Blue Food
Assessment

Brief for Public Health Decision-Makers

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

Four billion people suffer from malnutrition. Blue foods* can help reduce this number by providing critical micronutrients and reducing the incidence of non-communicable diseases. In addition, many blue foods are produced with lower environmental and climate impacts than many land-based alternatives. Greater integration of blue foods in dietary guidelines and nutrition programs can benefit the health of every community and help every country move closer to meeting the Sustainable Development Goals.

Key Facts & Findings

1. **Blue foods are a rich source of nutrition.**
   Many blue foods contain high concentrations of bioavailable minerals and vitamins, essential fatty acids and protein. When consumed together, blue foods can enhance the uptake of nutrients from plants, making well-balanced meals even more nutritious.

2. **Nutrient content varies widely across the more than 2,500 species or species groups of blue food that are caught and harvested.**
   A serving of small pelagic fish, for example, yields approximately eight times more iron, five times more omega-3 fatty acids and four times more vitamin B-12 than a serving of tilapia.

3. **Blue foods can help reduce micronutrient deficiencies and the incidence of non-communicable disease rates.**
   Micronutrient deficiencies have particularly serious consequences for children, pregnant women and women of childbearing age. Adding nutrient-dense blue foods to their diets can significantly improve their health and development. The omega-3 fatty acids blue foods contain can also support heart, brain and eye health in people of all ages. Moderate investments in blue food supply can lower prices and substantially improve nutritional outcomes. We estimate that an 8% increase in the sustainable production of species consumed today would prevent 166 million micronutrient deficiencies by 2030. If blue foods replace consumption of less healthy red and processed meats – or avert the transition to diets that contain large quantities of such foods – they can help reduce the incidence of non-communicable diseases, such as heart disease and cancer.

4. **Small-scale fishing and local markets provide access to high-value nutrition to millions of coastal and inland people.**
   Small-scale production accounts for two-thirds of the fish we eat. About 90% of jobs in fisheries are small-scale, and the blue food sector supports over 800 million livelihoods overall. In many of these communities, blue foods are deeply ingrained in local food culture.

5. **Investments are needed to improve the sustainability of blue food systems and safeguard their contributions from climate change and other environmental impacts.**
   As with terrestrial food systems, a range of global and local environmental stressors threaten the production, quality and safety of blue foods. Investing in sustainable resource management, nature-based solutions (e.g., ecosystem restoration) and nature-positive production practices (e.g., bivalve aquaculture) can create triple wins for sustainability, climate resilience and health.

Preserving and promoting the diversity of blue food systems — not only of species but also of production methods, actors and markets — can support healthier diets, bolster livelihoods and enhance food system resilience.

6. **Governments can contribute to public health and development by addressing the unequal distribution of benefits from blue food systems and the concentration of power in the sector.** Women, Indigenous Peoples and marginalized communities are underrepresented in policies and decision-making. Where gender equality is lacking, blue foods are less affordable and blue food waste and losses are greater.

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. Public health policymakers might consider the following actions to realize the potential of blue foods:

1. **Include diverse blue foods in food and nutrition policies.** Blue foods can be a valuable part of safety net programs for children and pregnant and lactating women, as in Odisha, India, where the government is adding dried small fish powder to school meals. Dietary guidelines could include comparisons of the nutritional contributions of different kinds of blue foods and could promote blue foods as a healthy, often more sustainable alternative to terrestrial meat.

2. **Support the collection and curation of data on blue food consumption, nutritional deficiencies and food loss and waste.** Production, trade and consumption statistics typically collapse blue foods into the single category of "fish." Doing so makes it difficult to accurately estimate the nutritional contributions of blue foods at a population level, or to identify appropriate blue food investments to meet specific health needs. A lack of data at subnational scales makes it challenging to target investments to the most vulnerable populations.

3. **Address the social, economic and political barriers facing marginalized communities to increase their access to blue foods.** Actively including and empowering marginalized groups, including women and Indigenous communities, in food and health governance presents an important opportunity to increase its effectiveness and improve nutrition and other food system outcomes.

4. **Work with environment ministries, food agencies and industry to improve food safety throughout the value chain.** Efforts could include food safety training for small-scale producers; support for innovation in processing methods; investment in sustainable cold chains; and the reduction, monitoring and mitigation of pollution in waterways.

5. **Work with other agencies to ensure that their decisions do not undermine the role of blue foods in health and nutrition.** Agencies responsible for different parts of the food system — fisheries and aquaculture, agriculture, natural resource management, public health, trade — often work towards different and sometimes conflicting aims. For example, trade policy aimed at increasing export revenue can deprive nutritionally vulnerable populations of essential and affordable nutrients by promoting the export of blue foods at the expense of domestic consumption. Aquaculture policy aimed at boosting production could end up prioritizing low nutrient density species. Integrative governance structures that coordinate policy and investments across ministries can help ensure that concurrent environmental, economic, nutrition and social goals are met.

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