Organic Aquaculture: The Concept & Environmental Benefits

The following article is a part of FIFP webinars conducted on 25th September 2021 on the topic Earth Tomorrow - Environment, You and Seafood (Part II).

Note from the Chief Editor

Earth Tomorrow - Environment, You and Seafood (Part II) comprised the main theme of FIFP webinar conducted on 25th September 2021. Two presentations were made that covered Trawl fisheries and greenhouse gas emission: environmental impact and mitigation measures and Organic aquaculture: The concept & environmental benefits. Dr. Sini Joys Mathew made a presentation on Organic aquaculture and covered various aspects of organic aquaculture. He explained the four major principles of organic operations. He elaborated on the regulations of organic farming that includes management regulations and social responsibility stipulations. He stressed on the need for carrying out organic aquaculture operations based on the organic agriculture principles and stipulations. The environmental benefits resulting from organic operations were highlighted.

Introduction

The organic agriculture is an agriculture production system that combines tradition, innovation and science to sustain the health of air, soil, water, ecosystems and people. It relies on ecological processes, biodiversity and local conditions. The Organic operations are based on four major principles namely principle of heath, principle of ecology, principle of fairness and principle of care. These operations are accredited through a certification procedure. Management regulations and social responsibility stipulations comprise the general regulation of organic farming.

Management regulations

The management regulations include stipulations on sustainable management, quality assurance, non-employment of GMO/GMO derivatives, non-use of nanomaterial, storage, the sale of purchased merchandise,

purchase of means of production and equipment, and exchange of farming equipment.

Social Responsibility Stipulations

The social responsibility stipulations to be followed in organic operations include national and international human rights requirements, freedom to accept or reject employment, freedom to join Association, freedom to join Trade Unions, equal treatment and opportunities, children's rights, employee health and safety, specific employment condition etc.

Organic aquaculture operations

Organic aquaculture operations are fundamentally carried out based on the organic agriculture principles and stipulations; aiming to develop responsible/sustainable aquatic systems, maintain/enhance water quality/water resources, promote good animal welfare, foster biodiversity, protect sensitive habitats, maximize the use of renewable resources/ recycling and to minimize pollution and waste generation.

Management principles

Management principles governing organic aquaculture cover various aspects of site selection, ecosystem interactions, species and origin of stock, breeding/hatchery management, design of holding systems, water quality, stocking density, use of energy/fertilizers, feeding, animal health, transport, slaughtering, processing etc.

Environmental benefits

Several environmental benefits accrue from organic operations such as reduced chemical inputs, water conservation, improved soil organic matter, prevention of harmful substances, reduction in usage of inorganic fertilizer, reduction of energy (nitrogen) use, reduction in power (electricity) use, conservation of resources and reduction of pollution.

Author: Dr. Sini Joys Mathew
Scientist and Consultant – International Food Regulations
Email: drsini@yahoo.com

Dr. Sini Joys Mathew is currently a Consultant Scientist, International Food Regulations. He completed his post-graduate studies at School of Industrial Fisheries under Cochin University of Science and Technology. He was then a

Senior Research Fellow, ICAR and was awarded PhD in Microbiology. His present positions include Consultant of UNDP - United Nations; Advisor to Ministry of Agriculture, Saudi Arabia; Consultant- SFDA - Saudi Food and Drug Authority, Saudi Arabia; Consultant – Almarai, NAQUA; and Research Consultant - Lampero Fos. He has 31 years of experience in Research and Operations in Aquaculture, Fish Production and Processing, International Food Regulatory Systems, International Quality/Hygiene Audits, Food Quality and Food Safety Management; Food Handling and Transportation; Food Laboratory Management; Biosecurity, and Organic Farming. Previously he held Positions as Consultant - FAO- United Nations; Director - Quality Assurance, Aquapesca, Mozambique, Africa; Head of Department QA & QC NPC Al-Rajhi -Saudi Arabia: and Divisional Manager – Choice Trading Corporation.