



Sustainable Aquaculture in the Black Sea

The World Bank's support to CMA participating countries to enhance sustainable aquaculture.

Context and objective

As a semi-enclosed sea with a vast coastline of over 4,000 km, the Black Sea faces severe environmental degradation, including eutrophication caused by nutrient pollution and the escalating issue of plastic and marine litter. Challenges such as overfishing, invasive species, pollution from industrial and coastal activities, and climate change present a significant threat to water quality and marine habitats and thus, have severely impacted fisheries and aquaculture in the region.

The World Bank's regional and long-term [Blueing the Black Sea](#) (BBSEA) Program, through the [ProBlue](#) financed analytical and policy support work, and [GEF financed investment program](#), directly aligns with the commitment of Black Sea coastal countries, including Bulgaria, Georgia, Moldova, Romania, Türkiye, and Ukraine to work together toward a sustainable and resilient Black Sea by 2030. The BBSEA has been designed and is being implemented in a close coordination and in support of the Common Maritime Agenda (CMA) for Black Sea and is partnering with the CMA countries' governments, the EU, Black Sea Economic Cooperation, Black Sea Commission, UNOPS, UNDP, FAO and other stakeholders in the region.

The program initial activities aim to foster regional cooperation in addressing land-based nutrient, chemical, and plastic pollution. It is being expanded to newer activities that aim to assist the Black Sea countries to sustainably develop their maritime economies by supporting the response to the systematic and emerging challenges to the environmental sustainability of the Black Sea region. Such new activity is the Sustainable Aquaculture Initiative, which addresses a major gap in current efforts and complements existing initiatives.

Sustainable aquaculture enhances food security by providing a consistent and reliable source of high-quality protein, reducing dependency on wild fish stocks and imported seafood. It supports blue economy development by diversifying local economies, creating jobs, and promoting inclusive growth, particularly in rural and coastal communities. Additionally, sustainable aquaculture practices improve environmental health through pollution mitigation and biodiversity enhancement, ensuring long-term viability of marine resources and contributing to economic resilience and environmental stewardship in the Black Sea region.

The World Bank's support in this sector shall contribute to enhancing these and other positive effects of sustainable aquaculture in the region.

Objectives

The World Bank's Black Sea Sustainable Aquaculture Initiative aims to enhance environmental knowledge in Black Sea fisheries and aquaculture through exploring the potential for developing sustainable aquaculture to enhance food security and blue economy development, as well as leveraging aquaculture as a Nature-Based Solution (NBS).

Specifically, the initiative shall help to align aquaculture practices in the Black Sea countries with EU and CMA priorities and standards; create a more robust regulatory environment supportive of sustainable practices; engage stakeholders to implement innovative aquaculture solutions; explore aquaculture as a Nature-Based Solution (NBS) to mitigate pollution and climate change; and to strengthen governance, policy frameworks, and capacity building in the sector.

These efforts shall contribute to filling critical gaps in policy, technology, and practice, contributing to the sustainable and inclusive growth of the aquaculture sector in the Black Sea region.

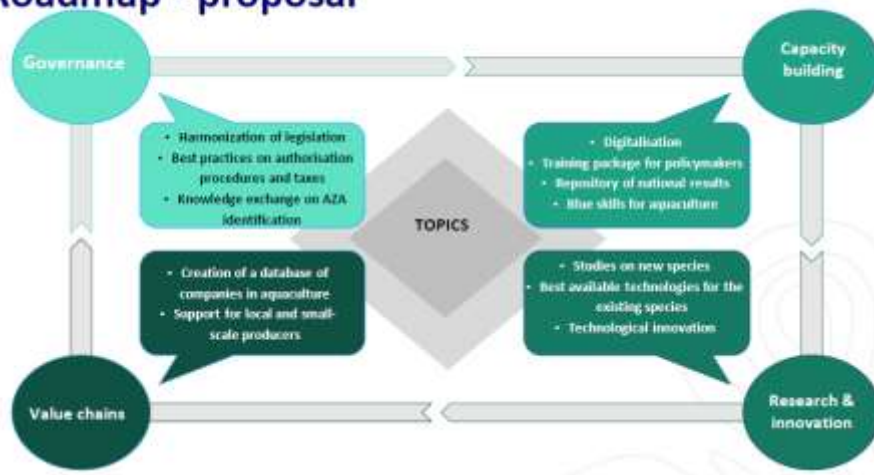
Priority Themes and CMA Alignment

The World Bank's Black Sea Aquaculture Initiative builds on and aligns with the priorities set up by the CMA member countries, as laid out in the CMA '*Policy recommendations brief for enhancing sustainable aquaculture governance*' (September 2024), and the '*Sustainable Aquaculture TG KoM-Debrief*' (Dec 2023). The following policy recommendations are provided:

- 2.1 Harmonization of legislation and permits
- 2.2 Environmental impact assessments and monitoring
- 2.3 Responsible investment principles
- 2.4 Development of national blue economy strategies
- 2.5 Continuous collaboration and data sharing

Key topics have also been identified in the roadmap proposal:

Roadmap - proposal



Building on these CMA priorities, the World Bank's Black Sea Sustainable Aquaculture Initiative has identified the below outlined priority themes and scope for support.

Scope and activities

Priority theme: Responsible investment principles / Development of national blue economy strategies

The sustainable development of aquaculture in CMA member countries requires a concerted effort to align with EU and CMA priorities, integrate innovation, and enhance governance and partnerships.

- Assessment of the potential for developing sustainable aquaculture to enhance food security and blue economy development
- Identification of and evaluating existing aquaculture frameworks and practices
- Identifying gaps and barriers in policies and regulations that hinder sustainable aquaculture development
- Generating insights regarding the financial landscape and investment opportunities in these sectors.
- Assessing the potential to integrate innovative practices and digital tools in aquaculture: identification of opportunities for digitalization in the sector to enhance efficiency and sustainability, building on best practice examples
- Exploration of options for harmonizing aquaculture development frameworks across the Black Sea region, ensuring they are conducive to sustainable practices and aligned with EU guidelines.

Priority theme: Environmental assessments and monitoring:

Aquaculture holds significant potential as a Nature-Based Solution (NBS) in the Black Sea, addressing not only pollution, but also critical societal challenges, while enhancing biodiversity and ensuring economic viability. By aligning with the EU guidelines and CMA priorities, and focusing on innovative, sustainable practices, the Black Sea region can develop a resilient aquaculture sector that supports both human and ecological well-being.

- Assessment of the potential of Aquaculture to play the role of a Nature-Based Solution (NBS) in the Black Sea, supporting pollution mitigation and decarbonization in the sector.
- Identifying NBS options and their potential in addressing decarbonization, reducing harmful chemicals, and mitigating pollution.
- Evaluating NBS options in aquaculture based on their environmental impact (pollutant reduction), carbon footprint (emission reduction), biodiversity enhancement (ecosystem health), water quality improvement (nutrient cycling), and socio-economic benefits (job creation for women and marginalized groups)

Priority theme: Capacity building

- Workshops to facilitate knowledge transfer from EU best practices, enhancing capacity building in the sector: a platform for stakeholders to align on a strategic framework, address existing challenges, and leverage opportunities for sustainable aquaculture development in line with EU standards and priorities
- Workshops and capacity building explaining the role of Aquaculture as NBS in the Black Sea: disseminate knowledge about aquaculture as a Nature based NBS and their practical applications in decarbonization and pollution reduction in the Black Sea region