

# One Health Aquaculture

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## **ABSTRACT:**

Aquaculture is one of the fastest growing and highly traded global food sectors and is set to dominate the supply of aquatic protein by 2050. For aquaculture to deliver significantly enhanced volumes of food in a sustainable manner, however, appropriate account now needs to be taken of its impacts on the environment, the welfare of organisms cultured, and human health outcomes of consuming seafood from this sector. The One Health Aquaculture concept\* argues that the sector requires an evidence-policy refresh, bringing in a wider array of industry, government and societal stakeholders to ensure that key 'success metrics' spanning human, environmental and organismal health are 'designed-in' to current and future aquaculture systems - effectively operationalising a One Health approach to food production from the sector. Sustainable aquaculture success metrics, applied to a given sub-sector of the industry (e.g., seaweed, molluscs, shrimp, finfish) and assessed according to the availability of research, evidence, policy and legislation specific to those metrics can provide a simple framework around which potential negative impacts associated with production can be defined and reduced or averted. As aquaculture positions to dominate supply of seafood in the next three decades, the application of One Health principles to the sector provides a means to optimise the environmental, human, and organismal health benefits of food production from water. In addition, the increasing recognition of aquaculture as a major global food sector will necessitate a broader debate on its interaction with land-based food production systems and must underpin appropriate national and international science and policy strategies to support improved food system design.

## **KEYWORDS:**

One Health, sustainable, water quality, animal health, human health, nutrition, seafood

\*Stentiford, G.D. et al. (2020). Sustainable aquaculture through the One Health lens. *Nature Food* 1, 468–474