

Subsection 5A

Chapter 1

Food systems

Introduction

Food systems¹ are facing a significant challenge: providing sustainable global food security and nutrition for a global population that is expected to reach almost 10 billion by 2050. Food systems are strongly affected by climate change, overfishing, infrastructure development and ecosystems degradation. They also contribute significantly to global climate change and biodiversity loss.

Seafood from wild fisheries and marine aquaculture accounts for around 20% of animal protein and 6.7% of total protein consumed by humans worldwide. In 2022, the production of world fisheries and aquaculture reached 223.2 million tons, including 185.4 million tons of aquatic animals and 37.8 million tons of algae. Human consumption accounted for 89% of total aquatic animal production and between 30% and 38% of total seaweed production (Food and Agriculture Organization of the United Nations (FAO), 2024). Marine food systems also provide livelihoods for many millions of people along the food supply chain and are strongly linked to cultural heritage and identity. As the world's population grows and average incomes rise, the demand for seafood will continue to increase. However, increasing seafood production depends on many environmental, ecological, social, economic, regulatory, governance and technological factors, as well as the complex interactions between them (Alexander and Kelly, 2024).

Given the significance of marine food systems, the present *World Ocean Assessment* includes a deeper analysis than the second *Assessment*, featuring the introduction of new subchapters on seafood processing and trade. The present chapter comprises six subchapters: Medium- and large-scale fishing (subchap. 1A); Small-scale fishing, including subsistence fishing (subchap. 1B); Medium- and large-scale aquaculture (subchap. 1C); Small-scale aquaculture (subchap. 1D); Seafood processing (subchap. 1E); and Trade (subchap. 1F). Together they offer an updated assessment and outline key challenges in achieving sustainable marine food systems.

References

Alexander, K.A., Kelling, I. (2024). Social sustainability in seafood systems: a rapid review. *Cambridge Prisms: Coastal Futures*, 2: e1. doi:10.1017/cft.2023.31.

HLPE (2014). Food losses and waste in the context of sustainable food systems. A report by the High-Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome. <https://openknowledge.fao.org/server/api/core/bitstreams/b1949fae-23d4-473c-8b87-18c4359b74d6c/content>.

¹ According to the High-level Panel of Experts on Food Security and Nutrition, 2014, a food system is defined as all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that related to the production, processing, distribution, preparation and consumption of food, and the outputs of these activities, including socioeconomic and environmental outcomes.