



2021 United Nations Decade
of Ocean Science
2030 for Sustainable Development



UN Decade
Collaborative Centre
for COASTAL
RESILIENCE



2023-2027

STRATEGIC WORKPLAN

UN Decade Collaborative Centre for Coastal Resilience

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1 MANDATE AND MISSION OF THE CENTRE

The Decade Collaborative Centre for Coastal Resilience (DCC-CR) is a Centre of the Department of Physics and Astronomy of the University of Bologna, funded by the Emilia-Romagna Region, which operates within the remit of the United Nations Decade of Ocean Science for Sustainable Development.

In particular, the DCC-CR focuses on the Ocean Decade Challenge 6: Increase community resilience to ocean hazards. Challenge 6 prioritises the enhancement of multi-hazard early warning services for all geophysical, ecological, biological, weather, climate, and anthropogenic related ocean and coastal hazards, and the mainstreaming of community preparedness and resilience¹.

Within the global Ocean Decade ecosystem, the DCC-CR supports the Decade Coordination Unit (DCU), based in the Secretariat of the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO), by providing decentralised thematic coordination around Challenge 6. The Centre has received a clear mandate from the IOC-UNESCO to catalyse and coordinate Decade Actions that contribute to this Challenge.

More specifically, the DCC-CR is requested to provide technical, logistical, and financial support for coordinating endorsed Decade Actions, stakeholder engagement, catalysing new Decade Actions, capacity development, communications, awareness-raising, outreach, resource mobilisation, monitoring, and reporting.

The main mission of the DCC-CR is to strengthen the connection between the new science and technology developed in the Ocean Decade and coastal stakeholders, implementing innovative co-design practices for coastal resilience.

¹ <https://oceandecade.org/challenges/>.

2 STRATEGIC OBJECTIVES

In order to operationalise its mission, the DCC-CR has set out four strategic objectives:

- SI – Improve science information for all
- SE – Enhance stakeholder engagement
- EE – Promote equitable education
- EJ – Uphold environmental justice for coastal communities

A brief description of each strategic objective followed by initial expected results is given below. The expected results will be connected to measurable indicators of achievement of the goals.

SI IMPROVE SCIENCE INFORMATION FOR ALL

Ocean coasts are highly vulnerable areas of the planet where the population concentrates and human impacts on the marine ecosystems may become increasingly adverse.

Starting from the assumption that coastal communities face urgent challenges that are amplified by climate change, several Decade Actions have concentrated their new science and technology developments on the world ocean coastal ecosystems and their human dimension. Science and engineering for the protection of coastal areas have started in the early 1970s but knowledge of long-term changes and compound effects has been lacking until very recently. The UN Decade is expected to transform our understanding of ocean coastal areas, as well as improve their monitoring and prediction. Coordination and synthesis of these efforts are therefore necessary, along with the promotion of new actions to fill gaps.

For this strategic objective the DCC-CR will document scientific case studies from Decade Actions trying to resolve gaps in a timely manner, recommend potential new science and technology actions, in particular support new community science for coastal resilience and advise the DCU on the advancements in several sectors of coastal science and engineering.

Expected results from this objective are:

- SI.1 Design a knowledge hub on coastal resilience (catalogues of test cases, test experiences, etc.)
- SI.2 Promote coastal community science²

SE ENHANCE STAKEHOLDER ENGAGEMENT

Mach et al. (2020)³ wrote: "Scholars and practitioners have increasingly advocated that the traditional linear model of knowledge production, with its unidirectional flow of information from researchers to policy-makers, be replaced by a new approach in which researchers and knowledge-users meaningfully interact to co-create knowledge that is actionable in decision-making."

To contribute to the DCC-CR mission, it is imperative to enhance stakeholder engagement in the design, testing and uptake of the science and technology for coastal resilience resulting from Decade Actions. Specifically, the DCC will engage with coastal stakeholders in collaborative transnational endeavours, towards the achievement of the Decade's goals. The type of engagement will be defined once an initial mapping of stakeholders will be accomplished, but the creation of digital frameworks for dialogue will be central to these activities.

The aim is to raise awareness from coastal communities up to the level of IOC-UNESCO and its Member States, on the Decade actionable science and promote substantive interactions and equitable partnerships at different stages of the Decade science creation process.

Expected results from this objective are:

- SE.1 Map coastal stakeholders
- SE.2 Design coastal stakeholder dialogue tools

EE PROMOTE EQUITABLE EDUCATION

Knowledge of marine hazards and climate change impacts has increased in the past twenty years. However, the process of developing this knowledge and its results has not been equally shared among different communities, especially between the Global North and South.

² "Community Science is an equitable collaboration of science aimed at outcomes for the benefit of communities," as defined by the peer-review journal Community Science (Wiley): <https://onlinelibrary.wiley.com/page/journal/26929430/homepage/aims-and-scope>.

³ Mach, K.J., M. C. Lemos, A. M. Meadow, C. Wyborn, N. Klenk, J. C. Arnott, N. M. Ardoin, C. Fieseler, R. H. Moss, L. Nichols, M. Stults, C. Vaughan, G. Wong-Parodi, 2020. Actionable knowledge and the art of engagement, Current Opinion in Environmental Sustainability, Volume 42, Pages 30-37, <https://doi.org/10.1016/j.cosust.2020.01.002>.

To reverse this trend, educational material and training activities should be developed to prepare, broadly and in a timely fashion, the public, early career professional communities and interested practitioners on coastal resilience.

Challenges for this strategic objective include making training resources accessible to diverse communities, in a culturally competent manner, as well as translating state-of-the-art concepts into understandable and relatable content for the general public.

The main aim is to make accessible the outcomes of the Decade Actions through open access publications and reference catalogues, as well as to organise specific training courses⁴ in collaboration with the Decade Actions to transfer knowledge and capacity and improve ocean literacy.

Expected results from this objective are:

- EE.1 Produce and make available training materials (such as websites or social media communications, videos, pamphlets, training manuals, including open access publications)
- EE.2 Offer Early Career Ocean Professionals (ECOPs)⁵ training programmes coordinated with IOC-UNESCO Ocean Teacher Global Academy (OTGA) and Ocean Literacy activities

EJ UPHOLD ENVIRONMENTAL JUSTICE FOR COASTAL COMMUNITIES

The adverse effects of climate change are not equally distributed, but tend to impact on already poor and vulnerable coastal communities in the Global South the most. In order to fully advance coastal resilience, it is therefore necessary to couple the development of scientific concepts with the realization of environmental justice. The latter can be understood as both a normative concept and a political claim, usually accompanied by social activism, that encompasses three crucial dimensions: distribution (of environmental goods/harms), procedure (participation in environmental decision-making), recognition (of different identities/groups and their own perceptions of and claims on the environment).

This strategic objective is at an early stage of development, especially for coastal areas, and we argue that a case-study approach based on empirical research is necessary in order to reveal the more complex ways in which the relationship between justice and resilience operates in practice.

⁴ The DCC-CR will embrace the strategy for capacity building of the IOC-UNESCO which focuses on systematically enhancing the capacity of all IOC Member States to conduct scientific research and benefit from its results, leaving no one behind. Furthermore, we will refer to SDG Target 14.a: Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries.

⁵ The UN Decade ECOP programme aims to empower all those who self-identify as being early in their career in any field related to the ocean.

The main activity to achieve this objective will consist of conducting a comprehensive literature review and carrying out field work on selected cases in the Global South, while also looking for possible collaborations with existing organisations and movements working on these themes.

Expected results from this objective are:

- EJ.1 Carry out a literature review of coastal environmental justice
- EJ.2 Select possible case studies for, and conduct in-depth fieldwork, prioritising LCDs and SIDS locations

3 CROSS-CUTTING ACTIVITIES

In addition to the specific strategic objectives, several cross-cutting activities are envisaged both at the explicit request of the DCU and from the initial work of the DCC-CR.

3.1 GLOBAL SOUTH COASTS

The DCC-CR, along with other DCCs and Decade Coordination Offices (DCOs), has identified a serious gap in the representation of Decade Actions, as most of them (especially at the Programme level) are based at institutions located in the so-called Global North. From a coastal resilience perspective, the under-representation of actors from the Global South is particularly concerning since, as noted above, coastal communities in ‘developing countries’ are typically more vulnerable to the effects of climate change and yet less resourced to deal with them.

For this reason, the Centre will adopt a Global South focus in relation to both the achievement of its strategic objectives and the fulfilment of its mandate. This focus will be translated into practical activities, such as:

- Provide assistance to (scientific) institutions based in the Global South interested in submitting new Decade Actions
- Offer training activities to early career professionals from the Global South
- Co-organise sessions and/or side events dedicated to Global South issues and perspectives at major Ocean Science and Ocean Decade events; promote and assist with the organisation of such events in the Global South
- Explore existing and new funding opportunities for institutions based in the Global South

3.2 COMMUNITY OF PRACTICE ON COASTAL ECOSYSTEM AND COMMUNITY RESILIENCE

As part of its activities in the domains of stakeholder engagement and communications, awareness-raising, and outreach, the DCC-CR will be the administrator of the Community of Practice (COP) on Coastal Ecosystem and Community Resilience hosted on the Ocean Decade Network (previously known as the Global Stakeholder Forum). The Ocean Decade Network is an interactive online platform for ocean-minded professionals who want to actively engage with the Decade and work together towards its mission of bringing transformative ocean science solutions for sustainable development, connecting people and our ocean.

The COP Coastal Ecosystem and Community Resilience is a group founded in 2021 and co-led by three Decade Programmes (Global Estuaries Monitoring, Ocean Cities, and Mega-Delta which are now part of the DCC-CR Programme Committee), which aims to offer an open space in which to debate and exchange best practices for coastal areas around the world.

The COP Coastal Ecosystem and Community Resilience will interact with other COPs and will include Decade Action partners. Webinars will be organised to share information between Decade Actions and selected outside stakeholders. The COP hub will be used also as a live discussion space between the involved partners.

3.3 CITIES WITH THE OCEAN

The DCU developed a concept paper that tries to devise a strategy for

“ocean cities to use ocean science to develop a harmonious relationship with the ocean and rely on preserved marine ecosystems to meet the challenges rising from global change and rapid urban growth and seize opportunities to improve the lives of their inhabitants.”

Under the coordination of the DCU, an informal working group has been established to create a pilot group of Cities with the Ocean, a network that seeks to involve representatives from municipalities and coastal stakeholders working in urban coastal environments. The goal of this initiative is to bring together the Ocean Decade science community with that of ocean cities, providing them with a toolbox of knowledge,

resources and capacity to face the challenges posed by a changing climate and find sustainable solutions for their adaptation plans. Moreover, the initiative aims to foster a stronger partnership between Ocean Decade Actions and global coastal cities, where the needs and experiences of urban communities can drive the development of relevant products and tools for society.

The working group will develop a roadmap for implementing this initiative, which will be presented at the UN Ocean Decade Conference in Barcelona in April 2024. The roadmap will establish goals and milestones for the initiative beyond its initial phase.

The DCC-CR plays a crucial role as a key player among the Ocean Decade actions and will support the coordination of this informal working group by involving relevant partners and facilitating occasions for discussion and dialogue between the two communities.

3.4 GLOBALCOAST EXPERIMENT

CoastPredict, a UN Decade Programme (also represented in the DCC-CR Programme Committee), is launching a science and technology experiment where transformational observing and prediction systems will be demonstrated. The experiment is named "GlobalCoast."

The GlobalCoast aim is summarised below:

GlobalCoast will implement the CoastPredict projects and guidance principles in a range of contrasting global coastal oceans to demonstrate the value of an integrated and fit-for-purpose coastal observing and prediction system that delivers innovative products and services for coastal resilience in collaboration with local stakeholders

The challenge is to establish and disseminate best practices in observing and predicting up to the final outcomes of defining standards for both products and services. This new information and service line should be made available to all and thus the DCC-CR can help in two directions: 1) map the different stakeholder needs; 2) disseminate the information to the COP and more.

The GlobalCoast will be implemented by a partnership being defined with the Global Ocean Observing System (GOOS). The main activity of the first year includes establishing a partnership to provide coordination support to GOOS and CoastPredict.

3.5 OCEAN DECADE VISION 2030

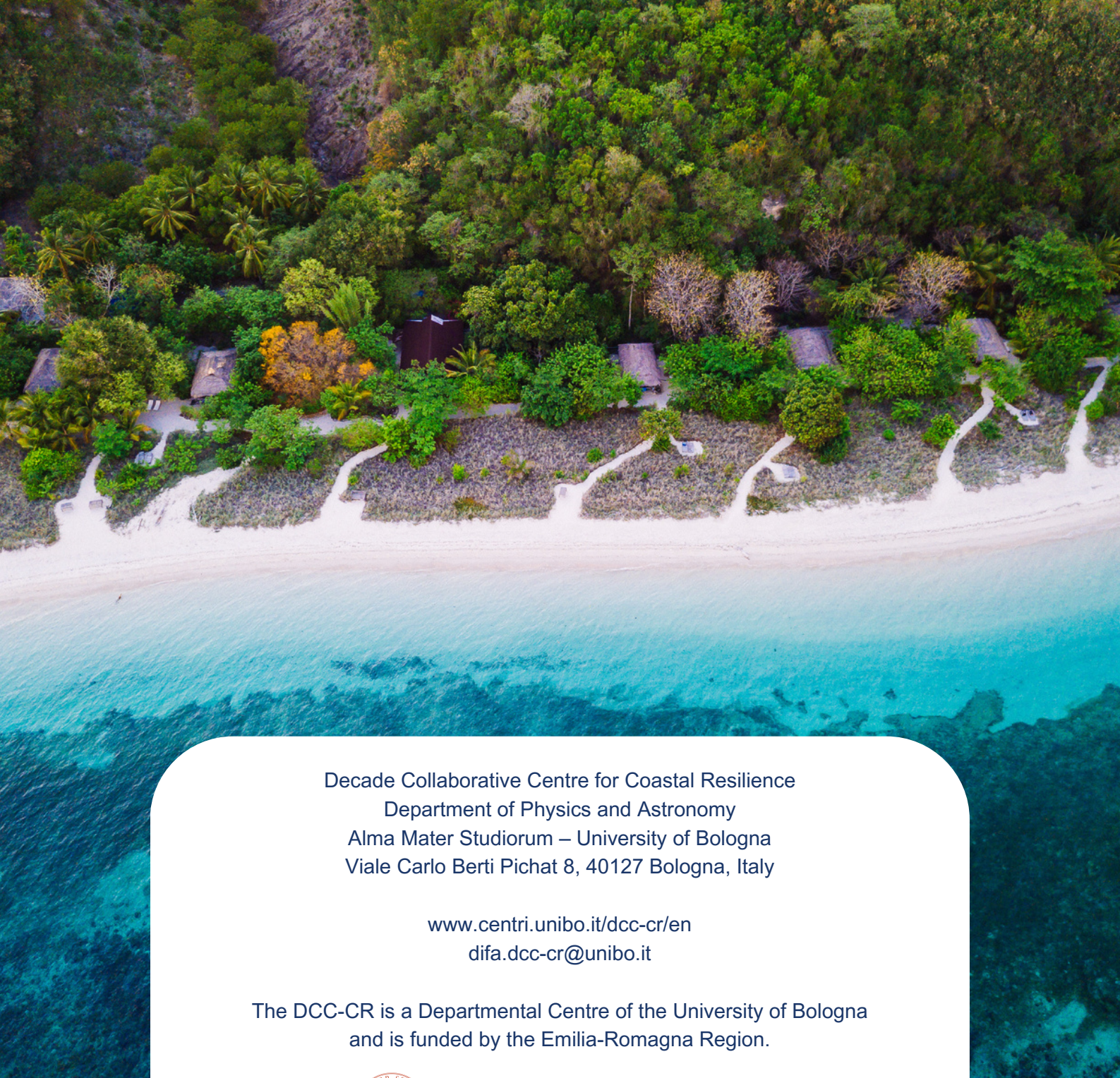
The DCU has invited the DCC-CR to take part in this participatory and iterative process that aims at setting a collective strategic ambition for the ten Decade Challenges. A strategic ambition is understood as stemming from ocean users' perspectives and as incorporating the following elements, among others: priority datasets, technology and innovation, infrastructure, knowledge, partnerships and resources, capacity development, and indicators to measure progress.

More specifically, the Director of the Centre has been nominated co-chair of Working Group 6 alongside the Director of the DCC for the Indian Ocean Region, hosted by the Indian National Centre for Ocean Information Services. This working group will set a strategic ambition and associated milestones and targets for Challenge 6. The two co-chairs will convene a group composed of subject matter experts, Decade Actions, and users and will coordinate the drafting of a white paper that will be presented at the 2024 Ocean Decade Conference.

4 PRIORITIES FOR 2023-2024

During the Ocean Decade reporting period July 2023 – June 2024, the DCC-CR will work towards achieving the following expected results:

Activities	Expected results	Delivery Date
SI	Design knowledge hub	30.6.2024
SE	Map coastal stakeholders	31.12.2023
	Organise 2 side events at international meetings	30.4.2024
EE	Contribute to 1 training programme with IOC-UNESCO	30.6.2024
	Plan 1 training event as DCC-CR	30.6.2024
EJ	Literature review	31.12.2023
	Organise 2 webinars, to test format and scope	30.6.2024
Cross-cutting activities	Participate in Cities with the Ocean informal working group	30.4.2024
	Shape memorandum of understanding for GlobalCoast Experiment	31.12.2023
	Co-chair WG6 for Ocean Decade Vision 2023	30.4.2024



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