GEO Blue Planet 5th Symposium

Local action in support of global traction

24 - 28 Oct 2022 | Accra, Ghana

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

BLUE PLANET

Introduction to Observational Oceanography and Modelling

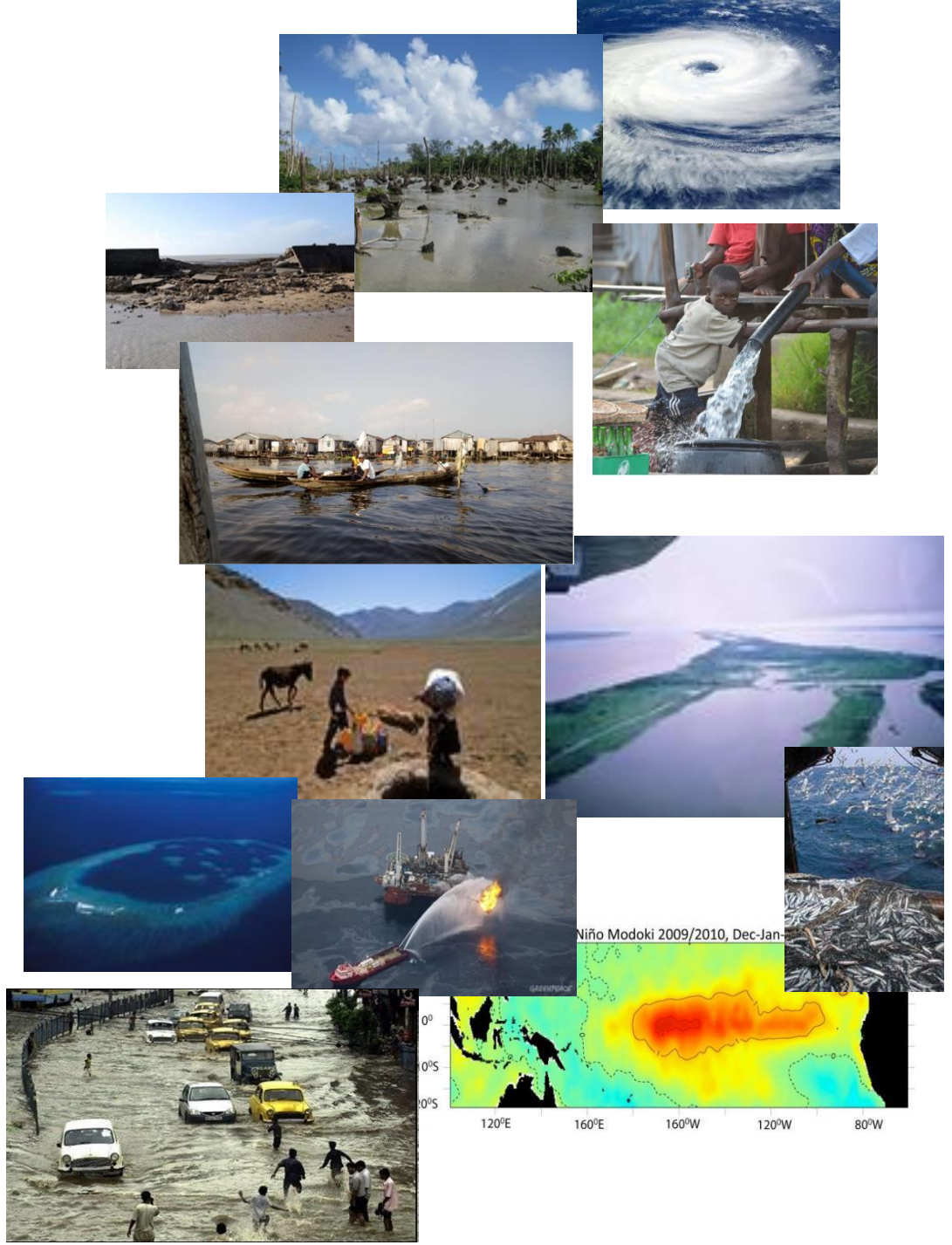
Dr. Fifi ADODO*, Dr Yves Morel, Dr Gael Alory

Risks/challenges for society

Vulnerability of the ocean (from global ocean to local littoral threats) :

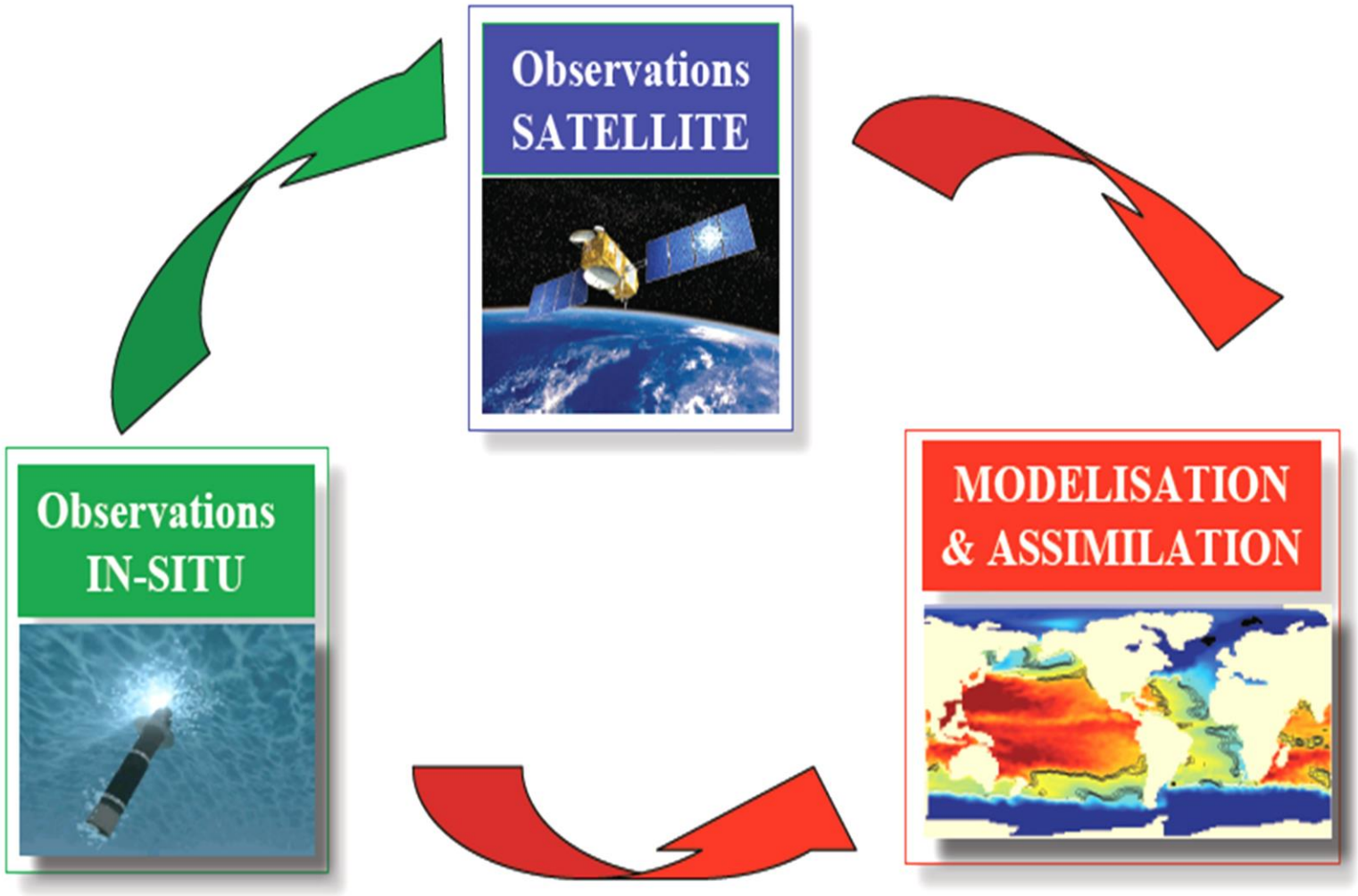
Limits of natural resources ;

- Climate change and consequences on physical balances (storms, erosion, floodings, droughts, fish stocks, ...) and local ecosystems;
- Vulnerability of certain regions to natural variations or anthropic pressure (ENSO phenomenon);
- Accidents, pollution and natural disasters;
- Isolated ecosystem with specific environment (islands, lagoons, ...): Heritage/biodiversity, fragile equilibrium;



General scientific strategy

Observe - Understand – Modelling - Forecast



In situ ocean observations

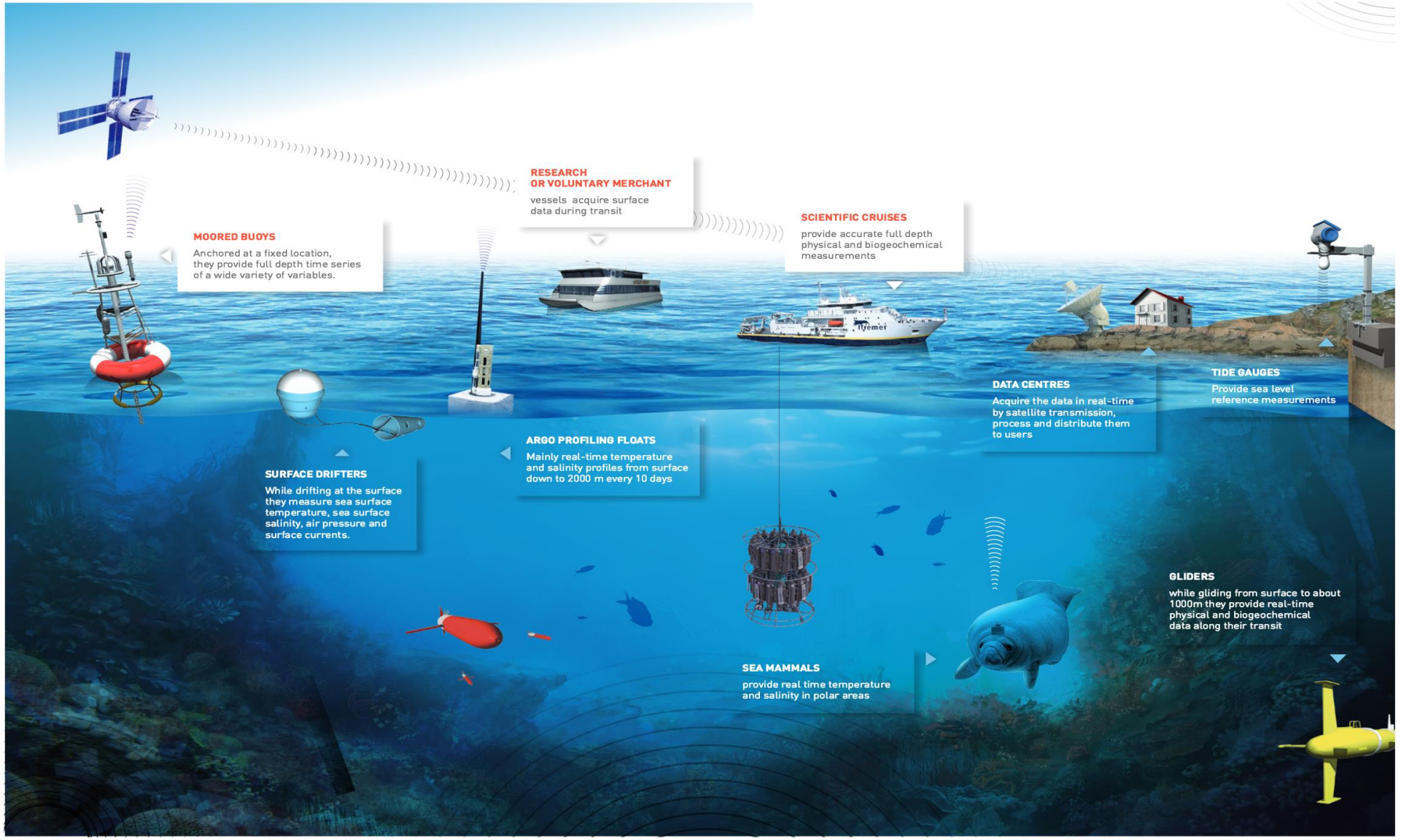


Figure 1: Global and regional in-situ observing systems: Argo, gliders, research vessels, ship of opportunities, drifting buoys, marine mammals, tidal networks and high frequency coastal observatories

In situ ocean observations

- **International + national programs to collect data**

Argo

Essential element of the global ocean observation system. 3000 floats in operation 100 000 new profiles/year of temperature and salinity

Research Vessels ships of opportunity

PIRATA

observation CL-O/A Tropical Atlantic

Glider

Marine Mammals (MEMO)

Driffting buoys

Tidal Networks

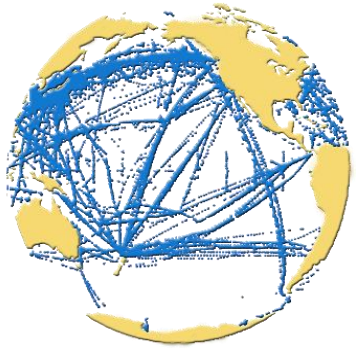
Measure wave height, period, tidal range, tidal current, sea level trends.

HF Coastal Networks

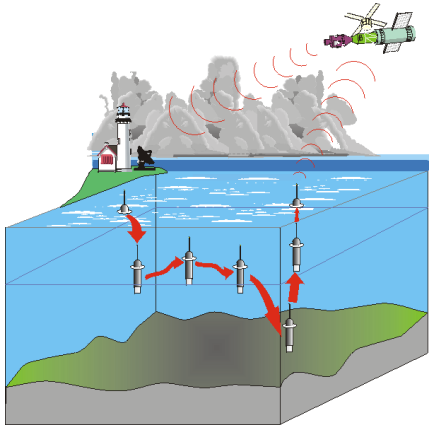
Measure surface current vectors, wave heights, directional spectrum

Space ocean observation

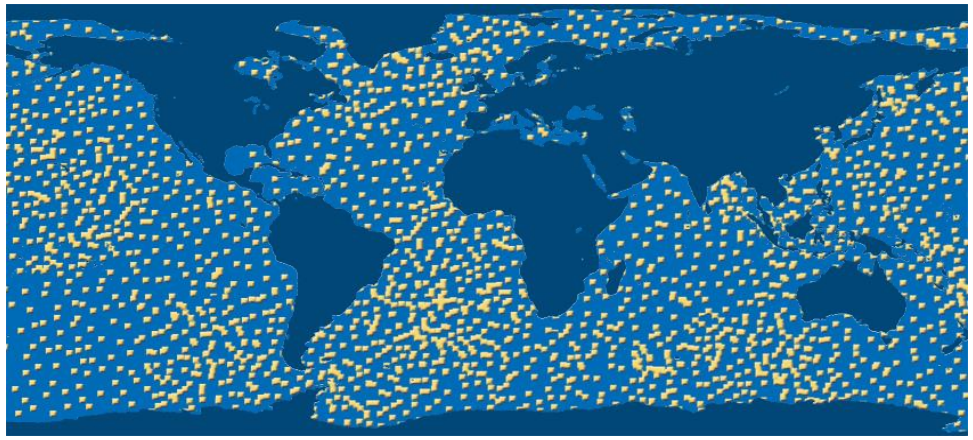
Space observation as a complement to 'in situ' measurements



Principales routes maritimes



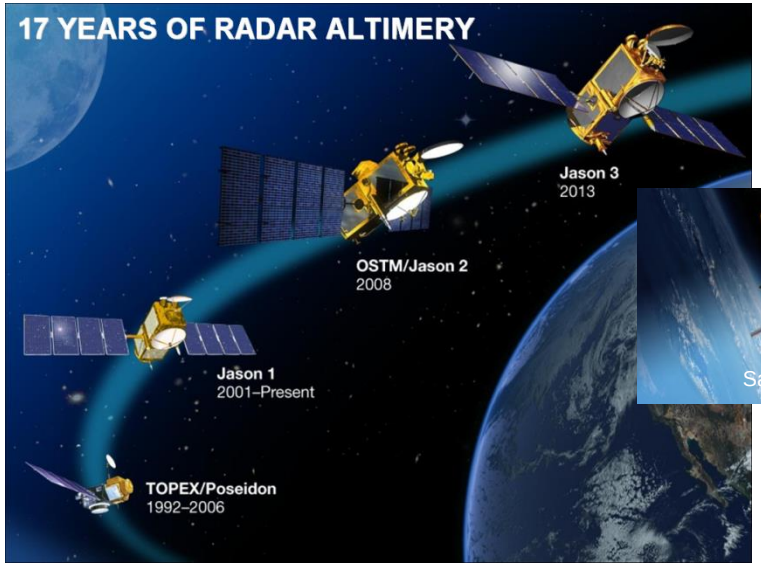
Argo



Altimeter' coverage of the ocean in only a few days

Examples of space observation missions for the ocean

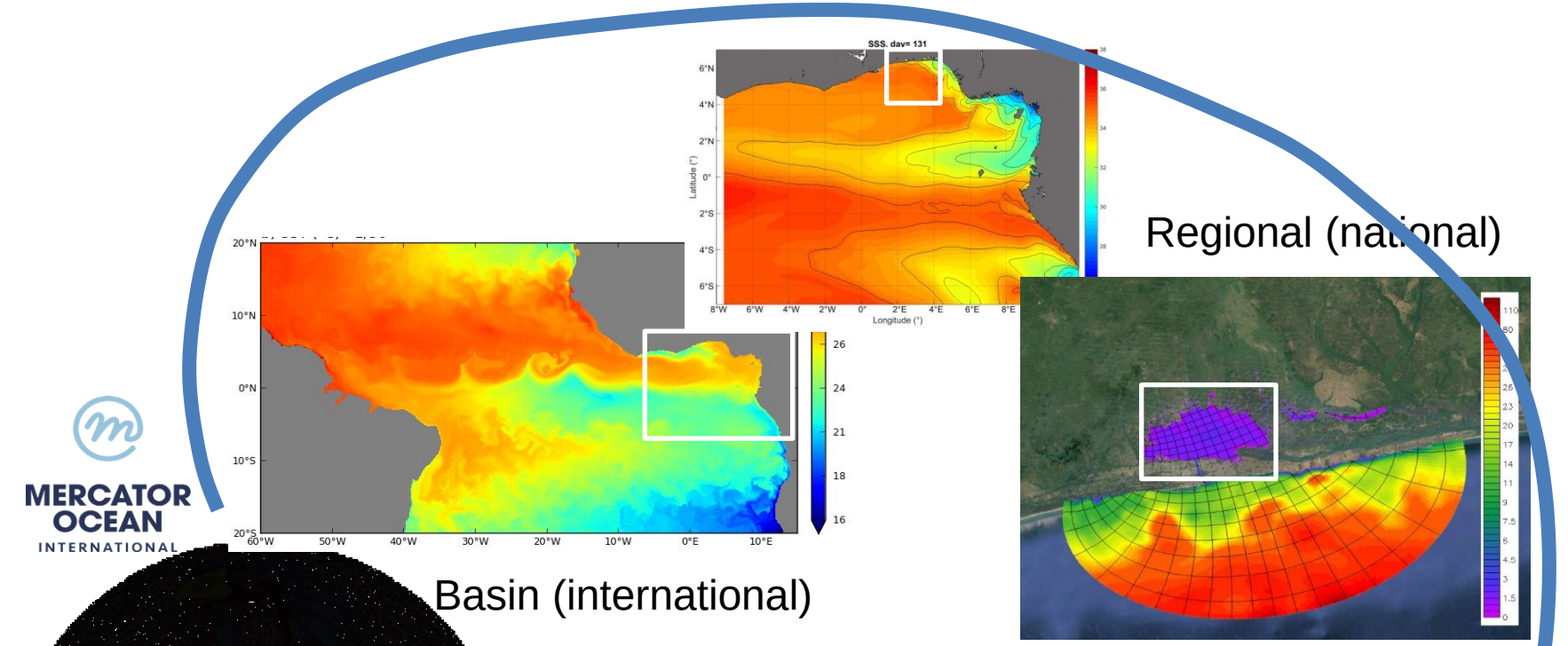
- SSH (Sea Surface Height)
- SST (Sea Surface Temperature)
- SSS (Sea Surface sanility)
- Wind speed and direction
- Ocean colour (Chlorophyl-a concentration)
- Etc…

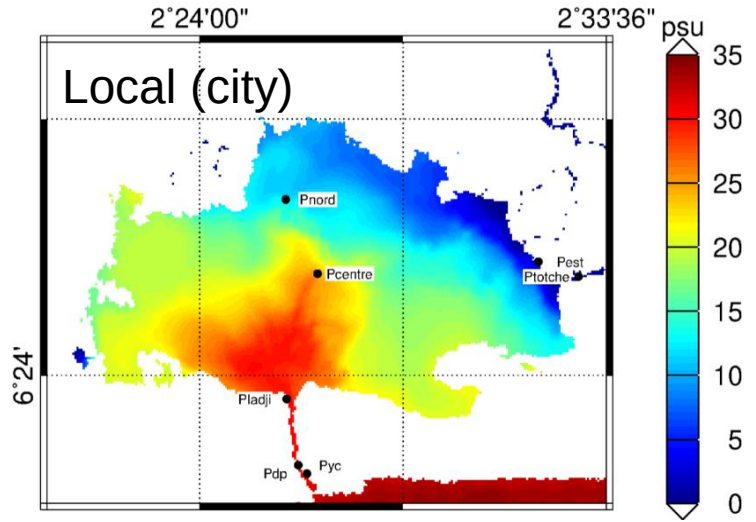


Numerical Model (forecast)

MOi has developed complex ocean simulation systems (numerical models) based on ocean observation data (satellite and in situ) that are able to describe, analyze and forecast the physical and biogeochemical state of the ocean at any given time, at the surface or at depth, on a global scale or for a specific zone, in real-time or delayed mode.

MERCATOR OCEAN INTERNATIONAL





GEO BLUE PLANET

Thank You.
Medaase.
Oyiwaladon.