



# AfricaGIS 2025



**UN-GGIM: AFRICA**  
UNITED NATIONS  
GLOBAL GEOSPATIAL  
INFORMATION MANAGEMENT

## Marine and Coastal Areas Management in North and West Africa

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**(MarCNoWA)**



Consortium Name: **MarCNoWA**

Title: **Marine and Coastal Areas Management in North and West Africa**

Geographical Coverage: West & North Africa (18 countries)

Focus: **Fisheries, Marine meteorology, Coastal ecosystems monitoring and vulnerability assessment, Oil spill monitoring**

Website: <https://gmes.rmc.africa/>

Contacts: [rmc@ug.edu.gh](mailto:rmc@ug.edu.gh) / [kaagyekum@ug.edu.gh](mailto:kaagyekum@ug.edu.gh)

Partners : **UG, GMet, CEDARE, NTG, CURAT, UCD, CERT, IRHOB, CRODT, NIOMR, Edenway Foundation**

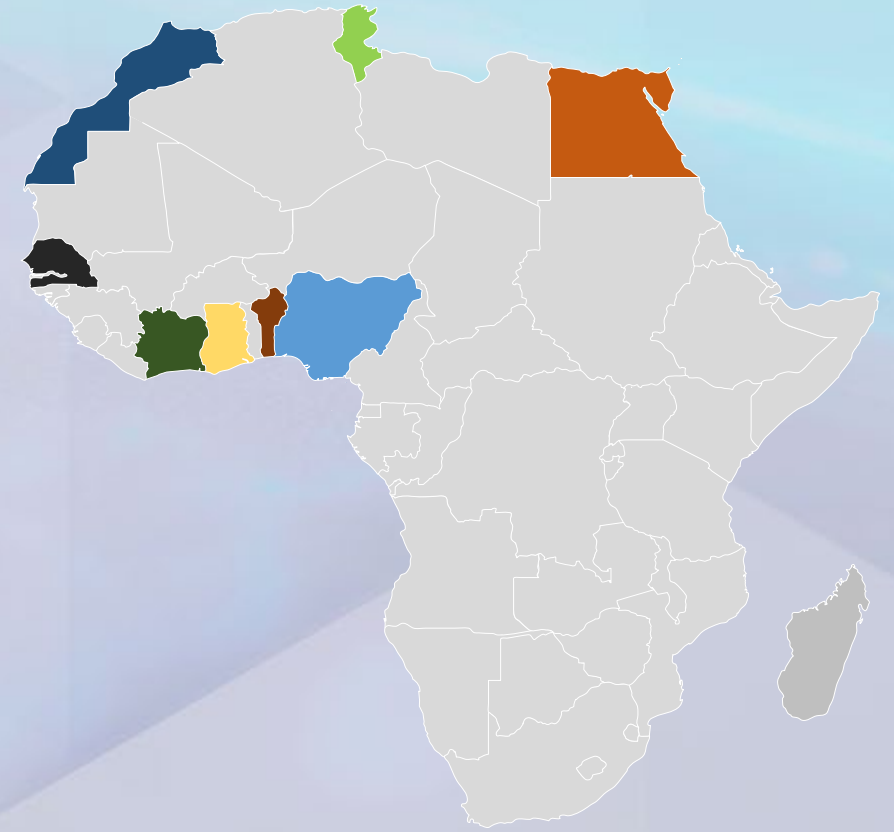


# Implementing Partners


**11 Partners** are highly involved in the design and implementation of the EO Services.

UG (Ghana)  
GMet (Ghana)  
CEDARE (Egypt)  
NTG (Ghana)  
CURAT (Cote d'Ivoire)  
UCD (Morocco)  
CERT (Tunisia)  
IRHOB (Benin)  
CRODT (Senegal)  
NIOMR (Nigeria)  
Edenway  
Foundation (Ghana)

Partner Locations



# Services



## Earth Observation Applications & Services

1 Monitoring & forecasting oceanography variables

2 Regional marine weather forecast

3 Monitoring coastal vulnerability

4 Coastal ecosystem/habitat mapping

5 Fisheries resources management and protection

6 Oil spill monitoring and warning services





# Regional Marine Weather Forecast

Main objective is to support the safety of fishermen and other marine operators at sea by providing accurate and timely information on ocean conditions

## Mobile USSD code



## Flag system



# Regional Marine Weather Forecast



# Conversion of Advisory Message to Audio

**Develop Text-to-Speech capabilities (en, fr, po – automated)**

**English**



**French**



**Portuguese**



**Convert messages to audio (local dialect)**

**Create various groups based on [Location/Language]**



# Dissemination of Advisory via WhatsApp





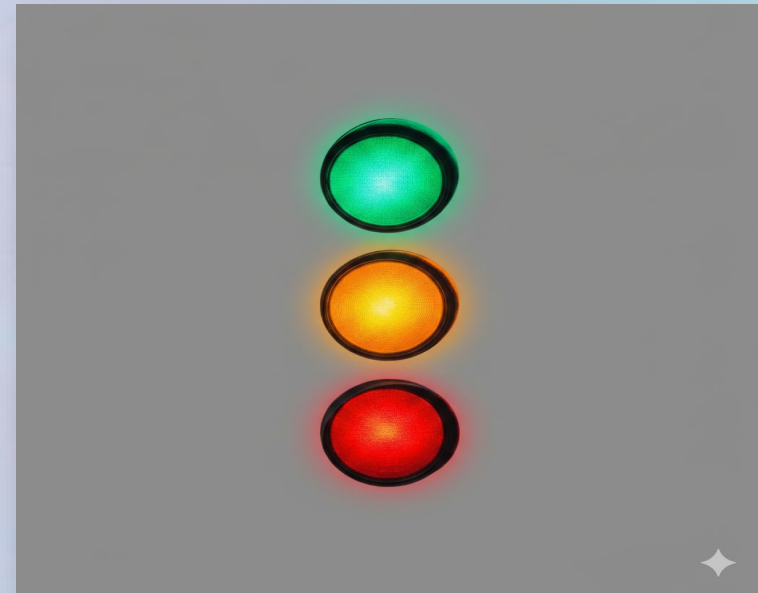
# Service Design

1



Access Forecast Data (wave)

2



Processing to generate index (1- Green, 2- Rough, 3-Dangerous)

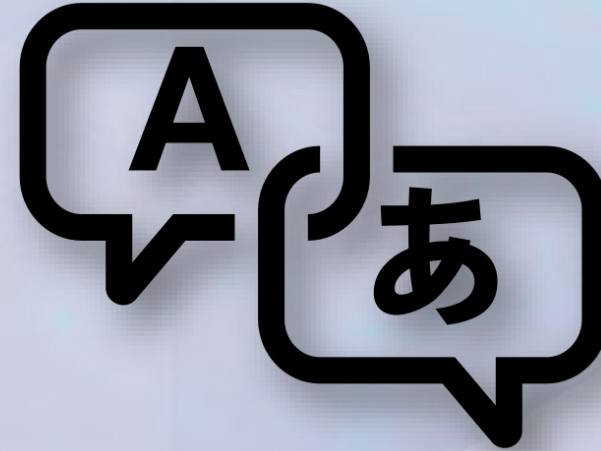
# Service Design

3



Advisory Message is Created

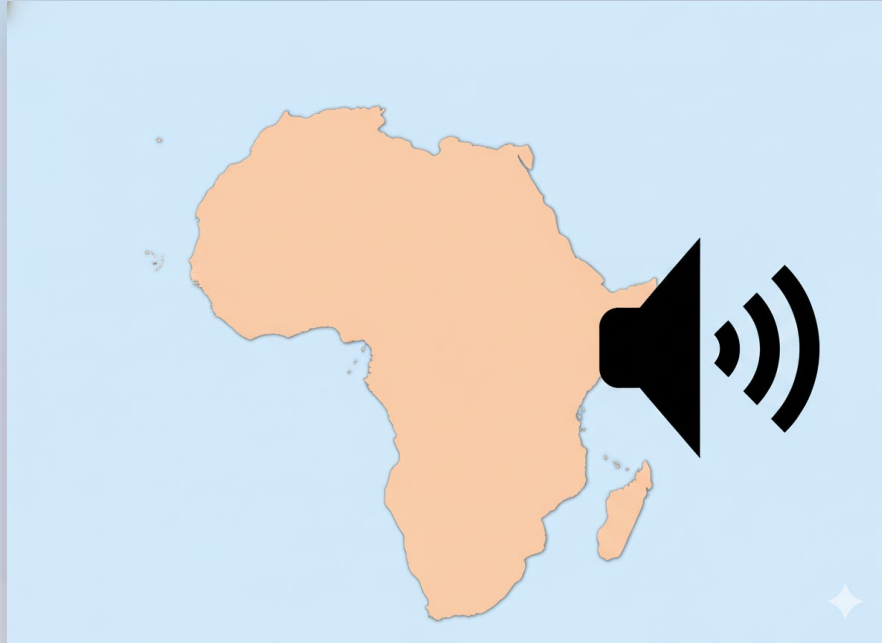
4



Translation of Message to Local Languages

# Service Design

5



**Audio and Image is generated**

6



**Dissemination of Advisory Message to users via WhatsApp**

# Service Design

7



**Focal points confirms  
delivery to landing sites**

8

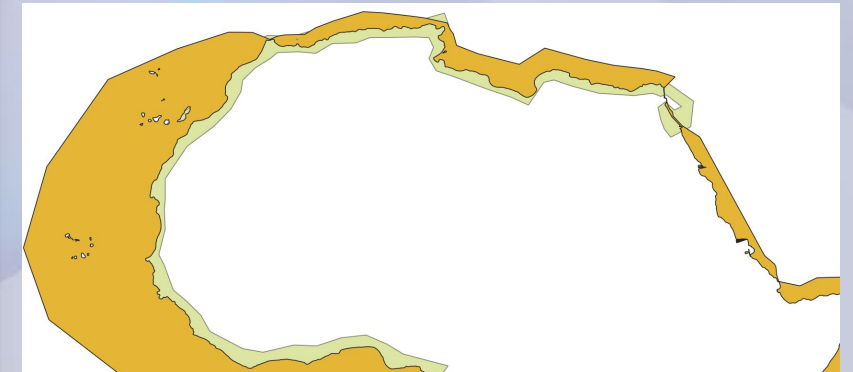
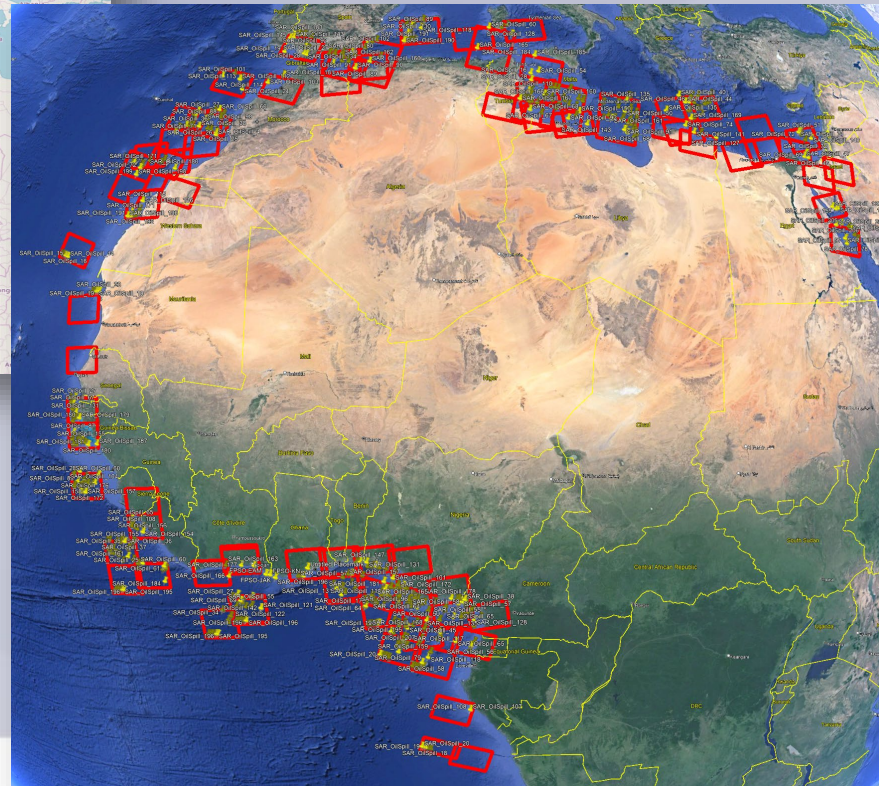
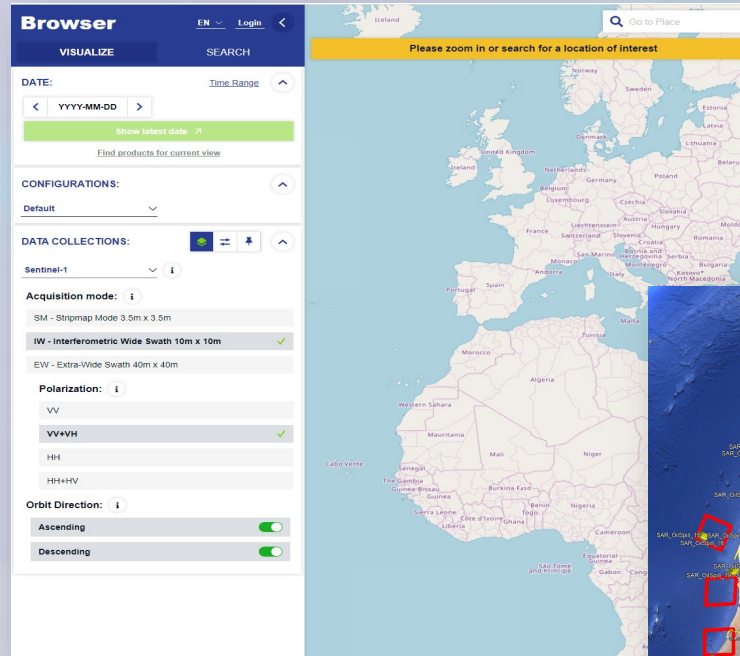


**Mount flags at landing sites**

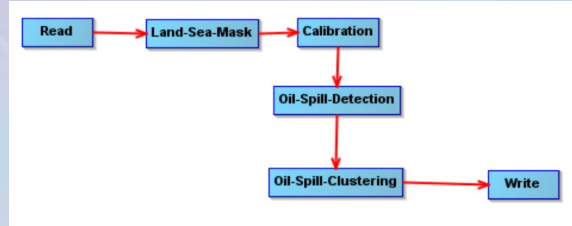


# Oil Spill Detection and Dissipation

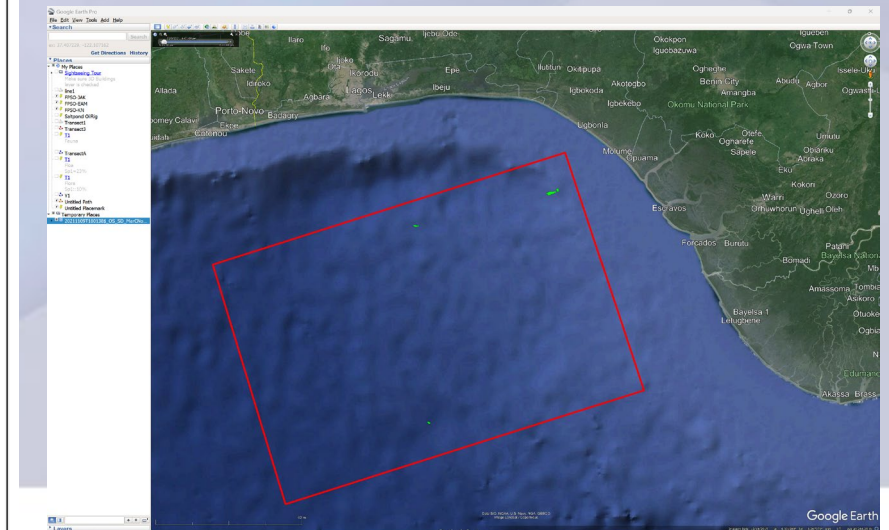
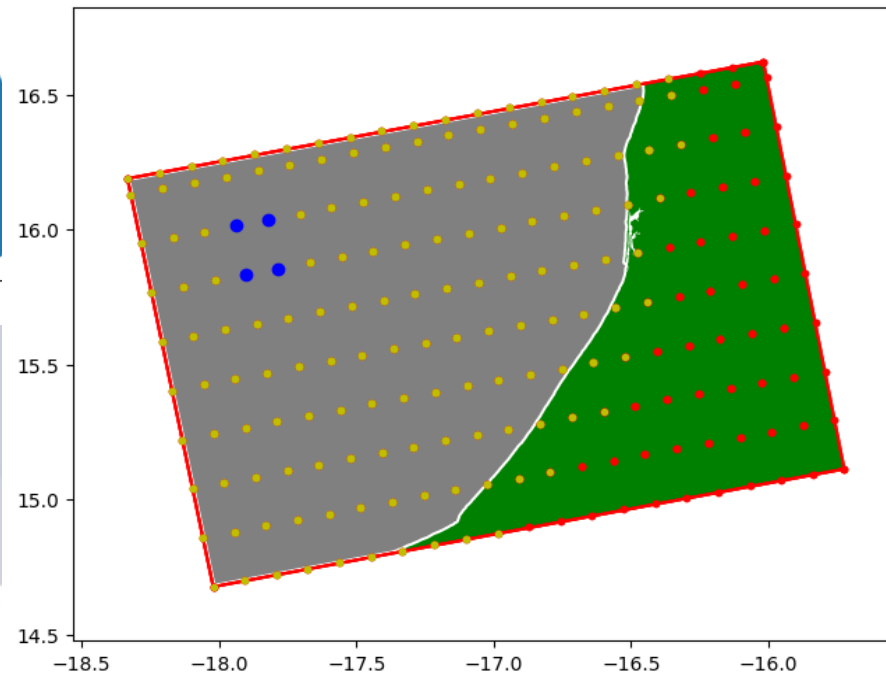
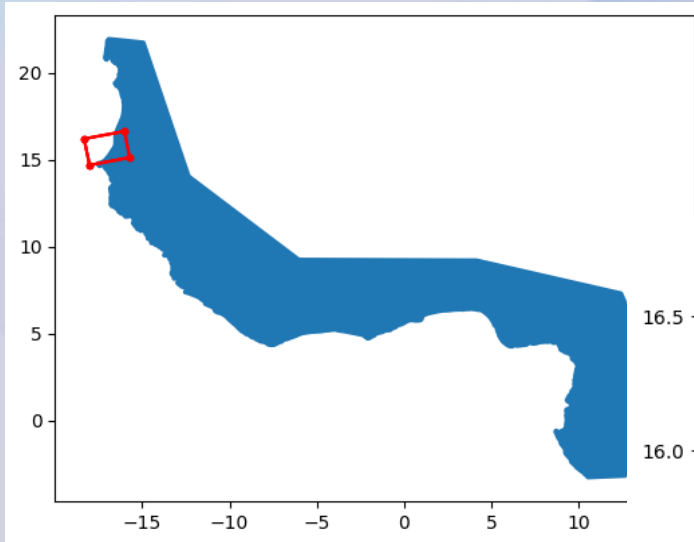
**Downloads:** Automated using Python scripts;  
Scripts call every 3 hours; Cronjob on a Linux OS



# Oil Spill Detection and Dissipation

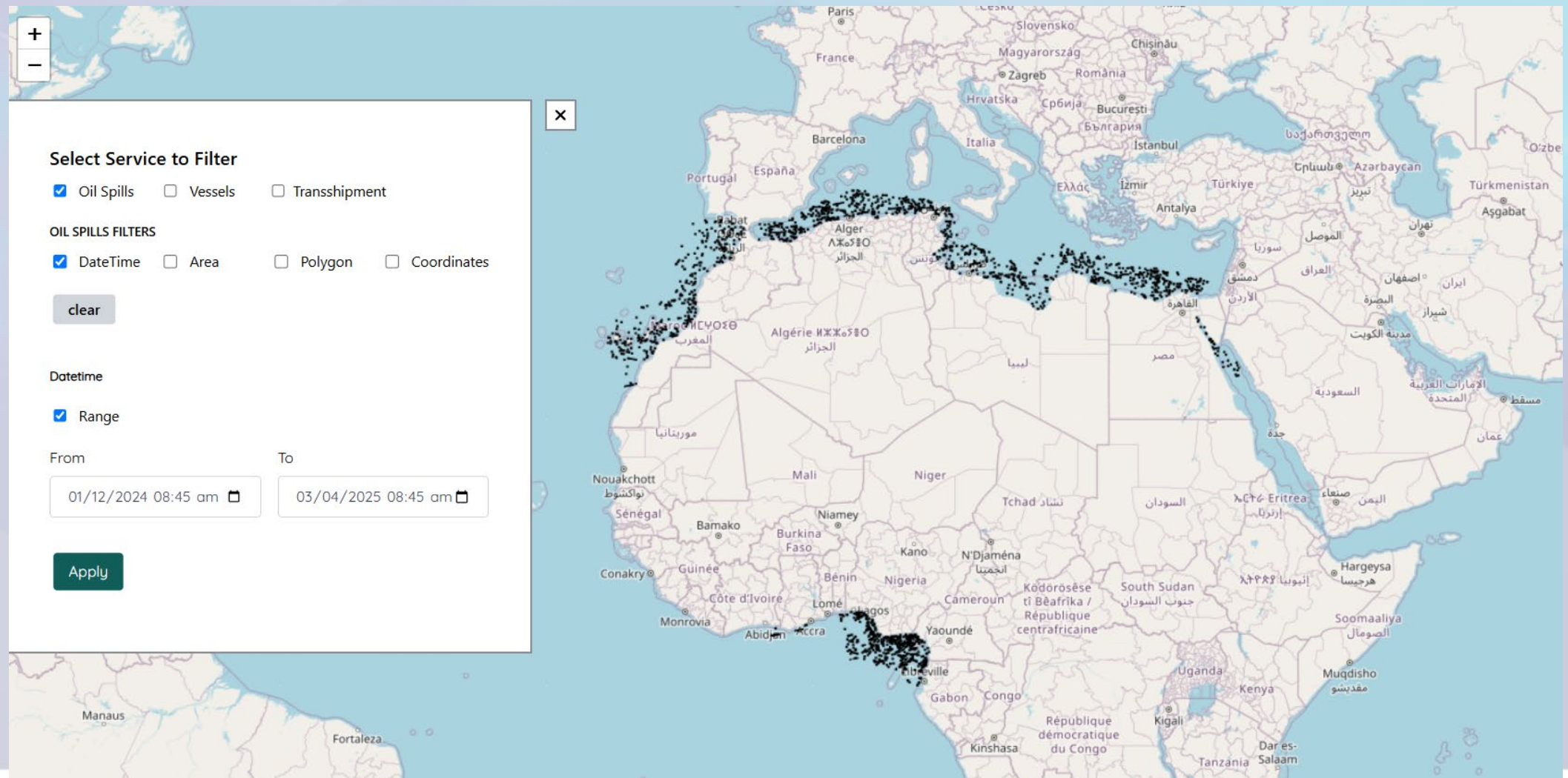


**Data processing:** Reading huge data using `dask_image`; Land masking; Tie-point generation for chunks collection and geolocation of pixels; Chunks with ocean selection for targeted and faster processing; Optimised detection; Target detection in a csv-formatted table; Upload to web portal; Scripts call every 3 hours; Cronjob on a Linux OS





# MarCNoWA Web Portal



# MarCNoWA Web Portal

18

Beneficiary Countries



34

Institutions Engaged



200+

Individuals Trained



1.0K+

Square Kilometers Covered



17.1K+

Potentetial Oil Spill Cases Detected



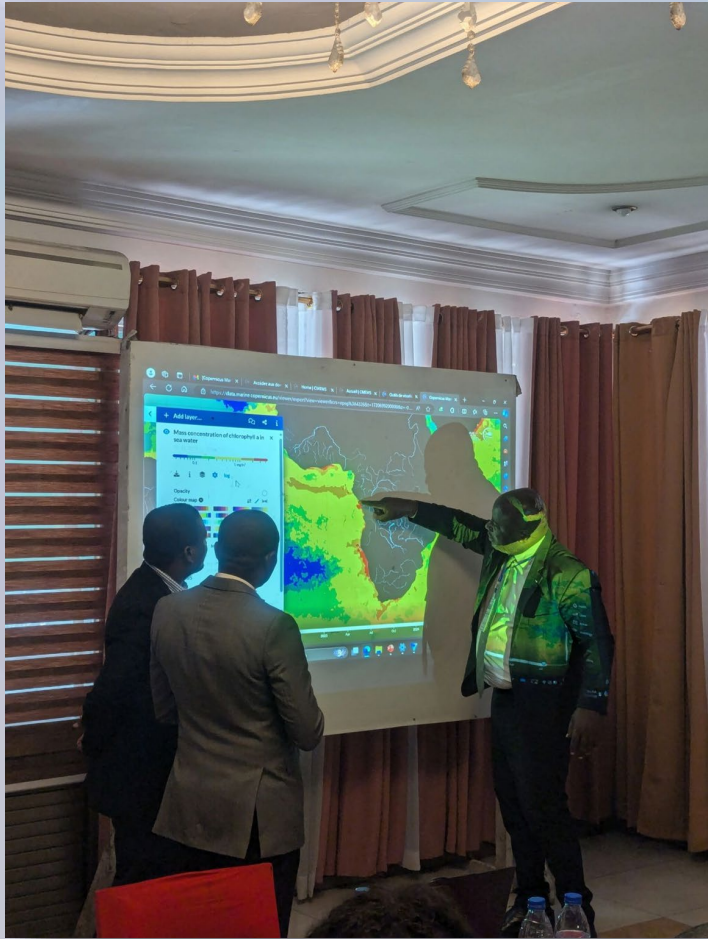




# Capacity Building in EO



# Capacity Building in EO



**Marine and Coastal Areas Monitoring  
Training in Brazzaville, Congo, July 2024**



**Training on the MarCNoWA Web Application  
and Python for AIS Data Analysis with the  
Ghana Navy, April 2025**





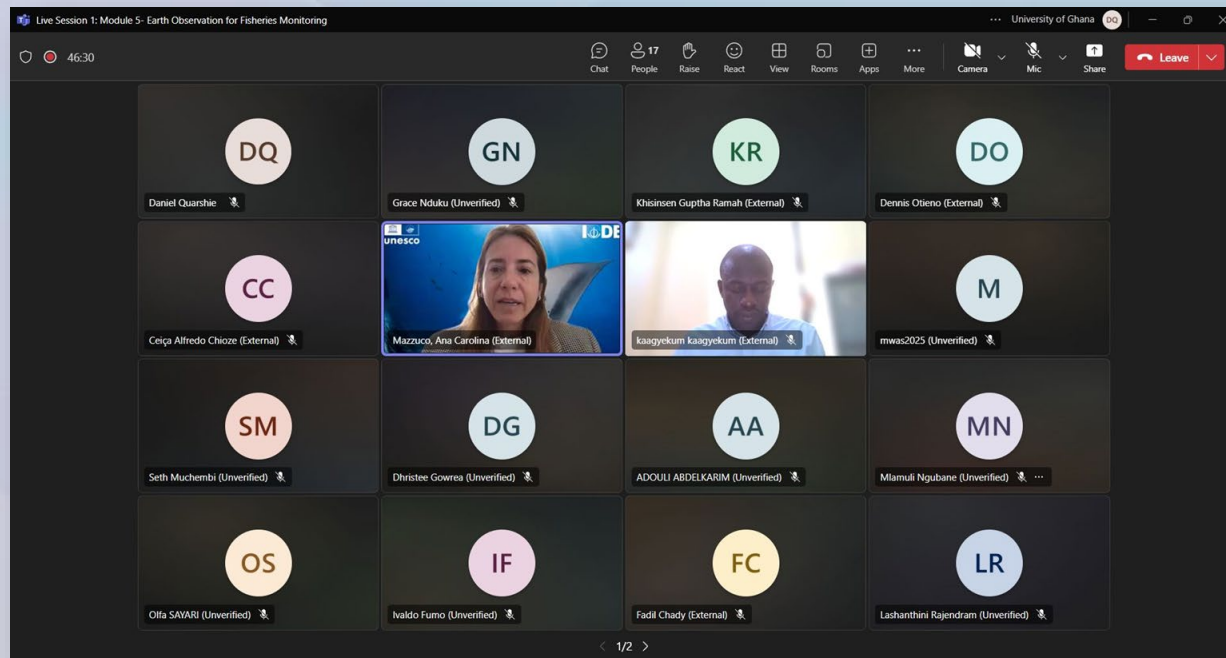


**Regional Oil Spill Workshop 2025, organized by  
MarCNoWA, UNEP, Abidjan Convention**

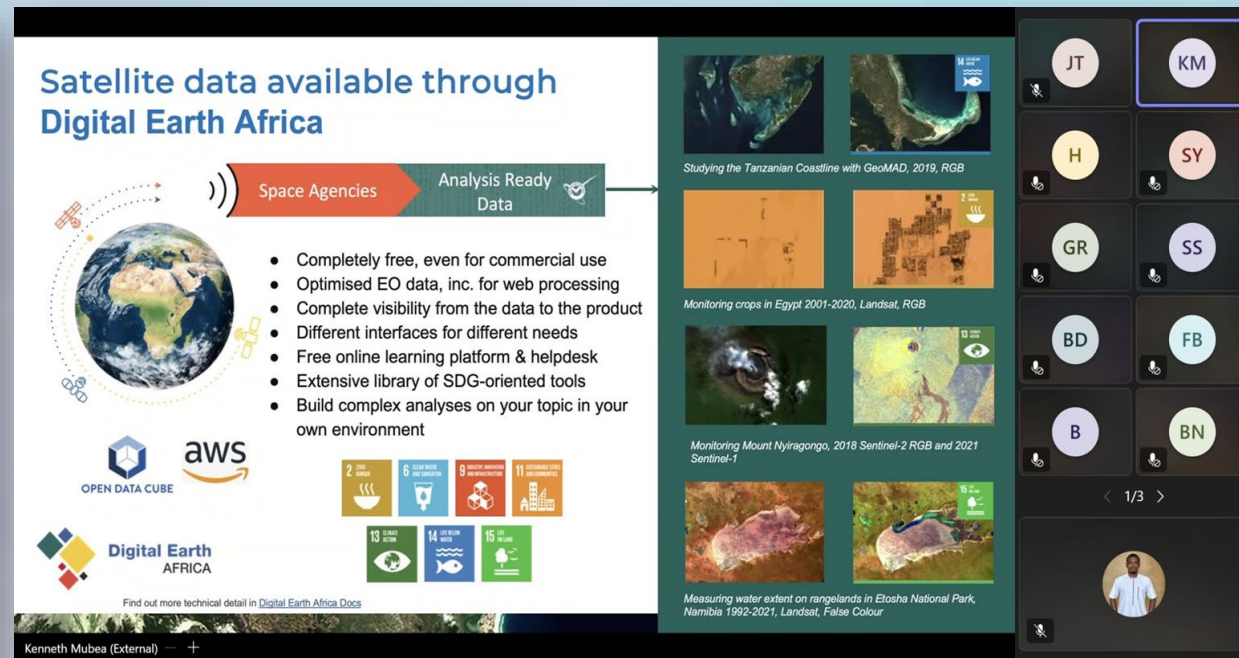




# Capacity Building in EO



**Earth Observation for Enhanced Fisheries Monitoring, Control, and Surveillance (EOFish), June 2025**



**GMES & Africa \_Digital Earth Africa Webinar series\_ENGLISH, April 2025**



# Capacity Building in EO

**50+** Applications received in the years  
2023 and 2025

**11 Master's :**

Males - 8

Females - 3

**4 PhD :**

Males - 2

Females - 2



The poster features a circular inset image of two male graduates in black gowns and caps, one with a colorful stole. The background is dark with a satellite dish. Logos at the top include GMES AND AFRICA, African Union, European Union, and UNIVERSITY OF GHANA. The MarCNoWA logo is on the left. The main text reads 'GMES and Africa Thesis Completion Grants' in white, followed by 'For Masters and PhD' in yellow. A QR code is present, and a red calendar icon with the date 'November 10, 2023' and the text 'Apply before the closing date' is at the bottom.

**GMES and Africa  
Thesis Completion  
Grants**

For Masters and PhD

**November 10, 2023**  
Apply before the closing date





# GAIathon

**GAIathon** is an initiative that aims to inspire and engage African youth to develop tech-powered solutions using Earth Observation (EO) and Internet of Things (IoT) technologies to solve real environmental problems on the continent.



# Synergies and Partnership with other Consortia

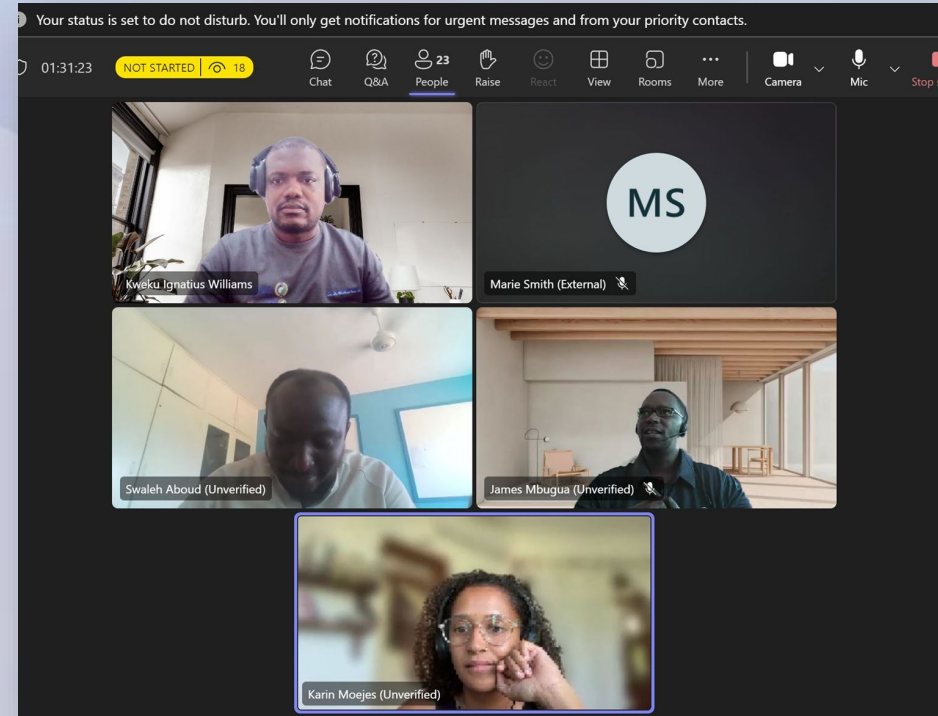




# Synergies and Partnership with other Consortia



UoG collaborated with CSIR to organize the training "Earth Observation for Coral Reef Resilience: Ecology, Threats, and Monitoring"



Online Training on Coral Reef Monitoring, November 2024

AfricaGIS 2025 and UN-GGIM: Africa XI Joint Conference



AfricaGIS 2025



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# Thank You for your Attention

*AfricaGIS 2025 and UN-GGIM: Africa XI Joint Conference*