Data, Observation & Modelling

Fri. Nov 13, 2026 2:00 PM - 3:30 PM JST | Fri. Nov 13, 2026 5:00 AM - 6:30 AM UTC | Room B (Kujaku) (2F)

Oral B5 Coastal and Marine Ecosystems, Blue Carbon and Regional Ocean

Chair: Konobu Kimura, Fadli Syamsudin

3:00 PM - 3:15 PM JST | 6:00 AM - 6:15 AM UTC

[TPZePaqP-05] Dendê Platform - Coastal Ocean Observing platform for Community-Led Monitoring

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Coastal communities worldwide face accelerating environmental change from climate change, pollution, and pressure on its marine ecosystems, however timely, locally relevant ocean observations remain insufficient. Existing traditional observing systems, which have significant scientific value, are often costly, technically complex, or limited in coastal coverage, leaving persistent gaps between scientific data, local knowledge, and effective coastal management. Dendê, an international volunteer-led initiative born from the All-Atlantic Intergenerational Hackathon 2026, addresses this gap by developing a cost-effective, community-deployable ocean observing platform. Rather than building a new standalone affordable sensor, Dendê integrates accessible technologies, open-source software, standardized monitoring protocols, and intuitive, multilingual data visualization tools, into a unified, interoperable platform designed for community-led implementation.

The project pilot sites in coastal communities are planned for Ghana and Brazil, with the expectation to deploy systems to monitor temperature, salinity, turbidity, and community-based environmental observations. Local participants will be trained to deploy, maintain, and interpret the data in the platform, with technical performance, data quality, and usability evaluated to refine a scalable, transferable model for community-led coastal observing. Data generated through Dendê is structured for integration with broader ocean data systems, increasing its value for researchers, communities, and decision-makers while expanding observing capacity in historically underrepresented regions.

Dendê is building a scalable framework of deployment workflows, training resources, quality assurance practices, and visualization tools adaptable across coastal regions globally. Supported by an interdisciplinary, early-career core team and advisors from around the world, Dendê demonstrates how accessible, standards-aligned observing platforms can strengthen the human and technical foundations of Ocean Digital Twins, turning distributed community observations into interoperable, decision-ready data that complements existing networks and advances more inclusive, resilient ocean governance.

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