996 Protocol

minimize pollution from ships – from both accidental pollution and routine operations. This convention works on the basis of certifying ships in terms of safety and pollution compliance. Under the various annexes, MARPOL stipulates that any discharge of waste

the Caribbean Sea".[156] One of the initiatives of the ACS, which falls under the Caribbean Sea mandate, is the pursuance of the Caribbean Sea Special Status at the United Nations General Assembly (UNGA).[157]

The Revised Treaty: This treaty establishes the Caribbean Community (CARICOM) and accompanying mandates for informing policy decisions within the jurisdictions of its members[158]. In the Revised Treaty, the need for management of the Caribbean Sea to

Basseterre Treaty: The Treaty of Basseterre establishing the Organisation of Eastern Caribbean States (OECS) [165] gave primacy to cooperation in the international relations of its member States.[166] One of its major objectives is "to assist the Member States in the realization of their obligations and responsibilities to the international community with due regard to the role of international law as a standard of conduct in their relationships."[167] Under the OECS, the St George's Declaration of Principles of Environmental Sustainability was adopted to augment the legal international environmental instruments within the OECS and to give credence to the treaty. One of the core principles in the Declaration is the recognition of the need for sustainable management by preventing air, water and land pollution stating *inter alia*, "Measures will be taken to prevent, reduce and control waste generation and disposal, as well as pollution of land, rivers, sea and the air."[168]

In addition to these instruments, there are also a number of non-binding initiatives, which contain programmes of action including responses to pollution from ship-generated wastes. These serve to augment the legal agreements, which are further t6 Td [(b)-0.957028(-8[(,)-03( )-1

Agenda 21: An outcome of the UNCED Process[169], Agenda 21[170] recognizes the importance of preventing, reducing and controlling sea based activities, which are affecting the marine environment and presented a number of measures for States to consider.[171] These include supporting the ratification and implementation of shipping conventions and protocols[172], cooperation in the monitoring and assessment of marine pollution from ships especially illegal discharges[173], enforcement of MARPOL provisions[174] and take into consideration appropriate measures for ballast water discharge and transportation of hazardous and noxious substances.[175] Port States are also tasked with establishing port reception facilities and similar facilities in harbours and marinas[176]

outlined, as part of its action plan for waste management, that States ratify and implement all the necessary treaties and conventions.[180]

In addition to these programmes, there was also a major project called the 'Wider Caribbean Initiative for Ship Generated Waste (WCISW)' which was initiated in 1994 and ended in 1998. Twenty-two countries from the Wider Caribbean Region participated in this project.[181] The objective of the project was to provide a regional strategy for the ratification of the MARPOL Convention. Specifically, it aimed at providing the Government in the region with information on the legal, technical and institutional measures and to provide support for the implementation of a regional strategy. However, at the end of the project in 1998, many of the objectives were not achieved especially the regional strategy.

Collectively, these mechanisms form the existing governance structure for the management of ship-generated waste.[182]

2.4.1.2 Land Based Sources of Pollution

contributing factor to coastal degradation. One example is in Guadeloupe, where an inventory of its facilities showed that from a total of twenty public sewerage treatment plants, only nine apply minimum treatment, the others are either inadequate or ineffective.[187] A similar situation regarding the management of sewage exists in other islands and in settlements in mainland Latin America, as many settlement centres are not connected to a sewerage system.[188] For example, a study done in Curaçao in 1998 revealed that only 38% of the households in that State are connected to the sewerage system.[189] This low percentage of connection is due to the lack of mandatory compliance. The issue of sewage disposal and sewerage treatment is recognized by Government in the region as critical and as a result, more emphasis is being placed on building treatment plants. Currently however, the available capacity is still inadequate to deal with the waste generated[190] and to date the degradation of coastal water quality remains a major concern in the region.

Effluents emanating from industries are also a major source of land based pollution and are regarded as a significant issue in the more industrialised countries such as Venezuela, Columbia, Trinidad and to a lesser extent, islands such as Martinique. In addition to the relatively high volume of industrial waste, in many countries, existing industries do not conduct adequate effluent treatment prior to the discharge thereby compromising water quality in the marine environment.[191] This inevitably contributes to the inherent disruption of the marine ecosystems found in the region.

[187] IFRECOR. (2000). "Introduction Guadeloupe." Retrieved 03/02/2003 2003, http://www.ecologie.gouv.fr/article.php3?id_article=794.

[188] Singh, A. (2005). "SIDS, Sustainability and the Caribbean Sea " SEOES Plymouth PhD: 391.pp. In this study an inventory was conducted of the existing sewage system in the SIDS and it was found that no countries did tertiary treatment of sewage and in almost all the SIDS in 2005,).2(a)in

compared marine debris collected in various Caribbean SIDS and found that the amount of debris collected varied among the Caribbean island States. For example, Jamaica

compromised in many areas by these contaminants. For example, heavy metals were found in the vicinity of Kingston Harbour in the water column and suspended sediments.[212] Furthermore, in the surrounding waters of Guadeloupe, abnormal concentrations of some heavy metals were found in sediments, marine organisms and within the water column.[213] These heavy metals included lead (Pb), cadmium (Cd), vanadium (V), copper (Cu), zinc (Zn) and tin (Sn) were traced to the sources.[214] The lead originates from [illegible]

In 1992, the oil refinery in St. Eustatius suffered a damaged pipe, which spilled between 200-400 barrels of oil into the Caribbean Sea.[218] In addition, to affecting the water quality of the Caribbean Sea, studies have indicated that ecosystems and habitats affected by oil pollution may never recover to pre spill level. For example, in 1986, Refinera Panama in Panama suffered a rupture at its facility and over 55,000 gallons of oil was spilled into the Caribbean Sea in areas where coral reef and mangroves are present. Over 15 years of monitoring by the Smithsonian Institute, it was found that the reefs have not recovered.[219] Studies like this reinforce the fragile nature of these ecosystems and add knowledge on resilience of ecosystems. In addition, it further demonstrates that disturbances of any magnitude will likely have a long term or even permanent effect.

The increased understanding of the impacts of these land based activities have prompted many response effort in the form of international, regional, sub-regional and national initiatives. These are discussed below and graphically represented in Figure 3.

2.4.1.2.2 The Current Governance Structure for Land Based Pollution Management in the Caribbean Sea

UNCLOS: The issue of pollution is articulated in this agreement and within its provisions, it sets forth the general obligations of States to protect and preserve the marine environment.[220] UNCLOS also articulates that measures be taken by Contracting Parties to "prevent, reduce and control pollution of the marine environment and minimise

Cartagena Convention: In its provisions stated that Contracting Parties

to include responding to land based sources of pollution. These include the Colombia Convention, The Revised Treaty, Basseterre Treaty and Tegucigalpa Protocol.[229]

Global Programme of Action (GPA): In 1995, the UNEP initiated a Global Plan of

Integrated Watershed and Coastal Areas Management Project (IWCAM): At the project level, NOAA, UNEP and a selected number of States[235] in the Caribbean have jointly undertaken the Integrated Watershed and Coastal Area Management (IWCAM) project to respond to issues of terrestrial and marine degradation in the region. The objective of the project is to strengthen the capacity of the participating SIDS to implement an integrated approach to the management of watersheds and coasta

2.4.2.1 Biodiversity Management

2.4.2.1.1 Overview of Pressures

Coral Reefs provide many direct and indirect ecosystem services. They are a source of fish and other seafoods for many of the inhabitants of the region. The reefs also provide biochemical compounds that are being used in treatments of diseases, serves as a protective barrier to the adjacent coastal areas and are of high aesthetic value.[238] Indirectly, the coral reefs provide nursery grounds for an immense number of species (some of direct commercial importance), including habitats for larvae, juveniles and adults. Coral reefs also perform synthesis functions such as the uptake of carbon dioxide,

Mangroves provide a variety of services in the Caribbean Sea, it plays a key role in cycling of nutrients, provides habitation for many juvenile species of fish of which many,

these for ecosystems goods and services for human well-being. In addition, there are many unique species found in the Caribbean Sea [242] which are of global significance, hence these impacts can lead to extinction. Already natural phenomena such as effects of climate change and hurricanes are compromising the resilience of these ecosystems hence, added pressures from anthropogenic activities can further compromise the health of the ecosystems and thereby their ability to perform the services.

Convention	Status	States	Signed	Ratified or Acceded	No. of Non -Party Members
Biodiversity Management					
The Convention on international Trade in Endangered Speices of Wild flora and FauMau5WAx3;3Mdu;WR;WR05.Ra		Independent States (total of 21)		18	3

practical means. UNCLOS also stipulates that these measures must take into account and should not be less effective than generally accepted international rules and standards.[249]

Convention on the international Trade in Endangered Species of Wild Flora and fauna (CITES): This convention is one of the oldest agreements which attempts to protect species by regulating the international trade of certain specimens of wild animals and plants.[250] This was done as a means of ensuring that trade does not threaten species survival or make them prone to over-exploitation. Since its inception, two amendments to the original text of the Convention were made, called the Bonn and Botswana Amendments respectively.

CITES presently accords varying degrees of protection to more than 30,000 species of animals and plants worldwide.[251] These species are categorized in the Appendices as most endangered, threatened species and species, which neither endangered nor threatened but require cooperation to avoid exploitation.[252] CITES stipulates that Contracting Parties must regulate the trading by the use of export permits, which must be issued by credible agencies (Scientific and Management Authorities) within the States.[253]

Collectively, these mechanisms form the governance structure for biodiversity management of the Caribbean Sea.[274]

2.4.2.2 Fisheries Use and Management

2.4.2.2.1 Overview of Pressures

In the Caribbean Sea, there are two types of fisheries:

1. Fisheries stocks found in the fringing habitats of the coral reefs, seagrass and mangroves of the islands and coastal areas of mainland countries;

2. The pelagic fisheries stocks which are linked at a Caribbean wide level[275]

Fishery in the Caribbean Sea include offshore pelag

correlation was observed of trophic cascading from overfishing in Discovery Bay, which led to increase macro-algae community and decline fringing coral reef.[286]

Overall, the region's fisheries are under pressure, therefore meaningful responses are vital to maintain a sustainable fisheries sector. The fisheries resources are vulnerable, because stock abundance, is highly dependent on habitat integrity and spawning aggregations, which can be easily lost from overfishing pressure and other anthropogenic activities, that affect their habitats.

In response, a number of instruments are influencing the governance of fisheries in the Caribbean Sea. These are shown in Table 3 and are discussed below.

2.4.2.2.2 The Current Governance Structure for Fisheries Management in the Caribbean Sea

UNCLOS: The provision of the EEZ[287] was the most significant provision in relation to the governance of the marine fisheries resources. This provision offers coastal States sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources including living.[288] Contracting Parties are also tasked with pursuing sustainable exploitation [illegible]

Straddling Stock Agreement is not applicable in full[290] to the Caribbean Sea, because of the absence of high seas upon the complete delimination of boundaries.[291] However, many of the principles, concepts and tools for management articulated in this agreement[292] apply to any forms of fisheries and as such, influence the governance of fisheries in the Caribbean Sea. Testimony to this understanding is the ratification of this agreement by some jurisdictions in the Caribbean Sea e.g Belize shown in Table 3**.**

In addition to these instruments, there are also regional and sub-regional agreements which have indentified issues of sustainable management for the Caribbean Sea which inferred to also include fisheries management. These include the Columbia Convention, Basseterre Treaty and Tegucigalpa Protocol.[293]

processing of fishery resources.[300] It also calls for States to ratify and/or adhere to regional and international conventions concerning the protection of coastal and marine resources and combat unsustainable fishing and related practices.[301]

FAO Fisheries Code of Conduct: Another form of response to fisheries was by FAO. In 1995, FAO attempted to address declining stock worldwide by providing guidelines for effective fisheries management. This was done through the Code of Conduct for Responsible Fisheries.[302]

Caribbean Large Marine Ecosystem Project (CLME): This project which is scheduled to be implemented in late 2008 aims to provide a governance mechanism for the management of the shared marine resources in the Caribbean Sea and adjacent regions.[310] It proposes to build on and compliment existing projects and initiatives that emphasize

2.4.3.2 The Current Governance Structure for Non-Living Resources in the Caribbean Sea

2.4.4 UNGA Resolution as a vehicle for Sustainable Management

2.4.4.1 Overview of the Resolution

Given the fragile nature of the ecosystems, the high dependence on these services and the threats from shipping and related activities, the Caribbean Sea is viewed as a special sea. On this basis, coupled with the provisions in UNCLOS[319] and the Revised Treaty[320], in 1997 at the CARICOM initiated Caribbean Ministerial Meeting on the Implementation of the Programme of Action for the Sustainable Development of SIDS, the decision was taken to seek international support for the Caribbean Sea as a special area in the context of sustainable development.

Considering that not only the Caribbean SIDS shares the Caribbean Sea, it was agreed that the support, involvement and consent of the Latin American countries that exercised jurisdictions in the Caribbean Sea were vital. In 1997, the ACS was given the mandate to pursue this agenda[321] instead of CARICOM. As a way forward, the region under the aegis of the ACS decided to seek the special area status for the Sea via the UNGA. In 1999, the UNGA passed a resolution on the Caribbean Sea, and to date there has been four more resolutions, all dealing with sustainable management. From the ACS' perspective, the overarching aim is to seek a constituted legal instrument that would address the major uses and impacts on the Caribbean Sea.[322] Given these developments since 1999, it will be necessary to examine the resolutions, the region's responses to the obligations set forth in each of these in an effort to determine the effectiveness of such a mechanism he

international law and are implemented by States as a mechanism for sustainable fisheries.[328]

2.4.4.4 The Merits for Sustainable Management of the Caribbean Sea

The resolutions[329] have the basis on the use and importance of the Caribbean Sea to which the UNGA recognized its importance to present and future generations such that:

undertake, especially in areas of financial assista

Measures regarding each Resolution that should be undertaken by the Caribbean[335]	Initiatives to fulfil the obligations of the Resolution as reported by UNGA Secretary General

Measures regarding each Resolution that should be undertaken by the Caribbean[335]	Initiatives to fulfil the obligations of the Resolution as reported by UNGA Secretary General
Res:55/203 Promoting an integrated Management Approach to the Caribbean Sea area in the Context of Sustainable Development[337]	
...all States to become contracting parties to relevant international agreements to promote the protection of the marine environment of the Caribbean Sea from pollution and degradation from ships;	
...Calls upon Member States to improve as a matter of priority their emergency response capabilities and the containment of environmental damage, particularly in the Caribbean Sea, in the event of natural disasters or of an accident or incident relating to maritime navigation;	

Measures regarding each Resolution that should be undertaken by the Caribbean[335]	Initiatives to fulfil the obligations of the Resolution as reported by UNGA Secretary General
Res: 57/261 Promoting an Integrated Management Approach to the Caribbean Sea Area in the context of Sustainable Development[338]	

In response, this raft of instruments and interventions which exist for the Caribbean Sea, demonstrates a genuine concern by the various international, regional and national bodies for the need to find a such compromise between environment and development. However, the Caribbean Sea continues to degrade. In the following section, an evaluation of the governance mechanism will be discussed.

Part 3: Discussion of the Governance Mechanism in the Caribbean Sea and Implications for

the obligations are not many, the ratification rate is higher, for example the Oil Spills Protocol of the Cartagena Convention. In some cases, countries are signatory to the protocols but the time lag between signature, ratification and implementation are long, as in the case of the LBS Protocol.

For many treaties, there seem to be a significant d

Inadequacies in the Conventions: Some of the conventions seem rather inadequate in dealing with the environmental issues facing the Caribbean Sea. For example, MARPOL is one of the most widely ratified pollution related convention and one of the oldest in the region. However, when the stipulations for discharges are analysed in GIS (as shown in

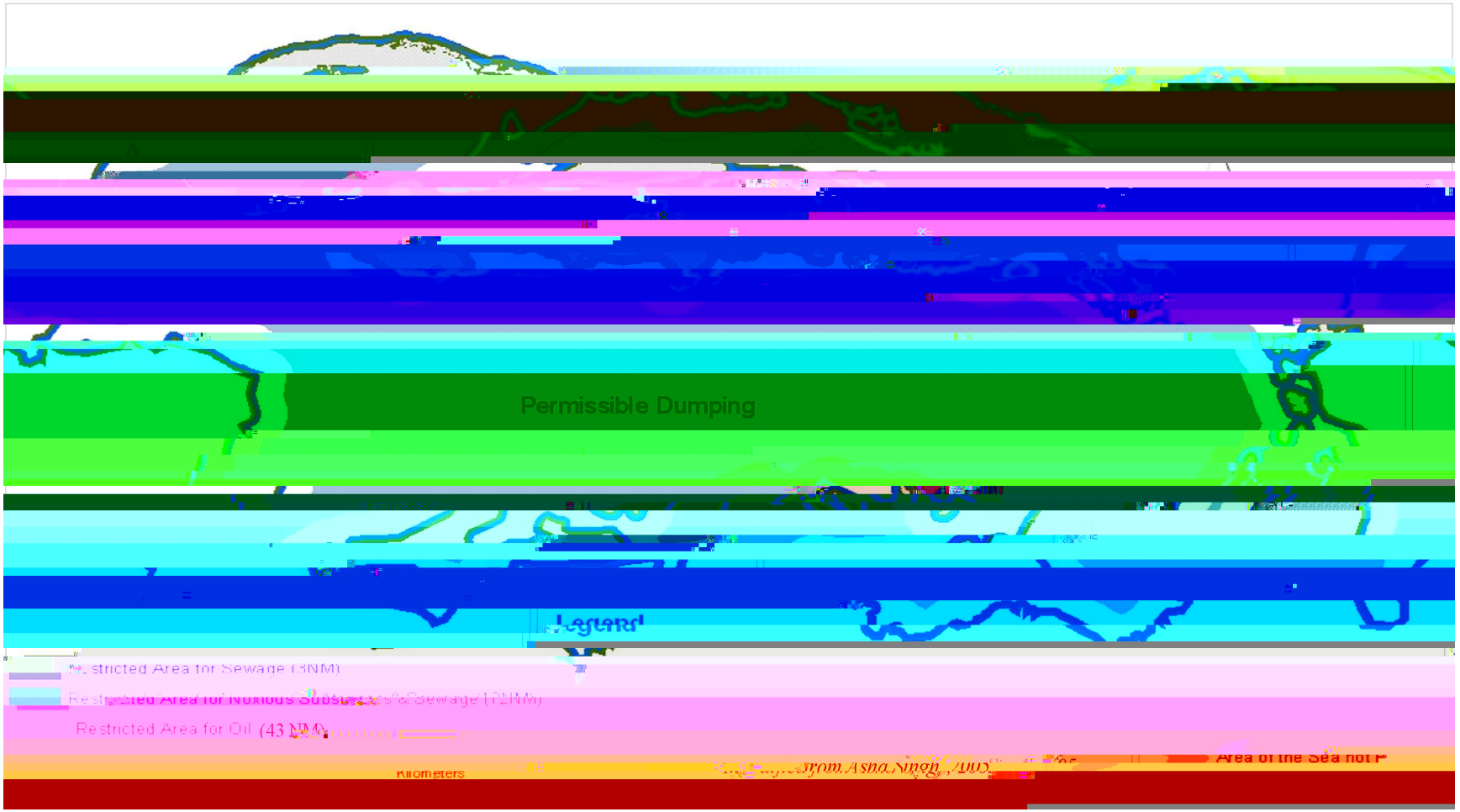

Figure 5: A Map showing the area of the Caribbean S

Non-Binding Agreements and their poor influence: Apart from the legal agreements, the non-binding agreements such as Agenda 21 and BPOA have all attempted to give further credibility to the various legal instruments. These agreements provide useful guidelines and action plans which can assist in curbing marine degradation. For example, BPOA is very applicable to the Caribbean region given the large number of SIDS. However since its inception in 1994, it has undergone 2 major follow-up 'reviews' (shown in Table 5) of which both concluded that it remains largely unimplemented at a regional level. In 2005, at a meeting for the BPOA +10 in Mauritius, Jamaica

Arguably, the initiative such as the BPOA is a well-intentioned effort to deal with many of the environmental problems including those faced in the Caribbean Sea. However, it lacks the necessary power needed for its successful implementation. Its non-binding principles allow for manoeuvres and the reviews highlight its meagre achievements after 14 years from its conception.

Overemphasising the UNGA Resolutions: The region must be commended for taking sustainable management of the Caribbean Sea to a global audience via the UNGA Resolutions. Such action seems to demonstrate that the region is both concerned with the declining environmental quality and cognizant of the consequences of inaction. The region has acted with a high degree of unison, testimony by fact that this initiative has seen the largest number (although not all) of the States being involved via the Caribbean Sea Commission (CSC) to pursue such an initiative at a global level.

However, an evaluation of the achievements has highlighted major shortcomings in terms of meeting the obligations as summarised in Table 6. The review of the achievements indicates that the region has many areas where the required measures of the resolution were not fulfilled based on the reports submitted o

Although, this is a well intentioned initiative, beyond the cooperation agreement and resolutions on paper, the manner in which the region responds to environmental degradation in the past seems to still be the same at present – sectoral, core group of countries with similar political alignment and lack of integration of all States. These are hindrance to achieving any form of sustainable resource management of the Sea. The CSC programme of work seems similar to that of a sub-regional organisation, which will make it difficult to achieve holistic management of the sea. In addition, the concept of special area which is presently being pursued under this resolution seems legally flawed in its present format and continuity seems to be absent from the work of the CSC. The resolutions (non-binding) principles, may likely allow for continued manoeuvres similar to other initiatives such as the BPOA. In view of these observations, seeking another resolution[353] in the region's current manner of operation will be another agreement while in the meantime the marine environment continues to degrade. In practical terms, there is a tremendous gap between rhetoric and reality which needs to be narrowed.

3.1.3 Challenges

in this region is evident in many other areas as well, such as ship generated waste and fisheries among others.

This lack of integration is also very evident for the OTs of France, the USA, the United Kingdom and the Netherlands. At best, many of these States are observing members to many of the regional and sub-regional bodies, hence their integration into the governance of the Caribbean Sea may be less effective, than those with full membership. This can have implications for the overall management of the sea.

In terms of implementation of multilateral agreements, many of the instruments are poorly implemented in the region. For example, biodiversity management falls under CBD, Agenda 21, BPOA, Cartagena Convention and SPAW Protocol of which all articulated the designation of protected areas to curb biodiversity loss. Many countries have ratified these conventions and incorporate the non-binding agreements into national

3.2 Recommendations

Based on the findings, it may be useful to consider the following recommendations:

a. *A Common Strategy:* There are merits in such an approach, as the resources are shared and so are the problems. Therefore, good conservation measures in one country can reap benefits for another country as in the case of shared marine species. In addition, fulfilling the obligations for all the conventions (MARPOL, Cartagena, UNCLOS) and agreements (Agenda 21, BPOA, Johannesburg 2006) require preparing strategies and programs and to report on them regularly. In a region of mostly developing countries where resources and expertise are scare, a regional approach to the Caribbean Sea will reap benefits in meeting these obligations and achieving sustainable management while simultaneously reducing the financial burden by the duplication of projects. In specific regards the following

together in this regard especially in areas of fisheries surveillance and pollution monitoring. However, in devising such policy, the issues of sovereignty must be given due consideration

Standards, Monitoring Programmes and Data Collection: The increasingly high coastal development means that water quality and discharge standards should be a priority. Based on the current knowledge, common monitoring schemes and indicators should be devised and use by all the countries. Each country should have a regime for water quality monitoring applicable to its own situation, but should be informed by the regional water quality programme.

Data collection and monitoring should be an important priority, as this is the only way to further the understanding of the marine environment, while simultaneously being able to identify trends and environmental changes. Indicators should be developed to gauge the state of the environment, specifically regarding pollution indicators. There should be a repository for data storage which should be made readily available to any country and other relevant stakeholders.

Research: Integrated management is an ongoing process, and resources should be prioritised to fulfil the research needs in various aspects (such as scientific, economic and socio cultural) for ongoing management. Below are a few examples of required research:

1. Economic valuation of the services provided by the

6. Identify ways in which the region can capture economic rents for ecosystem goods and services from the Caribbean Sea.

Public Awareness:

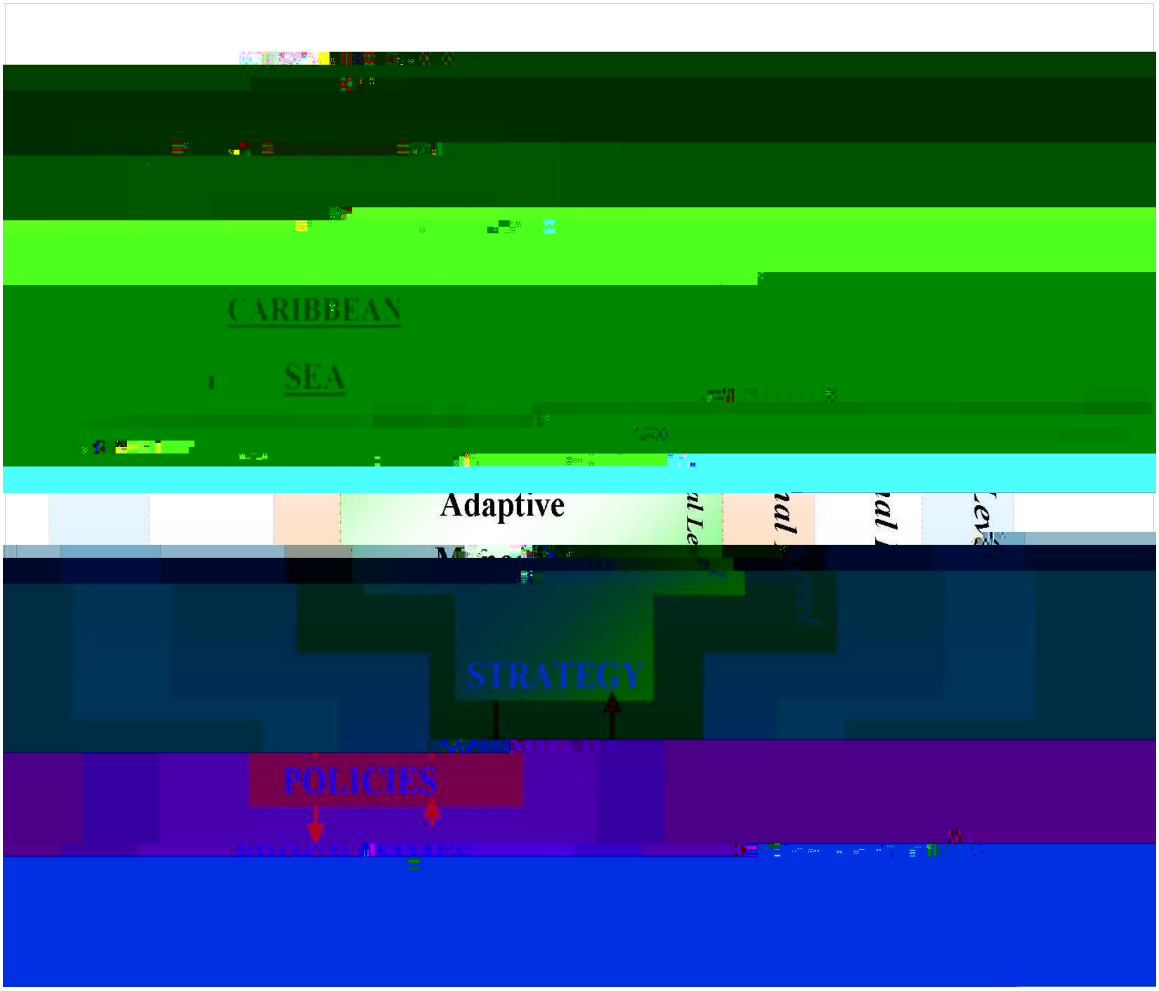

Figure 6: Example of the Proposed Tier Approach to achieving integrated management. It shows that any policies, programmes or projects must be informed by the Integrated Adaptive Management Strategy, with effective synergies. For example, pelagic fisheries is part of the strategy in dealing with fisheries management. A pelagic fisheries policy is devised at a regional level and implemented via a regional programme and i7194(l)-2.53597(e502.53658(e)-0.6)-6.86125(m)11.4305

In addition to a strategy, the following are also recommended:

2. *Obligations*: Conventions, which are related to marine and land based pollution and activities, should be ratified and implemented by all countries that have jurisdiction in the Caribbean Sea, especially those conventions listed in Tables 1, 2 and 3. Despite the identified shortcomings in these instruments, they do provide a common base upon which the region can build sound regimes especially with regard to sustainable governance.

3. *Institutional:* Agreed cooperation and common policies require efficient and integrated institutional mechanisms. This must involve all the countries and efforts must be made to overcome language and cultural barriers. The Caribbean region is a multi-lingual area, therefore, a four-tiered approach with top-down, bottom-up and horizontal information flow will be useful and may be worthwhile considering (these organisations already exist in the region). In terms of collaboration, there must also be horizontal flow of information and cooperation, as language and political alignment (the many sub-regional blocks) must be seamless in order to deal with the management of the Caribbean Sea. A proposed model shown in Figure 7 may help in dealing with some of the current problems.

Currently, the CSC holds potential as a lead agency and can play a vital role in bridging the many programmes and initiatives. However, the success of the CSC will depend on its ability to incorporate and build on the existing initiatives such as those by CARICOM, UNEP/CEP, in addition to adhering to a clear and committed long-term strategy.

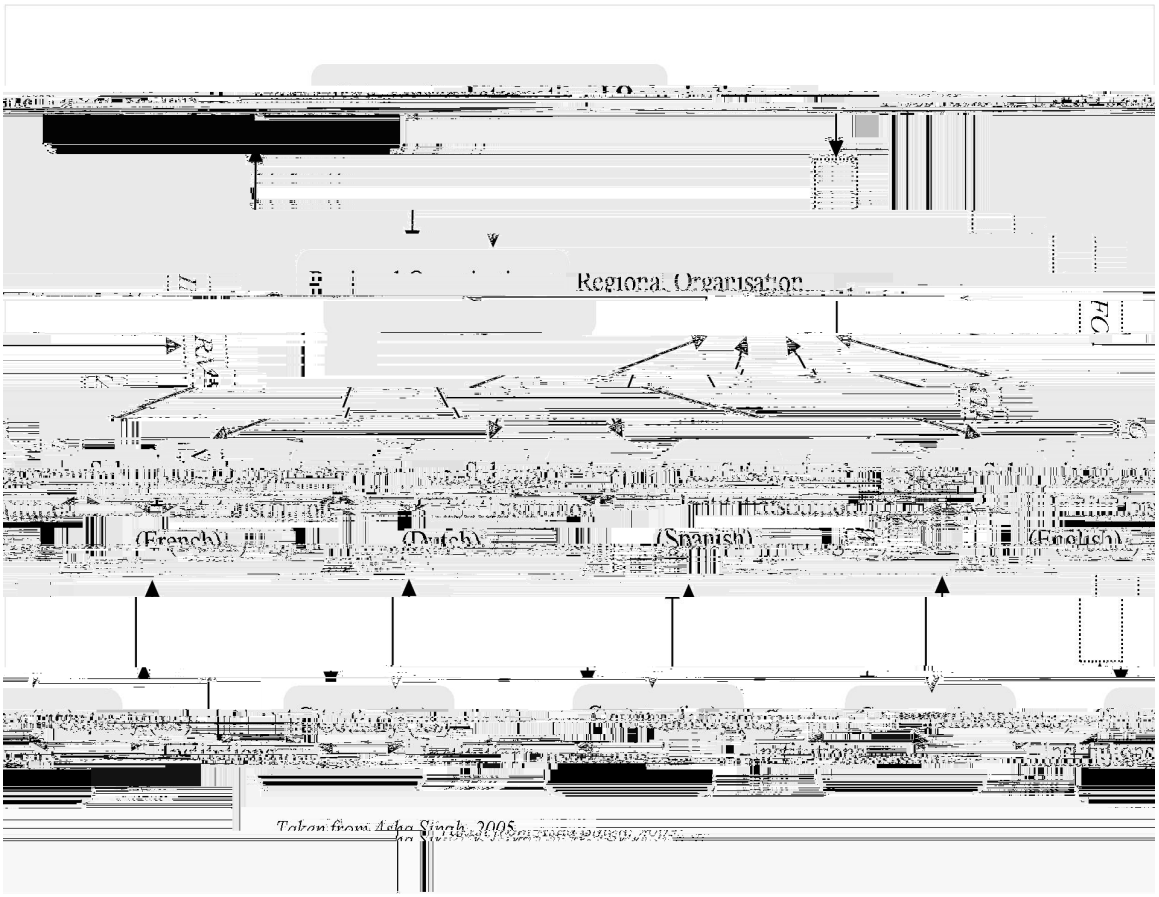

Figure 7: Proposed Institutional Structure for Integrated Management of the Sea. For example, information regarding all the devised policies programmes and projects implementation are reported to a sub- regional institution (e.g CARICOM)

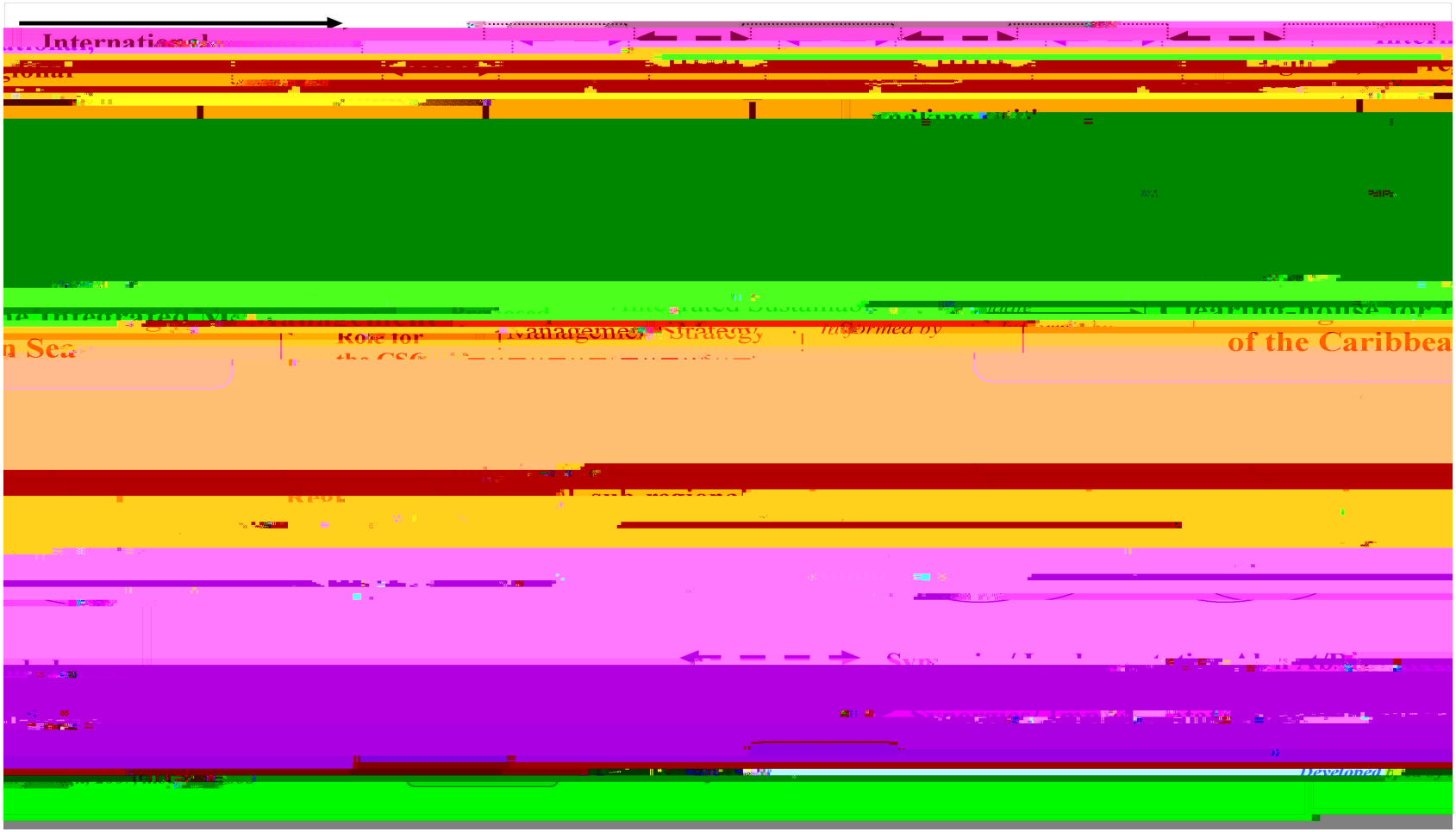

Figure 8: An Illustration of the complexity of Governance in the Caribbean Sea and an approach to overcoming the challenges. The diagram shows that various governance mechanisms are operating with/without synergy among them, which

3.6 Conclusion

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Appendix
Head Tax from Cruise Passengers -debate

St. Maarten denies CTO conference boycott

Thursday, October 16, 2003

PHILIPSBURG, St. Maarten: St. Maarten's Economic Affairs and Tourism Commissioner, Mr. Theo Heyliger, has denied boycotting the 26th Annual Caribbean Tourism Organization (CTO) conference in St. Thomas. "Going or not going to that conference had nothing to do with boycotting. It is not that I didn't want to go. I would have loved to go," he told the Daily Herald today. He denied that St. Maarten wasn't represented at the CTO conference because of the proposal of a US$20 head tax. But the tourism official acknowledged that the levy is clearly not in the best interest of St. Maarten.

The levy being championed by the Caribbean Tourism Organisation as part of efforts to create a sustainable fund to market the Caribbean in global tourism. The proposal has its roots in the private sector and is under consideration by several regional governments. Should St. Maarten decide to implement a US$20 levy or "head tax" for cruise visitors, it could spell economic disaster for the island and its cruise product, said Mr. Heyliger.

Antigua has already rejected the proposal while Dominica is expected to soon follow with a similar announcement. Antigua has built a second pier that can hold four ships, St. Kitts has a pier for two ships and St. Thomas has signed a five-year contract with the Florida-Caribbean Cruise Association (FCCA) agreein

Tourism conference in St. Thomas concludes with no consensus on head tax

Sunday, October 19, 2003

CHARLOTTE AMALIE, U.S. Virgin Islands: St. Vincent & the Grenadines, Mr. Prime Minister Ralph Gonsalves, yesterday stopped short of saying he approved of the US$20 cruise ship levy instead telling industry officials at the close of the travel conference that the cruise industry should be required to help pay for services ranging from police to garbage collection in different countries. "They are reluctant to provide a fair and reasonable contribution," AP last night quoted Mr. Gonsalves as saying. "We have to engage the cruise ship companies to do somewhat better."The proposed tax has drawn fire from cruise officials who say it would reduce demand for the industry by increasing ticket prices. Members who support the proposed tax hope it will generate more than US$60 million (EC$160 million) in annual revenue that could be reinvested into the region's tourism industry.

Much of the conference focused on the cruise industry, which accounted for 9 percent of the Caribbean's US$20 billion (EC$53 billion) in revenue last year. The proposed levy comes at a time when island governments will need to invest more in their infrastructure to keep ships coming.

Taken from Caribbean Net News Friday July 29, 2005
http://www.caribbeannetnews.com/2003/10/19/cto.htm