



First Steps Toward a Sustainable Management of Sargassum in the Dominican Republic

Yessica A. Castro, Ph.D

Research Professor

Federico Henríquez & Carvajal University

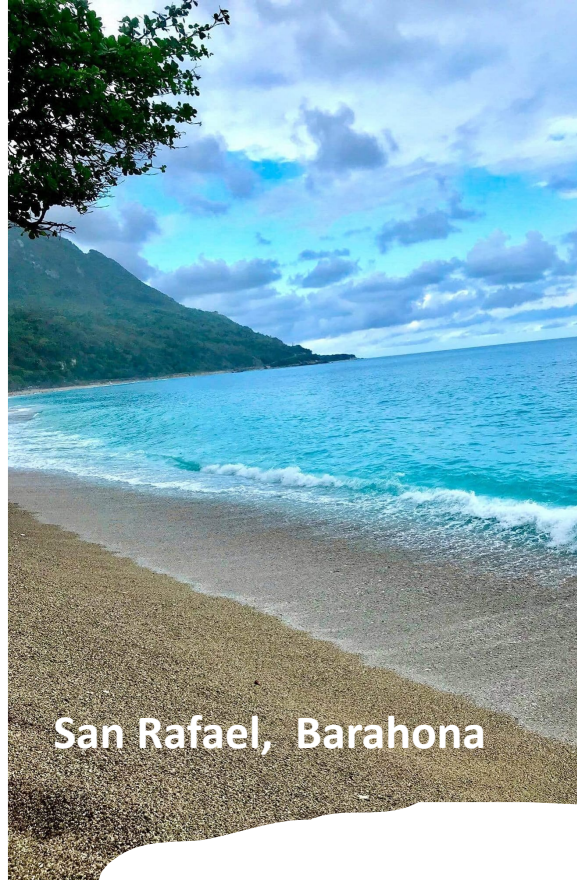
Santo Domingo, Dominican Republic

**NOAA in the Caribbean Annual Partner Meeting
June 21st, 2023**

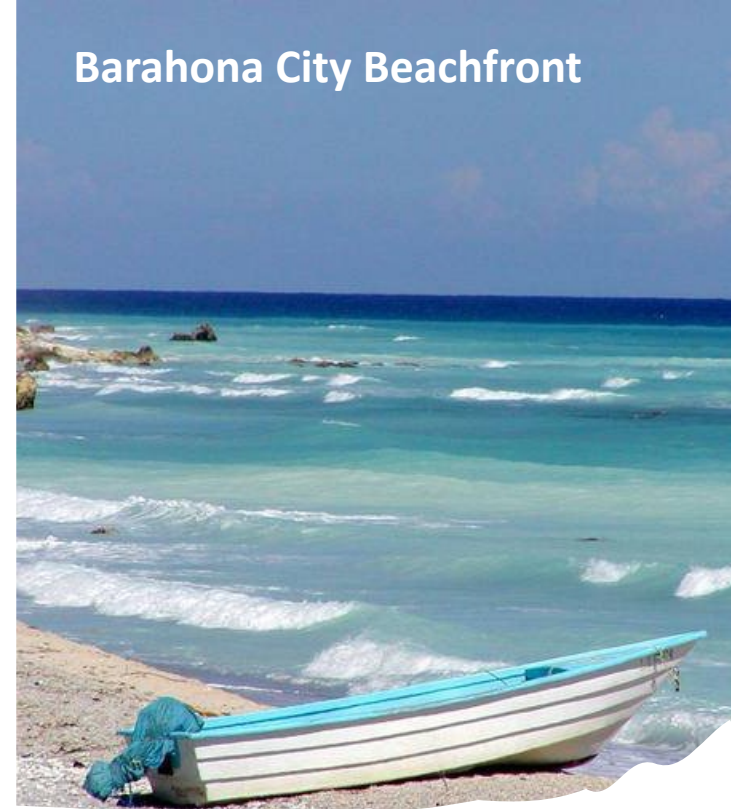




Punta Cana



San Rafael, Barahona



Barahona City Beachfront



La Caleta, La Romana

Dominican Republic

- More than 30% of economy growth in 2022 was due to Tourism (Central Bank).
- In 2022, 8.5 million tourists visited the country.
- 3347 km of beautiful beaches and reefs.



San Rafael, Barahona



Barahona Beachfront



La Caleta, La Romana



Punta Cana

South-west



South-east

Sargassum in the Dominican Republic

Since 2011, sargassum blooms have reached mainly beaches located at the Southern coastline, from the East side to the West side of the country. **This phenomenon is attributed to climate change.**



San Rafael, Barahona



Barahona Seafront



La Caleta, La Romana



Punta Cana

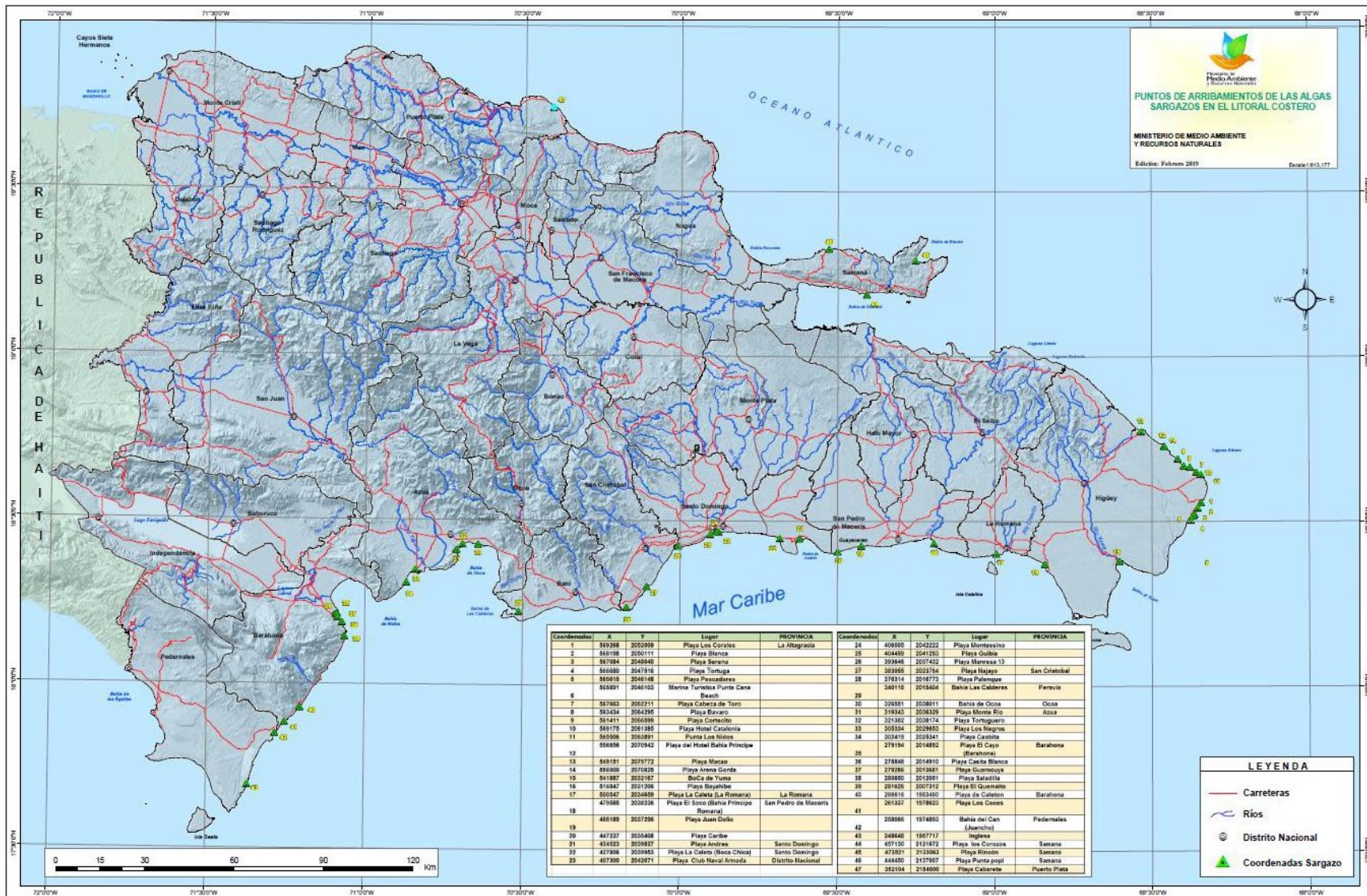
South-west



South-east

Sargassum in the Dominican Republic

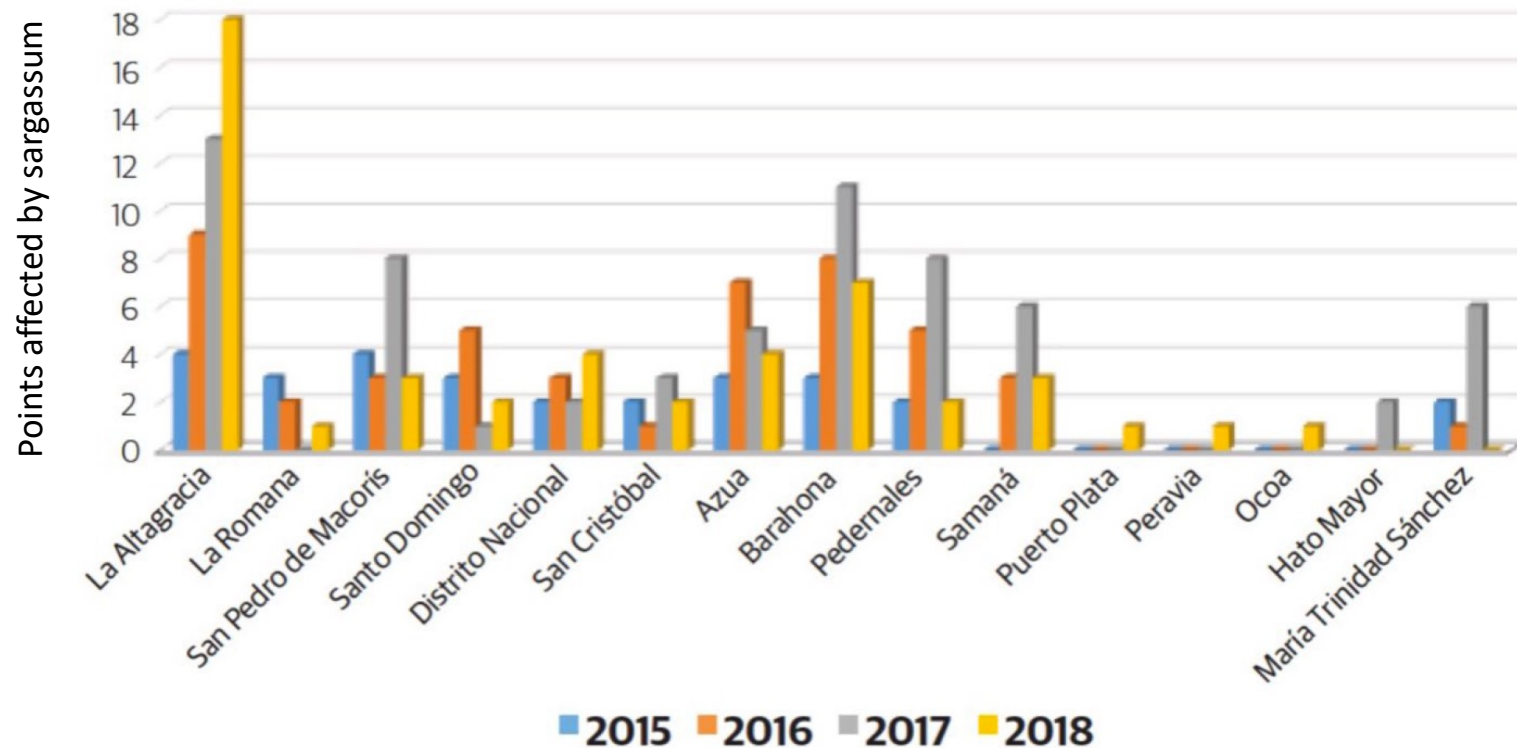
Stranded sargassum impacts the touristic and fishery industry, as well as the coastal biodiversity and the human health.



Sargassum arrival points on the coastline of the Dominican Republic (2018).
 Source: Ministry of Environment and Natural Resources.

Sargassum - Dominican Republic

During 2015 -2018, sargassum biomass was detected in 50 points within 15 provinces of the country

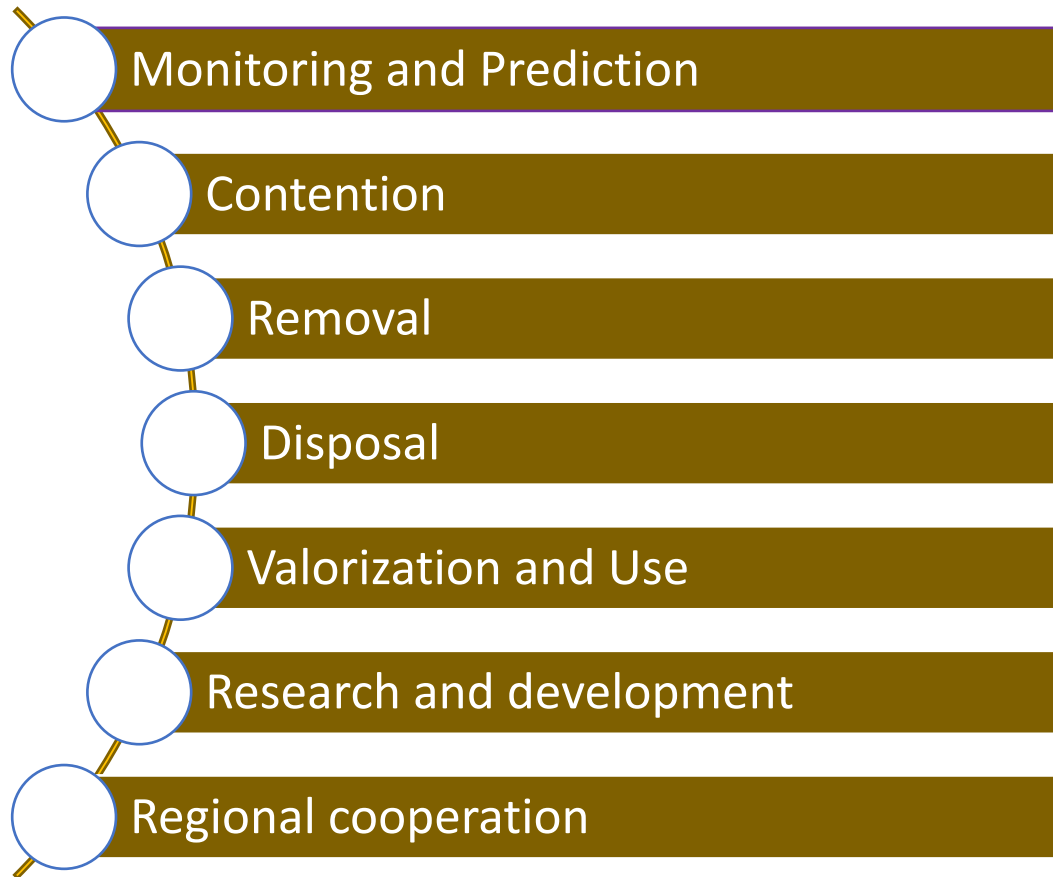


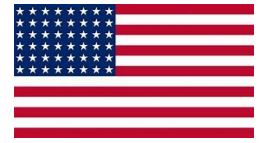
Sargassum Integrated Management - First Steps

- In 2015, the Sargassum National Committee was formed with the ministries of the Environment, Tourism, Public Works, the Presidency, and representatives of tourism companies.
- The **National Sargassum Board** was created in 2023 by the Ministry of Environment and Natural Resources to gather stakeholders of the private and public sectors, academia, ONGs, and cooperation agencies. **The aim is to create a National Sargassum Sustainable Management Plan** based on the input from these meetings.



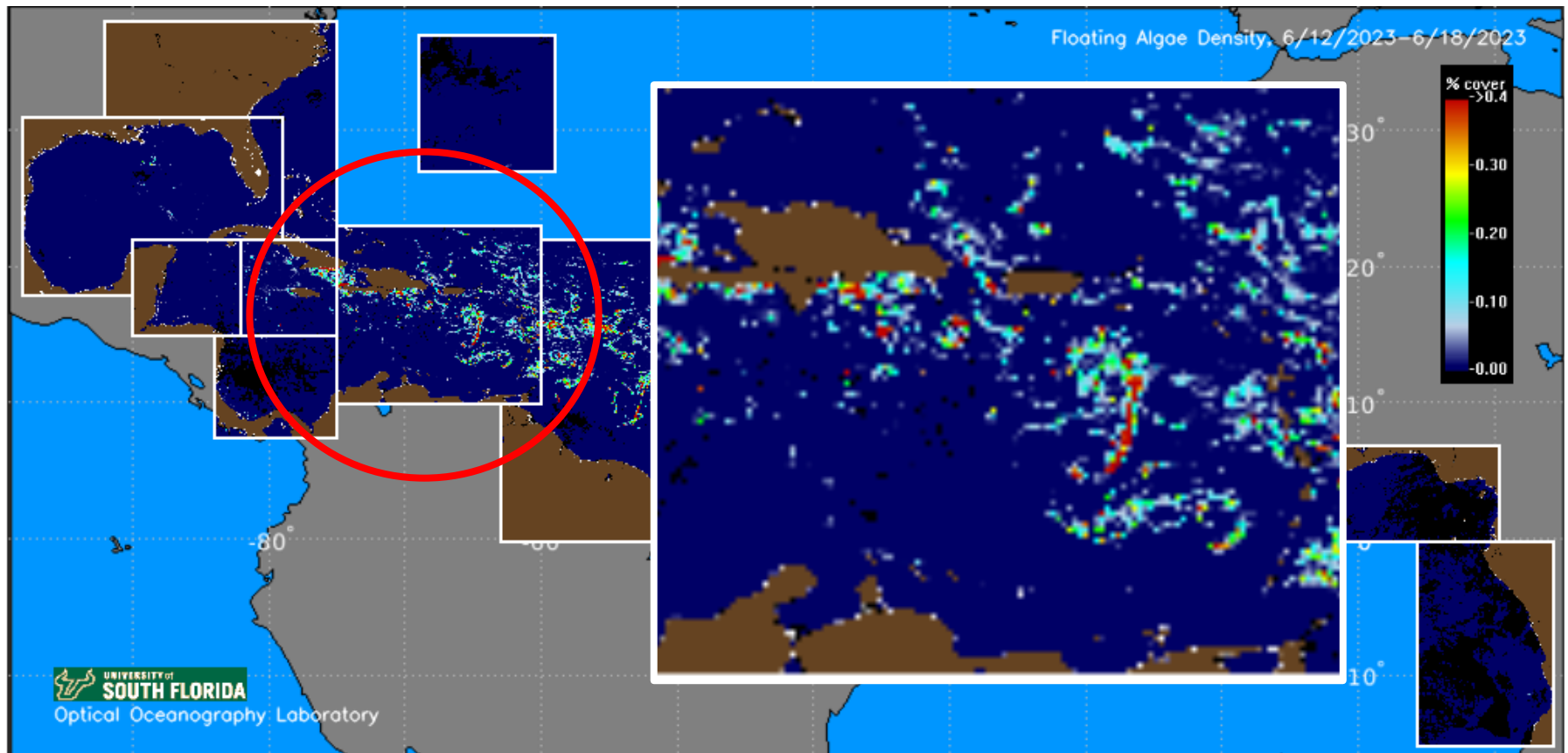
Sustainable Management of Sargassum





Monitoring and Prediction


Satellite-based Sargassum Watch System (SaWS)






Monitoring and Prediction

Experimental Weekly Sargassum Inundation Report (SIR v1.2): Jun 13-19, 2023

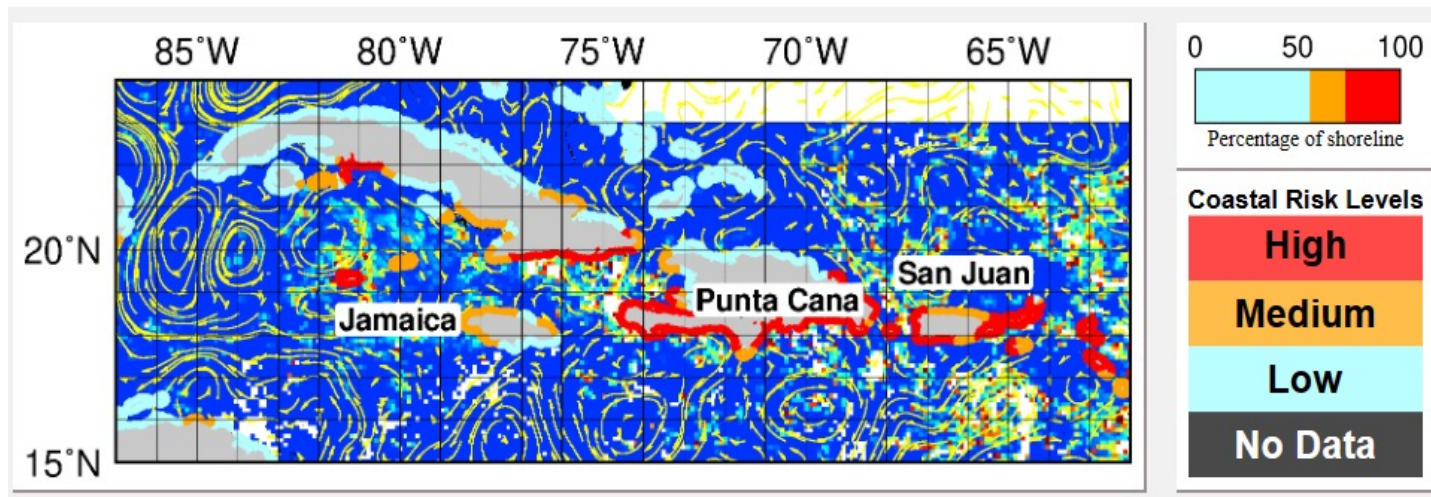
 National Oceanic and Atmospheric Administration
Atlantic Oceanographic and Meteorological Laboratory
CoastWatch Caribbean and Gulf of Mexico Regional Node

NOAA - CoastWatch -

85°W 80°W



Greater Antilles

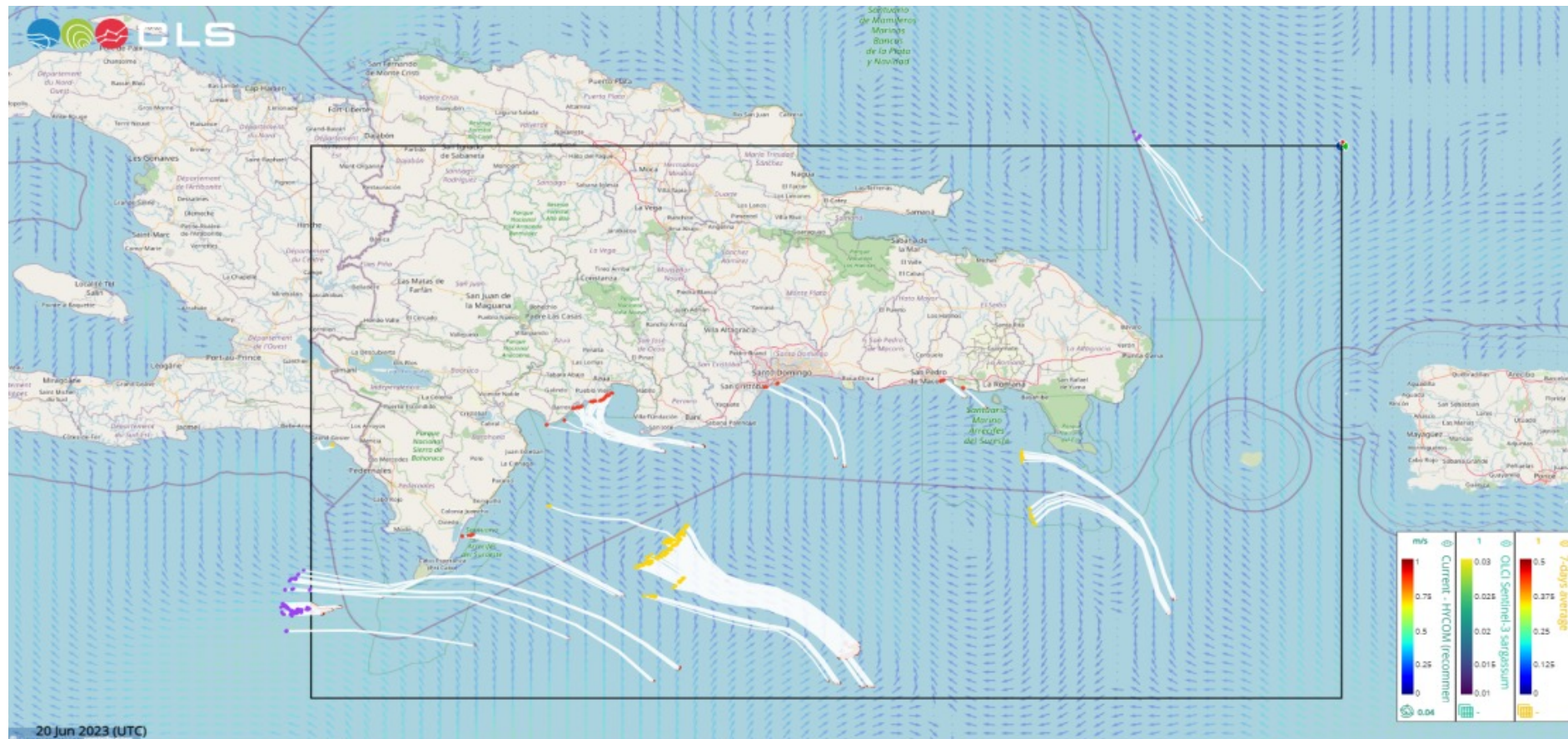


https://www.aoml.noaa.gov/phod/sargassum_inundation_report/#



Monitoring and Prediction

National Maritime Affairs Authority (ANAMAR)'s SAMtool (Sargassum Monitoring) based on forecasts from Marine Copernicus Services Jun 15-20, 2023



<https://anamar.gob.do/transparencia/index.php/publicaciones-t/category/882-2023>

Monitoring and Prediction

1. The National Maritime Affairs Authority (ANAMAR) conducts a **daily review of the sargassum arrival forecast**.
2. ANAMAR socializes the findings with the **Control and Intelligence Center of the Dominican Navy** to assess possible intervention needs.
3. The intervention, if necessary, is discussed and validated with the Ministry of Environment and Natural Resources, which is the institution with decision-making power based on existing action protocols.

Additionally, ANAMAR receives requests from the tourism and fishing sectors about the arrival forecasts of sargassum.



Contention

In November 2020, the Fund for the Mitigation and Management of Sargassum was created through the public and private contribution of US\$11,891,884.00, between the Ministry of Tourism and the hotel sector coordinated by the National Association of Hotels and Restaurants of the Dominican Republic (ASONAHORES).

“Supply and installation of a containment, collection and disposal system for sargassum in the 45.4 kilometers of selected coasts of the Verón - Punta Cana Municipal District”.



Removal



AlgaeNova harvesting equipment that operates on the water.

Removal

- SOS Carbon : Collection on the sea with the collaboration of fishermen



Removal



Scarbat (Beach Trotters) machine, a beach cleaner used by some hotels



Removal and disposal

Public Sector

Manual removal from beaches by Ministry of Tourism on touristic public places. The final disposition is dumpsites.

Removal and Disposal

The municipalities are not prepared for transporting and disposing sargassum residue.



Playa Guayacanes, El Nuevo Diario (June 9th 2023)



Valorization and use

- SOS Carbon exports sargassum to a cosmetic company :Origin by Ocean.
- **Puntacana Foundation** in partnership with academia (**UNAPEC**) has build a pilot plan for biogas production from anaerobic co digestion of sargassum and food waste, and is working on trials for composts production from sargassum.
- Compost and biodegradable plates have been developed by Algaenova from sargassum.

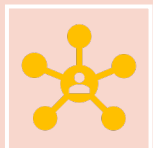
Research and Development



Ministry of Higher Education supports ~ 0.5 - 0.75M USD annually for sargassum research through the National Fund for Science and Technology (FONDOCyT)



This year, the president announced the use of 1M USD for the financial support of research on sargassum.



Academic Sargassum Network consists of 9 universities: UNAPEC, INTEC, UASD, UFHEC, UNPHU, PUCMM, UNIBE, UNISA, and UCATECI.

Research and Development

RESEARCH LINES	TOPICS	UNIVERSITIES
Impact	Impact on Biodiversity / fisheries	UASD-UNPHU
	Social Impact	PUCMM-UNIBE-INTEC
Monitoring and prediction	Monitoring	UASD-UNPHU-PUCMM-INTEC
	Prediction	INTEC-UNAPEC
Standardization of biomass	Characterization	UNPHU-UASD-UCATECI-UFHEC
	Storage	UNPHU-UNAPEC-UFHEC
Applications	Biogas production	UNAPEC-UFHEC
	Composite Material	ISA-PUCMM
	Activated Carbon	INTEC-ISA
	Biofertilizer production	INTEC-UCATECI
	Bioactive compounds	UFHEC-UASD



WIDER CARIBBEAN · EU REGIONAL CONFERENCE ON SARGASSUM

TURNING
SARGASSUM
INTO AN
OPPORTUNITY

15 June 2023

Santo Domingo, Dominican
Republic

Ministry of Foreign Affairs,
Convention Centre,

Avenida Independencia 752,
Estancia San Gerónimo

#Sargazo #Caribe

Regional Cooperation

- Transference of knowledge and technology between affected countries of the region
- Creation of regional policies
- Coordinated actions for mitigation
- Funding from developed countries toward adaptation.



Acumulación de sargazo en las playas de los resorts en Punta Cana en la República Dominicana. Foto: Iren Key (Shutterstock.com)

Informe de situación del sargazo en la República Dominicana

Marzo de 2023

Versión final

Lluís Torrent i Bescós

Un proyecto implementado por DAI Global
y financiado por la Unión Europea



Information Source

- Enrique Pugibet (Ministry of Environment)
- Jimmy García (ANAMAR)
- Jake Kheel (Grupo Puntacana)
- Manuel Despradel (AlgaeNova)
- Andrés Bisonó (SOS Carbon)
- Carlos Rodríguez (MESCyT)
- Ulises Jaraugui (INTEC)
- Alvin Rodríguez (UNAPEC)
- Gladys Rosado (UASD)



Contact Info

Yessica.castro@ufhec.edu.do