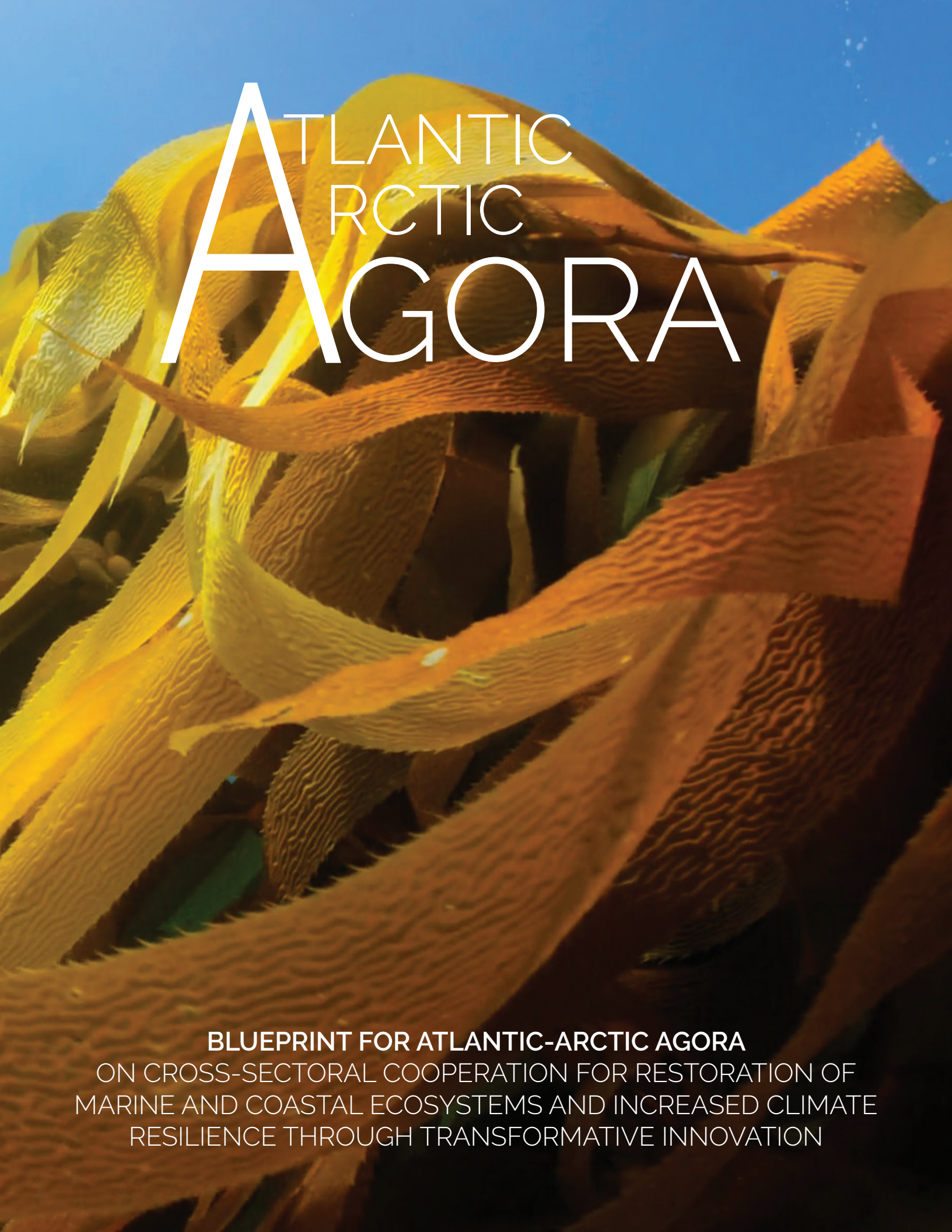




ATLANTIC ARCTIC AGORA

BLUEPRINT FOR ATLANTIC-ARCTIC AGORA

ON CROSS-SECTORAL COOPERATION FOR RESTORATION OF
MARINE AND COASTAL ECOSYSTEMS AND INCREASED CLIMATE
RESILIENCE THROUGH TRANSFORMATIVE INNOVATION

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AA-AGORA

OBJECTIVE

AA-Agora will be a beacon to protect and restore ecosystems and biodiversity in Arctic and Atlantic coastal areas. We will demonstrate how innovation, ecosystem-based management and nature-based solutions can contribute to sustainable transformation in three coastal areas:

1. The Arctic Archipelago, Norway
2. County Cork, Ireland
3. Centro Region, Portugal

Based on the results and experiences in these three case areas, we will create a blueprint, that is, a plan or a recipe for protecting and restoring ecosystems and biodiversity that can be used by other coastal areas in the Arctic-Atlantic area.

The EU wants these lighthouse projects to be defined to the greatest extent possible by the coastal communities and is therefore planning for a large degree of local involvement in the demonstration cases.

The EU's societal mission to Restore Our Ocean and Waters by 2030

The project is part of the EU's social mission "Restore Our Ocean and Waters by 2030". A social mission involves setting ambitious, measurable and time-bound goals that must be achieved through joint efforts from research actors, authorities, the public sector, businesses, organizations and citizens.

The purpose of this social mission is to:

1. Protect and restore ecosystems and biodiversity
2. Reduce pollution in river systems and sea basins
3. Making the blue economy circular and carbon neutral

We have been commissioned to create a lighthouse project which is primarily related to objective 1 of the mission, but which in an overall plan must also be connected to other objectives in the community discovery. For example, it is desirable that we also consider the circular and carbon-neutral solutions related to fisheries and aquaculture. In addition, we will also connect our lighthouse to the EU's societal mission of adapting to climate change by building resilience and climate-robust coastal communities to meet challenges such as extreme weather, ocean acidification, sea level rise and storm surges, and changes in harvestable species.

Nature-based solutions and ecosystem-based management are expected to contribute to increased climate resilience.

Nature-based solutions

Nature-based solutions are conservation, sustainable use, or restoration of ecosystems to solve societal challenges. Sustainable management of kelp forest at the Arctic Archipelago can, for example, contribute to meeting several sustainability goals, including carbon uptake, conservation of biological diversity and climate adaptation. At the same time, these areas are important habitats for fish and shellfish, and restoration of the kelp forest is therefore expected to provide nutritional gains in the form of increased fish stocks.

Nature-based solutions are expected to become an important part of the UN's nature agreement, which will eventually be adopted in Montreal in December 2022.

Ecosystem-based management



Ecosystem-based approaches for managing climate adaptation and disaster preparedness in order to reduce the risk of climate change are also part of nature-based solutions.

In AA_Agora, we will contribute to creating a comprehensive plan for the conservation, sustainable use, restoration and monitoring of ecosystems inside and outside the protected areas. The archipelago in Troms has rich populations of seabirds, fish and mammals and 11 conservation areas that safeguard biological diversity in the region. We will use ecosystem-based approaches to protect and restore biological diversity, contribute to resilience and adaptation to climate change, as well as sustainable social development for the benefit of the citizens and businesses in the region.

Living laboratory as a method

We use a living lab approach where we jointly identify solutions and measures together with business, administration, organizations and citizens. Research and development in the demonstration area will be based on a procedure where we design, test, monitor and validate the solutions that are proposed to manage the ecosystems. An important part of this work is to build capacity for local monitoring of the ecosystems in the protected areas. Furthermore, the solutions must be able to be scaled up to other coastal areas. In the application process, we selected the following measures in the demonstration area:



Large-scale restoration of kelp forests

The measure here is to remove sea urchins to ensure regrowth of kelp forests. The kelp keepers, which is a voluntary diving organisation, school classes and possibly local fishermen are invited to collaborate on various solutions. The point is to involve young people and the local population in restoration work as well as in restoration monitoring together with scientific project partners. The demonstrated innovations will be documented by quantifying the restored area and work effort (expected SRL 7), and evaluated for their added value, tradeoffs and scale-up.

Development of a sustainable tourism destination

The initiative is to develop nature-based tourism that protects and restores the rich natural areas along the coast, including seabirds, mammals, and marine biodiversity in the kelp forest. The point here is to develop nature-based tourism that can contribute to the protection and restoration of ecosystems through, for example, snorkelling/diving camps, exploration of sea urchins and kelp forests as a learning arena, sustainable local food, bird watching, monitoring, sustainable networking with local businesses, and learning and capacity building for to restore biodiversity and increase climate resilience. We are also developing a prototype for scaling up nature-based tourism that is more driven by an intention to protect and restore marine ecosystems inside and outside the protected areas. The added value of the NbS solutions and trade-offs is made in collaboration with the local community.



Photo: PUKKA Travel



Designing an adaptive monitoring system

Of the marine ecosystems together with the local community, we will design an adaptive monitoring system and identify nature-based solutions based on the mapping of influencing factors. The mapping includes climate scenarios (CMIP6), climate risk maps and other human activities that affect the marine ecosystems. The purpose of this task is also to build capacity so that local actors can themselves do most of the monitoring and management of one of the areas. This section includes co-design with local communities for monitoring, evaluation and learning (citizen science), and combining biological and local ecological knowledge to understand marine ecosystems and biodiversity. We use artificial intelligence and machine learning to analyze images from drones, satellites, GPS and social media, but our purpose is to create automated solutions that can contribute to local monitoring related to kelp forests, fish, seabirds and marine mammals. We also map future effects of runoff from rivers and from land.

Implement adaptive ecosystem-based management

This measure shall be based on points 1-3 and prepared in collaboration with the partners. There must be a comprehensive ecosystem-based management plan based on the interests of the citizens, the industry and the administration. The management of the protected areas and surrounding areas can potentially contribute as example areas for how marine protected areas and buffer zones can be managed in a "European Blue Park network". Various forms of local participation through the use of maps and technology to engage the population will contribute to the development of this plan (map-based gamification tools). Design thinking, theories of change and principles for dialogue and democratic participation will form the basis of this plan.



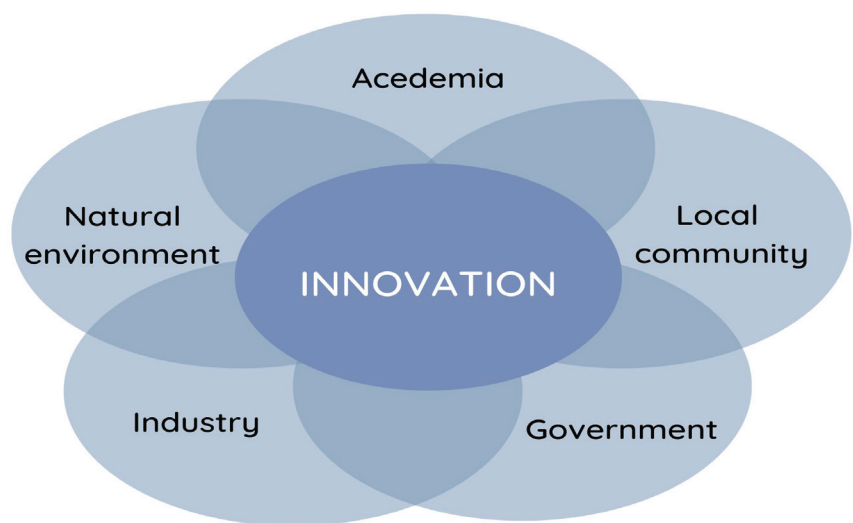
Circular and sustainable solutions for fisheries and aquaculture

The EU Commission wants also include circular and sustainable solutions for fisheries and aquaculture as part of AA_Agora. This can be included as part of an overall plan in point 4. Moreover this can be integrated to other projects that deal with this topic at UiT as the FRAM center Coastshift project.

A living lab approach means that the measures to be tested and monitored can also be changed during the project period as we learn what is best for the demonstration area.

The measures that are proposed should contribute to protection and restoration of marine ecosystems, but they must also be socially and economically sustainable.

We therefore use a quintuple helix model which highlights the importance of understanding innovation and sustainable development as an interaction between research, authority, industry, local communities and the ecosystem (here defined as a socio-ecological system).



It is important that from the start we make a good plan for how we can achieve innovative solutions in collaboration between the municipality, the conservation area board, voluntary organisations, the industry, the research institutes and the university. It is also desirable to establish a university camp with MSc students who carry out smaller tasks that the administration or the industry can benefit from.

Work plan for AA_Agora

In the AA-Agora project, on the one hand, we have the demonstration areas where innovative measures will be implemented, while the work packages will contribute to comparisons between the cases and scaling up to Atlantic and Arctic coastal areas.

WP1 Setting the right enabling conditions for delivering upscaling

The purpose of this package is to assess a wide range of political commitments and strategies on different scales (national, EU and international) as well as contribute to scaling up nature-based solutions in the Arctic and Atlantic action plans (EU Atlantic 2.0 action Plan and Arctic Action Plan).

WP2 Social-ecological innovation for deliberative democracy process

The main goal of WP2 is to develop innovations for cooperation and participation in each demonstrator, and to contribute to the scaling up of games as a tool for participation in the Arctic and Atlantic coastal areas.

WP3 Design and implementation of the Atlantic-Arctic digital knowledge system

The purpose of WP3 is to implement the Atlantic-Arctic digital knowledge system to enable new partnerships and work towards the vision of sustainable ocean and coastal observations.

WP4 Co-create sustainable business models

The main objective of WP4 is to improve public decision-making by engaging a community of citizens, local stakeholders and coastal communities to develop socially and economically sustainable management strategies.

WP5 Channels for Communication and Community Development

The purpose of this package is to contribute to communication internally in the project, to external dissemination and involvement of the general public in AA_Agora.

WP6 Atlantic-Arctic Demos', the lighthouse and blueprint for upscaling

The purpose of this work package is to develop the lighthouse and contribute to scaling it up to the entire Arctic-Atlantic coastal area.

WP7 Management and Coordination

This package is about management and coordination of AA_Agora.