



Brief for Development Decision-Makers



*Blue foods include aquatic animals, plants and algae cultivated and captured in freshwater and marine environments.

Four billion people suffer from malnutrition. As sustainable and affordable sources of essential nutrients, blue foods* can help reduce the nutrient deficiencies that are a major impediment to development. Blue foods are also an important source of livelihoods. Despite their critical contributions, blue foods have been underrepresented in international development funding priorities. Supporting and investing in blue food ecosystems, value chains and small-scale actors can help advance multiple Sustainable Development Goals (SDGs) and deliver better outcomes for entire economies and populations.



Key Facts & Findings

1. Blue foods are a cornerstone of nutrition, small-scale livelihoods and culture for poor people around the world.

Blue foods are a major source of protein for more than 3 billion people, and with greater integration, can support healthy diets for many more. Blue foods provide essential micronutrients and omega-3 fatty acids that support brain and eye health – benefiting child and maternal health in support of human capital development. About 90% of jobs in fisheries are in small-scale enterprises, and about 800 million people, most of them small-scale actors, earn their livelihoods from producing, processing or selling blue foods.

2. The extraordinary diversity of blue foods offers important opportunities for both social and economic development.

More than 2,500 animal species or species groups of blue foods are caught and harvested. They vary widely in nutrient content, environmental footprint, actors involved and markets served. For example, mola, a fish species from Bangladesh, offers 80 times more vitamin A than silver carp. Small-scale actors range from subsistence mosquito-net fishers in Mozambique to lobster-fishing cooperatives in Mexico supplying high-end markets.

Policies and investments that recognize and promote the diversity of blue food species, production methods, actors and markets can help identify tailored solutions and enhance food system and societal resilience.

3. The health and economic benefits of blue foods are distributed unevenly, leaving women and small-scale actors particularly vulnerable.

Blue food value chains employ roughly equal numbers of men and women, but influence, voice and access to benefits are often highly unequal. Industrial production and exports tend to support wealth generation but can erode the livelihoods, food security and cultural benefits generated by small-scale actors. Policies that explicitly recognize inequities and address their drivers can improve the equitability of outcomes.

4. Healthy aquatic ecosystems are key for protecting and expanding blue food systems.

A range of environmental stressors – including habitat fragmentation and degradation, and urban, industrial and agricultural pollution – threaten the productivity, quality and safety of blue foods. Through warming waters, ocean acidification, sea level rise, storm surges and rainfall changes, climate change poses a growing threat to blue food systems. Significant investments in climate adaptation and resilience are needed to ensure the sustained contributions of blue foods to well-being and development, especially in Africa, South and Southeast Asia and Small Island Developing States.

5. Protecting and expanding blue food systems can help countries meet multiple SDGs, including (1) No Poverty, (2) Zero Hunger, (3) Good Health & Well-Being, (5) Gender Equality, (12) Responsible Consumption, (13) Climate Action, (14) Life Below Water and (15) Life on Land. Moderate investments in blue food supply can lower prices and substantially improve nutritional outcomes: an 8% increase in sustainable production of species consumed today would decrease prices by 26% and prevent 166 million micronutrient deficiencies by 2030. With generally low environmental footprints, blue foods can be an integral part of climate solutions and nature-positive food systems. The great diversity of blue food systems offers opportunities to explore synergies and navigate trade-offs when making development investments.



Recommendations for Action

All actors – governments, the private sector and civil society – have roles to play at multiple scales, ranging from local initiatives to international agreements. Development policymakers might consider the following actions to realize the potential of blue foods:

- 1. Use diverse blue foods to reduce malnutrition.**
Blue foods can provide essential nutrition when integrated into healthy diets. They can increase the nutritional impacts of school meals, infant feeding programs and humanitarian food programs. Innovative products like dried fish powder are providing major opportunities for improving children's health in Myanmar, for example.
- 2. Invest in the development of hard and soft infrastructure that enables small-scale actors to access markets.**
Maintenance and expansion of roads, cold chains and inclusive financial instruments like community-based finance can support a diverse and dynamic small-scale sector, improve food safety and reduce waste.

3. Help governments protect and improve the health of aquatic ecosystems to support the production of safe blue foods.

Development actors should support policies and practices that restore and sustain fisheries, conserve wetlands and other aquatic ecosystems and manage the impacts of terrestrial agriculture. Co-developing resource management plans with affected communities and protecting access rights for small-scale actors are key components of success.

4. Invest in the capabilities of small-scale actors, particularly through measures that expand the inclusion of women and strengthen human rights.

Development initiatives can stimulate innovation, increase literacy and skills and support the sustainable intensification and diversity of operations. Actively including and empowering small-scale actors – including women, Indigenous communities and other marginalized groups – in development programs presents an important opportunity to increase effectiveness and improve food system outcomes.

5. Support the collection and curation of data on blue food production and consumption, nutrient deficiencies and food loss and waste.

Lack of data, especially at subnational scales, makes it challenging to target investments to the most vulnerable populations. Development actors can support national governments in their efforts to produce and analyze data, and they can participate in international initiatives such as Illuminating Hidden Harvests, a collaborative effort led by the Food and Agriculture Organization that assesses the contributions of small-scale fisheries to blue food systems.

The Blue Food Assessment is an international initiative led by the Stockholm Resilience Centre at Stockholm University, the Center for Ocean Solutions and the Center on Food Security and the Environment at Stanford University and EAT.