

Chapter-1

Cross-learning for Addressing Emergent Challenges of Aquaculture and Fisheries in South Asia - an Introduction

Grinson George

Senior Programme Specialist (Fisheries), SAARC Agriculture Centre, Bangladesh
E-mail: grinsongeorge@gmail.com

Abstract

South Asian agriculture is diverse with the inherent strengths and weaknesses which is evident in all sectors including aquaculture and fisheries. There can be large variations amongst different member countries depending upon the extent of activities in aquaculture and fisheries, there are certain issues that require a regional perspective for resolving it. Even for the strongest country in terms of the resources and technologies, sometimes may require the help of the weakest and vice-versa. A sudden outbreak of disease in the region, adulteration in the quality of inputs such as fish seed and fish feed, trans-boundary challenges and many more can be cited as examples for managing the aquatic resources at the right earnest. It is imperative to learn from each other and be familiar with the regional and sub-regional networks prevalent in each country in the region which will help us in sourcing the right information. Aquaculture and fisheries are emerging sectors in the region and leads the world in the production process. The prevalent infrastructure and situations make it challenging for the small-scale fishers and aqua-farmers. There is a need to establish professional and stakeholder networks which can evolve to help the fishers and aquafarmers in the South Asia region. In this introductory chapter, we are discussing some of the opportunities and challenges in aquaculture and fisheries where cross-learning and net-working can bring in better solutions for improving the fish production from the region.

Keywords: inter-disciplinary, SAARC, fish-farming, capture-fisheries, networks

Introduction

Augmenting aquafarming is a firm solution for satiating the soaring demand for fish. South Asia region has been exemplary in promoting aquaculture and different member states have high proportion of fish production from aquafarms than wild capture (George and Hassan, 2020). Afghanistan, Nepal, Bangladesh and India are doing well in this area. Other countries are also equally prospective. But off late there is serious disruption in aquafarming activities with

the prevalence of lockdown or regulations related to COVID-19 pandemic. Therefore, there is a need to assess the dynamics of aquaculture in this context. The problems related to this sector are imminent and there have been contingent responses requested from various farming groups to resolve some of the issues which have been emanated purely in the wake of the pandemic. Marine and inland capture fisheries also faced serious challenges with fishing coming to a standstill and captured fish denied of proper marketing channels and issues related to seafood industry. All these challenges have to be assessed and issues have to be prioritized with possible recommendations in order to bring a stimulus into the sector. This book is a compilation of the regional consultation meeting which addressed cross-learning for South Asian challenges in aquaculture and fisheries. The deliberations helped us to understand the problems and vulnerability of fisheries and aquaculture in the wake of the pandemic and come up with pragmatic solutions. During the discussions the expert team tried to identify various challenges associated with fisheries and aquaculture in South Asia in the wake of COVID-19 and assessed, analysed and shared knowledge on the innovations, technologies and approaches in resolving the challenges in order to improve the efficiency and add stimulus to the pandemic affected sector for enhancing the quantity of fish production. As a part of the discussion process the SAARC Agriculture Centre could document the challenges and possible technological solutions for resolving COVID-19 related issues in fisheries and aquaculture and formulate guidelines on knowledge sharing, regional support and backup for the sector

Climate change – a major thematic area

During the meeting the SAARC countries sought regional cooperation to reduce impact of climate crisis in aquaculture and fisheries. Fishery experts from member countries identified issues in the sector and proposed suggestions to address them. In a major development in reducing the impact of climate crisis in aquaculture and fisheries in the region, SAARC member countries have sought for regional cooperation to implement strategies in battling the climate-induced fallouts in the sector. The consultative meeting of fishery experts representing Afghanistan, Bangladesh, Bhutan, India, Nepal, Maldives, Pakistan and Sri Lanka organized by the SAARC Agriculture Centre (SAC) has felt the urgent need for implementing strategies such as introduction of climate-friendly technologies in fisheries and aquaculture as well as measures for sustainable utilisation of the resources. The meeting came up with this suggestion after the experts identified climate crisis a major concern in aquaculture and fisheries sector of South Asian countries. The experts voiced concern over dwindling marine catch and aquaculture production, environmental disruption in aquatic

ecosystem and its rippling effect on livelihood of the stakeholders owing to climate change and associated developments.

They suggested that technologies such as seaweed farming and integrated multi-trophic aquaculture (IMTA), including cage fish farming could be adopted to reduce the impacts of the crisis to a certain extent. The sector could use 'green fishing vessels' with built-in design features for energy saving and fuel saving technologies to reduce carbon emission. Increase in frequency and intensity of cyclones, storms and extreme weather conditions causes drastic decrease in marine fishing days, habitat destruction, depletion of commercially important resources and other ecosystem changes in marine and inland aquatic system which ultimately affect the livelihood of those depending on the sector. The expert's group pointed out that increasing trend of floods, long-lasting droughts and salinity changes are posing severe threat to inland aquaculture.

Platform for cross-learning

The member countries have demanded for regional cooperation among the nations and a platform for cross-learning and knowledge sharing to check the fallouts in the best possible way in the time of climate change. In marine fisheries, need for capacity building for exploitation of deep-sea resources was raised by Bangladesh, India, Maldives and Sri Lanka. Scarcity of quality seeds and shortage of other input materials were the major gaps faced by the member countries in inland aquaculture. Based on the discussions in the meeting, the SAC came up with a set of recommendations to address such issues. Technical collaboration for knowledge sharing and capacity building among the SAARC countries and setting up of regional network for seed bank and germplasm transfer are some of the important suggestions. The entire list of recommendations emanated out of the discussion is also provided separately. There are scientific gaps inhibiting the implementation of rules and regulations for sustainable management of fisheries and aquaculture. Some possible solutions can be looked upon in satellite remote sensing, numerical modelling, stakeholders' perception, prioritization of spatial sensitiveness to ecosystems and many more with right interference from the stakeholders.

Socio-economic security

Referring to the existing disparity in socio-economic standards of the stakeholders, the SAARC body recommended for promoting discussions and cross-learning on strengthening 'social-safety-nets' with emphasis on ensuring socio-economic security of the stakeholders, and policies, laws and regulations harmonising between environment conservation and livelihood development. Establishment of referral laboratories for aquatic animal health management, a

centre of excellence in aquaculture and fisheries in the region and e-repository for information sharing were also listed in the recommendations. Marine pollution, increased fuel prices, illegal, unreported and unregulated fishing, increasing length of value chain, resource crunch and lack of adequate infrastructure are some of the other major issues raised in the meeting by representatives of member countries.

The meeting stressed the need for applying artificial intelligence, bio-informatics, genetic and biotechnological tools, etc. in frontier areas of research to improve aquaculture and fisheries sector. Mariculture sector (cage farming, seaweed farming, mussel culture) needed comprehensive development in the areas of leasing policies and hatchery development.

Inadequate infrastructure especially in fishing harbours, cold chain and distribution system; limited scope for expansion due to overcapacities in territorial waters; deficiencies in processing and value addition; depleted stocks in inland water bodies; low adoption of technologies; and shortage of skilled manpower are some of the gaps in the sector in the South Asian region.

Conclusion

The meeting came up with some salient observations and identified key networks to be developed in the South Asian context. The delegates suggested that aquatic animal health surveillance should be promoted in all countries and there is a need for interlinking the networks across the region. A SAARC regional network on fish seed bank should be in place, which can facilitate germplasm transfer, harmonized-certification process, technical know-how and infrastructure establishment. South Asian collaboration is required for exploring knowledge sharing and capacity building by establishing Tuna and Hilsa fisheries network. Technical collaboration for transfer of technology from production to consumption value chain in aquatic products by enabling SAAF Conference or exhibition was proposed as an innovative step forward. There can be various webinar series and guided study tours for improving capacity building and knowledge sharing which can include co-farming studies. There is a need for promoting discussions and cross-learning on policies, laws and regulations on aquaculture and fisheries harmonizing between environment conservation and livelihood development and for strengthening social-safety-nets in SAARC countries. An initiative to facilitate cross-country demonstration trials for flagged regional issues in aquaculture and capture fisheries which can culminate in the establishment of a regional centre of excellence in fisheries and aquaculture in the South Asian University can enable the researchers and academic professionals in the region to perform better. Enhanced human resource development for fisheries professionals in South Asia can be enabled

by facilitating the SAARC UG, PG, PhD fellowships and facilitating student exchange, short and medium-term training opportunities. The E-repository at SAARC Agriculture Centre should have SAARC country's aquaculture and fisheries laws and regulations and access sharing of South Asian institutional repositories for aquaculture and fisheries professionals. The most important thematic area should be on promoting climate resilient aquaculture and fisheries technologies using SAARC network.

References

- George and Hassan, 2020. Guidelines for ensuring sustainability of fisheries and aquaculture in South Asia. SAC Policy Brief 12/Fisheries 09.
- Grinson George, Md. Baktear Hossain (Eds.), 2021. Promoting Innovations in the Fisheries Value Chain for Improving Human Nutrition in South Asia. SAARC Agriculture Centre (SAC), Dhaka, Bangladesh. ISBN: 978-984-35-0861-4