

## Note on Sustainable Aquaculture

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### DESCRIPTION

Aquaculture is one of the world's most rapidly expanding food production methods. The majority of worldwide aquaculture production is generated in developing nations, with low-income food-deficit countries accounting for a large portion. With stagnant yields from many capture fisheries and rising demand for fish and fishery products, expectations for aquaculture to increase its contribution to the world's production of aquatic food are quite high, and there is also hope that aquaculture will continue to strengthen. Aquaculture, on the other hand, is recognized as embracing a wide range of different aquatic farming practices in terms of species including seaweeds, mollusks, crustaceans, fish, and other aquatic species groups, environments, and systems used, with very different resource use patterns involved, providing a wide range of options for diversification. Aquaculture presently produces nearly one-third of the world's total supply of edible fish, and its contribution to marine food sources will surely grow in the future. Aquaculture has the potential to become a sustainable enterprise that can help feed the world's rising population by supplementing catch fisheries. Aquaculture is the fastest-growing sector of the global food industry, rising at a rate of more than 10% per year and accounting for more than 30% of all fish consumed. Aquaculture, like all other food production methods, faces issues in terms of long-term sustainability. Like their terrestrial counterparts, most aqua farmers are always looking for methods to improve their production processes and make them more efficient and cost-effective. The public's awareness of possible environmental issues has risen dramatically. Human capacity, resource usage, and environmental management are all being worked on in aquaculture. The COFI stressed the importance of improving inland fish output through combined aquaculture-agriculture farming systems and the integrated use of small and medium-sized water bodies.

However, for an aquaculture system to be sustainable, it must include the following features:

**Environmental sustainability:** Aquaculture should not produce severe ecological disruption, biodiversity loss, or considerable

pollution effect. Economic viability: Aquaculture must be socially responsible and contribute to community well-being to be sustainable. The long-term survival of an aquaculture system is dependent on species, location, societal norms, and the status of knowledge and technology. Several certification programs have been developed to identify the progress in critical sustainable aquaculture criteria. Environment practices include mangrove and wetland conservation, effective effluent management and water quality control, sediment control and sludge management, soil and water conservation, efficient fishmeal and fish oil use, responsible sourcing of broodstock and juvenile fish, escape control, minimizing biodiversity and wildlife impact. Establish well-defined rights, aquaculture zones, and responsibilities for aquaculturists; regulatory compliance and effective enforcement; community engagement; worker safety, fair labor practices, and equitable remuneration are all examples of community activities.

Effective biosecurity, disease control systems, minimal antibiotic and pharmaceutical use, microbial sanitation, maintaining global hygiene standards; efficient and humane harvest and transportation; accountable record-keeping and traceability; profitability are all examples of sustainable business and farm management practices [1-5].

### CONCLUSION

The construction and maintenance of "enabling environments," particularly those aimed at ensuring continued human resource development and capacity building, are required for the promotion of sustainable aquaculture growth. The FAO Code of Conduct for Responsible Fisheries includes concepts and rules that sustainably assist the development of aquaculture. The code recognizes the special requirements of developing countries, and article 5 of the code specifically addresses these needs, particularly in the areas of financial and technical aid, technology transfer, training, and scientific collaboration. Ecological aquaculture, organic aquaculture, composite fish culture, integrated aquaculture, and closed recirculatory systems are some of the options for long-term aquaculture development.

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