



## Detecting and forecasting Sargassum

Marion SUTTON, CLS, France

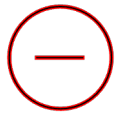






Since 2011, huge sargassum mass strandings (Sargassum fluitans and Sargassum natans) have occurred in the wider Caribbean region, West African countries and Gulf of Mexico, having **strong societal and environmental impacts**.





## # Public authorities:

- Mandates in public beach management and public health management
- In charge of cleaning beaches and monitor H2S concentration



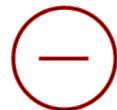
## # Tourism sector:

- Key source of revenue for most countries
- Sargassum ruins the visual aspect of beaches and nuisance for nautical activities



## # Fisheries :

- Hampered by floating sargassum, especially net fishing
- Fishermen can be trapped in port by Sargassum



## # Operations at sea & marine safety:

- Seismic surveys stopped by floating sargassum
- Small-size vessels, sailing boats trapped in Sargassum mats



## # Wildlife protection and valorisation :

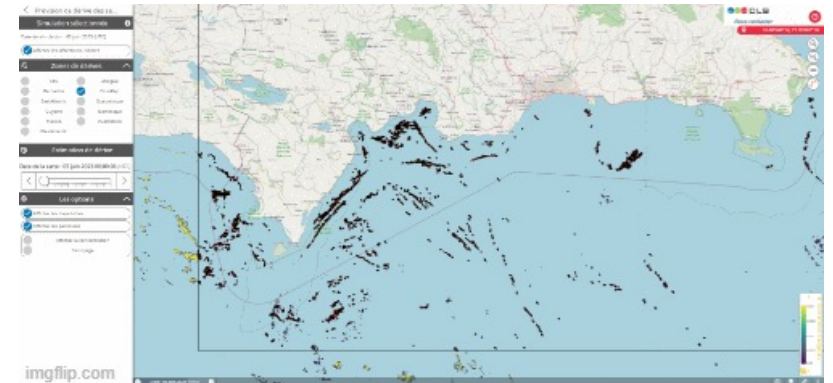
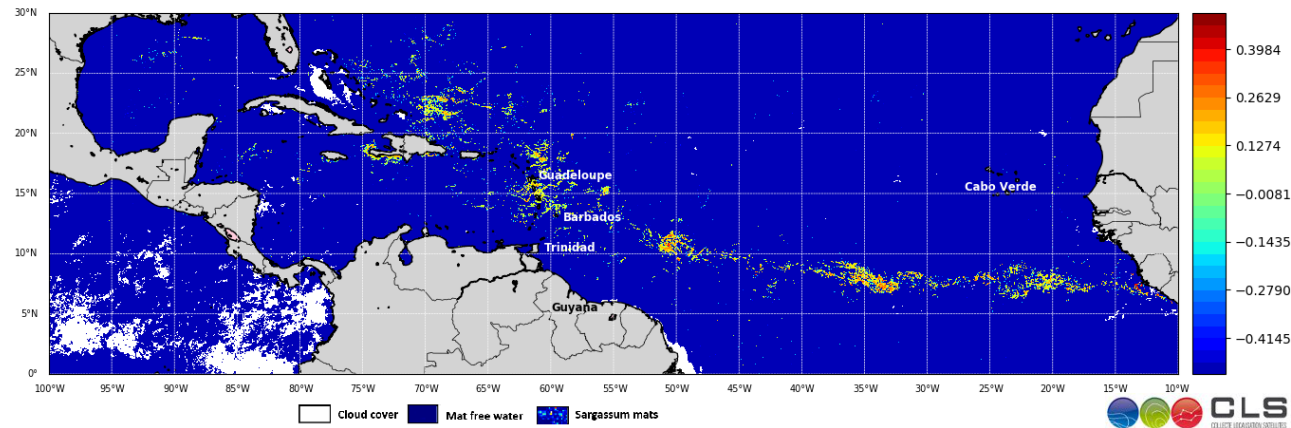
- Floating sargassum is a protection for juveniles
- Collection for valorization,





- **Need to monitor the situation at Atlantic basin and Islands scales**
- **Satellite technology and drift models are key tools to help mitigation: anticipate size and timing of influxes to correctly size the responses**

OLCI / MODIS NFAI CLS 7 days Mean (2021-08-30 00:00:00 UTC)







## 2 founding projects

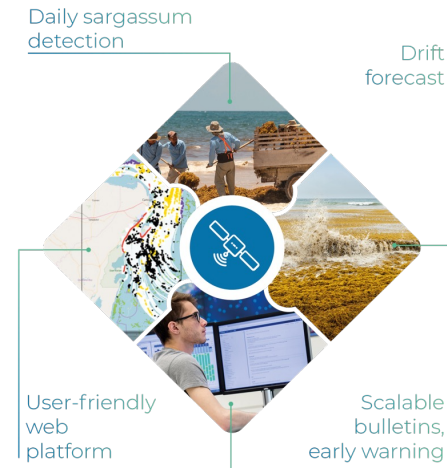
2018-2020

- EO science for society

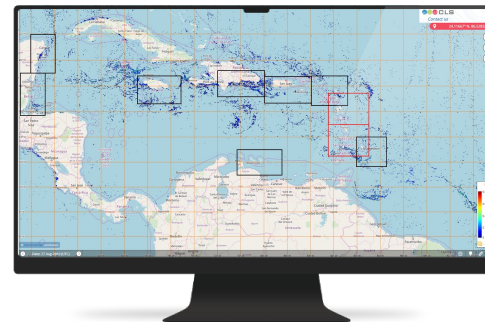
ESA AO/1-9101/17/I-NB - EOEP-5 BLOCK 4



Valorisation of satellite data to answer a need from society: **Development of SAMTool**



**6** satellite sensors including medium and high resolution



**5** days forecast



**24/7** operational & scalable service



## 2 founding projects

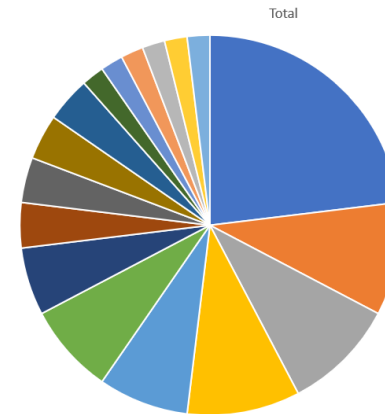
- E-Shape EUROGEO Showcases

EU Horizon 2020 / GA 820852

Expanding the user community with co-design actions: Scaling up from Operational to Seasonal planning



2019-2023



> 50%

Domain

- University
- National Park
- Private Collection at sea
- National Environmental service
- Environment Company
- National Meteorological service
- National Research Center
- Coast Guards
- Scientist
- Film maker
- NGO
- Regional Fisheries Management
- Marine & Port Authority
- Journalist
- Marine & Port Authority
- Meteorological institute
- Private Company

+60 USERS OF THE SYSTEM SINCE 2019  
IN +12 COUNTRIES





## Consolidation phase

2013-2025

Need to support to International Public Sector by sharing the satellite detection products with the scientific community , sponsored by EU Copernicus Marine Service and CNES



● **SODA:** <https://marine.copernicus.eu/about/research-development-projects/2022-2024/soda>

- Improving Sargassum Operational Detection Algorithms



● **SeSAM:** <https://www.spaceclimateobservatory.org/sesam>

- Satellite data will be shared through AVISO, GEO Blue Planet Sargassum Hub
- Seasonal forecast will be produced operationally (IRD & MOI )



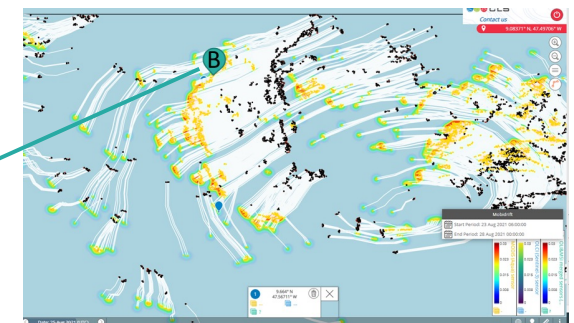
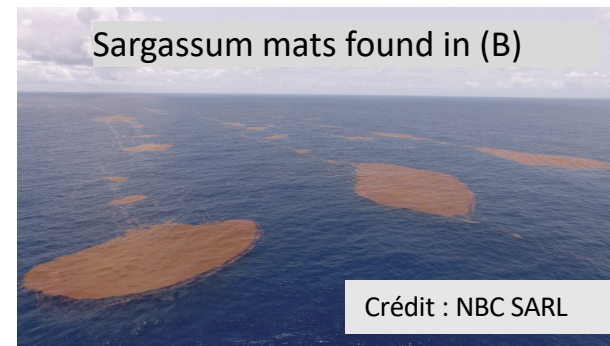


## Consolidation phase

2013-2025

Need to support operational actions for sargassum management with SAMTool

- Anticipate sargassum influxes and landings
  - Coastal management & cleaning operations
- Localise sargassum mats at sea
  - Plan for collection operation
- Estimate amount of sargassum for valorisation
  - Support development of private sector







2025+

## Conclusion & future steps

- Earth Observation data is a key tool for sargassum monitoring
- Valorizing space data to answer a real need from society
- Need to support the offer for the public & scientific sector through International & European actions (EuroGEO, Copernicus)
- Different needs for the private sector will need different answers