CoastPredict

with The Global Ocean Observing System

Supporting the United Nations Decade of Ocean Science for Sustainable Development by revolutionising Global Coastal Ocean observation and forecasting, to offer open and free access to coastal information in response to communities' needs.

Risk management & climate-resilient planning for sustainable coastal communities

The UN Ocean Decade CoastPredict Programme aims to provide decision-makers and coastal communities with integrated observing and predicting systems to manage risk in the short-term, and plan for mitigation and adaptation in the longer-term context of future climate and ocean change.

The Challenge

Roughly 23% of the global population resides within 100 kilometres of coastlines, about 10% of this living in areas less than 10 metres above sea level. Coastal residents and communities globally, must confront and adapt to the challenges associated with coastal living in a time characterised by rapid changes and increasing vulnerability, intensified by climate change, population growth and expanding coastal urbanisation. There is a pressing need for advanced monitoring and predictions of extreme events such as flooding, as well as ecosystem health, pollution and other hazards.

The Answer

CoastPredict has launched the *GlobalCoast* initiative to revolutionise Global Coastal Ocean observing and prediction by establishing a network for innovation and solutions to address coastal community challenges and overcome fragmentation of knowledge.

GlobalCoast will provide an open and free platform for data sharing and computing and will engage coastal stakeholders and decision makers to co-design science-based solutions. The outcome will be globally replicable solutions, standards, and applications that enhance coastal resilience.

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CoastPredict Programme is endorsed by

2021 2030 United Nations Decade of Ocean Science for Sustainable Development

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GlobalCoast has two components

1. GlobalCoast Cloud to host all information for Pilot Sites and development of services for risk assessment and management.

- Removes need for local High Performance Computing capacity and resourcing
- Enables equitable access and knowledge sharing
- Allows shared services development

2. Implementation at Pilot Sites through deployment of integrated observing and prediction systems, particularly using cost-effective technologies and community science, complementary to satellite data and open ocean monitoring, and local predictions from downscaling.

Benefits and legacy

- **Enhanced decision-making support for better coastal resilience planning** enabled by identification of trends and climate indicators, and reliable future predictions, particularly in 'Global South' regions;
- **Global collaboration** among researchers, experts, and organisations worldwide, fostered through an open and cost-free digital platform that will advance capabilities, especially in regions with limited capacity;
- **Cloud-based platform** that will expedite the review and exchange of data, methodologies, standards, and best practices, accelerating the development of solutions, including early warning systems;
- **Development of innovative and adaptable solutions** including Nature Based Solutions, for restoration of habitats, mitigation of greenhouse gas emissions and advancing sustainable blue economies;
- **Capacity-enhancement** through access to training and educational resources on the digital platform, empowering communities to address coastal challenges effectively.

Services that will be demonstrated at Pilot Sites

Multi-hazard early warning system
Climate scenario downscaling and indicators
Pollution hazard mapping toolbox
Predictions of coastal erosion
Design of sustainable Marine Protected Areas
Design of Coastal Marine Spatial Planning

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