



2021
2030 United Nations Decade
of Ocean Science
for Sustainable Development

GOOS | CoastPredict

with The Global Ocean Observing System

**Supporting the Decade of Ocean Science for Sustainable
Development by revolutionising Global Coastal Ocean
observing and forecasting**

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IOC



WMO



UN
environment



International
Science Council



CoastPredict will redefine the science of observing and predicting the Global Coastal Ocean to help the Ocean Decade succeed in its aims and give us the ocean we need for the future we want.

— **The challenge**

Reducing risks and improving lives requires us to understand the coastal natural system as well as respond to ways in which climate change is affecting coastal populations. With increasing coastal urbanisation, cities and megacities, and increasing coastal impact from climate change, there is greater need for advanced monitoring of habitat health. We also need more accurate predictions of extreme events such as flooding, as well as pollution and other hazards. We need funding and support from regional governments as well as end users of forecasts to make a difference to the outcomes for vulnerable, underfunded coastal communities.

“ We will spread the ability to put systems designed in a global framework and implemented locally to other coastal locations worldwide. ”

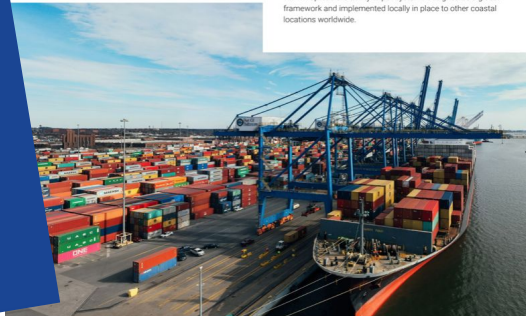
— **The answer**

CoastPredict is a co-designed transformative response to science and societal needs. It is the result of significant input from GOOS, OceanPredict, young scientists and global bodies active in international data and best practice systems.

The Global Coastal Ocean concept at the centre of CoastPredict considers all coastal ocean regions as an interface area. Atmosphere, land, ice, hydrology, coastal ecosystems, open ocean and humans interact on a multiplicity of space and time scales that need to be resolved with proper scientific methods and consideration of uncertainties.

A coastal focus will engage island nations and indigenous or local people and inspire early career ocean professionals. CoastPredict can make a real difference to the outcomes for vulnerable, currently underserved coastal communities. We will be able to support sustainable marine activity and adaptation around climate change as well as warnings and preparation for extreme weather and coastal events.

We will spread the ability to put systems designed as a global framework and implemented locally in place to other coastal locations worldwide.



— **The objectives**

1. A predicted Global Coastal Ocean.
2. A fit-for-purpose oceanographic information infrastructure benefiting stakeholders such as specialised end users such as businesses, government and individuals.
3. An integrated coastal ocean observing and forecasting system adhering to best practices and standards, designed as a global framework and implemented locally.
4. Open and free access to coastal information and the growth of ocean literacy.
5. Innovative and sustainable applications for coastal solutions/services.

— **The benefits**

CoastPredict will offer us an integrated and comprehensive knowledge of the Global Coastal Ocean, including the urban well as impacts of societal drivers. It will result in an integrated coastal and open ocean observing and modelling system and improved, multidisciplinary and extended range predictive capability for the coastal zone. By the end of the Ocean Decade, observations and modelling will be integrated in the coastal ocean and we will be closer to having the ocean we need for the future we want.

Specifically, we will be able to:

- Enhance the value of and quality of end-user products such as forecasts.
- Offer reliable predictions of different potential futures.
- Develop new multi-platform observing and modelling technologies and expand coverage into regions and premises where before this would have been economically unviable.
- Prove human interaction with our oceans.
- Quantify the impact of climate change, restore habitats and increase sustainable and blue economies.

— **Get involved**

CoastPredict will make vital, real and lasting change. If you would like to support us please get in touch to start the conversation about how you can help and what your contribution will enable us to achieve together.

Potential investors and supporters please contact us to discuss possible projects and funding opportunities that align with your needs.

goosocean.org →

CoastPredict will redefine the science of observing and predicting the Global Coastal Ocean. We will focus on the many common worldwide features of the coastal ocean to design systems in a global framework that can be implemented locally in other coastal locations worldwide.

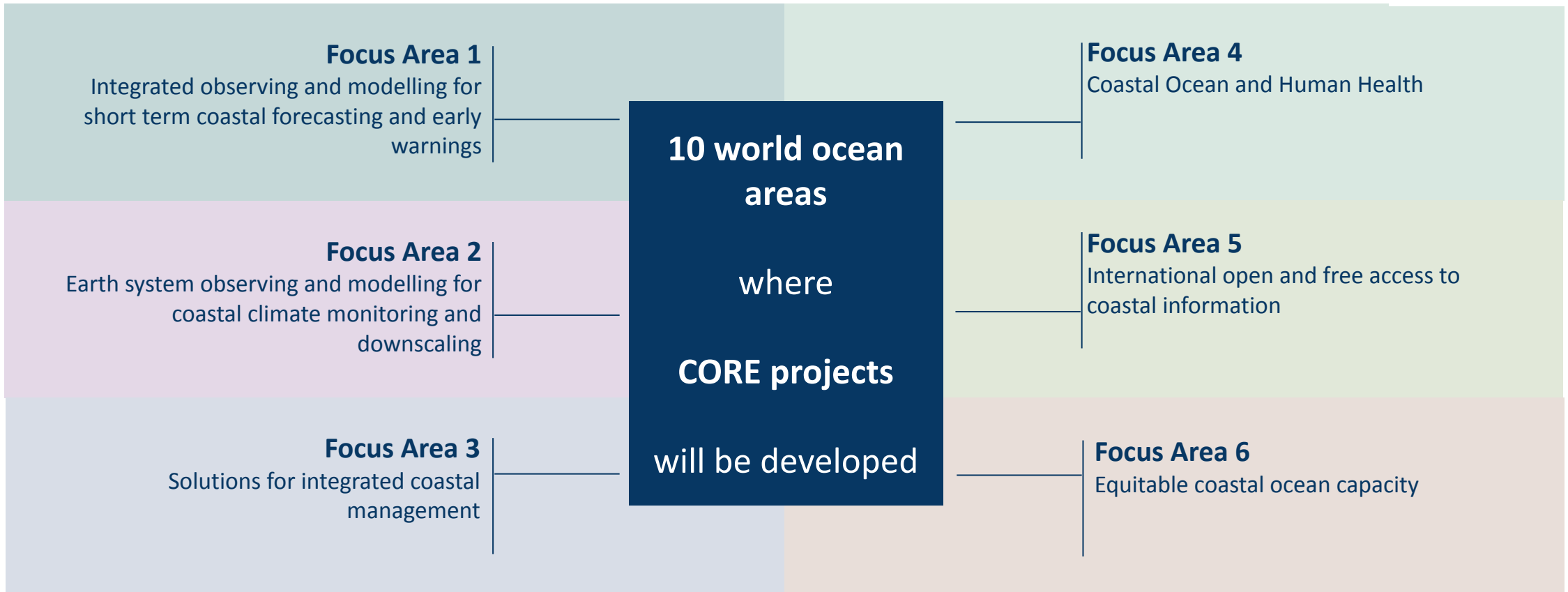


UPDATE: summary

- Implementation plan [5 yr] outlined including governance and structure
- 6 Focus Areas defined: key areas of development, leads appointed
- 30 CoastPredict projects will be merged to 2-3 core projects per focus area
- Co-advisory board [ForeSea / Ocean Observing Co-Design] establishment-in-progress
- General Assembly and Executive Committee meeting planned December
- Decade Collaborative Centre [Bologna] '*Coastal resilience in a changing climate*' will help support the programme



UPDATE: Focus Areas



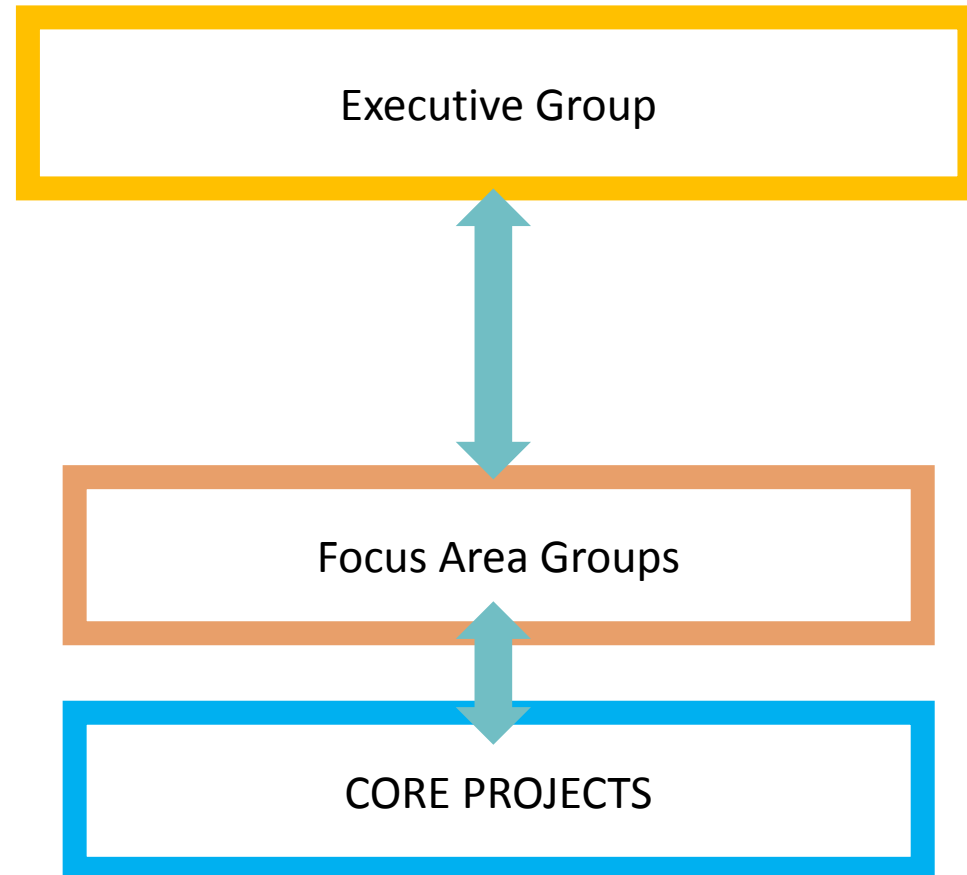
Partners already submitted **30** contributing projects to the CORE

UPDATE: Governance & structure

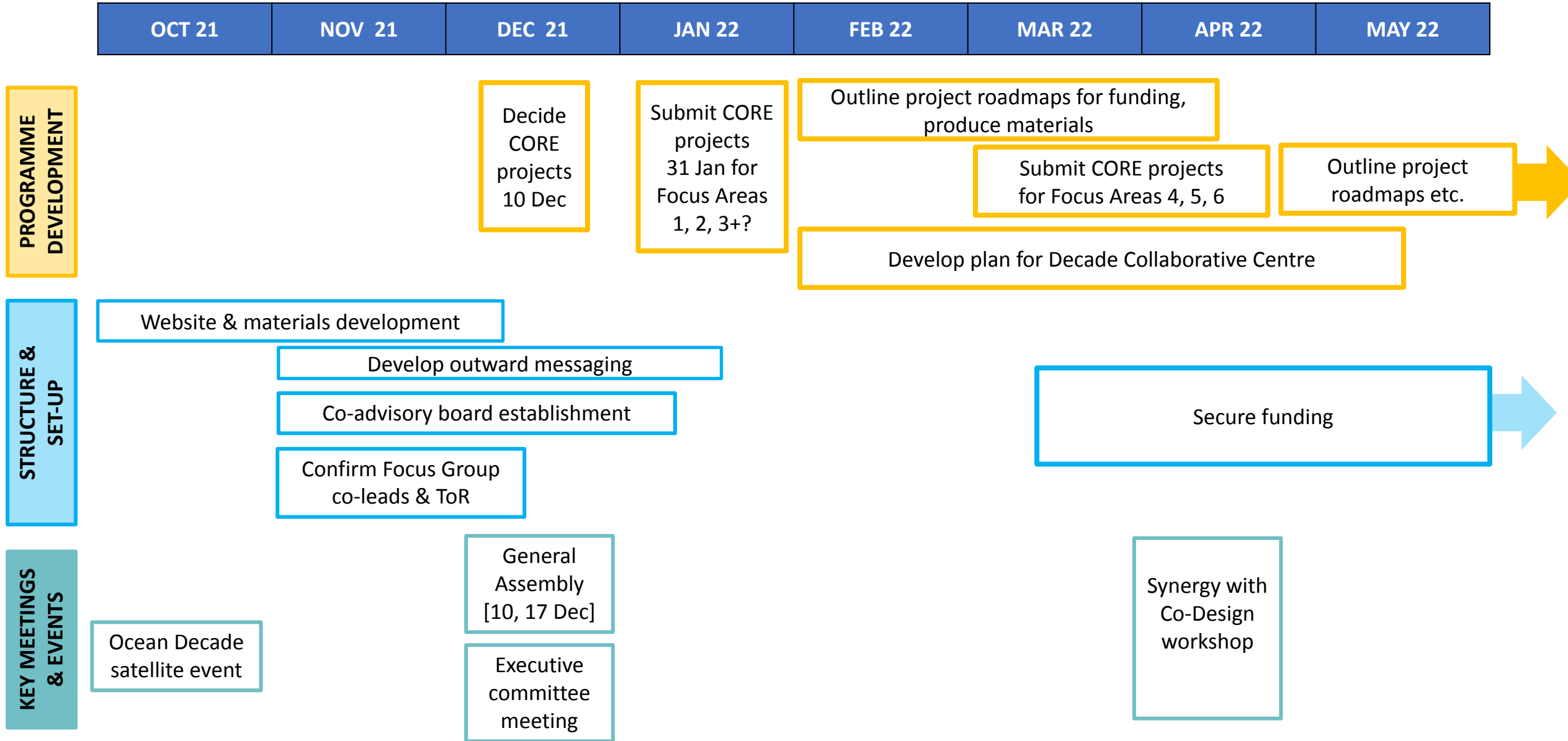


Exec committee:

- > Co-chairs
- > GOOS representative
- > 6 FG lead/co-lead
- > IODE/OBPS
- > ECOP lead/co-lead

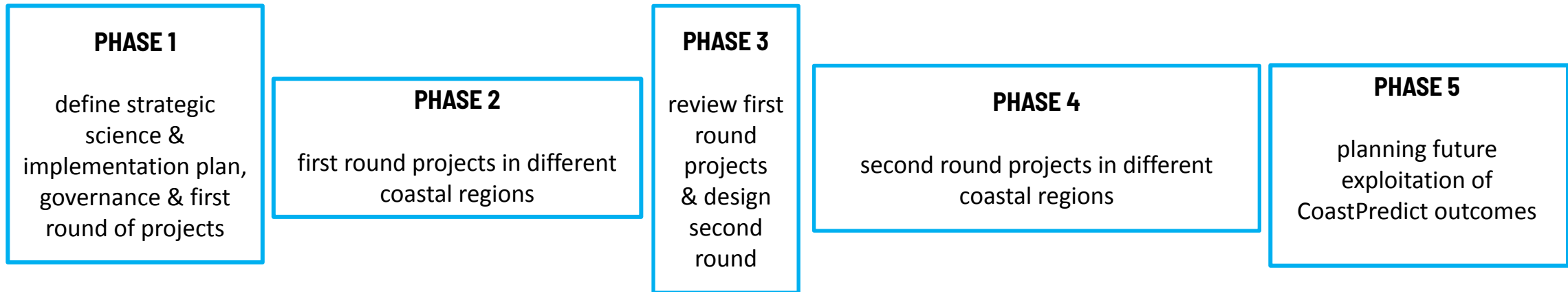


TIMELINE SHORT-TERM



TIMELINE to 2030

2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
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OPPORTUNITIES

- Leverage existing projects [x 30]
- Decade Collaborative Centre [Bologna] '*Coastal Resilience in a changing Climate*' will including focus for coastal ocean modelling and observing
- Collaboration with Communities of Practice
- Better leverage the Decade funding mechanisms
- Strong scientific approach - features of the global coastal ocean - combined



EXPECTED OUTCOMES

1. Integrated knowledge of the global coastal ocean **from events to climate** (*advancing knowledge*);
2. The design and implementation of an **integrated** river/estuarine/coastal/open **ocean observing and modelling multidisciplinary** system (*integrated observing and predicting*);
3. **Improved** coastal marine forecasting and **extended range predictive capabilities** for the coastal zone (*accurate predictions from hours to centuries ahead*);
4. The development of methods for **trusted data/information exchange and interoperability across the value chain** and adopt these as **best practices** (*open and free access to coastal information*);
5. Innovative and sustainable applications for coastal solutions/services that **directly benefit local populations, including well-being and human health** (*solutions*);
6. **Increased equitable education and capacity** for observing and forecasting in the global coastal ocean (*capacity building*).
7. **Strong engagement of Early Career Professionals and promotion of education, training and research** under principles of diversity, equity and inclusion (*education, no-one left behind*)



CHALLENGES

- Coordination of multiple projects and designing new major “CORE” projects. The level of collaboration to lift initiatives towards change is considerable, progress is steady but slow.
- Connections to multiple coastal users will require social science input and collaboration beyond current action. May be the coordination with other Programs of the Coastal resilience Community of Practice
- Funding uncertainty - when & how? The interest the Decade has initiated requires extra resources to support progress.
- Some early confusion about whether projects under CoastPredict register separately with the Ocean Decade

REQUESTS FOR THE STEERING COMMITTEE

- GOOS to publicise its co-designed Decade Programmes. How to get regular updates? How to get involved? What funding required?
- Ocean Decade to highlight their Programmes and support seeking of funding, support the programmes in the levels of collaboration required?
- GOOS start to consider how coastal observations, including model data, be fully implemented in GOOS? What impact on existing infrastructure? Is a tighter connection to ODIS development required?

