

# CLIMATE CHANGE & AQUACULTURE: WHAT THE SCIENTISTS ARE SAYING



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**Fish and other aquatic foods from both freshwater and marine environments are central to meeting food and nutrition security goals;** and potentially providing more environmentally sustainable animal-source foods.

Jessica A. Gephart, Christopher D. Golden, Frank Asche, Ben Belton, Cecile Brugere, Halley E. Froehlich, Jillian P. Fry, Benjamin S. Halpern, Christina C. Hicks, Robert C. Jones, Dane H. Klinger, David C. Little, Douglas J. McCauley, Shakuntala H. Thilsted, Max Troell & Edward H. Allison. (2020). *Scenarios for Global Aquaculture and Its Role in Human Nutrition, Reviews in Fisheries Science & Aquaculture.*

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**Aquaculture enterprise plays an integral role in contributing to global food security, human nutrition, international trade, and economic development and status.** Agencies within those countries that predominantly contribute to the carbon footprint need to act wisely and duly fund education, training, and research that is founded in the pivotal role of aquaculture enterprise in mitigation of and adaptation to the disruptive effects of global climate change.

Louis R. D'Abramo & Matthew J. Slater. (2019). *World Aquaculture Society.*

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Research shows that **food system diversification will play an important role in supporting a more stable food supply in the face of a changing climate. Marine aquaculture can play an important role** in the diversification strategy. Its products can be produced with less reliance on scarce land and freshwater resources than land-based food production.

Aquarium of the Pacific. (2019). *State of the Science Briefing.*

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**Aquaculture already holds a substantive mitigating role in the struggle to cope with the adverse effects of climate change.** If the appropriate species and production systems are applied, the protein derived from aquaculture animal products is commonly associated with the lowest carbon output with the added advantage of zero methane emissions and low land-use cost.

Flachowsky, Meyer, & Sudekum (2018) Flachowsky, G., Meyer, U., & Sudekum, K. H. ( 2018). *Invited review: Resource inputs and land, water and carbon footprints from the production of edible protein of animal origin.*

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**Aquaculture is increasingly recognized as one of the most resource-efficient ways to produce protein** relative to other animal proteins in terms of feed conversion and use of space.

Gunnar Knapp & Michael C. Rubino. (2016). *The Political Economics of Marine Aquaculture in the United States, Reviews in Fisheries Science & Aquaculture.*

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**Aquaculture has been identified and welcomed as an important “remedy” to successfully address the challenges to global food security arising from climate change** and intensified by the projected 2050 world population of 9.5 billion.

National Research Council of the National Academies. (2015). *Critical role of animal science research in food security and sustainability.*

