Concept Note

Regional Workshop on Underutilized Fish and Marine Genetic Resources and their Amelioration

Background

At the global level in 2015, countries set in motion for achieving the most far reaching and ambitious development agenda of the era, the 2030 Agenda for Sustainable Development. Food and agriculture are the key to achieving the entire set of Sustainable Development Goals (SDGs). Many SDGs are directly or indirectly related to fisheries and aquaculture, particularly SDG 14. It includes enhancement of the conservation and sustainable use of oceans and their resources by implementing international law as reflected in United Nations Convention on the Law of the Sea (UNCLOS), which provides the legal framework for the conservation and sustainable use of oceans and their resources.

In 2014, about 33 per cent of the 56.6 million people engaged in aquaculture, and of the 18 million people engaged in fish farming, 94 per cent are in Asia[1]. Through their involvement in the various activities in aquaculture value chain, aquaculture can help reduce poverty and hunger of people. Specifically, fish farm workers and those involved in aquaculture often have better income and consequently have better chances of providing the basic needs of their households than others. Involvement in the aquaculture industry either as producers or employees is indeed one of the ways to help alleviate poverty and hunger among the poor people in the rural areas. The problem, however, is that there is no equitable sharing of benefits among the various players in the value chain of industries.

Global aquaculture production (including aquatic plants) in 2016 was 110.2 million tonnes, with the first-sale value estimated at USD 243.5 billion. Since 2000, world aquaculture no longer enjoys the high annual growth rates as of the 1980s and 1990s (10.8 and 9.5 per cent, respectively). Nevertheless, aquaculture continues to grow faster than other major food production sectors, however, average annual growth declined to 5.8 per cent during the period 2000–2016[2].

In Asia-Pacific region (APR), aquaculture has continued to grow at a rapid rate since 2012; APR continues to be the world's largest producer of fish and represents 61 per cent of the global production (61 per cent from marine water and 66 per cent from inland water). In terms of food security, revenue generation and employment, both capture fisheries and aquaculture sectors continue to be of

[1] Asia-Pacific Fishery Commission (APFIC) (2016) Regional overview of the Status and Trends of Aquaculture and Fisheries in the Asia Pacific Region 2016

[2]FAO. 2018. The State of World Fisheries and Aquaculture 2018 - Meeting the sustainable development goals. Rome.

fundamental importance to the region as can be seen by the tonnage and value produced. Total aquaculture production in 2014 reached 92.3 million tonnes and is 12.6 per cent higher than the production in 2012. Overall global capture fisheries production continues to remain relatively stable but with a small growth of 2.3 per cent since 2012, and amounted to 94.6 million tonnes in 2014. Marine capture yield dominated the production with 82.7 million tonnes, and inland capture was 11.9 million tonnes in 2014. The region remains the largest contributor to the global supply of fishery products from aquaculture supplying 91.3 per cent of the total global supply of aquaculture products in 2014. As in the previous years, China remained the largest contributor for aquaculture products producing 63.7 per cent of the total production in APR, and 58 per cent to the global supply in 2016[3].

The Second Session of the Ad Hoc Intergovernmental Technical Working Group on Aquatic Genetic Resources for Food and Agriculture (Working Group) was held in Rome, Italy, from 23 to 25 April 2018. The Working Group highlighted the importance of *in situ* and *ex situ* conservation, specifically live gene banking. The Working Group discussed conservation methods used for stock enhancement, noting the importance of minimizing selection for farm conditions to prevent potential adverse effects in the wild population. The Working Group noted the need for clarification in the Report of the concepts of *in situ* and *ex situ* conservation, especially with regard to *in situ* conservation on-farm and through stock enhancement. The Working Group also noted the challenges of some countries to carry out *in situ* and *ex situ* conservation programmes through technology transfer and capacity development [4].

In view of the above facts, aquaculture assumed extreme importance and contributes significantly in food value chain in APR. However, underutilized fish and marine genetic resources (hereafter called as FMGR) which are also very valuable but unexplored for food and agriculture in the region, needs adequate attention and action for their conservation and sustainable use to improve the livelihoods of rural and coastal population in APR, involved in aquaculture. FMGR both within and beyond national jurisdiction have been the focus of international negotiations in a range of forums in recent years. Industrial use of FMGR is currently not large and applications for the intellectual property protection of FMGR, and Access and Benefit-Sharing have been found mainly in the exclusive economic zones (EEZs). The national maritime zones which consists of territorial waters, EEZs and continental shelves are, therefore, important. Sovereign rights over the natural resources are provided for the EEZs in the Article 56 (1) and for the Continental Shelf in the Article 77 (1) of the UNCLOS. According to the Article 56 of the UNCLOS, living and non-living resources of the EEZs are under the sovereign rights of the coastal nations when it comes to prospecting the exploration and exploiting the bioresources. Most of the countries in APR have already begun to fulfill the targets through action as many countries have already set up the national planning for coordinating mechanisms for making the efforts towards achieving the SDGs.

Rationale

Fish and fish products play a very important role in the food and nutritional security of rural, urban and coastal populations throughout Asia and the Pacific. Asia Pacific Fishery Commission (APFIC) carried out

[3] http://www.fao.org/3/CA0038EN/ca0038en.pdf

[4]www.fao.org/fi/static-media/MeetingDocuments/AqGenRes/ITWG/2018/MX047en.pdf

a study on fish and fish product consumption in 30 countries across the region, and examined household survey data. The study found that countries of APR have very different access to fish in its different forms and unsurprisingly, fish consumption figures vary considerably from 110.7 kg per capita per year in the Pacific island of Tuvalu to 0.18 kg per capita per year in Mongolia and parts of western China[5].

The use of the terms "low value" and "trash fish" varies across the APR and can change both seasonally and with location. However, in most of Asian countries, low value/trash fish was recognized as being always of low economic value, generally small in size (though it can include larger fish of low quality or waste from other uses) and having a low consumer preference. They are usually taken as a by catch (in the sense that it was caught by non-selective fishing gear). A portion is often thrown away or discarded at sea, although this practice is quite minimal in many Asian fisheries. Small-scale fish trawlers operating in the Southeast Asian region normally catch substantial amounts of fishes that are sorted onboard the vessels into high economic-value species and other species. The latter comprise a significant portion of small demersal fishes also known as “trash fish” that are generally discarded as they are not mostly used for human consumption or are turned into feeds for livestock and cultured fishes. Even while the region’s fish stocks are reported to be over-exploited, the region’s trash fish production or discards in 2005 was estimated to be about 1.056 million metric tonnes or about 10% of the region’s total marine fish catch (10.785 million metric tonnes)[6]. On the other hand, the world’s production in 2003 has been reduced by 24% (or about 32 million metric tonnes) to fish meal and other non-food uses[7], although not much information is available on how much trash fish is presently used in the APR. Among the reasons for the low discards in the Southeast Asian region include the fact that in many countries trash fish is still used for direct human consumption such as in Indonesia and the Philippines, and that some discards are no longer thrown away as these are sold at good prices to fish meal processing plants as in the case of Thailand. In Vietnam, it has been reported that fishers prefer to catch low-value fish for commercial purposes rather than targeting the high economic-value fish with large portion of low value fish as by-catch.

In addition to conservation of FMGR, equal focus should be given on the sustainable commercial utilization (activity of extracting or capturing value) of underutilized FMGR found in countries of APR, within and beyond the limits of their national jurisdiction. The resources should be investigated or researched and the commercial element of the utilization of the resources should be explored. This understanding implies that when describing and analyzing the regulation of the commercial utilization of FMGR, a discussion should be triggered of the activity related to the resources, often called bioprospecting, and its regulation.

Exploring the potential of underutilized FMGR in the region is a virtual endeavor towards achieving the goals of 2030 Sustainable Development. Regional cooperation can support and complement the effectiveness of national mechanisms upon which the ultimate success of the global 2030 Agenda rests. Transboundary challenges such as climate change and natural disasters, energy security, ecosystem

[5]Needham S & Funge-Smith SJ (2014) “The consumption of fish and fish products in the Asia-Pacific region based on household surveys”. FAO Regional Office for Asia and the Pacific, Bangkok, Thailand. RAP Publication 2015/12. 87pp

[6] SEAFDEC (2008)

[7] APFIC (2005)

degradation, and contamination of oceans, seas and marine resources require regional actions through consultations and discussions in the workshops.

Objectives

1. To assess the current status of underutilized FMGR at regional level and to assess R&D status of priority species those are needed to be promoted for the use in food and agriculture.
2. To discuss the knowledge gaps and way forward in defining regional priorities concerning underutilized FMGR and create awareness on the role and value of underutilized FMGR that have potential for diversification of food basket and improve the livelihoods of rural and coastal population.
3. To formulate strategies for strengthening the institutional framework for FMGR management, and legal and policy framework to promote conservation and sustainable use of underutilized FMGR at regional level.

Expected outcomes

a) The Regional Workshop will provide a platform for sharing experiences/knowledge relating to underutilized FMGR those are important for food and agriculture in Asia-Pacific.
b) Assessing the importance of most potential FMGR, status of their R&D for exploring the possibilities of their commercial use and eventual benefit to rural and coastal population of Asia-Pacific.
c) Developing a Road Map to ensure efficient management including conservation and sustainable use of underutilized FMGR.
d) Exploring the possibilities of project formulation and establishing a regional network for knowledge sharing and other related issues at regional level.

Organizers/Collaborators

The Regional Workshop is being organized by the Asia-Pacific Association of Agricultural Research Institutions (APAARI), Sri Lanka Council of Agricultural Research and Policy (SLCARP), Asia-Pacific Consortium on Agricultural Biotechnology and Bioresources (APCoAB), Council of Agriculture (COA), Taiwan, and Australian Centre for International Agricultural Research (ACIAR) in collaboration with National Aquatic Resource Research and Development Agency (NARA), National Aquaculture Development Authority (NAQDA), Marine Environment Protection Agency (MEPA) and Ministry of Fisheries and Aquatic Resource Development and Rural Economy, Sri Lanka.

Participation

Around 60-65 participants including senior officials from organizers, selected experts from NARS of member countries of APAARI; WorldFish; experts in the fields of underutilized FMGR; representatives from local (from Sri Lanka) universities, ministries, research institutions who are working on FMGR including scientists, academicians and related government officers; donors; private sector; NGOs and farmers.

Date and Venue

July 10-12, 2019; National Aquatic Resources Research and Development Agency, Colombo, Sri Lanka