



Aquaculture and management of environment

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DESCRIPTION

Aquaculture interacts with the environment. It utilizes resources and causes environmental changes. Most interactions have beneficial effects. There have been substantial socio-economic benefits arising from the expansion of aquaculture. These benefits include increased income, employment, foreign exchange earnings and improved nutrition. It should be recognized that to date the majority of aquaculture practices have had little adverse effect on ecosystems. Nevertheless, some cases of environmental degradation in coastal areas have occurred due to, for example, intensive cage culture operations in Europe and shrimp farming practices in Southeast Asia and Latin America.

Aquaculture, being a human activity, will lead to some loss of biodiversity or affect ecosystem services to some extent. Aquaculture, like agriculture, results in huge changes to natural systems but delivers specific valued ecosystem services, especially food. So long as delivery is sustained, this is widely regarded as a good thing. The resulting loss of biodiversity is a sacrifice most developing economies are quite willing to make so long as this does not undermine the delivery of the valued services themselves. However, there is increasing appreciation that changes to current practices are required as some of these services are being compromised (instability in production; pollution; flooding; erosion; dwindling or poor quality water supplies).

To research water quality management issues related to aquaculture production in the Mekong Delta, several sites in CanTho, AnGiang and DongThap provinces were considered. ThotNot district in CanTho province was subsequently selected as an appropriate study location. ThotNot has 1,000 hectares of aquaculture production area, which is one of the largest intensive areas in the region. Furthermore, ThotNot is located near the Hau River, a tributary of the Mekong River, so improvements in aquaculture production can be linked to benefits in the broader catchment. Aquaculture production can be linked to benefits in the broader catchment.

The global catch fishery has been exploited to its limit, and aquaculture is the only hope for meeting the world demand for fishery products. Aquaculture has grown rapidly in recent years and has promise for continued growth. However, to fulfill its potential role in the world food supply, the aquaculture industry must counter criticisms about adverse environmental effects and lack of sustainability. Many of the criticisms are unfounded or embellished, but some are based on observed impacts of specific aquaculture operations, and better environmental management is needed in aquaculture. Governments are the only entities with the authority to regulate aquaculture, but in many countries regulations are either lacking or unenforced. The aquaculture industry should be proactive and work towards developing and implementing systems of environmental management based on best management practices (BMPs) for preventing or mitigating adverse environmental impacts. This effort will prevent the criticisms from further tarnishing the image of aquaculture, and the BMPs can serve as a basis for future government regulation in many nations.

Aquaculture needs an enabling policy environment in order to grow in a sustainable manner and to be integrated into the coastal zone. Moreover the interactions between aquaculture and the larger system, in which it occurs, in particular, the influence of the surrounding natural and social environment on aquaculture, must be taken into consideration.