Good Food Institute

FACT SHEET
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Leveraging plant-based and cultivated seafood to meet climate goals

Plant-based and cultivated seafood could fill the growing seafood supply gap while reducing seafood emissions—but only if policymakers and ocean advocates incorporate alternative proteins as a key strategy for building a climate-friendly seafood supply chain.

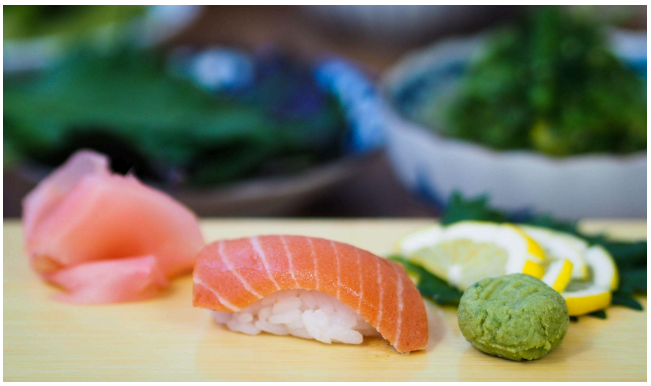
Scaling seafood amid a climate crisis

Seafood is a significant source of animal protein—globally eaten twice as often as poultry and three times as often as beef. From 2020 to 2030, global seafood production is expected to grow by 14 percent.[1] Neither wild-capture fishing nor fish farming can scale to meet growing demand without threatening the health of the ocean and rivers.[2] Scaling plant-based and cultivated seafood could help satisfy this growing global appetite while minimizing the climate impacts of seafood consumption and reducing harms to sensitive aquatic ecosystems.

How alternative seafood can mitigate climate impacts

While the estimated emissions of aquaculture and wild capture fisheries are small relative to terrestrial animal agriculture, conventional seafood climate impacts are poorly documented and likely underaccounted. Few studies compare conventional seafood to alternative proteins, and scientific methods vary. Nonetheless, current research indicates that plant-based and cultivated products can be transformative strategies for developing a resilient, climate-smart seafood supply chain.

Plant-based alternatives have a greenhouse gas (GHG) footprint one-third less than conventionally farmed fish and three-quarters less than farmed crustaceans.[3]



Wildtype cultivated salmon nigiri. Image courtesy of Wildtype

Renewable energy is critical to realizing the climate benefits of cultivated meat and seafood: Life-cycle assessments project that emissions from cultivated meat produced with renewable energy will be in the lower range of aquaculture emissions and less than the emissions of most wild capture.[4,5]

Further, cultivated seafood is expected to require even less energy than cultivated red meat and poultry, in large part because seafood can be cultivated at lower temperatures than terrestrial meats.[6]

In addition to climate considerations, alternative seafood offers important biodiversity benefits relative to conventional seafood production).[6] Emissions data alone fail to reflect holistic ecological impacts: for instance, some types of seafood with relatively low emissions pose the greatest risk of entanglement and bycatch to marine mammals.[5]

Advancing climate goals through alternative seafood

To realize the potential climate benefits of alternative proteins and help meet the Paris Agreement targets, policymakers and ocean advocates can:

Drive public investment in open-access research focused on alternative seafood reaching taste and price parity with conventional seafood.

Ensure a clear, efficient regulatory process: Alternative seafood should not be subject to regulatory requirements that exceed those of conventional proteins.

Support equitable labeling laws and a fair competitive marketplace for alternative seafood.

Increase investment in research that quantifies how various forms of seafood production affect sequestration, GHG releases, and warming potential.

Alternative seafood has the potential to provide healthy, geographically distributed, and nutritionally dense protein while relieving pressure on ocean ecosystems in the face of human population growth.

References

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About GFI

The Good Food Institute is a 501(c)(3) nonprofit working internationally to make alternative proteins like plant-based and cultivated meat delicious, affordable, and accessible. GFI advances open-access research, mobilizes resources and talent, and empowers partners across the food system to create a sustainable, secure, and just protein supply. Our work with scientists, businesses, and policymakers across the global food system is powered by philanthropy.