



5th Symposium | Accra, Ghana | 24 – 28 October 2022



Training
Session





University
Of Ghana

Marine products for decision-making purposes

Coastal environment & protection of biodiversity

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Introduction (5')

Presentation of use cases related to coastal environment & protection of biodiversity (20')

- From the University of Ghana / GMES&Africa (10')
- From the Copernicus Marine Service / WEkEO (10')

Demonstration of MyOcean/UNEP Viewer + WEkEO platform (10')

Discussion & Q&A (10')



Coastal environment & protection of biodiversity

Decision-making purposes



**Discover
the products**



**Find the
Relevant product(s)**



**Access the
product(s)**



**Use
the product(s)**

Information

Product sheets, OMI / Ocean State Report

Notifications

Use Cases

User support (FAQ, tutorials,...)

Tools

MyOcean Viewers

E-Learning material

Plugins & API

Events

Webinars

Regular Training workshops

Tailored workshops



Use cases related to coastal environment & protection of biodiversity from University of Ghana



- **Service 1:** Enhance monitoring and forecasting of Biological and Physical Oceanographic variables in North and West Africa
- **Service 2:** Fisheries resources management and protection (PFZ and Vessel traffic)
- **Service 3:** Coastal vulnerability mapping and monitoring
- **Service 4:** Regional marine weather forecast
- **Service 5:** Coastal ecosystems mapping and monitoring
- **Service 6:** Oil spill monitoring and warning services from North to West Africa



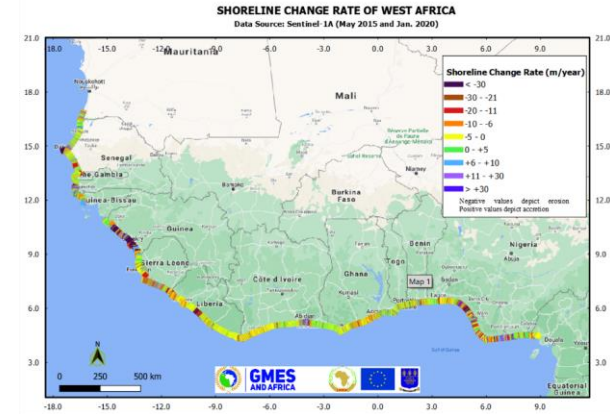
Coastal vulnerability mapping and monitoring

Products:

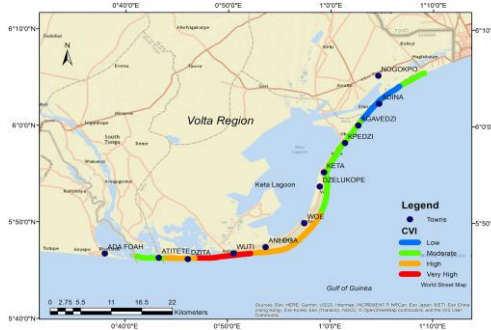
- Shoreline change and forecast maps
- Map of coastal vulnerability indices (CVI)
- Information on state of the environment: vulnerability of coasts (high, medium, low, etc.)
- Risk and hazard maps

Data Used:

- Sentinel-1 data (EUMETSAT)
- Historical orthophotos
- Wave height (CMEMS)
- DEM



Shoreline change map of West Africa



CVI map of an erosion hotspot in Ghana



Coastal ecosystems mapping and monitoring

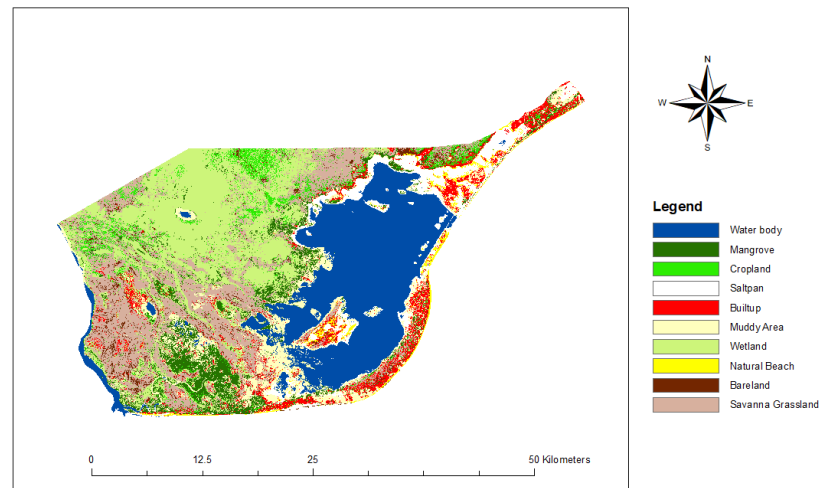
Products:

- Maps of coastal vegetation change
- State of the environment reports
- Vector(shape files) and raster images (jpeg, geotiff)

Data Used:

- Sentinel-2 (EUMETSAT)
- High Res. aerial photos
- Shape files

Landcover Map of Keta Lagoon Complex, DEC-2015



Produced by Regional Marine Centre, University Of Ghana.
Data source: Sentinel-2,

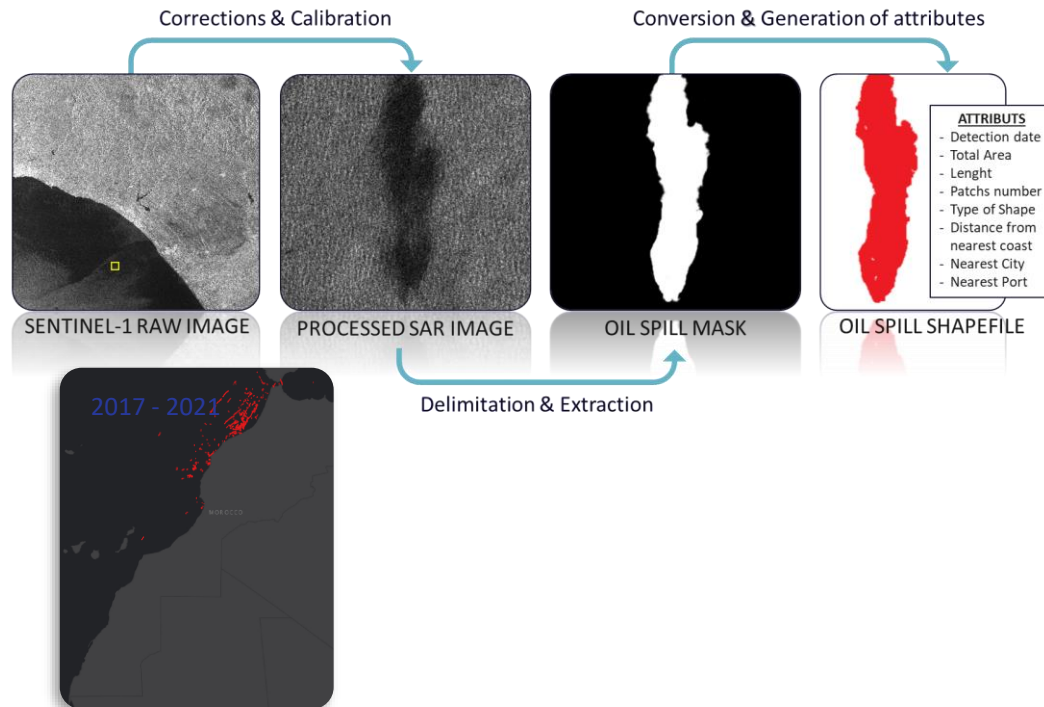
Oil spill monitoring and warning services from North to West Africa

Products Expected:

Oil spill detection improved
with dissipation models

Data Needed:

- Sentinel-1 (EUMETSAT)
- Winds, waves, SST (CMEMS)
- Bathymetry



Use cases related to coastal environment & protection of biodiversity from **Copernicus Marine Service**



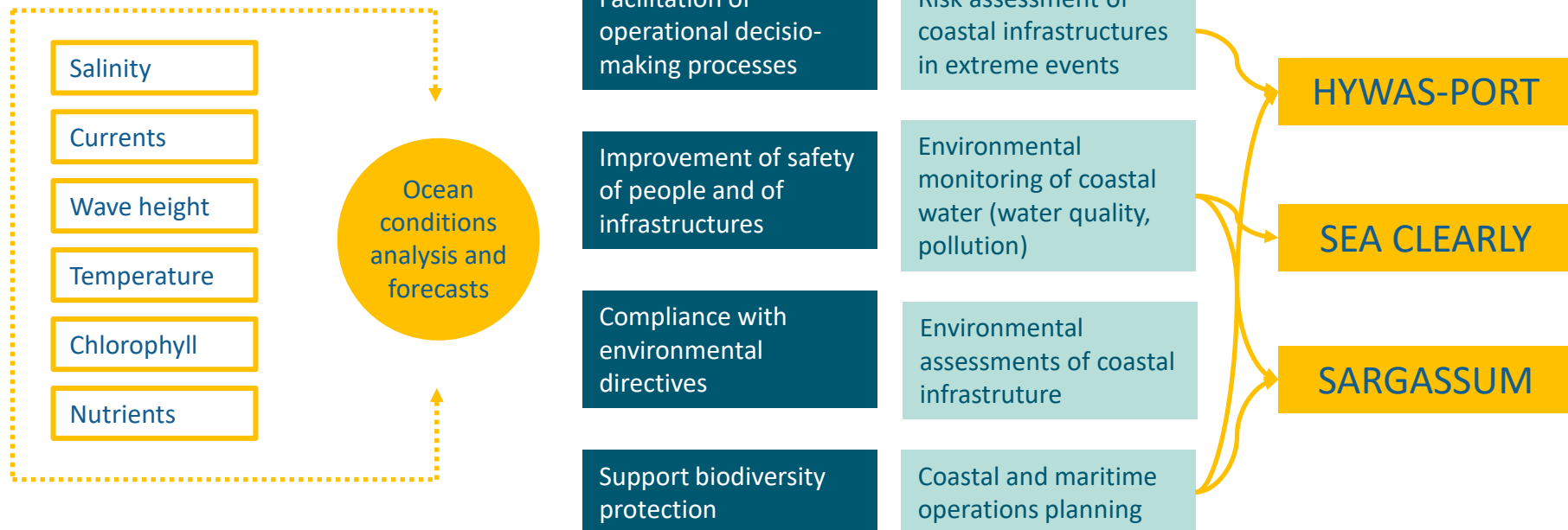
EXAMPLES OF COPERNICUS MARINE SERVICE DATA

INTERMEDIATE USE

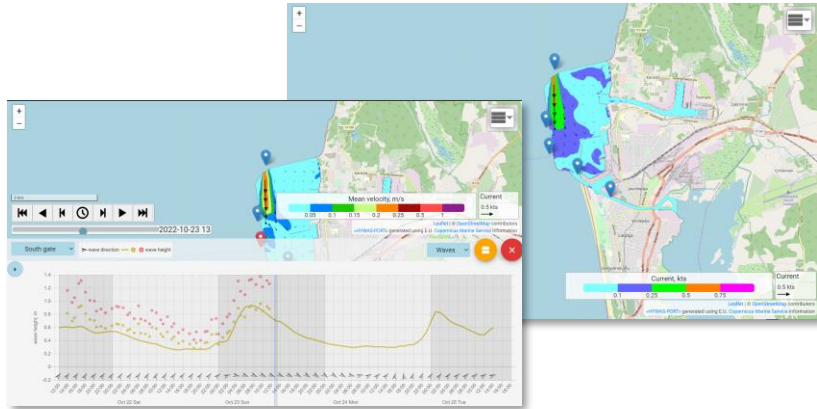
BENEFITS & IMPACTS

END USE

USE CASES



Hydrodynamic, wave and siltation modelling for ports



The operational web service providing:

- Parameter forecasts;
- parameter warnings;
- observation data and their visualization;
- integral siltation level forecast in the sediment traps and navigation channels.

The service contains operational wave and hydrodynamic models of up to 20 m resolution for the port aquatories.

BENEFITS for end-users

The service is designed for decision support increasing port operation efficiency and maritime safety.

Targeted end-users

Services and units of Port Authorities: Captain's service, Hydrographic service, Navigation safety service, Pilot service and similar.



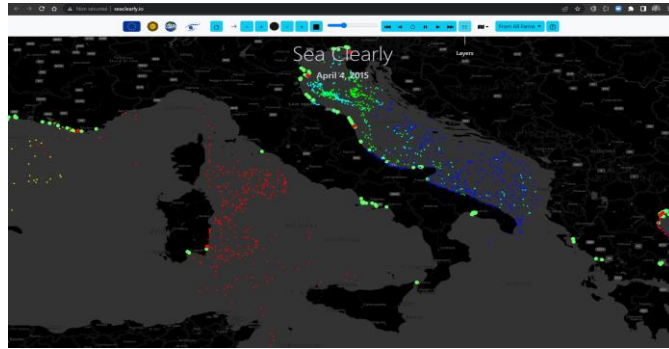
Assess ocean plastic transport on and by aquaculture farms



OCEAN HEALTH



MARINE CONSERVATION & BIODIVERSITY



BENEFITS for end-users

- Identify pollution-low locations for new aquaculture farms
- Help decision maker assessing the impact of new and existing aquaculture farms on MPAs (Marine Protected Areas)
- Ensure safe and clean marine based food

Providing animated drift of pollutant, this web-based tracking tool helps determine locations for probability of:

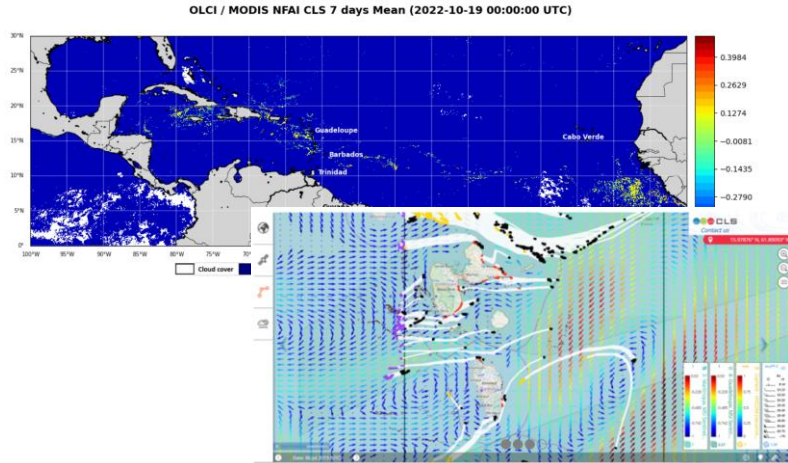
- Plastic pollution reaching aquaculture cages
- Plastic pollution from cages reaching marine protected areas.

Targeted end-users

NGOs, Aquaculture farmers, Environmental Authorities...



Sargassum detection



BENEFITS for end-users

Prepare the mitigation plan in advance to reduce the devastating effects of sargassum stranding on local economies and support timely sargassum collection operations



The operational web service providing:

- Sargassum detection by satellite ;
- parameter warnings;
- observation data and their visualization;
- drift computation and forecasts.

Targeted end-users

Services and units of Port Authorities: Captain's service, Hydrographic service, Navigation safety service, Pilot service and similar
Tourism Department



**Demonstration related to coastal
environment & protection of biodiversity**

Copernicus Marine Service Viewer

WEkEO platform



THANK YOU

