

# Mariculture affects antibiotic resistome and microbiome in the coastal environment

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## Description

Marine aquaculture is defined as the cultivation, management, and harvesting of marine organisms in their natural environment (including estuarine, brackish, coastal, and offshore waters) or enclosures such as pens, tanks, and channels. The range of cultured organisms includes algae, mollusks, crustaceans, fish, and most recently echinoderms. As with all forms of aquaculture, operations range from large-scale to very intensive. On the one hand, large-scale marine aquaculture is simply based on resource conservation to improve the survival of hatchlings in the wild with little or no nutrition. Intensive marine aquaculture, on the other hand, can take place in a closed system where all nutrients are provided by the farmer, and the environment is maintained by water filtration, sterilization, oxygenation, and control of light and temperature regimes. Other forms of aquaculture include grazing, where newly hatched hatchlings are released into the marine environment, fed, and grown in the same way as hatchlings in the wild. Low survival rates in animal husbandry are offset by reduced costs compared to full-scale farms. This article reviews the global history of marine aquaculture, followed by an overview of the current situation and opportunities and limitations for future development. Details on the impacts, fish health, social and economic aspects of marine aquaculture, as well as details on social and economic aspects of marine aquaculture, can be found in other articles. Providing employment and income for Well-planned and managed marine aquaculture can also make a positive contribution to the integrity of coastal environments. However, the future development of marine aquaculture in many regions will be accompanied by increasing pressure on coastal resources due to population growth and increased competition for resources. Therefore, considerable attention is needed to improve the environmental management of aquaculture through green technology and better management, supported by effective policy and planning strategies and legislation. Contamination is often called an externality. For example, if effluent from a marine

farm causes water quality problems for another farm or community downstream, that farm or community will have to spend more to clean up the contamination. However, these costs are "external" to the company that caused the problem. There are concerns that the demand for fishmeal will increase as marine farming of carnivorous species increases. There are concerns that this increased use will lead to the depletion of marine species used to make feed and fishmeal for wild fish. I have. The loss of mangrove forests in coastal areas means the loss of critical habitat for many species, leaving less shelter from storms. Loss of mangrove areas is due to many uses including construction, firewood, salt extraction, etc. If the mangrove area is reduced due to the construction of aquaculture ponds, there will be further negative impacts. Deadly methods are often required to control predators in corrals and other types of marine aquaculture operations. The use of lethal methods raises concerns about the biodiversity and the viability of wild populations. Although many of these cases are not directly related to other economic activities, the loss of ecosystem services due to biodiversity loss can ultimately lead to other economic problems.

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## Conflict of Interest

The author declares there is no conflict of interest in publishing this article.

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