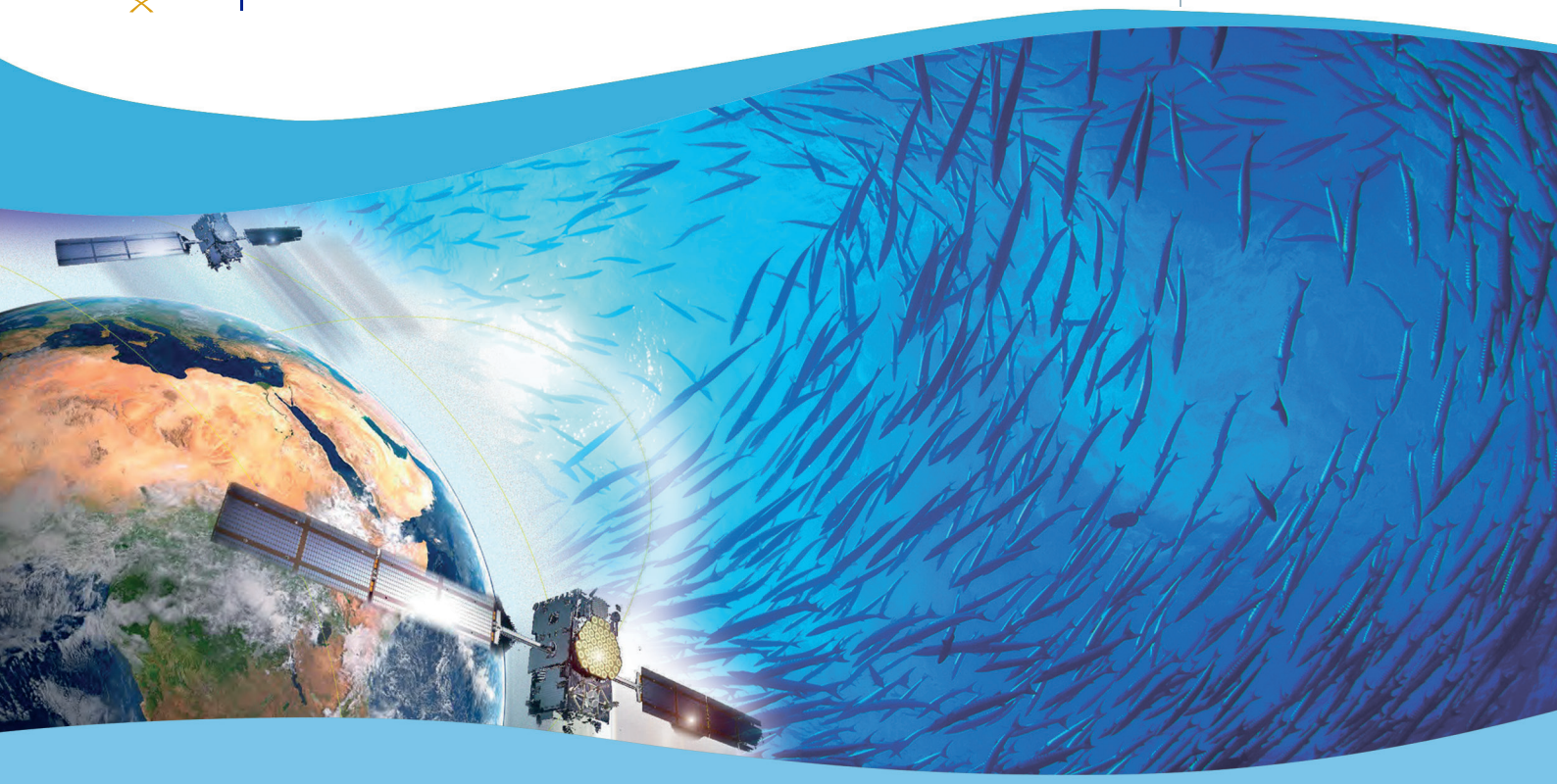
GMES AND AFRICA

African Union

GDZHIAO



Ensuring Safety for Ghana's Fishermen: The Role of GMES and Africa's Marine Weather Service

BACKGROUND:

Since 2014, associations and groups of artisanal fishermen have emphasized the critical need for timely and accurate marine weather and ocean state information to ensure the safety and efficiency of their fishing expeditions. This led to the development and implementation of a Regional Marine forecast service for artisanal fishermen in twelve (12) coastal West African countries, expanding to eighteen (18) countries under the second phase of the GMES and Africa Programme in 2022, including six (6) North African countries. In Ghana, the University of Ghana, together with its partner, the Ghana Meteorological Agency (GMet), implements this service, disseminating information to groups like the Canoes and Fishing Gears Owners Association of Ghana (CaFGOAG).

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END-USER PROFILE:

CaFGOAG (https://cafgoagghana.org/) is an association of canoe and net owners involved in fisheries governance and management, consisting of over 4000 members, primarily **artisanal fishermen**, located in coastal communities and fishing landing sites/harbours along Ghana's coast

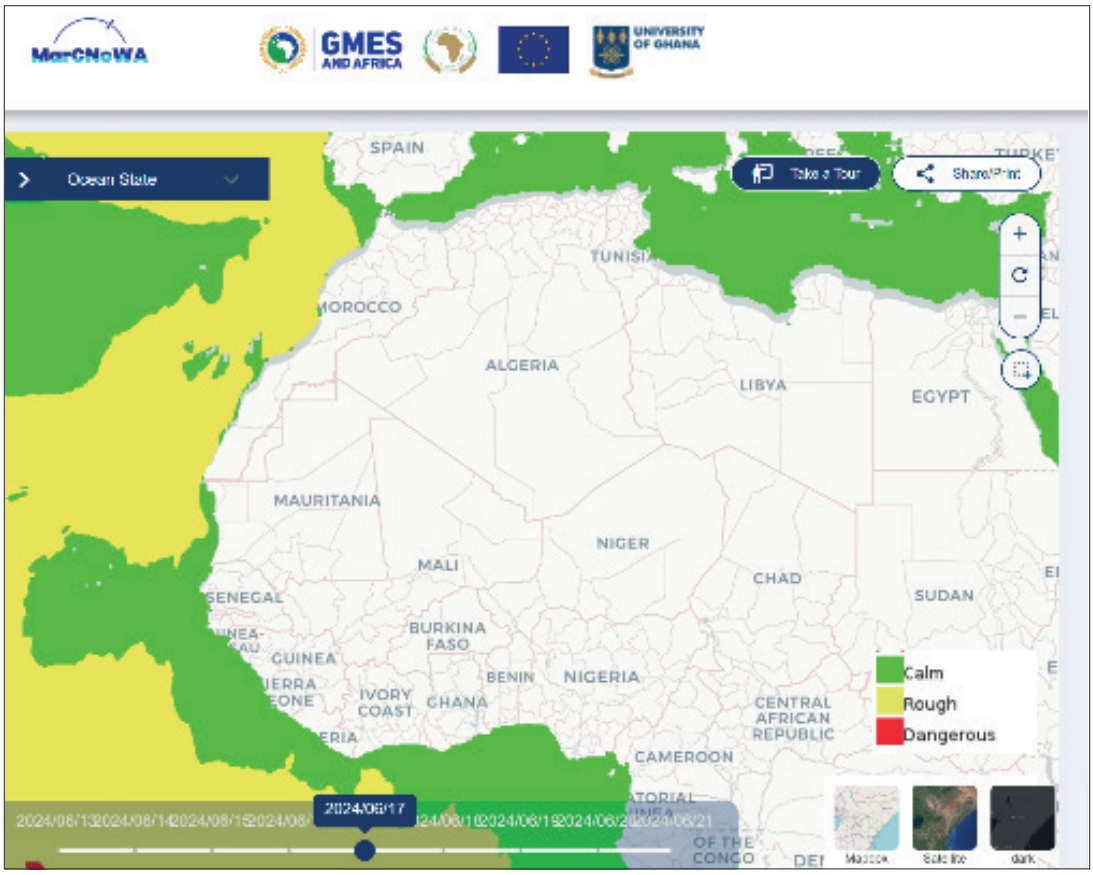
END-USER'S NEEDS:

Members of CaFGOAG since 2022, have expressed the critical need **for timely and accurate marine weather and ocean state information**. This need was highlighted through various engagement sessions, including **five community meetings, three national** workshops, t**wo regional** workshops, and participation in one continental forum. These sessions aimed to gather **insights** on **service design**, solicit **improvements**, and create awareness about digital tools developed under the project. Additionally, fishermen requested the integration of extra information such as **rainfall** and **visibility** into the service.

INFORMATION PROVIDER:

The key data for ocean state prediction is sourced from the **Copernicus Marine Service**. The daily forecast significant wave height component of the **Global Ocean Waves Analysis and Forecast product** (GLOBAL_ANALYSISFORECAST_WAV_001_027) is the main parameter used. This data is converted into three indices: 1 (Calm), 2 (Rough), and 3 (Dangerous),

corresponding to mean wave heights of **<1.5m, 1.5-2.5m,** and **>2.5m** respectively. The ocean state information is produced in both text (numbered codes: **Dangerous-3, Rough-2, Calm-1**) and raster/maps (png, Geotiff). The forecast covers a **four-day** period (present day and three-day forecast) and is accessible to end-users on multiple platforms.



USAGE:

The information is widely disseminated through **five** main channels to ensure equitable access for all fishermen, regardless of technological capability. Real-time updates on ocean conditions are accessible via the **GMES-UG mobile application**, a **USSD code, WhatsApp groups, a daily forecast bulletin** by the Ghana Meteorological Agency, and the **MarCNoWA Geoportal** (macnowaportal (ug.edu.gh)). **Flags** (green, yellow, and red) hoisted at various fish landing sites serve as actionable indicators for fishermen. **Five community trainings** have been provided to fishing

communities on the various dissemination platforms and the interpretation of alerts and bulletins. Continuous feedback is collected through social media platforms (WhatsApp, Facebook, Twitter) and in-person meetings and workshops

IMPACT:

The introduction of the regional marine weather forecast service has significantly reduced **accidents and fatalities**, with **accidents** dropping from **168** in **2014/2015** to **08** in **2022**, and **deaths** decreasing from **52** to **01** in the same period. Localized and highly specific forecasts tailored to the fishermen's needs have been developed due to ongoing collaboration and feedback between the project secretariat, the Ghana Meteorological Agency, and CaFGOAG. There has also been an increase in the number of fishermen engaging with meteorological services, leading to higher utilization rates and enhanced trust in the accuracy and reliability of these services. The positive outcomes for fishermen have elevated the reputation of the Ghana Meteorological Agency, highlighting their critical role in supporting local livelihoods. The **adoption** of the service and subsequent creation of a **marine forecast unit** under the Ghana Meteorological agency is going to ensure that the service is **sustained** long after the end of the GMES and Africa Project.

OUTREACH:

To ensure that CaFGOAG and the broader fishing community have access to timely and accurate marine weather information, several strategies have been implemented to enhance the service's reach. The Ghana Meteorological Agency collaborates with **community radio stations and information centres** to broadcast regular marine weather updates, forecasts, and safety warnings. They also engage and train local leaders or representatives to act as conduits of weather information, ensuring quick, widespread, and accurate dissemination within coastal fishing communities. Social media platforms like **Facebook**, **WhatsApp**, and **Twitter** have been effective in reaching a broad audience and soliciting useful feedback for service improvement.