

# Abstract

This document contains the proceedings of the technical workshop entitled “Expanding mariculture: technical, environmental, spatial and governance challenges”, held from 22 to 25 March 2010, in Orbetello, Italy, and organized by the Aquaculture Branch of the Fisheries and Aquaculture Department of the Food and Agriculture Organization of the United Nations (FAO).

The objective of this workshop was to discuss the growing need to increasingly transfer land-based and coastal aquaculture production systems farther off the coast and provide recommendations for action to FAO, governments and the private sector. The workshop experts proposed general “operational criteria” for defining mariculture activities in three broad categories: (i) coastal mariculture, (ii) off the coast mariculture and (iii) offshore mariculture.

Offshore mariculture is likely to offer significant opportunities for food production and development to many coastal countries, especially in regions where the availability of land, nearshore space and freshwater are limited resources. Mariculture is also recognized as a relevant producer of the protein that the global population will need in the coming decades.

It is likely that species with the highest production today, such as salmon, will initially drive the development of offshore mariculture. Nevertheless, the workshop agreed that additional efforts are necessary to define optimal species and improve efforts in the development and transfer of technologies that can facilitate offshore mariculture development. The workshop discussions and reviews indicate large potential for the development of offshore mariculture although more detailed assessments are needed to determine the regions and countries that are most promising for development. It is also recommended that efforts be increased to farm lower trophic levels species and optimize feeds and feeding in order to minimize ecosystems impacts and ensure long-term sustainability. Similarly, risk assessments and/or environmental impact assessment and monitoring must always be in place before establishing offshore farms, and permanent environmental monitoring must be ensured.

All coastal nations should be prepared to engage actively in developing the technological, legal and financial frameworks needed to support the future development of offshore mariculture to meet global food needs. The workshop report highlights the major opportunities and challenges for a sustainable mariculture industry to grow and further expand off the coast. In particular, the workshop recommended that FAO should provide a forum through which the potential importance of the sea in future food production can be communicated to the public and specific groups of stakeholders and to support its Members and industry in the development needed to expand mariculture to offshore locations.

The proceedings include the workshop report and an the accompanying CD-ROM containing six reviews covering technical, environmental, economic and marketing, policy and governance issues, and two case studies on highfin amberjack (*Seriola rivoliana*) offshore farming in Hawaii (the United States of America) and one on salmon farming in Chile.

**Lovatelli, A., Aguilar-Manjarrez, J. & Soto, D., eds.** 2013. *Expanding mariculture farther offshore: technical, environmental, spatial and governance challenges*. FAO Technical Workshop, 22–25 March 2010, Orbetello, Italy. FAO Fisheries and Aquaculture Proceedings No. 24. Rome, FAO. 73 pp. Includes a CD-ROM containing the full document (314 pp.).