Blue Food Assessment

The Blue Food Assessment

Providing a scientific foundation for integrating blue foods* into future food systems

There is growing recognition that food systems must be transformed—that achieving the U.N. Sustainable Development Goals requires shifting toward a system that is more diverse, resilient, just and healthier. Thoughtful investments and policies that foster a thriving, regenerative blue food sector could help solve some of the most pressing challenges facing the world today. The Blue Food Assessment (BFA) provides the scientific foundation for decision-makers to make blue foods part of an improved food system, from local to global scales, that benefits people and the planet.

What we did

The BFA brought together over 100 scientists from more than 25 institutions around the world. The Stockholm Resilience Centre at Stockholm University and Stanford University's Center for Ocean Solutions and Center on Food Security and the Environment were lead science partners and EAT was the lead impact partner. The BFA provides the scientific foundation for decision-makers to evaluate opportunities, tradeoffs and implement solutions to build healthy, equitable and sustainable food systems.

* **Blue Food:** Food derived from aquatic animals, plants or algae that are captured or cultivated in freshwater and marine environments.

2,500 species or species groups of fish, invertebrates, algae and aquatic plants are caught or cultivated for food.

3 billion people get vital nutrients and 20% of their animal protein from blue food.

Nearly half of the blue food workforce are women.

Two-thirds of blue food consumed by people is produced by small-scale fisheries and aquaculture.

800 million people depend on blue food systems for their livelihoods.

Although they vary in their environmental footprints, blue foods are often **greener than land-based animal-sourced foods.**

Scientific research

A focus on blue food

New BFA research was be published in eight peer-reviewed papers to fill important gaps in our understanding of the role blue food plays in global food systems now and in the future.

Learn more about BFA research findings

Blue foods in global diets

Blue food consumption has been poorly understood. Most analyses and policies address "fish" as a single category, yet blue foods include a diverse array of species with vital nutrients like vitamins, minerals and fatty acids. BFA researchers analyzed the diversity and dynamics of blue food in global diets to understand its nutritional contributions and how demand for these foods is changing over time.

Aquatic Foods to Nourish Nations

Golden et al. 2021 Find out more

A presentation of a novel aquatic foods nutrient composition database that moves beyond food as protein and calories and highlights aquatic food diversity and its nutritional contributions by nutrient and nation.

Blue Food Demand Across Geographic and Temporal Scales

Naylor et al. 2021 Find out more

An analysis of the economic, demographic and geographic factors and preferences shaping blue food's past, present and future consumption.

The intersection of production and consumption

Policies governing fisheries and aquaculture have tended to focus on large-scale producers, often neglecting both the central importance of small-scale actors in supporting livelihoods and the pervasive inequities in the system. BFA research shows that when governments enact policies that recognize inequities and directly address the drivers that cause them, they can improve equity in the sector.

Harnessing the Diversity of Small-Scale Actors is Key to the Future of Aquatic Food Systems

Short et al. 2021 Find out more

A new framework for understanding the diversity of small-scale actors who produce the majority of blue foods consumed by people.

Rights and Representation Support Justice Across Aquatic Food Systems

Hicks et al. 2022 Find out more

An analysis of the barriers to participation within blue food systems and how policy can steer us towards justice.

«The Blue Food Assessment urges thought leaders from terrestrial and aquatic systems to come together as a united front.»

Rosamond Naylor
Blue Food Assessment Co-Chair

Environmental sustainability

Blue food systems present opportunities to provide healthy nutrient-dense foods with less stress on the environment, helping the food system achieve global goals for climate change and biodiversity. However, some production practices drive environmental harm, and climate change poses risks to many blue food systems.

Vulnerability of Blue Foods to Human-Induced Environmental Change

Cao et al. 2023 Find out more

An assessment of how blue food production is vulnerable to environmental pressures, highlighting where and how we can create a more robust and resilient food system.

Environmental Performance of Blue Foods

Gephart et al. 2021 Find out more

Standardized estimates of the environmental pressures stemming from blue food production, allowing for more robust comparisons across edible aquatic species to better understand their role in sustainable diets.

Compound Climate Risks Threaten Aquatic Food System Benefits

Tigchelaar et al. 2021 Find out more

An integrative climate risk assessment of blue food systems across freshwater and marine capture fisheries and aquaculture to illuminate the climate risks that each country will face.

From science to policy to practice

Bringing blue foods into food system decision-making creates opportunities to serve multiple social goals simultaneously. However, managing tradeoffs will be critical to shaping equitable and long-lasting transformation.

«Blue food can play a critical role in global food system transformation while supporting health, livelihoods and sustainability.»

Beatrice Crona
Blue Food Assessment Co-Chair

Four Ways Blue Foods Can Help Achieve Food System Ambitions Across Nations

Crona et al. 2023 Find out more

A synthesis to help public and private decision-makers maximize the social, nutritional and environmental benefits of aquatic foods.

Policy recommendations

Getting started on transformation

The BFA illuminates the choices through which food decision-makers can affect positive transformation. The Report of the Blue Food Assessment synthesizes key findings of the scientific papers and outlines their implications for food systems. A series of action briefs shares specific findings and recommendations for various blue food actors throughout the sector.

The potential of blue foods will be fully realized only if they are brought into food system decision-making. Blue foods should be built into strategies for improving nutrition, reducing greenhouse gas emissions, increasing sustainability, creating livelihoods and improving equity across terrestrial and aquatic food systems. All actors—governments, the private sector and civil society—have roles to play. The first step is to identify and reform policies, like subsidies, that impede transformation. Then there are three priorities: (1) Governments and companies should embrace the extraordinary diversity of blue foods to meet goals for health and nutrition, sustainability and livelihoods; (2) they should recognize and support the central roles of small-scale actors; and (3) they should establish policies and practices that safeguard human rights.

Explore our policy recommendations

Blue food futures

All Blue Food Assessment research has been published. The Blue Food Futures Program, endorsed by the UN Ocean Decade, builds on the research generated by the Assessment to deepen our understanding of blue foods in food system transformation, integrate research insights into policies, and foster a global network of blue food scholars.

Get involved

Stockholm Resilience Centre
Sustainability Science for Biosphere Stewardship

Stockholm University

Stanford | Center for Ocean Solutions & Center on Food Security and the Environment

EAT