



EUROPEAN UNION



EU MISSIONS

ADAPTATION TO CLIMATE CHANGE



September 2024

EU Mission Adaptation Community

Summary of the event: Online Joint Workshop:
Mission Adaptation and Mission Ocean and Waters
Integrated Approaches to Build Coastal Resilience
Monday 30th September 2024

1. Introduction: the event at a glance

Registrations & participants:

405 registrations and 177 participants, including:

- 17 from Charter Signatories of Mission Adaptation
- 102 from Charter Signatories of Mission Ocean
- 16 from Charter Signatories of both Missions
- 2 from Regions or Local Authorities
- 3 from Mission Projects
- 2 from other projects working on adaptation
- 6 from Private Sector
- 6 from Research and Academia
- 13 from European Commission representatives
- 10 Others

The workshop aimed to address the challenges faced by coastal regions, cities, and municipalities in Europe due to climate change and environmental degradation. It brought together experts and stakeholders participating in the EU Mission Adaptation to Climate Change and the EU Mission Restore our Ocean and Waters to explore approaches for enhancing coastal resilience and implementing nature-based solutions for ecosystem protection and adaptation.

Watch the recording [here](#). The presentations are available in [Futurium](#).

Key findings

- Nature-based solutions offer significant benefits for coastal resilience, providing cost-effective options that enhance biodiversity and ecosystem services.
- Integrated Coastal Zone Management (ICZM) is crucial for balancing human activities and resource protection in coastal regions, emphasizing long-term planning and stakeholder participation.
- Transitioning from demonstration sites to large-scale restoration requires showcasing the broader benefits of these actions, aligning investments with stakeholder interests, and enhancing coastal zone management to address conflicts and promote collaboration.
- Empowering coastal communities is essential for achieving sustainable transitions, involving residents in decision-making and creating tailored plans that meet their specific needs.

For further details see Section "Findings and outputs".

2. Summary of the Event

The event highlighted effective coastal resilience strategies and tools. Attendees were able to deepen their understanding of Integrated Coastal Zone Management (ICZM), explore the use of natural systems and nature-based solutions to reduce climate impacts while restoring coastal ecosystems and connect across measures and resources to enhance resilience against droughts. Presentations gave an insight into the latest research, frameworks, solutions, and tools to enhance coastal resilience.

John Bell, Healthy Planet's Director at DG Research and Innovation, European Commission and Deputy Mission Manager for the Restore our Ocean and Waters Mission, introduced the topic and emphasised the pressing challenges coastal communities face across Europe. Key points highlighted include:

- **Urgent Climate Challenges:** Europe faces severe climate impacts, including rising sea levels, increased flooding, and extreme weather. Immediate action and preparation from coastal communities are essential. Further networking and collaboration among Mission participants are encouraged to share knowledge and implement local solutions for future climate challenges.
- **EU Missions' Objectives:** The [EU Mission Adaptation](#) aims to support regions and cities in becoming climate-resilient through systemic transformations, promoting nature-based solutions across various sectors, including infrastructure, water management, and health. The [EU Mission Ocean and Waters](#) aims to protect and restore the health of our ocean and waters through research and innovation, citizen engagement and blue investments.
- **Funding and Support Framework:** The EU Mission Adaptation Mission Adaptation provided financial support (approx. 550 million EUR in the period 2021-2024) in grants to projects to test and demonstrate solutions improving climate resilience. The EU Mission Ocean and Waters have mobilised significant resources, including €475 million from Horizon Europe for 2021-2024, to assist around 100 regions with funding, grants, and knowledge-sharing initiatives that enhance resilience and adaptability.

Pierre Failler, Director at the Centre for Blue Governance and UNESCO Chair for Ocean Governance, introduced the topic of Integrated Coastal Zone Management (ICZM). Key highlights include:

- **Definition and Purpose:** ICZM is a process aimed at promoting sustainable management of coastal zones, integrating various policy areas, sectors, and administrative levels to balance human use of coastal resources with conservation needs.
- **Core Principles:** ICZM is based on key principles such as the interdependence of natural systems and human activities, the precautionary principle, local specificity, and stakeholder involvement. In this way, ICZM provides an integrated approach that combines land and sea management, a long-term perspective for continuous adaptation, tailored solutions for local contexts, and the inclusion of all relevant stakeholders in decision-making.
- **Implementation Challenges:** Although Integrated Coastal Zone Management (ICZM) has been relevant for over 50 years, it has yet to be fully incorporated into the national policies of many European countries and is often overshadowed by more recent frameworks like Marine Spatial

Planning (MSP). This may be due to ICZM's primarily local scope, which makes it challenging to apply effectively at the national level in contrast to MSP. Strengthening ICZM's national-level implementation requires enhanced integration with MSP, as well as alignment with relevant EU directives, such as the Water Framework Directive and the Nature Restoration Law.

- **Connection with Blue Economy:** ICZM is closely linked to the Blue Economy, which seeks sustainable use of ocean resources. Ensuring alignment between these two concepts is essential for effective coastal and ocean management.

Ida Beathe Øverjordet, from the Climate and Environment section at SINTEF Ocean and a representative from the Mission Project CLIMAREST, showcased tools available for regions and local authorities to use to enhance coastal resilience. Key highlights include:

- **Project Overview:** The [CLIMAREST project](#), part of the Mission Ocean initiative, focuses on climate resilience and large-scale restoration of coastal ecosystems to enhance coastal resilience and protect communities from climate impacts.
- **Practical Tools for Implementation:** The project has developed practical tools and solutions to assist regions and local authorities address coastal resilience challenges, supporting climate adaptation and marine ecosystem restoration through nature-based and eco-engineering solutions.
- **Collaboration and Scope:** The project involves 18 partners across seven countries, working on diverse coastal restoration sites along the Arctic-Atlantic Basin, addressing issues like coastal erosion, seagrass restoration, oyster reef restoration, and pollution mitigation.
- **Demonstration Sites:** Five demonstration sites highlight specific restoration efforts: Svalbard (coastal erosion), Ireland (seagrass meadow restoration), France (oyster reefs), Spain (aquaculture habitat improvement), and Madeira (macroalgal forest restoration).
- **Marine Restoration Toolbox:** A key component of the project is the Marine Restoration Toolbox, a user-friendly resource for planning, implementing, and monitoring coastal restoration efforts, targeting various stakeholders.
- **Integration with Mission Goals:** The CLIMAREST project aligns with the EU Mission Ocean and Mission Adaptation to Climate Change, aiming to contribute to ocean restoration and coastal resilience by 2030 with scalable and replicable tools for broader application across Europe.

Marina Tonani, representing Mercator Ocean International and the European Digital Twin Ocean Partners, presented the European Digital Twin Ocean platform for monitoring, predicting, and forecasting impacts on coastal resilience. Key highlights include:

- **Digital Twin of the Ocean (DTO):** The DTO is a digital infrastructure that collects and integrates marine data to monitor and forecast the state of the ocean. By providing comprehensive data on ocean conditions, sea-level rise, and other key variables, it aims to improve decision-making for coastal resilience.
- **Purpose of DTO:** To simulate different scenarios ("what-if" analysis) to predict the outcomes of various management decisions, helping coastal authorities plan for long-term resilience.

- **Collaborative Platform:** The DTO is a collaborative tool designed to include input from various sources—such as citizen science, scientific models, and real-time data—to provide a complete picture of the marine environment.
- **Use Cases:** The platform allows users to explore data, create their own models, and contribute new information. It supports local governments and stakeholders manage coastal areas by predicting future risks like sea-level rise and extreme weather events.
- **Learn more:** Visit the [European Digital Twin Ocean platform](#) to learn more about ocean data science, discover how to contribute to reproducible science with trainings and tutorials, take advantage of near-data computing, collaborate, and build end-user apps and reproducible processes, and view public data and create private data catalogues.

Massimo Ponti, from the LIFE NaturReef project at the Bevano NATURA2000 site in Italy, presented nature-based solutions for coastal resilience. Key highlights include:

- **Nature-Based Solutions (NBS):** The [NatuReef project](#) focuses on using natural ecosystems to protect coastlines, specifically through the restoration of **oyster reefs** and **sabellariid reefs**, which are structures created by reef-building organisms.
- **Oyster Reef Restoration:** Oyster reefs are emphasised as natural coastal defence systems, offering benefits such as wave attenuation, enhanced biodiversity, and improved water purification.
- **Restoring Historical Reefs:** The project aims to restore ancient reefs that once protected coastlines but have been lost due to overfishing and environmental degradation. The restored reefs will serve as both coastal protection and ecological restoration.
- **Example in Northern Adriatic:** In Italy's Emilia-Romagna region, the project involves rebuilding natural reefs using limestone and metal cages to provide a foundation for oyster larvae. This helps prevent coastal erosion while supporting marine biodiversity.
- **Replication Potential:** The success of the project is expected to serve as a blueprint for similar restoration efforts across the Mediterranean, enabling a broader application of nature-based solutions for coastal resilience.

Maiken Bjørkan, representing the EmpowerUs project, presented on the socio-economic empowerment of coastal communities as users of the sea to ensure sustainable coastal development. Key highlights include:

- **EmpowerUs Project:** The project focuses on empowering coastal communities to lead their resilience-building efforts through social and economic empowerment, helping them develop and implement solutions to local challenges.
- **Living Labs:** EmpowerUs has established six **Transition Coastal Labs (TCLs)** across different European regions. These TCLs serve as platforms where local communities, scientists, and authorities co-create solutions to local issues such as climate change and economic vulnerabilities.
- **Empowerment through Co-Creation:** The approach emphasises co-creation, where local communities are deeply involved in identifying challenges and developing tailored solutions. This includes workshops, participatory methods, and funding for pilot projects.

- **Pilots for Local Solutions:** Each TCL receives €50,000 to implement pilot projects based on the co-created solutions. These pilots address real-world issues like sustainable fisheries, marine pollution, and community resilience.
- **Challenges and Lessons:** The project faces challenges in fostering broad participation in decision-making; however, efforts are being made to promote inclusivity and empower all community members in leading their resilience initiatives.
- **Scaling and Impact:** The goal is to scale these pilots beyond the initial communities and apply them more broadly across Europe's coastal regions, ensuring long-term socio-economic resilience.

The Q&A focused on clarifying key aspects of coastal resilience. It addressed questions about successful nature-based solutions for coastal protection and explored the application and effectiveness of Integrated Coastal Zone Management (ICZM). The session also examined the challenges and successes of engaging local communities in co-creating and implementing resilience strategies. Additionally, it highlighted the role of ocean literacy in promoting coastal resilience.

For a full compilation of the questions asked and answers, please refer to the Annex.

3. Findings and outputs

Based on the insights gathered from the discussions, several key lessons and findings have emerged:

- **Nature-Based Solutions in Coastal Resilience:** Discussions highlighted examples of nature-based solutions in the Eastern Mediterranean such as the Nature-based reef solution for coastal protection and marine biodiversity enhancement in the Bevano River Mouth in Italy. This emphasised a shift from traditional hard infrastructure, like breakwaters, to sustainable methods such as coastal dune and vegetation restoration.
- **Scaling Restoration Efforts:** Transitioning from demonstration sites to large-scale restoration requires showcasing the broader benefits of these actions, aligning investments with stakeholder interests, and enhancing coastal zone management to address conflicts and promote collaboration.
- **Sustainability Beyond Individual Projects:** To ensure the continuity and sustainability of restoration projects, it is essential to strengthen links between research, demonstration, and implementation. Tailored empowerment programs can support communities in taking ownership of ongoing efforts.
- **Importance of Ocean Literacy:** Ocean literacy is vital for fostering a society that cares for and understands the ocean's value. Engaging communities through education initiatives can drive behavioural changes necessary for reducing environmental pressures.
- **Feedback for Future Initiatives:** Participants wanted to explore themes such as marine spatial planning, coastal pollution, and stakeholder roles in future events. Continuous engagement and collaboration between the two Missions will be vital in developing effective strategies for coastal resilience.

4. Next Steps

The recording and presentations have been uploaded after the event to the online [EU Mission Adaptation Community site](#).

More information about upcoming events can be found on the [EU Mission Adaptation Community site](#).

Upcoming announced events and other key dates include:

- [EU Grants for Climate Resilience: opportunities for Regions and Local Authorities](#), 6 November
- [Participatory Green Budgets](#), 19 November

Contact us via the [Helpdesk form](#) for any queries from members of the Community of Practice on associated activities and events, specific concerns about your climate adaptation planning process, communications and press releases, and IT technical issues with the website.

Annex

Q&A Compilation

Question to Massimo Ponti

Could you offer examples of nature-based solutions already applied in the Eastern Mediterranean to improve coastal resilience instead of hard infrastructure like breakwaters?

Massimo Ponti provided the following answer during the event.

Most solutions in the Eastern Mediterranean focus on restoring coastal dunes and coastal vegetation to enhance resilience naturally. These efforts are particularly evident in areas like the Po River Delta. However, fewer projects have focused on restoring reefs, which are more common in the northern regions of Europe.

Question regarding behavioural change

Do we really believe that recycling plastic is enough to save the planet, or must we completely change our lifestyle?

Ida Beathe Øverjordet provided the following answer during the event.

Recycling plastic alone is not sufficient to address our environmental crises. A broader shift in consumption patterns and overall resource use is needed. People need to become more content with less consumption and adopt more sustainable lifestyles.

Question on scaling Demonstration Sites to Large-Scale Coastal Restoration

What is missing when moving from demonstration sites of coastal restoration to larger-scale restoration efforts?

Massimo Ponti provided the following answer during the event.

Demonstration sites, such as those in the LIFE NatuReef project, aim to develop best practices that can simplify replicating these solutions in other regions. For example, techniques for restoring oyster reefs will serve as a model for wider application across the Mediterranean.

The following answer to this question was provided during the event by Ida Beathe Øverjordet.

The key is to emphasise the wider benefits of coastal restoration actions to attract investments from local stakeholders while improving coastal zone and area management planning.

Pierre Failler provided the following answer to this question during the event.

One of the main challenges in upscaling restoration projects is ensuring continuity beyond the research and demonstration phases. Often, projects end once the initial funding period (e.g., 48 months) concludes, and there is no follow-up funding to ensure long-term implementation.

Question on ocean literacy

How is ocean literacy considered an outcome in these projects, especially in ensuring communities understand and value the ocean for long-term resilience?

The following answer to this question was provided during the event by Ida Beathe Øverjordet.

One of the initiatives includes creating a children's book available in six languages to raise awareness about coastal and marine issues. The aim is to educate local communities and tourists about reducing pollution and protecting coastal ecosystems. Promoting ocean literacy is essential not only for enhancing public understanding but also for driving behaviour change, especially in regions where communities depend on coastal ecosystems for their livelihoods.

The following answer to this question was provided during the event by Maiken Bjørkan.

EmpowerUs also emphasises ocean literacy, with each Transition Coastal Lab organising at least two literacy events. These events aim to reconnect coastal communities with the ocean and highlight its importance in their livelihoods and environment.

Question to Marina Tonani

How does technology, particularly tools like the Digital Twin of the Ocean (DTO), help scale solutions for coastal resilience?

Marina Tonani provided the following answer to this question during the event.

The DTO platform allows users to simulate different scenarios, providing valuable insights for decision-makers in coastal regions. By making data, models, and tools easily accessible, the DTO helps local authorities plan and predict the impacts of their decisions, enabling more informed and scalable resilience efforts.