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....... Monitoring Mangrove Ecosystems to Advance Sustainable Oyster **Farming in Benin**

BACKGROUND:

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In Benin provides information on the distribution and extent of mangroves to coastal communities. This initiative aimed to educate female oyster farmers on sustainable practices that preserve mangroves, enhance the ecological resilience of coastal areas, and improve the socio-economic conditions of oyster-farming communities., mangroves face threats from overexploitation, invasive species, and unsustainable practices. Female oyster farmers rely heavily on these mangroves to harvest the mangrove oyster species, Crassostrea tulipa, but this dependency often leads to environmental degradation. To address these challenges, the Benin Institute of Fisheries and Oceanographic Research (IRHOB), in partnership with GMES & Africa.



MarCNoW

END-USER PROFILE:

African

Union

Female oyster farmers in coastal Benin who depend on mangrove forests for oyster harvesting. Many of these women belong to local oyster farming associations based in the three coastal communities of Ahouandji, Dègouè, and Djondji. Most of these women belong to local associations or informal groups formed to support their oyster farming activities. These women represent not just their local communities but a critical demographic in the wider context of sustainable marine resource management in Benin.

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END-USER'S NEEDS:

Through stakeholder engagements and community outreach in these communities, it became apparent that this unique user group required information on mangrove health and water conditions. The engagement further revealed the need for information on environmental changes as well as threats to the mangrove ecosystem.



MarCNoWA

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INFORMATION PROVIDER:

The coastal ecosystem mapping service provides information on mangrove distribution, change and landcover changes over the coastal areas. These products are generated through the processing of Sentinel-2 images. Products are made available in widely used formats, including TIFF, PNG, and Shapefile (SHP), ensuring compatibility

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with various analysis tools and GIS platforms. The products from this service are hosted on the project's Geoportal (<u>https://geoportal.gmes.ug.edu.gh/#/dashboard</u>) which was developed through a partnership with the private sector.

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USAGE:

African 🍋

While the platform centralizes access, many coastal communities face unreliable internet connections, limiting their ability to directly access these datasets. The MarCNoWA consortium through its partner in Benin, the Institut de Recherches Halieutiques et Oceanologiques du Benin (IRHOB) makes available hard copies of maps of these areas to the communities. Workshops have been conducted in communities to facilitate dialogue and knowledge transfer between scientists and local communities, particularly women's oyster farming associations along the coastal lagoon of Benin, with the aim of preserving mangrove forests and enhancing the resilience of lagoon communities.



IMPACT:

While introducing this service to the communities, IRHOB used this as an opportunity to educate oyster farmers and fish smokers on sustainable mangrove harvesting practices. Oyster farmers have been educated in scientifically proven substrates for spat collection as well as oyster fattening and refining techniques. Through these actions, the project is helping to ensure the longevity of mangrove habitats and their essential ecosystem services. It is the hope that ultimately, information about land and ecosystem changes will help reduce conflicts among community members, such as farmers, fishers, oyster farmers and developers.





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OUTREACH:

Feedback on the service has established through direct communication and social media platforms to understand user challenges, refine data products, and adapt the service to meet evolving needs. Currently, in person workshops are conducted with oyster farming associations, fishing cooperatives, and other coastal livelihood groups to demonstrate the service's applications in optimizing resource use and mitigating environmental impacts. Platforms like WhatsApp, Facebook, and Twitter are also leveraged to share updates on mangrove distribution, promote webinar schedules, and collect real-time feedback from users. By combining digital tools, stakeholder partnerships, and community engagement, the outreach strategy ensures that the Coastal Ecosystem Mapping Service is effectively utilized for sustainable coastal management, fostering widespread adoption and impact.

