



CARIBBEAN SEA COMMISSION

Executive Summary

SYMPOSIUM: Challenges, Dialogue and Cooperation towards the Sustainability of the Caribbean Sea

23rd and 24th November, 2015
Port of Spain, Trinidad and Tobago



**ASSOCIATION OF CARIBBEAN STATES
ASOCIACION DE ESTADOS DEL CARIBE
ASSOCIATION DES ETATS DE LA CARAIBE**

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COMMUNIQUE OF THE I SYMPOSIUM OF THE CARIBBEAN SEA COMMISSION



The Association of Caribbean States (ACS) as host of the First Symposium of the Caribbean Sea Commission (CSC) held in the city of Port of Spain, Republic of Trinidad and Tobago, from 23 - 24 November 2015, is grateful for the high level of participation and is pleased with the fruitful discussions and high quality of recommendations received from participants.

The Symposium hosted a wide range of experts from eighteen (18) ACS countries consisting of: Antigua and Barbuda, The Bahamas, Barbados, Colombia, Costa Rica, Cuba, Dominican Republic, Grenada, Guadeloupe, Haiti, Jamaica, Mexico, Nicaragua, Panama, St. Kitts and Nevis, St. Vincent and the Grenadines, Trinidad and Tobago and the Bolivarian Republic of Ven-

ezuela. Furthermore, the ACS was pleased to welcome regional organisations and institutions namely: the Caribbean Regional Fisheries Mechanism, Caribbean Large Marine Ecosystem Mechanism, United Nations Environment Programme, United Nations Development Programme, SPAW Regional Activity Centre, International Maritime Organization and Organization of American States.

The following are the most significant results of the First Symposium of the Caribbean Sea Commission:

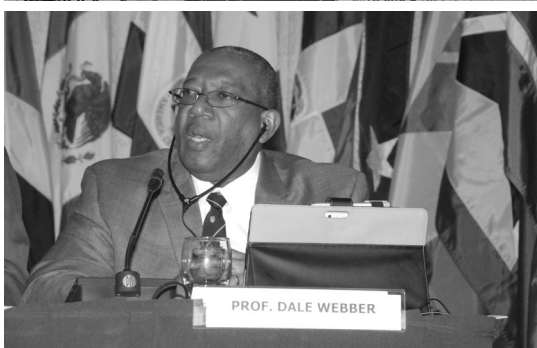
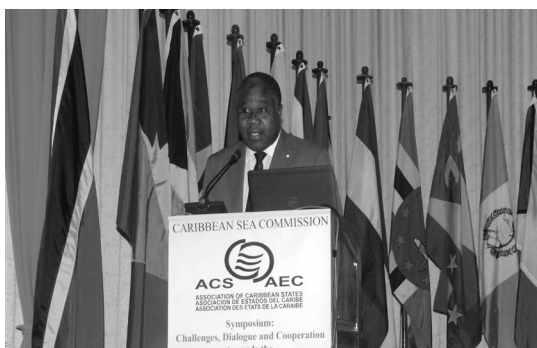
1. The Participants presented in a detailed and systematic manner on the uncontrolled increase of the invasive species-the Lionfish, Sargassum Seaweed and the erosion of the coasts of the Caribbean Sea and the serious and negative impacts it has on the people, the territory and the economy of the Greater Caribbean. Furthermore, they highlighted the intimate relationship between these phenomena and the deterioration of the coral reefs.
2. The Experts recommended to the Governments of the Member States and Associate Member States of the ACS to strengthen the mechanisms of coordination and centralization of actions, in order to address the serious problems that have adversely affected the sustainability of the Caribbean Sea.
3. Additionally, it was suggested that the Caribbean Sea Commission of the ACS is assigned the mission of acting as a coordinating mechanism, to facilitate cooperation among the nations of the Greater Caribbean. In this regard, the Secretariat of the ACS considered the coordination among the Sub-Regional Organizations of integration to be of vital importance and welcomed with enthusiasm the proposal of the OECS representative to work with the ACS.
4. The Participants considered it essential to seek international financing to drive a wider investigation on the topics of the Symposium and that actions be taken on behalf of the

Governments in order to establish mechanisms to centralize and disseminate scientific information which will be gathered. In this regard, the ACS Secretariat conveyed its intention to develop a databank to help with this function.

5. The Participants underscored the importance of using the CSC as a mechanism for transmitting knowledge provided by the scientific community with respect to the sustainability of the Caribbean Sea to the political decision makers of the Member States and Associate Member States of the ACS.

6. The Republic of France proposed to develop a project in relation to the sustainability of the Caribbean Sea as well as convene a conference on the Caribbean Sea in Guadeloupe in 2016 which will be presented to the ACS Secretariat in the upcoming months. The ACS Secretariat expressed its gratitude for the proposal of collaboration with the government of France

7. The Secretariat of the ACS and its Caribbean Sea Commission will report to the upcoming 21 Ordinary Meeting of the Ministerial Council of the ACS the recommendations outlined in this document, with the hope to eventually include those that are considered priority and achievable, in the ACS 2016-2017 Plan of Action which will be presented at the VII Summit of the Heads of States in Havana, Republic of Cuba in 2016.



INTRODUCTION

The I Symposium of the Caribbean Sea Commission (CSC) was held at Radisson Hotel in Port-of-Spain, Trinidad and Tobago on the 23 and 24 of November 2015. The Symposium was attended by one hundred and thirteen participants and Country Experts from eighteen Member States of the Association of Caribbean States (ACS) and twenty three Regional Organizations.

OPENING REMARKS

The Opening Ceremony of the Symposium took place on the 23 November at 9 am and featured remarks from Ms Frances Seignoret the Acting Permanent Secretary of the Ministry of Foreign and CARICOM Affairs of the Republic of Trinidad and Tobago; The Chairman of the Ministerial Council, His Excellency Lener Renauld, Minister of Foreign Affairs and Worship of the Republic of Haiti; The Chairman of the Caribbean Sea Commission, His Excellency Andrés Navarro, Minister of Foreign Affairs of the Dominican Republic; and His Excellency Alfonso Múnera, Secretary General of the Association of Caribbean States.

INTERVENTION BY THE UNIVERSITY OF THE WEST INDIES

Following the Opening Remarks, Professor Dale Webber, Pro-Vice-Chancellor (Graduate Studies and Research) of The University of the West Indies, made an intervention on behalf of Vice-Chancellor, Sir Hilary Beckles, accounting for the role which the University has and continues to play in the development of strategies to combat this issue.

From top to bottom: Ms Frances Seignoret; His Excellency Lener Renauld; His Excellency Andrés Navarro; His Excellency Alfonso Múnera; Professor Dale Webber

This Symposium's aim was to contribute to the objective of the Caribbean Sea Commission (CSC), to support the sustainable development of the Caribbean Sea for present and future generations. As such, it was geared towards creating a forum for discussions between Scientific Experts, Marine Environmental Science Practitioners and Policymakers at various levels. Additionally, the Symposium's objective was to encourage development at the science policy interface, bringing science and policy together, for frank and pragmatic discussions on how the CSC can improve the regional response to regional marine environmental issues.

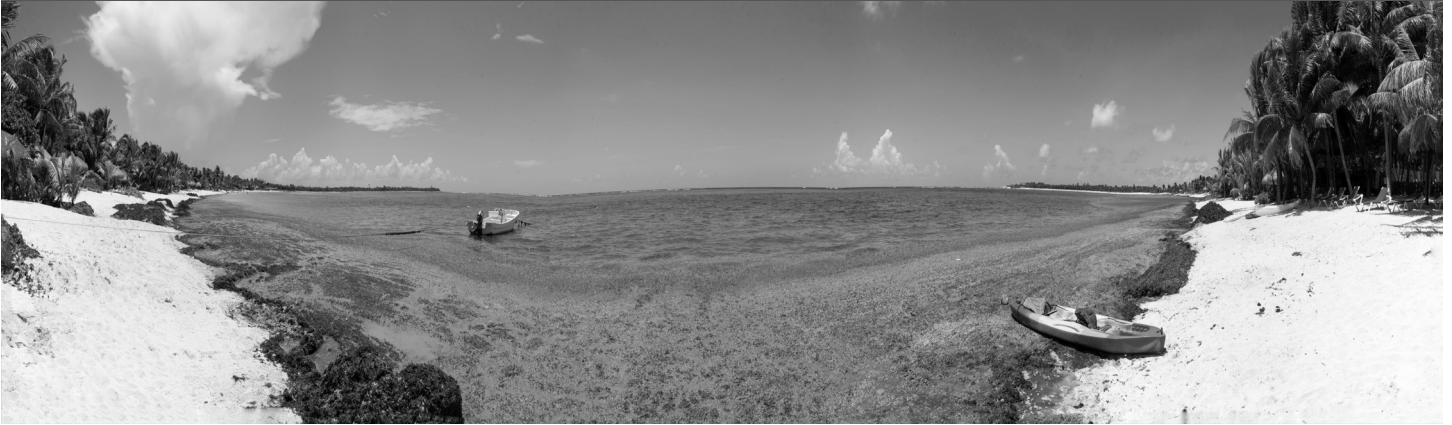
As the region is threatened by many issues, this Symposium focused its discussions on three of the most critical problems faced by the Region: the Sargassum Seaweed Threat, Coastal Erosion and the Invasion of the Lionfish. These issues were selected because, firstly, they have severe negative impacts on the productivity and economies of the countries of the Greater Caribbean Region. Secondly, these issues are regional in nature and thus, will likely benefit from the coordinated response efforts by the CSC. Finally, the impact of these issues is growing, and interest in developing solutions is high among the Member States.

During the Symposium each issue was dedicated to a session for presentations, discussions and remarks.

The sessions were divided into 4 parts as follows:

- 1. Presentations by Experts-** Experts presented on (i) The state of the environmental threat in the region, (ii) How this threat may evolve over time, and (iii) Possible recommendations on how to best address the threat.
- 2. Question and Answer Period-** This allowed clarification of the information provided by the Experts.
- 3. Remarks by Country Experts-** Member States were invited to nominate an Expert on the Caribbean Sea to attend the Symposium which ensured that a comprehensive understanding of how the situation affected the Greater Caribbean Region was attained. As such, in this session nominated country experts were invited to make remarks on the state of the situation in their respective country, indicating how their countries were combatting the threat and if there were any existing gaps in their knowledge.
- 4. Recommendations and Conclusions-** Lastly, recommendations and conclusions on how the threat can be combatted in the Greater Caribbean Region were discussed in order to identify concrete actions to advance accordingly.

SESSION ON SARGASSUM SEAWEED THREAT



The Experts which presented on the Sargassum Seaweed Threat were Professor Hazel Oxenford of Barbados and Dr. Norma Patricia Muñoz Sevilla of the United Mexican States. These experts stated that Sargassum Seaweed is a free floating brown Seaweed of which there are two main species: Sargassum Natans and Sargassum Fluitans. These Experts indicated that the Seaweed has high ecological value in the nutrient poor open ocean and a temporarily variable biomass.

They also reiterated that the unusual volumes of the seaweed is a problem because it inundates shorelines, decolours near shore water and creates a pungent and corrosive odour, as well as threatens coastal ecosystems as it smothers coral reefs sea grass beds and mangroves, while threatening endangered species. Furthermore, they added that Sargassum utilises oxygen gas thereby creating a nutrient overload and in relation the fisheries sector, it makes fishing difficult because it clogs propellers and intakes rendering fishing gear ineffective and thereby increasing the vulnerability of juvenile fish.

The drivers of the Sargassum influx were identified as: nutrients in the water, warm water

temperatures, dust from the Sahara Dessert which crossed the Atlantic and release and transport mechanism. Both experts emphasized that the best way to combat the current Sargassum influx is to have regional collaboration in research and regional communication for response and learning.

To conclude, Professor Oxenford suggested be a regional research fund established, a collaboration mechanism among research institutions, continued support of the communication and sharing of information, and new support for developing partnership and encouraging entrepreneurship.

Likewise, Dr Muñoz highlighted that the Federal Government in Mexico approved a proposal of 150 million pesos (10 Million USD) to combat this issue. The first step of their investment, she indicated, is a programme of temporary employment (15 million pesos) and rental of machinery (65 million pesos). She further stated that the second step is the acquisition of Machinery (65 million pesos); after which the consolidation of projects as the third step. She informed that the Government has presently spent 27 million pesos on the first step.

MAIN IMPACTS OF SARGASSUM SEAWEED THREAT

- Inundation of shorelines which renders them unsuitable for use by beachgoers, which has a negative economic impact on the Tourism industry;
- Discoloration of water close to shorelines;
- Release of Hydrogen Sulphide gas, which has an offensive odour and can cause human health issues;
- Degradation of Coastal Ecosystems such as mangroves, sea grass beds, and other Coastal environments; and
- Trapping and drowning of endangered species;

MAIN DISCUSSION POINTS

- Machinery and Heavy equipment are in many cases not ideal for the clearing of Sargassum as it can disrupt sea turtle nesting sites and exacerbates coastal erosion;
- Local Non-governmental Organisations, Community Based organizations, Youth Groups, and Women's Groups have proved critical to response efforts regionally;
- Many countries reported 2015 as the record year for the uncontrolled increase of Sargassum Threat Seaweed;
- ACS countries not currently affected by the Sargassum Seaweed threat must work to prepare for future events; and

- This Seaweed is not a problem limited to Caribbean Region, as many West African States are affected by it .

KEY RECOMMENDATIONS FOR ADDRESSING THE THREAT OF SARGASSUM SEAWEED THREAT

- Develop capacity to predict and monitor future influxes of Sargassum Seaweed in unusual quantities before they arrive at shore;
- Development of regional monitoring network for information sharing among Member States;
- Support research on commercial uses of Sargassum such as livestock feed, composting, and medicinal uses;
- Develop a guide of best practices for clean-up of beaches, removal and response frameworks to Sargassum events; and
- Using the CSC as the lead coordinating body for the development of regional monitoring and prediction network, the development of a best practice guide and efforts to commercialise the use of Sargassum Seaweed taking into account the capacity of island states.



L-R: Professor Hazel Oxenford (Barbados), Dr. Norma Patricia Muñoz Sevilla (Mexico)

SESSION ON COASTAL EROSION



The Experts which presented on Coastal erosion were Dr. José Luis Juanes Martí of the Republic of Cuba and Dr. Constanza Ricaurte Villota of the Republic of Colombia. These experts highlighted anthropogenic and natural causes of Coastal Erosion. Dr Juanes in particular highlighted various approaches which could be taken to combat Erosion: scientific, legal and engineering. A notable aspect of Dr Juanes presentation was the identification of the National Programme created by Cuba to combat Erosion with a budget of 40 million USD for the period 2011-2016.

This programme has three main objectives: (i) To obtain a current evaluation of the extent and magnitude of Coastal Erosion on Cuban Beaches; (ii) Evaluate the morphological profile changes of the beach that can be associated with the effect of the sea elevation for different types of beaches in the Cuban archipelago; and (iii) Select mathematical models to stimulate the response of beach profile to sea level rise for the years 2050 and 2100, for the different types of beaches in the Cuban Archipelago.

Likewise, Dr Constanza's presentation highlighted mitigation activities utilized to prevent Coastal Erosion, such as relocation, protection or adaption, and/or procurement as integral alternatives that attack various important points of this problem in an individualised manner as well as a regional joint manner. She suggested that this alternative could enhance the resilience of coastal areas and strengthen the system of risk management in Coastal areas.

The suggestion of mitigation with hard or soft solutions, such as the restoration of strategic ecosystems, mangroves, corals and beaches was also offered. Furthermore, research into the vulnerability of Erosion and other threats, Coastal Geo Hazards, Prevention and/or Mitigation, impact of climate change on Coastal Ecosystems, the benefits and services of these ecosystems, the effects associated with the mitigation measures and with establishment, and extreme climate events and their periods of return was proposed.

MAIN IMPACTS OF COASTAL EROSION

- Destruction of Coastal Infrastructure, including ports, fish landing sites, tourist facilities and beaches;
- Loss of Coastal land which disrupts historical maritime boundaries and coastal zone management plans; and
- Increased vulnerability of Coastal peoples, cultures and livelihoods to sea level rise and extreme events, such as storm surges.

MAIN DISCUSSION POINTS

- Hard engineering solutions such as beach defence can in some cases promote erosion and include the cost of reduced aesthetic quality;
- However, in many cases hard engineering solutions are necessary to prevent major negative impacts;
- Beach mining remains a problem which further exacerbates Coastal Erosion. This not only affects the site where the mining occurs but also affects coastlines down current from the sites;
- Coastal Erosion must be considered in the context of climate change and sea level rise; and
- Marine and Coastal Ecosystems play a critical role in maintaining beach structure.

KEY RECOMMENDATIONS FOR ADDRESSING COASTAL EROSION

- Build capacity in modelling, research and monitoring in the Region through educational and research cooperation;
- Protect and develop natural protective structures such as mangroves and sea grass beds. Restoration and vegetation present viable options to address beach erosion;
- Promote the Establishment of Maritime Boundaries which take into account Coastal Erosion;
- Promote the consideration of the grave consequences of sea level rise and Coastal Erosion in coastal land use planning; and
- Take a multidisciplinary approach in addressing and presenting the problem of Coastal Erosion. The socio-economic and cultural implications of coastal erosion must be better highlighted for its management by policymakers.



L-R Dr. José Luis Juanes Martí (Cuba), Dr. Constanza Ricaurte Villota (Colombia)

SESSION ON LIONFISH INVASION



The Experts which presented on the Lionfish were Ms. Jacklyn Wong of Republic of Costa Rica and Dr. Dayne Buddo of Jamaica. Ms. Wong's presentation looked at the Regional Lionfish Committee (RLC) created by the International Coral Reef Initiative (ICRI) in 2010. The RLC authored the Guide, a document entitled "Regional Strategy for Control of Invasive Lionfish in the Wider Caribbean" which has the purpose to help reduce the negative effects of the lionfish on the ecosystems and the economic value of the coral reefs of the Greater Caribbean Region.

The mission of the strategy, according to Dr. Buddo was to provide a regional framework for the cooperation, collaboration and coordination for the control of the lionfish in the Caribbean with the aim of employing best practices to execute local plans to minimize the negative effects of the Lionfish in marine ecosystems and coasts of the region. This strategy he indicated proposed to facilitate collaboration between the governments and industries which depend on coral reefs, civil society, and the scientific investigation centre developing mechanism for collaboration with the aim of formulating a coordinated effort of investigation and monitoring, thereby encouraging

governments to examine and modify legislation to aid the control of Lionfish, controlling the populations of Lionfish, and provoking mechanisms of education, information and dissemination of the strategy.

Dr. Buddo, who is a part of the aforementioned RLC, focused his presentation on the research which presently exists. He highlighted the Lionfish web portal (<http://lionfish.gcfi.org>) which contains over three hundred papers on Lionfish in its database. He stated that since 2011, there has been a sharp increase in the production of papers on Lionfish, probably representative of the rapid proliferation of Lionfish regionally. A lot of Lionfish research is focused on the distribution, the ecological impacts of the species, the feeding ecology and management strategies. Finally, Dr. Buddo mentioned a new invasive species, the Asian Tiger Shrimp, underscoring that the best way to deal with these species is through prevention, early detection and rapid response and lastly, management and control.

MAIN IMPACTS OF THE LIONFISH INVASION

- Degradation of Coastal fisheries, in particular the fish nurseries located in mangroves and coral reefs. This degradation is also associated with the reduction in catches by fishermen ;
- Degradation of coral reefs due to reduction of the population of species which feed on algae covering corals;
- Reduction in the quality of attractions for scuba and snorkelling tourists

MAIN DISCUSSION POINTS

- In places where efforts are consistent, a notable decline in Lionfish populations has occurred;
- A regional strategy and a number of local strategies to combat the Lionfish existence; Thus, promoting the application of these strategies and cooperation amongst Member States should be prioritised over the development of a new plan;
- Awareness building has proven critical for the development of local monitoring actions, as well as local efforts to improve consumption of Lionfish locally.

KEY RECOMMENDATIONS FOR ADDRESSING THE LIONFISH INVASION

- Prioritization of vulnerable areas such as marine parks, protected areas and fish nurseries for Lionfish control actions;
- Promote improved cooperation between regional monitoring networks and control actions of neighbouring countries;
- Promote implementation of Regional Lionfish Strategy titled “Regional Strategy for Control of Invasive Lionfish in the Wider Caribbean,” and use of existing best practice experiences.



L-R: Dr. Dayne Buddo (Jamaica), Ms. Jacklyn Wong (Costa Rica)

PARTICIPANT BREAKDOWN



Experts from:	Representation from the following bodies:	Diplomatic representation from:
Antigua and Barbuda	Caribbean Court of Justice	Argentina
Barbados	Caribbean Large Marine Ecosystem Project	Barbados
Republic of Colombia	Caribbean Regional Fisheries Mechanism (CRFM)	Republic of Colombia
Republic of Costa Rica	Centre for Latin America and the Caribbean	Republic of Costa Rica
Republic of Cuba	Centre for Resource Management and Environmental Studies	Republic of Cuba
Dominican Republic	Environmental Management Agency	Dominican Republic
Grenada	Environmental Management Authority (EMA)	Republic of El Salvador
Guadeloupe	Faculty of Law, UWI	Republic of Finland
Republic of Haiti	Faculty of Life Sciences, UWI	Guiana
Jamaica	Geology Without Limits	Republic of Guatemala
United Mexican States	Institute of International Affairs	Republic of Haiti
Republic of Nicaragua	Institute of Marine Affairs	Jamaica
Republic of Panama	International Maritime Organization	Japan
Federation of Saint Christopher and Nevis	National Conservation Commission	Kingdom of Netherlands
Sint Maarten	Oceans Governance Unit of the Organization for Eastern Caribbean States	United Mexican States
Saint Vincent and the Grenadines	Office of Disaster and Preparedness Management (ODPM)	Republic of Nicaragua
Republic of Trinidad and Tobago	Organization of American States	Republic of Panama
Bolivarian Republic of Venezuela	SPAW regional Activity Center	Republic of Peru
	The Global Environment Facility Small Grants	Bolivarian Republic of Venezuela
	The Nature Foundation	
	Tobago House of Assembly	
	Tourism Development Company (TDC)	
	Trinidad and Tobago Meteorological Service	
	United Nation Development Programme	
	United Nations Environmental Programme- Caribbean Environment Programme	



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www.acs-aec.org

5-7 Sweet Briar Road, St. Clair, P.O. Box 660,
Port of Spain, Trinidad and Tobago, West Indies
Tel: (868) 622 9575 | (868) 622 1653