

Interreg Caraïbes

Fonds européen de développement régional



SARG'COOP 
Programme caribéen de coopération de
lutte contre les algues sargasses

CONFÉRENCE INTERNATIONALE SUR LES SARGASSES

DU 23 AU 26 OCTOBRE 2019

— COMPLEXE WORLD TRADE CENTER, GUADELOUPE —



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The Prime Minister of the French Republic, Mr. Edouard PHILIPPE,

The President of the Guadeloupe Region, Mr. Ary CHALUS,

As well as their partners

**Are pleased to invite you to The International Sargassum Conference
From October 23rd to 26th, 2019**

At the World Trade Center Complex in Guadeloupe

Major strandings of Sargassum seaweed have reached Caribbean Sea beaches since 2011. However, the unprecedented scale and intensity of the 2018 crisis posed a new and major threat to the economy, ecology and health of the inhabitants of the territories involved.

This conference lays the foundations for efficient and pragmatic cooperation to provide functional and operational responses to Sargassum strandings that have become recurrent. It will bring together Heads of State, heads of regional and international organizations, companies, members of the civil society, researchers and academics from the Caribbean. The conference also aims to present the operational projects already implemented at regional level, to create the tools to support the most relevant initiatives and to identify possible funding.

The first day will be devoted to the state of knowledge on the theme of Sargassum and remote sensing. The highlight of this first day: the announcement of the winners of the «Sargassum» Call for Projects in partnership with the National Research Agency. It constitutes the starting point for long-term action to federate initiatives at the regional level.

The second day will be dedicated to sharing experiences and highlighting strategies for combating, collecting and recycling in the territories. Finally, the last day, which will be of an institutional nature, will bring together Caribbean Heads of State and multilateral organizations, thus providing an opportunity to start thinking about the definition of a common geopolitical strategy.

Moreover, beyond the mobilization on a regional scale reflected by the calling of the Conference, the Guadeloupe Region is attentive to supporting companies in implementing innovative solutions. In conjunction with the Conference, a trade show, Sarg'Expo, will be open to companies involved in the detection, collection, treatment and recycling of Sargassum. For more information on Sarg'Expo: <https://www.sargexpo.fr/>

For more information on the Sargassum International Conference:
<https://www.sargassum2019.com/>

EDITORIAL OF THE PRIME MINISTER OF THE FRENCH REPUBLIC



Since 2011, the coastline of the Caribbean Sea and the central Atlantic Ocean has been experiencing increasingly worrying episodes of Sargassum seaweed strandings. 2018 was marked by a sharp increase in the phenomenon, the economic, tourist and environmental consequences of which were particularly significant throughout the maritime basin.

Faithful to its commitments in the field of environmental preservation, France has decided to create the conditions for a vast international mobilization. This is the mission I entrusted in 2017 to the Senator of Guadeloupe, Dominique Théophile, who visited several Caribbean States concerned by Sargassum strandings.

The Guadeloupe Region is co-financing, with the support of European INTERREG funds, the implementation of a multi-annual study and monitoring program. Its aim is to cover and document in a very precise way all aspects of the phenomenon, whether scientific, economic, environmental or health. The international conference to be held in Guadeloupe from October 23rd to 26th will be the starting point for this mobilization, both for knowledge and applied research and for solutions for the control and treatment of Sargassum.

In my opinion, this conference must meet several objectives, consistent with sharing knowledge and experiences on a Caribbean scale: answering questions raised by the public, providing solutions to company managers who fear for their business activities; and finally, identifying ways of recycling this seaweed which can also constitute an opportunity for innovation and development. As for me, I will express at this conference the support of the national community for the populations concerned and the attention that my government and I attach to this issue, which requires treatment that is transversal, international and sustainable.

Edouard PHILIPPE

EDITORIAL OF THE PRESIDENT OF THE GUADELOUPE REGION



In Guadeloupe, in the coastal regions of the Caribbean Sea and the Gulf of Mexico, the massive invasion of Sargassum seaweed has caused unprecedented damage to the security of property and populations, the local economy and biodiversity.

In response to these observations, the Guadeloupe Region, within the framework of its powers in the field of decentralized cooperation and its recent accession to the Organization of Eastern Caribbean States (OECS), wanted to create a model and stimulate genuine cooperation between local authorities and the associative and private sectors within the affected territories.

Thus, the Conference will officially launch SARG'COOP, the Caribbean Program of Cooperation in the Fight against Sargassum seaweed. This ambitious project, financed by INTERREG, is supported by the Regional Authority, which is positioning itself as a leader in this multitude of still underdeveloped solutions.

The Conference embodies a commitment on the part of partner and participating governments to improve the resilience and coordination of territories but also to increase the protection of populations while ensuring a rationalization of resources.

The International Summit on 26 October is a decisive step for the peoples of the Caribbean. The objective is that our populations should no longer have to suffer from the harmful consequences of Sargassum seaweed but that they may instead benefit from the opportunity that the strandings represent. To this end, we will defend a common position in favor of including this phenomenon on the agenda of national and international bodies.

Ary CHALUS

EDITORIAL OF SENATOR DOMINIQUE THEOPHILE REGIONAL ADVISER, HEAD OF FRENCH MISSION FOR SARGASSUM



I am delighted that, owing to the Guadeloupe Region's determination and voluntarism (thank you to President CHALUS), this conference has been made possible and is taking place in Guadeloupe.

I would like to express my deep satisfaction at seeing the realization of the main recommendation contained in the report I had the honor to present to the Prime Minister on February 5, 2019. I called for the holding of an international conference on Sargassum in Guadeloupe, consistent with the international discussions that had been conducted on this topic in other forums, and I am thinking in particular of the reflections initiated under the auspices of the Association of Caribbean States.

I wish to thank very deeply the Governments of Mexico, the Dominican Republic and Saint Lucia for giving me their warmest welcome, as well as our Eastern Caribbean partners, during my visits to their territories as part of the mission entrusted by the French Prime Minister (Edouard PHILIPPE).

I am very happy that we have the opportunity to receive them in Guadeloupe and naturally I welcome them.

This is an exceptional opportunity to discuss a subject that now conditions the future of our regions.

I wish you all a great conference.

Dominique THEOPHILE

EDITORIAL OF THE DIRECTOR GENERAL OF THE ORGANIZATION OF THE EASTERN CARIBBEAN STATES (OECS)



Combating Climate Change, Together

The yearly influx of Sargassum presents yet another environmental challenge for the small island developing states of the Eastern Caribbean that may be attributed to the changing climate, increased ocean temperatures and pollution.

In 2018, more than 20 million tons of Sargassum carpeted the surface of the Atlantic Ocean, the Caribbean Sea, and the Gulf of Mexico; seriously affecting quality of life, human health, well-being, and Socio-economic activities such as coastal tourism, fisheries and navigation.

We call on the private sector and civil society to join with government rising to these unique challenges being faced in the region.

Innovative and successful initiatives such as Algas Organics, by OECS 30 Under 30 Winner, Johanan Dujon, should be supported and replicated.

Despite our vulnerabilities, we can reconcile economic growth with climate resilience by effective resources management, strategic utilization of the information and tools, and through partnerships and collaboration.

This International Conference on Sargassum is a substantial step in the right direction, bringing together scientists, policy-makers, and entrepreneurs; and serving as a hub for innovative ideas, deepened cooperation, and collective action.

It was estimated that cleanup of Sargassum could cost the Caribbean at least \$120 million in 2018.

While we will not shy away from this challenge, on the frontlines of a war we did not start, we do, however, call on those responsible to provide support.

We look forward to working with our OECS Member States and the wider regional and international community to better understand and plan for our new reality through the elaboration of a regional response plan and harmonized Sargassum management protocols.

We hold strong to the belief that the whole is stronger than the sum of its parts, and that together, we can find

Dr. Jules DICACUS

EDITORIAL OF THE SECRETARY GENERAL OF THE ASSOCIATION OF CARIBBEAN STATES (ACS)

No matter which part of the Greater Caribbean you come from, Sargassum and invasive species affect you. The number one priority of the Association of Caribbean States is ensuring the sustainable development of the Greater Caribbean and the protection and preservation of our common patrimony, the Caribbean Sea.

You only have to look to the South Eastern end of our Caribbean Sea, for example, and you will see that the invasive seaweed is stifling the Flying Fish, popular on plates and a staple for the Barbadian economy, and those of the Eastern Caribbean. Look to the North West and you will see Sargassum covering Mexico's Caribbean beaches. The government has spent some US \$17 million to remove over half a million tonnes of this biohazardous species. There are no boundaries; Sargassum affects our biggest democracy and our smaller ones too.

Since 2011, when the first massive bloom invaded our Caribbean blues and greens, we have not allowed Sargassum to suffocate us. In 2015, the ACS and its Caribbean Sea Commission organized the symposium examining the impact of Sargassum: Challenges, Dialogue & Cooperation towards Sustainability of the Caribbean Sea. We are raising awareness of this hazard- whether through representation at the United Nations or engaging with young people and coastal communities. We are engaging with scientists, innovators and policy-makers who can help us solve this problem. That is why we are actively cooperating with the Regional Council of Guadeloupe on The International Sargassum Conference.

This conference and its exposition - Sarg' Expo 2019 can only move us forward with science-based, innovative, business-smart and culturally-friendly solutions - solutions that will benefit the 280+ million people of the Greater Caribbean.



Dr June SOMER

EDITORIAL OF THE PRESIDENT OF THE REGIONAL COMMISSION ON COOPERATION, EUROPEAN AFFAIRS AND UNIVERSITY

Focus on the International Conference on Sargassum Seaweed, the first event of its kind in the Caribbean that will put the islands of Guadeloupe in the spotlight, and for a few days at the heart of today's environmental preoccupations.

Guadeloupe welcomes all Caribbean policy makers and economic actors around a common issue: the massive invasion of Sargassum seaweed.

In response to this challenge: SARG'COOP, the first cooperation program, initiated by the Guadeloupe Region, aims to structurally influence national and regional strategies for risk reduction and management of Sargassum seaweed.

SARG'COOP is a true win-win partnership that builds on a shared vision of environmental policy and protection of natural environments among Caribbean states and territories. We are thus touching on a problem that is at the heart of INTERREG Caraïbes 2014-2020 Operational Program. It involves creating together operational tools to better anticipate the impact of climate change and strengthen the resilience of island territories.

As the cornerstone of the cooperation program with our Caribbean partners, the Conference marks the political commitment of Caribbean Heads of State and regional international institutions such as the ACS and the OECS.

Together, we are building common awareness for the preservation of our environment and our ways of life.



Marie-Luce PENCHARD

EDITORIAL OF THE PRESIDENT OF THE REGIONAL COMMISSION ON ENVIRONMENT, WATER AND LIVING CONDITIONS



Our ambition within the regional community is to transform this wave of Sargassum seaweed on our Caribbean and American coasts, as well as the small sea of Sargassum in the making, into scientific, technical, economic and political opportunities.

Scientific opportunities to understand this phenomenon and its causes (impact of climate change and eutrophication processes with massive deforestation of the American continent); **technical and economic opportunities** to highlight our ingenuity and talent to create and innovate new tools or processes to collect, store and recycle this seaweed; **political opportunities** to establish trans-regional cooperation that extends far beyond the Caribbean basin.

We are working with international bodies to ensure that the Caribbean basin becomes a testing ground for assessing and combating the impacts of climate change. Our small islands are sentinel islands that must monitor the environment for our entire planet.

Sylvie GUSTAVE DIT DUFLO

8th Vice-President of the Region

President of the Guadeloupe Water and Biodiversity Committee

President of the Regional Commission on Environment, Water and Living Environment

THE INTERNATIONAL CONFERENCE ON SARGASSUM

A strategic event with international ambitions....

The International Sargassum Conference, to be held at the World Trade Center Complex in Guadeloupe, will bring together all those involved in the fight against Sargassum on October 24, 25 and 26, 2019.

The conference is divided into two parts:

The first part will better disseminate the knowledge of the phenomenon by taking stock of the means implemented in each partner and participating State or territory to mitigate the adverse effects of mass strandings on exposed coasts. The various strategies implemented by public authorities to limit economic, health and environmental impacts of the phenomenon will be identified as part of a benchmarking process of good practices.

The second part, «cooperation», in conjunction with regional multilateral organizations, aims to strengthen collaboration between Caribbean actors in this particular field. It will thus contribute to the definition of a common political strategy of the actors on this theme with a view to organizing concerted international actions.

In addition, it is expected that at the end of the Conference a joint declaration will be signed between the parties, thus announcing support of the signatories to carry the problem of Sargassum strandings to the agenda of the next Cartagena conference and its emblematic protocol. A common timetable and work objectives will be defined by the signatories.

... and an integral part of the INTERREG CARIBBEAN SARG'COOP program

SARG'COOP, the first Caribbean program to combat Sargassum seaweed, is the creation of a true «win-win» partnership. This cooperation program makes it possible to deal with all the issues related to this problem: forecasting and prevention of strandings, collection, treatment, recycling and impact prevention. It aims to strengthen cooperation on environmental issues and the protection of natural environments between Caribbean states and territories.

On the other hand, the project aims to strengthen cooperation at the Caribbean level on the theme of Sargassum in order to allow greater sharing and dissemination of the state of the art in science, but also methods and tools in all dimensions in consideration of the problem (forecasting, detection, collection, recycling, etc.). It is also a question of strengthening warning and communication mechanisms with regard to this phenomenon.

The ultimate objective of the project is to increase knowledge of the phenomenon and achieve better prevention and preparedness for the risks it presents.

The program, which lasts a total of 38 months, is organized into several activities and means.

FIGHTING SARGASSUM SEAWEED IN THE CARIBBEAN

Key dates

2011

● First influx of massive Sargassum strandings on the beaches of Caribbean countries. Sargassum seaweed blooms reach a peak in the Caribbean region. Scientists record a rate 200 times higher than those recorded over the last 8 years. For the first time, Sargassum blooms are detected off the African coast.

2012

● Sargassum events affect the 2012 Barbados fishing season drastically, recording lowest seasonal catch since 2004.

2014

● Johan Dujon creates Algas Organics, the first Aboriginal manufactured products company using biotechnology and natural processes, as well as seaweed-based biostimulants. The company, with the help of the Saint Lucia Fisher Folk Cooperative Society Ltd. has collected more than 298 tons of Sargassum seaweed from the beaches of the east coast of Saint Lucia since the beginning of their partnership in 2015.

2015

- June - Publication of «Sargassum: A Guide to Caribbean Resources» by the Caribbean Hotel and Tourism Association
- Largest Sargassum bloom on record invades the Caribbean.
- ACS organizes regional symposium on the impact of Sargassum: Challenges, Dialogue & Cooperation towards Sustainability of the Caribbean Sea.

2016

● March - Regional Conference on Sargassum organized by the Government of the British Virgin Islands and the Organization of Eastern Caribbean States on Mosquito Island. The aim was to describe scientific art in the field, management and collection methods as well as possible viable commercial and economic uses of Sargassum.



FIGHTING SARGASSUM SEAWEED IN THE CARIBBEAN

Key dates

2018

- July 2018: The 5th Council of Ministers of Environment and Sustainable Development (COMES5) issues a joint statement on the challenges and opportunities presented by Sargassum seaweed. Among the points selected were the desire to develop partnerships with universities and scientific institutions in order to increase the state of the art in science; determine the best solutions on land and at sea for the collection and management of Sargassum seaweed as well as common approaches for the implementation of operational responses; and the request that the response to the problem of Sargassum seaweed be a priority action at the 15th meeting of the Conference of the Parties (COP) and the Cartagena Protocol as well as at the 18th intergovernmental meeting of the Caribbean Action Plan.
- June: Barbados government describes Sargassum problem as “a national emergency”. French Environment Minister presents US \$10M plan to combat Sargassum in Guadeloupe.
- September: Saint Lucia begins to produce organic bio-fertilizer from Sargassum for international export.
- October: XIV Regional Conference of the Antilles-Guiana, organization of a Sargassum seminar on the acquisition and debating of knowledge on the subject, management (or governance) of the phenomenon, responses to be provided.

2019

- June - «High-Level Meeting on the Sargassum Problem in the Caribbean» in Cancun - The Association of Caribbean States (ACS) is recognized and appointed as the coordinator of the Sargassum seaweed problem in the Caribbean Region.
- The Government of the State of Quintana Roo declares a state of emergency due to the massive stranding of Sargassum seaweed, referring to «an imminent natural disaster». Mexico spends a total of \$17 million to remove over half a million tons of Sargassum from 1000kms on its beaches.
- Caribbean fishermen report drastic decrease in Flying Fish stock. Sargassum beds prevent them from spreading their wings over the sea surface





APPENDICES

PUBLIC OPENING OF THE CONFERENCE
Amphitheater Guy M é rault, Université des Antilles
October 23, 2019

Invasion of Sargassum seaweed: how does National Education and the Councils for Education and the Environment (CCEE, CAUE) apprehend and appropriate this question?

- **3:00 pm to 6:00 pm**- Opening of the exhibition to the school public and the general public - Hall of amphitheater M é rault - Faculty of Natural Sciences - Campus Fouillole.

- **6:00 pm to 6:30 pm**: Reception of personalities of the official procession

- **6:30 pm to 7:30 pm**: Inauguration of the exhibition by the official procession

Moderators: Audrey Pulvar (journalist)

- **7:30 pm to 8:20 pm**: Official speeches (5min / speaker)
 - o President of the Université des Antilles: Eustase Janky
 - o Vice President of the CCEE: Félix Lurel
 - o President of the CAUE: Jacques Anselme
 - o Producer of the film: Frédéric Tyrode Saint-Louis
 - o Rector of the Academy of Guadeloupe-St Martin: Mostafa Fourar
 - o ACS General Secretary: Dr. June Soomer
 - o OECS Representative
 - o Vice-President of the CTM: Louis Boutin
 - o President of region: Ary Chalus
 - o Prefect of Guadeloupe: Philippe Gustin
- **8:20 pm to 8:30 pm**: Screening of the film (3 min) from the OECS (confirmation on progress)
- **8:30 pm to 9:30 pm**: Screening of the film in the presence of the Port-Louis High School class participating in the film
- **9:30 pm to 10:30 pm**: Debate with the audience, the institutional parties, the producer and film actors (Port Louis High school, Green affair)

DAY 1 - OCTOBER 24, 2019, CWTC
What we know about Sargassum seaweed

8:00 am to 8:30 am: Welcoming participants

8:30 am to 9:45 am: Introductory remarks by the local authorities, the State and sponsors of the Sargassum call for projects (AAP)

Moderators: Jean-Bernard Nilam, Ambassador Delegate for Regional Cooperation in the West Indies Area and Sylvie Gustave Dit Duflo, Vice President of the Guadeloupe Region

- President of the Regional Collectivity of Guadeloupe: Ary Chalus
- President of the Department of Guadeloupe: Josette Borel-Lincertin
- Vice-President of the Territorial Collectivity of Martinique: Louis Boutrin
- Vice-President of the Territorial Collectivity of Guiana: H el ene Sirder
- President of the Overseas Collectivity of Saint-Martin: Daniel Gibbs
- President of the Overseas Collectivity of Saint-Barthelemy: Bruno Magras
- Executive Director of the ADEME territories: Nicolas Soudon
- President of the National Research Agency: Thierry Damerval
- European Commission DGRDT (Research) (in the process of confirmation)
- A representative from Brazil (in the process of confirmation)
- Prefect of Guadeloupe: Philippe Gustin

9:45 am to 12:30 pm: What we know - Biological, Ecological and Oceanographic Data

Moderators: Pr. Olivier Gros, Vice-President of Research at the Universit e des Antilles and Pr. Pascal Saffache, former President of the Universit e des Antilles

9:45 am to 10:55 am: Mini-conferences 1 – Fundamental knowledge about Sargassum and related micro-organisms

- o 9:45 am to 9:55 am: Dr. Fr ed eric M enard (IRD – France)
- o 9:55 am to 10:05 am: Dr. Amy Siuda Ecker College- (Florida - USA)
- o 10:05 am to 10:15 am: Regional scale analyzes of Sargassum epibionts during tide events in the French West Indies - Dr. Pascal Jean-Lopez, National Museum of Natural History (France)
- o 10:15 am to 10:25 am: Sargassum distribution and abundance reveal at World Heritage - Dr. Paulo Horta, Universidade Federal de Santa Catarina (Brazil)
- o 10:25 am to 10:55 am: Debate with participants

10:55 to 11:05: Coffee break

11:05 to 12:30: Mini-conferences 2 – Satellite remote sensing and estimation of the Caribbean Sea's Sargassum surface area

- 11:05 am to 11:15 am: mat drifting pattern: French model:– Yves Gregoris, Meteo France , French West Indies-Guiana Regional Directorate
- 11:15 am to 12:25 pm: Assessing the Feasibility of Impact-based Forecasting for Seasonal Influxes of Sargassum Seaweed on the Coastlines of Caribbean Small Island Developing State – Dr. Graham NILES- CIMH - Barbados
- 11:25 am to 11 :35 am: Satellite-based early warning of Sargassum system within the Marine-Coastal Information and Analysis System –Sergio Cerdeira- CONABIO Mexique (via videoconference)
- 11 :35 am to 11 :45 am: Assessment of the surface area of Sargassum seaweed in the Caribbean Sea from 2011 to 2018 : Dr Chuanmin HU, University of South Florida (via videoconference) -USA
- 11:45 am to 11:55 am: ErisNet project, Deep learning network for Sargassum detection along the coastline of the Mexican Caribbean, Dr. Javier ARELLANO-VERDEJO, El Colegio de la Frontera Sur Unidad Chetumal - Mexico
- 11:55 am to 12:05 pm: Communicating Sargassum forecasts to inform decision-making in climate-sensitive sectors in the Eastern Caribbean - Dr Hazel A. Oxenford, CERMES, Barbados
- 12:05 pm to 12:30 pm: Debate with participants

12:30 pm to 2:00 pm - Lunch break

Afternoon

2:00 pm to 5:30 pm - Presentation of results of the international call for projects (AAP) Sargassum – (All axes)

2:00 pm to 2:15 pm: Didier Hoffshir, Ministerial Delegate for Sustainable Development for Higher Education, Research and Innovation - France

Moderators: Jean-Louis Mansot (Professor at the Université des Antilles, Regional Delegate for Research and Technology in Guadeloupe) and Philippe Hunel (Professor at the Université des Antilles, Regional Delegate for Research and Technology in Martinique)

- **2:15 pm to 2:45 pm:** General presentation of AAP and results (ANR, ADEME and Guadeloupe Region)
- **2:45 pm to 3:45 pm:** Presentation by the coordinator of each selected consortium (10min / project) and presentation of the research axes developed – 1st part + debate with participants
- **3:45 pm to 4:00 pm:** Coffee break
- **4:00 pm to 5:00 pm:** Presentation by the coordinator of each selected consortium (10min / project) and presentation of the lines of research developed - 2nd part + debate with participants
- **5:00 pm – 5:30 pm:** Presentation of the **Technical Assessor Council** » set up by Mexico to coordinate the scientific answer to the problem of Sargassum as well as the specific call for tender for research projects that will be launched shortly. Dr. Edith Calixto Pérez, CONACYT – Mexico
- **5:30 pm:** Closing of the session by moderators

8:00 am to 8:30 am: Welcoming participants

8:30 am to 9:20 am: **The different strategies adopted by the territories to organize the fight against Sargassum invasion**

Moderators: Chamberlain Emmanuel (OECS Representative) and Louis Boutrin (Vice President of the Territorial Collectivity of Martinique)

- 8:30 am to 8:40 am: Outline of the senatorial mission and synthesis of the report: Senator Dominique Théophile - France
- 8:40 am to 8:50 am: French national plan: Frédéric Mortier, Interdepartmental Delegate for Major Hazards Overseas- France
- 8:50 am to 9:00 am: National Plan of Mexico : Contralmirante Admiral Flores Morado- Mexico
- 9:00 am to 9:10 am: National Plan of the Dominican Republic: Manuel Emilio Serrano Montero, Deputy Minister of the Environment - Dominican Republic
- 9:10 am to 9:20 am: National Plan of Trinidad and Tobago : Howard Robin, Climate Change Specialist - Division of Infrastructure Quarries and the Environment - Tobago Assembly

9:20am to 9:35am: **Focus on collection, recycling and barrier techniques in the Dominican Republic and Mexico**

- 9:20 am to 9:35 am: Mr. Julio Moisés Álvarez, Technical Director at the National Council for Climate Change and the Clean Development Mechanism - Dominican Republic
- 9:35 am to 9:50 am: Rear Admiral Enrique Flores Morado, Deputy Directorate General of Oceanography, Hydrography and Meteorology, Managing Director for Sargassum matters - Mexico
- 9:50 am to 10:10 am: Debate with participants

10:10 am to 10:20 am: **Coffee break**

10:20 am to 12:30 pm: **Workshops (mini-conferences and round tables) in parallel**

- **Workshop 1: Techniques for collecting and recycling Sargassum**
- **Workshop 2: Impacts of Sargassum Invasion**

Workshop 1: Techniques for collecting and recycling Sargassum

Moderator: Ferdy Louisy, Mayor of Goyave, Vice-President of AFB (French Agency for Biodiversity), Vice-President of the Urban Community of Northern Basse-Terre

Rapporteur: Clio Maridakis, Engineer, ADEME Martinique

10:20 am to 11:10 am: Mini-conference 1: Techniques for collecting and storing Sargassum

- 10:20 am to 10:30 am: Recommended appropriate practices: Jean-François Mauro, Regional Director of ADEME Martinique -France
- 10:30 am to 10:40 am: Collection techniques in the French West Indies: Camille Pelage, President, *Syndicat intercommunal pour la mise en valeur des plages et sites (intercommunal federation for the promotion of beaches and sites)*
- 10:40 am to 10:50 am: Sargassum Ocean sequestration project - Andrés G. Bisonó Leon (Engineer) - Dominican Republic and MIT (Boston)
- 10:50 am to 11:10 am: Debate with participants

11:10 am to 11:50 pm: Mini-conference 2: Anti-seaweed barrier techniques

- 11:10 am to 11:20 am: Different types of barriers existing in the West Indies - Stakes and constraints: Marc Iggabel (CEREMA) - France
- 11:20 am to 11:30 am: Feedback on deflection barriers: City of St. Francis - Jean-Marc Meunier, Sargassum referent - France
- 11:30 am to 11:50 am: Debate with participants

11:50 am to 12:30 pm: Mini-conference 3: Recycling techniques

- 11:50 am to 12:00 pm: The various existing solutions for seaweed reclamation opportunities and limits , Jérôme Dancoisne, Head of the Environment and Waste Department - Guadeloupe Region - France
- 12:00 pm to 12:10 pm: Use of Sargassum in agriculture: which agronomic interests? Jérôme Tyrolien, Engineer Tropical Technical Institute (IT2) - France
- 12:10 pm to 12:20 pm: Recycling as activated charcoal: Pr. Sara Gaspard - Université des Antilles - France
- 12:20 pm to 12:30 pm: Debate with participants

12:30 pm: Closing of workshop 1 by the moderator and the rapporteur

12:30 pm to 2:00 pm: Lunch break

Workshop 2: Environmental, health, sociological and economic impacts of Sargassum

Moderator: Arturo Lopez-Portillo Contreras, Director of Disaster Risk Reduction, Environment and the Caribbean Sea - AEC

Rapporteur: Hélène Sirder, Vice President of the Territorial Collectivity of Guiana

10:20 am to 11:20 am: Round Table 1: Economic impact

Organizations	Participants
Department of Guadeloupe - France	Nicole Erdan, President of the Environment Committee
CCIG - France	Patrick Vial-Collet (President)
CCI Martinique- France	Philippe Jock (President)
ECLAC (Economic Commission for Latin America and the Caribbean)	Willard Philips, Sustainable Development and Natural Disasters Coordinator
Caribbean Regional Fisheries Mechanism (CRFM)	Dr. Maren Headley, Researcher
WECAFC (Western Central Atlantic Fishery Commission)	Dr Iris Monnereau (Regional Project Coordinator (Fisheries sector in Caribbean is the most vulnerable in the world to climate change for FAO (Food and Agriculture Organization of the United Nations)

- 10:20 am to 10:30 am: Introductory remarks: Sargassum invasions in the Caribbean: a calamity or an opportunity? Patrick Lecurieux-Durival, President of CESEM Martinique - France
- 10:30 am to 11:00 am: Interviews of participants
- 11:00 am to 11:20 am: Debate with participants

11:20 am to 12:20 pm: Round Table 2: Environmental impact

Organizations	Participants
BRGM - France	Ywenn de la Torre, Regional Director Guadeloupe and Benoît Vittecoq, Regional Director Martinique
Université des Antilles - France	Malika René Trouillefou, Researcher ECO3SAR Olivier Gros (Professor at the Université des Antilles)
ABC Islands: Bonaire STINAPA national Park	Sabine Engel, Biologist

- 11:20 am to 11:30 am: Introductory remarks: first assessments of environmental impacts - Brigitta Van Tussenbroek, Researcher at the National University of Mexico - Mexico
- 11:30 am to 12:00 pm: Interviews of participants
- 12:00 pm to 12:20 pm: Debate with participants

12:20 pm to 1:20 pm: Round Table 3: Health, psychological and sociological impact

Organizations	Participants
Sub-Prefecture of Guadeloupe - France	Jean-Michel Jumez, Sub-Prefect
ARS Martinique - France	Dabor Resiere, Doctor
ARS Guadeloupe - France	Didier Roux, Engineer
Gwadair - France	Christina Raghoumandan, Director
Université des Antilles - France	Anne Péné-Annette, Geographer and Florence Ménez, Anthropologist

- 12:20 pm to 12:30 pm: Introductory remarks: The health impact of Sargassum on the population - Roger Genet, General Manager ANSES
- 12:30 pm to 1:00 pm: Interviews of participants
- 1:00 pm to 1:20 pm: Debate with participants

1:20 pm: Closing of workshop 2 by the moderator and the rapporteur

1:20 pm to 2:00 pm: Lunch break

Afternoon

2:00 pm to 2:30 pm: Morning workshops synthesis

Moderators: Jean-François Mauro, Regional Director ADEME Martinique and Pascale Alix-Laborde, Territorial Councilor for the Environment

- 2:00 pm-2:10 pm: Synthesis Workshop 1: Clio Maridakis (Rapporteur), ADEME Martinique - France
- 2:10 pm-2:10 pm: Synthesis Workshop 2: Hélène Sirder (Rapporteur), Vice President of the Territorial Collectivity of Guiana - France
- 2:10 pm-2:45 pm: Debate with participants

2:45 pm to 5:00 pm: Financing methods available

Moderator: Michel Magras (President of the Overseas Senate Delegation, Senator)

Rapporteur: Marjolaine Bordelais (BPI France)

2:45 pm to 3:45 pm: Mini-conference 1: National and international financial tools in the fight against climate change: what challenges, what mobilizations?

- 2:45 pm to 2:55 pm: BPI France financing mechanisms to help companies develop their projects, joint presentation BPI France (Michèle PAPALIA) and BNP Paribas (Pierre-Louis DEUMIER) - France
- 2:55 pm to 3:05 pm: Green Funds for the climate - Jessica Jacobs, Dialog specialist in Latin American countries, Caribbean – Program Division. In video-conference.
- 3:05 pm to 3:15 pm: AFD 2019-2023 Strategy for the Atlantic Ocean zone Philippe La Cognata, Atlantic Regional Director - France
- 3:15 to 3:25: Caribbean Development Bank - Unit for Sustainable Development - Luther Saint-Ville, Sustainable Development Officer
- 3:25 pm to 3:45 pm: Debate with participants

3:45 pm to 4:00 pm: Coffee break

4:00 pm to 5:00 pm: Mini-conference 2: European programs for the protection of the marine environment: what prospects?

- 4:00 pm to 4:10 pm: Interreg Funds for Caribbean Cooperation Projects: Gilles Bajazet (Joint Technical Secretariat) - France and Pierre Emmanuel Leclerc (Directorate-General for Regional and Urban Policy - Unit D1 - Competence Center Macroregions, Transnational/Interregional – European Commission)
- 4:10 pm to 4:20 pm: European Commission DGRTD Strategy - John Hanus, Program Expert, Healthy Oceans and Seas Unit.
- 4:20 pm to 4:30 pm: European Commission Strategy DEVCO - Denisa Salkova Policy Manager – “Environment, Natural Resources and Water” Unit, (Directorate General for International Cooperation and Development)
- 4:30 pm to 5:00 pm: Debate with participants

Themes addressed: New partnerships on sea and biodiversity economics 2021-2027; The apprehension of environmental issues in the future Caribbean Regional Indicative Program 2021-2027

5:00 pm: Closing of the day

Evening

Public conference - Fouillole Campus – Amphitheatre Lepointe

6:30 pm to 9:30 pm: How to make the Sargassum problem heard internationally?

6:30 pm to 6:45 pm: Official addresses

- President of the University of the West Indies: Eustase Janky
- President of the Guadeloupe Region: Ary Chalus
- Prefect of Guadeloupe: Philippe Gustin or his representative

Moderators: Dr Paméla Obertan – Université des Antilles

Rapporteur: Lydia Barfleur, University Head of mission - Guadeloupe region

6:45 pm to 7:45 pm: Regional and international strategies: various answers to the Sargassum issue - Round table debate with questions from moderators to stakeholders

6:45 pm to 7:15 pm: Round Table 1 - Strategies of Caribbean organizations on the Sargassum issue

- OECS Representative: The OECS Oceans Policy and the Fisheries Resource Management Plan: Towards a Specific Treatment for Sargassum Seaweed?
- Dr. Maren Headly (CARICOM): The Protocol for the Establishment of a Common CARICOM Policy on Climate Change and Risk Management for Fisheries and Aquaculture: Enhanced Cooperation ?
- Dr. June Soomer (Secretary General of the ACS): The ACS Action Plan 2019-2021: What treatment is given to the Sargassum issue?
- Questions from the audience

7:15 pm to 7:45 pm: Round table 2 - International strategies on the Sargassum issue

- o Daniel Calleja Crespo (Director General of DG Environment): What European strategy for the marine environment? (being confirmed)
- o César Toro, Secretary General of Iocaribe: The United Nations Decade for Ocean Science for Sustainable Development: What Strategy to Control Harmful Seaweed?
- o Dr. Habib N. El-Habr, Coordinator of the Global Program of Action for the Protection of the Marine Environment from Land-based Activities (UNEP): Towards inclusion of sargassum on UNEP's political agenda?
- o Questions from the audience

8:00 pm to 8:15 pm: "Sargassum: what first findings? How are the territories of the Caribbean coping? »- Summary of the work of the 2 previous days - Sylvie Gustave-dit-Duflo (Vice-President of the Guadeloupe Region) – France

8:15 pm to 8:30 pm: Debate with the public

8:30 pm to 9:30 pm: Presentation of the program of cooperation against Sargassum

- o 8:30 pm to 8:45 pm: General presentation of the program: Marie-Luce Penchard, Vice-President of the Regional Council of Guadeloupe
- o 8:45 pm to 9:00 pm: Operational tools of the program: Monique Apat, Deputy Director General - Region Guadeloupe.
- o 9:00 pm to 9:30 pm: Debate with the public

PRESENTATION OF THE SPEAKERS

SARG'NET NETWORK

Dr. Ligia Collado-Vides is a marine botanist working at Florida International University; her research is on tropical marine macroseaweed on seagrass and reef ecosystems in South Florida and the Mexican Caribbean. Among other projects, her group is conducting a monitoring program estimating the influx and measuring metals and nutrient on of the pelagic Sargassum in Florida. Her group has developed a Citizen Science program for Sargassum landings in South Florida, and an international network of experts. Dr. Collado-Vides got her PhD from the Universidad Nacional Autónoma de México, where she became Associated Professor; in Florida, her position is Senior Lecturer-Researcher. She has more than 56 publication and devotes time to national and international education.



Dr. Tom Linton

is a professor in the Department of Marine Sciences at Texas A&M University-For the past 10 years, in association with a large number of students and fellow professionals, Tom Linton has been researching the “habits” of the brown seaweed – Sargassum. His team has developed a predictive model that allows to predict when it will arrive. The unanswered question that continues to seek answers is why it has become so massive in quantity and widespread in occurrence and what to do with it after arrival. The International Conference on Sargassum is bringing together the world experts to build the sound scientific knowledge needed to develop and then implement a Sargassum Management Plan that will serve to answer these unanswered questions and bring the much needed relief to the Caribbean from its Sargassum problems.



OTHER SCIENTIFIC STAKEHOLDERS:

Frédéric Ménard

is a research director at the Research Institute for Development. He conducts research on the functioning of marine ecosystems in the context of global change: ecology, predator-prey relationships, fisheries and biodiversity. He has worked in the Ivory Coast and has visited South Africa and Brazil to study large pelagic predatory fish in the tropical oceans and the vulnerability of coastal ecosystems. Between 2001 and 2014, he led three research teams and seven scientific projects. He was a visiting professor at the Federal University of Pernambuco (Brazil) between 2014 and 2017. He has been the director of the IRD's OCEANS scientific department since 2015, and is involved in the IRD's scientific strategy. Since 2016, he has been leading two projects of the Ministry of Ecology on Sargassum.



Hazel Oxenford is a Professor of Marine Ecology and Fisheries at the University of the West Indies (UWI). She originally joined UWI as a student, obtaining a PhD in fisheries science in 1986 for her work on the biology and management of dolphinfish in the eastern Caribbean. She is now well known regionally and internationally for her work in applied fisheries biology (especially flyingfish), coral reef ecology, and the impacts of climate change on marine ecosystems. Most recently she has been deeply involved in understanding and communicating the new origins and impacts of Sargassum, and developing best practice guidelines for coping and adapting to this new phenomenon. She was a recipient of the 'Zayed International Prize for the Environment' in 2006, and in 2012 received a Vice Chancellor's Award for Excellence in research and public service.



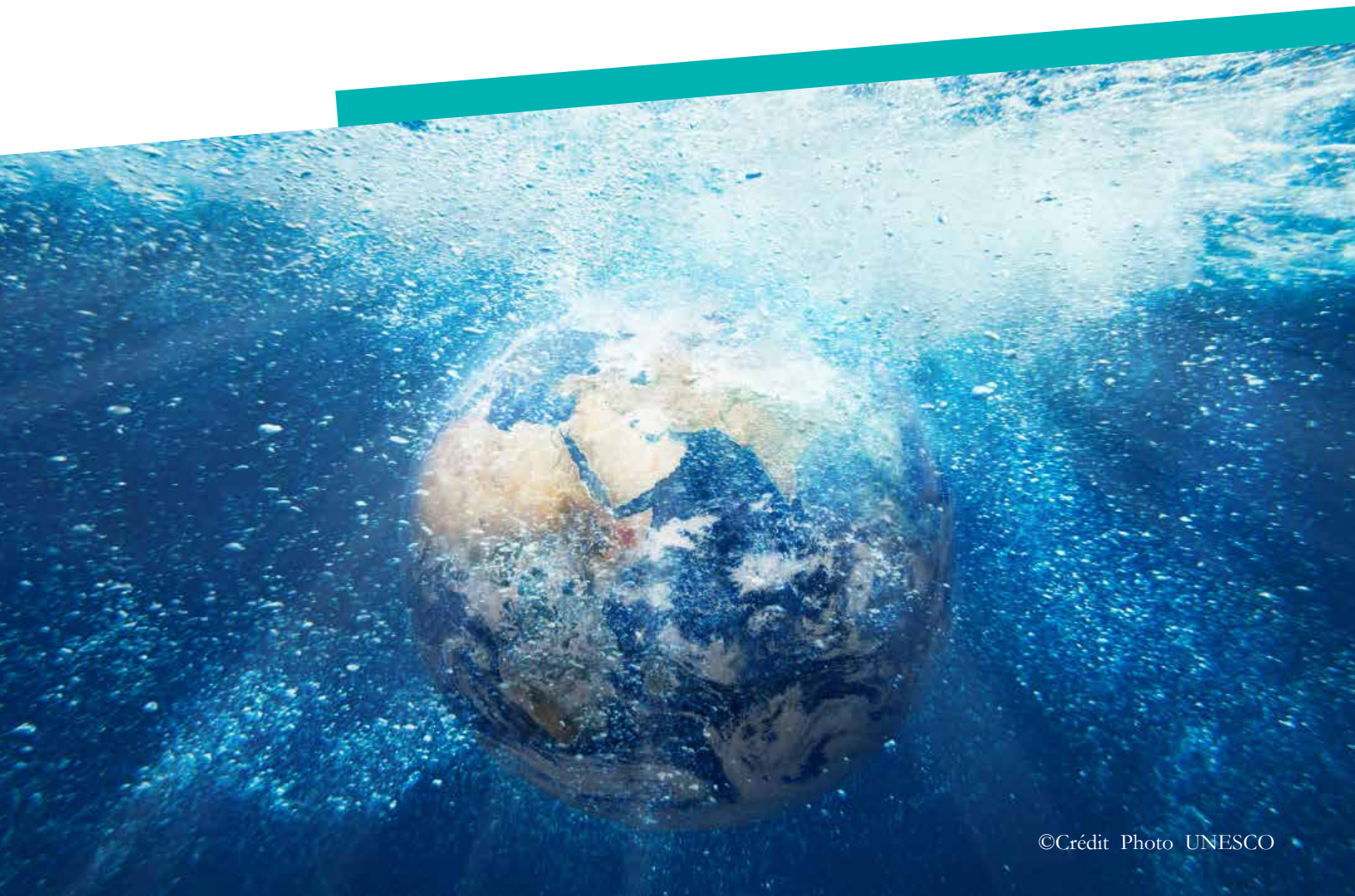
Chuanmin Hu received a PhD degree in physics (environmental optics) from the University of Miami in 1997. He is currently a professor of optical oceanography at the University of South Florida, who also directs the Optical Oceanography Lab of College of Marine Science. He uses laboratory, field, and remote sensing techniques to study marine algal blooms (e.g., red tides, blue-green seaweed, Sargassum, Ulva, etc), oil spills, coastal and inland water quality, and global changes. He has authored and co-authored >260 refereed articles, many of which have been highlighted on journal covers and by AGU and NASA. His research has led to the establishment of a SargassumWatch System and other systems to generate and distribute customized data products in near real-time. He has served as a topical editor of Applied Optics (2008 – 2014) and a chief editor of Remote Sensing of Environment (2015 – 2017).

UNESCO certification in a few words



On 5 December 2017, the United Nations proclaimed a United Nations Decade of Ocean Sciences for Sustainable Development, to be held from 2021 to 2030. This Decade will provide a common framework to ensure that marine science can fully support countries' actions to sustainably manage the oceans and in particular to achieve the Sustainable Development Agenda by 2030. The main objective of the Decade is to support efforts to reverse the cycle of declining ocean health and create better conditions for the sustainable development of the ocean, seas and coasts. The Decade will strengthen international cooperation and support the actions of ocean policy makers and managers.

The International Sargassum Conference, by obtaining this label, fully contributes to these objectives and in particular with the aim of consulting stakeholders, communicating on the Decade and identifying investment and resource mobilization opportunities.



THE PARTNERS

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