



**Ocean Prediction actual status and future needs for Africa:**

# **Summary Results from the OceanPrediction DCC Survey**

**October 2024**

The **OceanPrediction Decade Collaborative Centre (DCC)**, in collaboration with the **African Ocean Decade Task Force**, launched a survey in April 2024 to gather insights from experts on the current state, challenges, and future prospects of ocean forecasting services in Africa.

To maximize reach, the survey was promoted through various channels, including a targeted mailing campaign to the contacts of the African Ocean Decade Taskforce and the OceanPrediction DCC regional team for Africa. The collected data offers a comprehensive view of the current landscape of ocean forecasting in Africa and helps inform future initiatives in this domain.

This document presents a summary of the survey results for public dissemination. To access the full report, contact [oceanprediction@mercator-ocean.fr](mailto:oceanprediction@mercator-ocean.fr).

## Summary of survey results analysis

The survey received a total of 134 responses. Out of the total responses, 81 (60%) came from participants in Africa. Examining the responses by region, 19 responses from Northern Africa (Morocco to Egypt), 34 responses from the Western region (Senegal to Congo), 14 from Southern (Angola to Mozambique), and 19 from Eastern Africa (Tanzania to Eritrea).

However, only 45% of the respondents are affiliated with institutions that utilize ocean forecasting. This highlights a clear need for further development, which 76% of the experts acknowledge, stating that existing services need improvement, or new ones need to be developed.

### Available applications based on Ocean forecasting

Based on survey results, the most used ocean forecasting-based applications are those related to ocean biogeochemical processes (also known as the green ocean), covering **coastal ecosystems, support to fisheries, and aquaculture**, followed by applications linked to **Disaster Risk Reduction** (safety at sea, storm surge, search and rescue, and oil spills). The results are similar when only responses from respondents affiliated with African institutions are considered (see Figure 1).

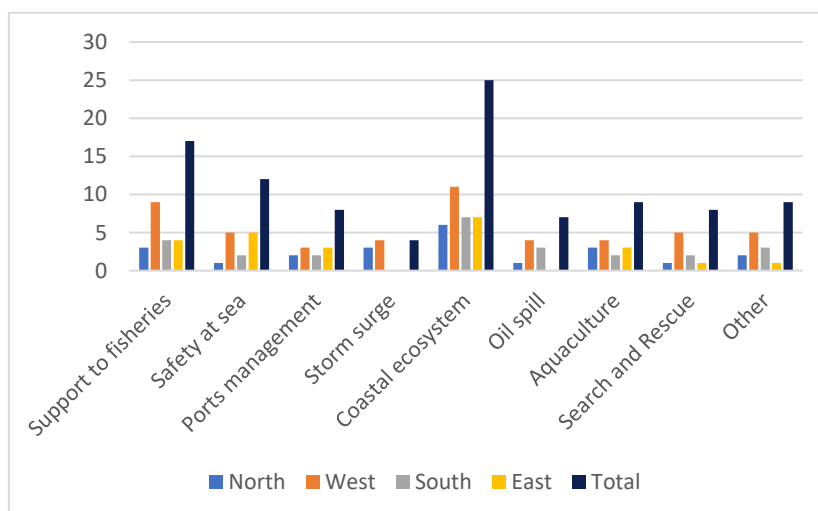


Figure 1: Type of existing Ocean forecasting applications operating in Africa (total) and by region (North, West, South, East), according to respondents in Africa-based institutions

Notably, no responses indicated the use of storm surge applications in the South and East regions, which is surprising given the high flooding risk from tropical cyclones in these areas. Additionally, in the East, safety at sea holds significant importance, second only to coastal ecosystems.

Some specific applications were highlighted in the responses, including the South African **National Oceans and Coastal Information Management System (OCIMS)**, the **Water Data Bank (WADABA)** dedicated to coastal ecosystem data, the **DELFT3D tool** for hydrodynamic modeling and sediment transport studies in Côte d'Ivoire, the **South African Weather Services (SAWS) Marine forecast**, and the **Baus Taka mobile** application in Kenya to combat the problem of illegal dumping in the coastal area, especially plastic pollution.

In Northern Africa, only the Observatory of the Ghar el Melh Littoral (OMELI) observatory, in Tunisia, was mentioned, but this initiative does not include any ocean forecasting activity. Other previously known operational applications in Africa, such as **ABALOB** supported by **MarCOSIO** (fisheries management), **CORDIO East Africa's App** (coral bleaching), and **MarCNoWA's App** (wave information via SMS), were not explicitly mentioned in the replies. However, these applications are likely behind some of the responses that contribute to the results shown in Figure 1.

### Need for new or upgraded services.

When asked about developing new applications or improving existing ones, the most common responses focused on enhancing knowledge of **Essential Ocean Variables**, typically through higher resolution ocean forecasting services, and on **Disaster Risk Reduction (DRR)** applications (see Figure 2). In contrast, green ocean applications received fewer responses, differing from the previous question about existing applications where green ocean solutions were predominant.

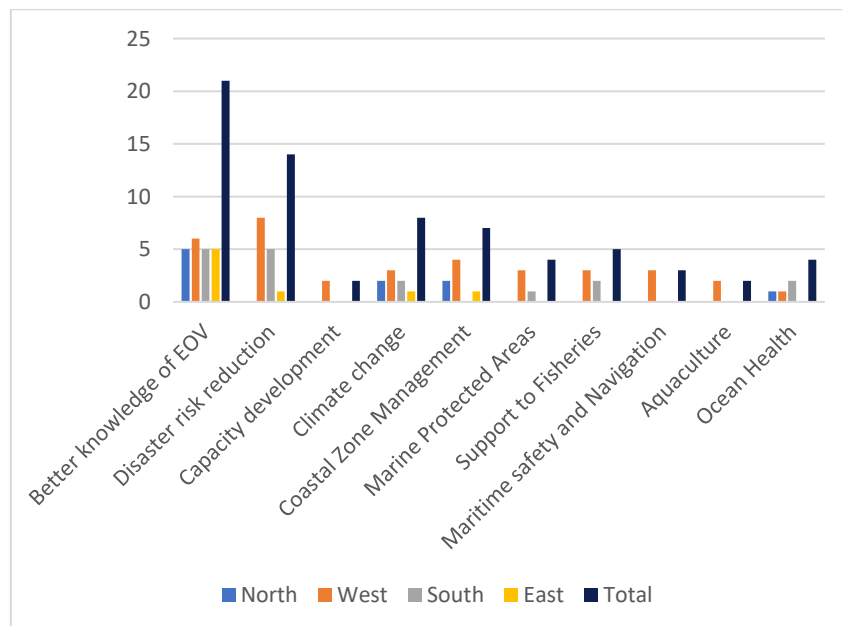


Figure 2: Needs for new or upgraded services based on Ocean Forecasting Africa considering only replies coming from African institutions. The analysis is divided by region (North, West, South, and East) and includes the total for Africa.

### Cross-cutting and additional needs

The survey also reveals a strong desire among African experts for African-built solutions to African problems. **Capacity development** is the highest priority among cross-cutting activities, even more so than **additional funding** and **high-resolution services**. African partners have a clear understanding that without a strong knowledge base, other efforts are futile (see Figure 3).

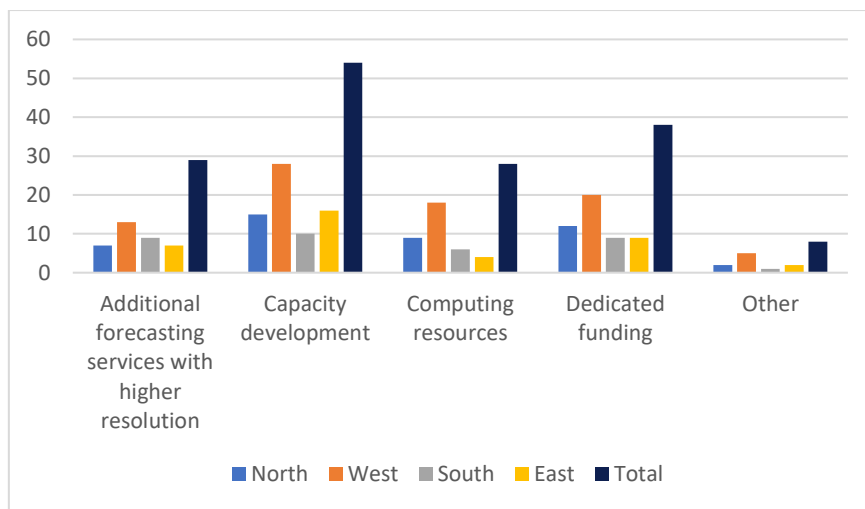


Figure 3: Additional needs related to ocean forecasting by region and including the total for Africa (Only replies coming from African institutions are considered).

Additional needs highlighted include stronger engagement with local communities, particularly the inclusion of women and youth in developing ocean forecasting systems in Africa. Respondents also emphasized the importance of observations and reliable data as the backbone of good forecasting systems, reiterating the need for significant investments in infrastructure and human capacity.

### Role of frameworks for collaboration

Another significant finding is that the African community remains inadequately integrated in collaborative frameworks, despite progress made by initiatives such as the Africa Ocean Decade Taskforce and, the Global Monitoring for Environment and Security and Africa (GMES and Africa). Only 34% of experts reported involvement in bilateral or regional partnerships and programs aimed at strengthening ocean forecasting capacity. Moreover, no single initiative was mentioned by more than one respondent, underscoring the continent's low level of integration. This points to the **need for cooperation mechanisms to drive further integration and collaboration across Africa** toward building a community around ocean forecasting.

## Conclusion

The survey responses indicate the strong importance and need for ocean forecasting and its applications in Africa. The responses outline a clear way forward, indicating that efforts should focus on the following streams:

- **Community building:** Promoting further sharing of data and knowledge among African experts.
- **Capacity development:** Preparing a new generation of scientists and technicians to provide African solutions for African problems.
- **New forecasting services:** Developing services in Africa providing higher resolution data on Essential Ocean Variables, which are highly demanded by the consulted experts.
- **New or improved applications:** Focusing especially on Disaster Risk Reduction (DRR).
- **User uptake and societal engagement:** Leaving no one behind, considering indigenous knowledge, and involving all sectors, with a special focus on women and young people.

Many institutions have declared their readiness for these challenges, with some even looking forward to taking the lead. Given the high level of interest and awareness of the importance of the topic demonstrated by African partners, the future promises substantial improvements.

## Useful links

- OceanPrediction DCC African Regional Team - <https://www.unoceanprediction.org/en/regional-team-african-seas>
- Africa Ocean Decade Task Force - <https://oceandecade.org/news/first-in-person-meeting-of-african-ocean-decade-taskforce/>
- Ocean Decade Africa Roadmap - <https://oceandecade.org/news/new-roadmap-sets-out-nine-priority-actions-for-the-implementation-of-the-ocean-decade-in-africa/>