

## **Mediterranean High-Frequency radar network: regional coordinated efforts meeting end users and science-driven requirements.**

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The Mediterranean Sea is a prominent climate change hot spot, being their coastal areas the most **vulnerable targets** for **maritime safety**, **marine pollution** and diverse **metocean hazards**. The **integration of High-frequency radars (HFR)** in ocean observing systems for a continuous monitoring of the surface circulation, waves and (occasionally) winds has **enhanced our understanding** of the coastal dynamics. Additionally, it has also **boosted the development of ad-hoc products and tailored services** in the socio-economically vital and often environmentally stressed coastal areas of the Mediterranean Sea.

Nowadays, over **55% of the HFR systems** installed in Europe are operationally monitoring the coastal regions in the **Mediterranean**. Under the umbrella of the working framework established between MonGOOS and EuroGOOS, the **joint efforts** of the Mediterranean HFR community, benefited by the **centralization of the data management** at the European HFR Node, have **underpinned the coordination** at regional level and favoured the **growth of HFR applications**.

This work presents the main outcomes of a **multidisciplinary, international and intersectoral collaboration** to unlock **HFR data** potential, improving **uptake** by encouraging emerging and promising scientific applications **in three different areas**: i) maritime safety; ii) extreme hazards and coastal monitoring; iii) water quality and ecological decision support.

In order to maximize the contribution to the UN Decade of Ocean Science for Sustainable Development, the long-term major effort is **two-fold**: i) **extending** the science-based **products into** societal relevant downstream **services** and; ii) further **strengthening** the Mediterranean HFR community long-standing cooperation towards a **co-designed and sustained regional network**, benefited by the European HFR Task Team endorsement, roadmap and its main achievements.