

Integrating Blue Foods into National Climate Strategies

Executive Summary

Blue or aquatic foods—foods that are wild-caught or farmed from oceans, rivers, and lakes—are an important part of global food systems. They are increasingly recognized as a priority for climate action, yet they are often overlooked in climate discussions and underfunded in mitigation and adaptation financing. Addressing climate impacts on aquatic food systems and leveraging their potential for climate action requires their integration into national climate strategies and UNFCCC processes. Climate decision-makers have an opportunity to use growing momentum and insights on blue foods to develop concrete policy strategies that can support a thriving blue food sector in the face of climate change.

These guidelines are designed for audiences working on nationally determined contributions (NDCs) and other climate strategies. They offer diverse entry points for employing blue foods in climate solutions and are intended to be a starting point for setting targets and developing policies related to blue foods in climate action, offering a framework rather than an exhaustive list of actions. Policymakers can adapt these policy options to NDCs as well as consider their relevance in other areas of climate planning, including water and waste management, energy, nutrition, and economic development.

The policy options outlined in these guidelines are organized into five intervention areas. In addition, we offer four enabling measures that can strengthen the implementation and monitoring of aquatic food climate solutions.

Guidelines for incorporating blue foods in NDCs

Capture fisheries production

Global fishing activities are estimated to emit about 180 MtCO₂e annually, accounting for approximately 4 percent of the global food system's production emissions. Marine and freshwater fisheries, which support the livelihoods of millions of people worldwide, are also highly vulnerable to climate change impacts.

- Policy option 1** Develop sustainable and climate-adaptive fisheries management
- Policy option 2** Reduce emissions from fishing
- Policy option 3** Support climate-adaptive livelihoods and practices for fishers and fishing communities

Aquaculture production

In 2022, aquaculture production surpassed capture fisheries in aquatic animal production for the first time, representing 51 percent of the world's total. As aquaculture expands, strategic planning, investment, and resilience-building measures are essential to reduce emissions as well as aquaculture's vulnerability to climate change.

- Policy option 1** Improve aquaculture feed and feeding management to reduce greenhouse emissions
- Policy option 2** Transition aquaculture energy inputs to renewables and reduce energy use
- Policy option 3** Promote expansion of low-input, integrated, and/or non-fed aquaculture systems
- Policy option 4** Support climate-adaptive technologies and practices to increase aquaculture's resilience to climate change

Blue food supply chains

Aquatic foods are the most traded food products globally, providing higher net revenues for developing countries than all other agricultural commodities combined. Along highly diverse supply chains, the world lost around 23.8 million tonnes of edible aquatic food in 2021, representing 14.8 percent of total production. Transport emissions, particularly for fresh products, can be as high or higher than those from production.

Policy option 1 Reduce loss and waste and enhance circularity in blue food supply chains

Policy option 2 Reduce emissions from energy use and operations such as storage, processing, and transport of blue foods

Consumption and diets

Blue foods are rich in key nutrients like vitamin B12 and omega-3 fatty acids and can help address micronutrient deficiencies and reduce the incidence of non-communicable diseases. Responsibly produced blue foods can therefore be part of low-emission development pathways and diets, but transparency about sustainability, nutrient content, and carbon footprint needs to be improved.

Policy option 1 Integrate sustainable, low-carbon blue foods into food procurement, planning, and assistance programs

Policy option 2 Help consumers shift to sustainably produced, low-footprint blue foods

Blue foods and coastal blue carbon habitats

Blue carbon ecosystems, including mangroves, salt marshes, and seagrasses, are important carbon sinks that collectively store over 30,000 teragrams of carbon across approximately 185 million hectares. These ecosystems also act as fish nursery habitats and offer ecosystem services such as storm surge and flood protection.

Policy option 1 Reduce impact of aquaculture and fisheries on blue carbon habitats

Policy option 2 Implement blue carbon habitat management and restoration for carbon storage and adaptation

Enabling policy measures to address cross-cutting challenges

Across intervention areas, policy measures are needed to ensure that climate actions are integrated rather than siloed. These can help reduce uncertainties, verify effectiveness, and enhance equity and inclusiveness.

Enabling measure 1 Research and development

Enabling measure 2 Develop and maintain robust data collection, monitoring, and prediction systems

Enabling measure 3 Improve equitable access to financial services, knowledge, government support, and resources

Enabling measure 4 Ensure collaborative and inclusive management, planning, and decision-making

Integrating blue foods into national climate strategies presents a practical pathway to reduce emissions and foster resilience across food, oceans, and water, with significant potential for co-benefits with biodiversity and sustainable development. The options outlined in these guidelines can serve as a foundation for developing effective blue food climate actions.

To learn more about opportunities for blue foods in national climate planning, read the full report: <https://stanford.io/4eJYBHx>



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