

# Africa Regional Centres of Excellence - ArcX

## Ocean Component: Ocean Prediction Enhancement in Regions of Africa (OPERA)

The OPERA project is the ocean-focused component of the Africa Regional Centres of Excellence programme for science, technology and innovation towards Africa's green transition. It aims to strengthen capacity and cooperation in ocean forecasting and its application for sustainable ocean development at national, regional and pan-African levels. By improving the quality, accessibility and use of ocean information, OPERA supports evidence-based decision making needed to support coastal resilience and sustainable blue economies. OPERA aligns with the priorities of the Ocean Decade Africa Roadmap, as well as key African Union policy frameworks, including the Africa Blue Economy Strategy and Agenda 2063.

### Background

Ocean forecasting is a vital link between societal needs and marine science providing advanced insights into the state of marine and coastal environment. This knowledge is essential for disaster risk reduction and sustainable development, supporting sectors such as maritime transport and security, fisheries, tourism to marine spatial planning, and management of marine protected areas.

With roughly 47,000 km of coastline, including island states, and over 1.5 million km<sup>2</sup> of Exclusive Economic Zones (EEZs),

African countries are highly dependent on the ocean, making accurate forecasting even more vital for the sustainable competitiveness of the blue economy, and for the environmental, economic, and social well-being. Within this context, OPERA was launched at the third UN Ocean Conference (UNOC3) in June 2025 in Nice, highlighting Europe's support to ocean science and knowledge and international ocean governance in partner regions, underpinned by the European Ocean Pact and Global Gateway Strategy. This initiative contributes directly to SDG 14 (Life Below Water), which remains the least funded Sustainable Development Goal.



**BUDGET:**  
€10 million  
**FUNDING:**  
European Union  
**DURATION:**  
2025-2029



## Main Objective:

OPERA serves to improve the sustainable management of marine resources and human welfare by strengthening digital and scientific capacities in ocean monitoring and forecasting in sub-Saharan Africa.

## Specific Objectives:

1. Build cooperation and foster a coordinated and dynamic African ocean prediction community to enhance regional leadership and global collaboration in ocean monitoring and forecasting
2. Implement large-scale capacity development activities targeting a broad range of users and stakeholders to access, use, and tailor existing Ocean forecasting services and tools.
3. Develop regional autonomy through African Regional centres of Excellence to locally operate coastal and regional ocean forecasting systems for Essential Ocean Variables
4. Develop fit-for-purpose ocean data-driven applications to support sustainable blue economies, protect coastal communities and safeguard marine ecosystems
5. Develop an African Digital Twin Ocean/ocean Knowledge Hub framework to enhance sharing, accessibility and use of digital ocean resources for informed decision-making and foster further innovation
6. Strengthen the uptake and long-term impact of the project's results by engaging stakeholders and users through co-design, dissemination and knowledge tools, while fostering private sector participation and stronger links with policy.

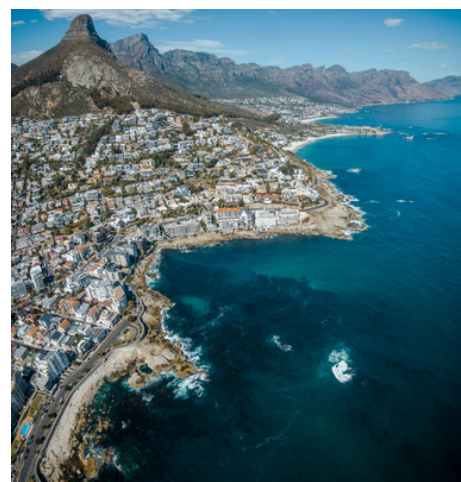
## Areas of Impact:

- Strengthened European and African partnership for improved international ocean governance, sustainable blue economy development and enhanced maritime security.
- Stronger African and European leadership in ocean monitoring reinforcing innovation and industrial base for all sectors relying on ocean forecasting, driving regional collaboration and contributing to global efforts
- Regional autonomy through African Centres of Excellence operating sustainable, locally-driven ocean forecasting systems and downstream applications
- Empowered users with strengthened capacity to access, use, and apply ocean data and forecasting tools
- Coastal resilience and sustainable blue economies (or “prosperity” instead of sustainable blue economies mentioned in the first sentence?) through ocean data-driven solutions supporting livelihoods, disaster risk reduction and sustainable management of marine resources
- Accessible and federated digital ocean resources through African Digital Twin Ocean for enhanced uptake, sharing and enabling innovation and knowledge-based decision-making
- Real-world uptake and sustainability of solutions co-designed solutions and new services adopted by users, policymakers, and the private sector



## Final Beneficiaries:

1. African governments and policymakers
2. African Regional Centres of Excellence, marine science institutions, and operational oceanography services, meteorology services
3. Regional and local authorities engaged in coastal management and disaster risk reduction
4. African and European entrepreneurs, businesses and blue economy actors (fisheries, aquaculture, maritime transport, offshore energy, security, tourism, etc.)
5. Civil society (NGOs, community-based organisations, etc.)



## Lead Organisation:

Mercator Ocean International leads and coordinates OPERA, leveraging its expertise in the Copernicus Marine Service and the European Digital Twin Ocean Programme, and through its coordinating role of the OceanPrediction Decade Collaborative Centre.

## African Regional Centres of Excellence:

OPERA will be implemented by collaborating with a network of African Regional Centres of Excellence, organised into three consortia:

- One consortium to develop and implement ocean forecasting systems for Essential Ocean Variables at both regional and coastal scales
- Two consortia to develop tailored applications and tools integrating ocean data products based on local needs and priorities.

Calls for Proposals to establish the RCoEs are currently open and will close in June 2026. [Click here](#) for more information.

## Scientific and Technical Support:

To support the development of solutions and activities, the project collaborates with a network of African and European institutions through a co-design and participatory approach, fostering an enabling environment for the uptake and long-term impact of its results. These include:

- The UNESCO International Chair of Mathematical Physics and Applications (ICMPA)/University of Abomey Calavi and the Gulf of Guinea Ocean Sciences Summer School (GGOSSS)
- Technology Transfer Team Ocean Forecasting (Selection in progress)
- Technology Transfer Teams for Applications (Upcoming call)



[Arc X Programme](#)



[OPERA Project](#)

***This factsheet will be updated regularly as new information becomes available.***

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