



ALLIANCE™

(<https://www.globalseafood.org>).



Responsibility

Journal examines aquaculture's valuable contribution to global food production

12 June 2023

By Darryl Jory, Ph.D.

***Journal of the World Aquaculture Society* article summarizes global aquaculture development since 2000**



Integrating fish farming into nutrition-sensitive, circular and sustainable food systems can drive future aquaculture development, say authors of a new report.

A study in the *Journal of the World Aquaculture Society* argues that the integration of aquaculture into local nutrition-sensitive, circular and sustainable food systems should become the major driver for future aquaculture system development. Photo by Mohsen Taha, via Wikimedia Commons.

Since 2000, aquaculture has become well-integrated into the global food system. The growth in production since 2000 is due to intensification, the use of more and better feeds, improved production management and increased attention to biosecurity.

But for aquaculture to fully contribute its share to the production of food for a growing human population and to optimize its contribution to society and nature through the responsible use of resources, it must be integrated into local nutrition-sensitive, circular and sustainable food systems.

These are the conclusions of a **recent review article** (<https://doi.org/10.1111/jwas.12963>) that summarizes the development of aquaculture between 2000 and today and how the sector developed considering the large differences that exist in system requirements to produce fish, crustaceans, mollusks and seaweed.

A banner for 'Seafood from Scotland'. On the left, the text 'SEAFOOD FROM SCOTLAND' is written in white, bold, sans-serif font. To the right, the text 'See you in St. John!' is written in a larger, white, sans-serif font. On the far right, there is a photograph of several fish, likely salmon, arranged in a circular pattern. The background of the banner is a dark teal color with white wavy lines at the bottom.

[\(https://events.seafoodfromscotland.org/\)](https://events.seafoodfromscotland.org/)

Written by Verdegem et al., the paper discusses current issues and challenges facing the industry today, including harmful and positive impacts of aquaculture production systems on the environment, society, and the ability to produce within planetary boundaries. Finally, it addresses priorities for future aquaculture development.

Fed and extractive (non-fed) aquaculture both need to pay more attention to scaling, site selection and the health of the wider production environment. In terms of land use, aquaculture is more efficient than terrestrial animal production.



Global protein production by fisheries and aquaculture

Prof. Boyd and co-authors discuss and contrast the production of protein by fisheries and aquaculture, and various terrestrial-based animal protein sources.



Global Seafood Alliance

Still, water use remains a challenge, the authors say, urging that more attention should be given to water recycling in land-based systems, reducing water consumption and facilitating nutrient recovery and reuse. Future development should focus on making aquaculture climate neutral and on reducing environmental impacts, both inland and at sea.

Aquaculture systems are highly diverse with around 425 species in production, with each able to be cultured in different production systems ranging from extensive to super-intensive and on various scales with a wide range of technologies. Therefore, the authors defined an “aquaculture production system” as a “production environment in which interventions aim to enhance the value and/or the amount of biomass produced, to the benefit of the people and communities organizing and executing these actions.”

The “interventions” range from stimulating recruitment of desired species to stocking fast-growing strains, protecting against disease, fertilization, feeding, and creating production environments like ponds, rafts supporting hanging or floating ropes or long lines, cages, pens, raceways and recirculating aquaculture systems (RAS) that allow control on resource use efficiency to a higher degree than in natural systems.

“Criteria to judge aquaculture development during the next decade should not focus primarily on global growth, except for extractive species,” wrote Dr. Marc Verdegem, corresponding author. “The industry found ways to improve its environmental performance during the last decades, and as societal pressure

to improve upon environmental performance will increase further, the aquaculture sector will continue to improve its environmental performance.”

Read the full study. (<https://doi.org/10.1111/jwas.12963>).

Follow the *Advocate* on Twitter @GSA_Advocate (https://twitter.com/GSA_Advocate).

Author



DARRYL JORY, PH.D.

Editor Emeritus
Responsible Seafood Advocate

Copyright © 2023 Global Seafood Alliance

All rights reserved.