Collection and Evaluation of Existing Guidelines and Awareness Materials on Aquaculture Biosecurity for Small-scale Farms in the Asia-Pacific Region

Background and objective

Aquaculture is one of the important sectors in the economy of most Asia-Pacific countries. However, majority of aquaculture farms are small-scale and most often lack the necessary infrastructure and competency to comply with biosecurity measures, or are not well informed of the product standards imposed by concerned authorities, especially for international trade. The World Trade Organization-Sanitary and Phytosanitary Measures (WTO-SPS) governs the way in which governments can apply national measures consistent with international standards, guidelines and recommendations. The World Organisation for Animal Health (OIE) is one of the international standard setting bodies under the WTO-SPS agreement, in terms of aquatic animal health and biosecurity. To provide recommendations on the development and implementation of biosecurity measures primarily to mitigate the risk of the introduction of specific pathogenic agents into aquaculture establishments, and if pathogenic agents are introduced, to mitigate the risk of further spread within or release from the aquaculture establishment, the OIE drafted the new OIE Chapter on Biosecurity for aquaculture establishments which will be proposed for adoption by the OIE General Assembly in near future.

For many countries in the region, compliance to these standards is not easy and straightforward. Only those countries that have well established national aquatic animal health strategies can ensure full compliance to OIE standards on aquatic animal health, biosecurity and food safety, when it comes to responsible trade of live aquatic animals.

The continuous globalization in the aquaculture trade has increased the potential of disease introduction and spread to new areas. Spread of important aquatic animal diseases that can cause serious economic losses, as well as some social and ecological consequences, have been reported among major aquaculture producing and exporting countries. In shrimp as an example, most major disease outbreaks were associated with the movement of live animals (broodstock, nauplii and postlarvae) when the patterns of disease spread were analyzed. Many aquatic animal diseases, once established, are often difficult to treat or to eradicate.

Biosecurity, as defined by OIE, is a set of management and physical measures designed to reduce the risk of introduction, establishment and spread of animal diseases, infections or infestations to, from and within an animal population (including aquaculture). Pre-requisites for biosecurity programmes in aquaculture include: understanding of the overall aquaculture operations; general principles of disease development and transmission; and knowledge on fish/shellfish species cultured and maintained in an aquaculture environment. In general, the primary goal of a biosecurity program in aquaculture is to prevent the introduction of any pathogenic infectious organism into the culture facilities. However, this is easier said than done, thus the goal may have to be modified to at least eliminate or control infectious diseases within the facility, prior to any movement and trade. Potential sources of pathogenic infectious organisms that can be introduced to any aquaculture facility include:

- Introduction of new stocks (including eggs, fry, fingerlings, juveniles, broodstock);
- Contaminated water or feeds (especially unprocessed natural food);
- Human and animal sources;
- Contaminated fomites;
- Intermediate carriers and vectors.

Proper evaluation and assessment of each of these sources are needed for effective biosecurity measures in preventing the entry of infectious organisms into the facility. Thus, a sound biosecurity programme for an aquaculture facility would incorporate:

- Risk assessments;
- Disease prevention;
- Disease monitoring, surveillance and reporting;
- Proper cleaning/disinfection between production cycles;
- Eradication

With the increasing incidence in the transboundary spread of emerging and important aquatic animal diseases, aquaculture biosecurity has become more and more important. Although many counties in the region still lack regulations on aquaculture biosecurity, there are countries that have made progress in formulating guidelines (e.g. India, Indonesia, Malaysia, Thailand and Vietnam, among others). However, these countries still face a lot of challenges in the implementation of these guidelines, especially at the farm level, considering the dominance of small-scale farmers in the industry which are considered as the “weak link” in biosecurity.

Activities:

To address this need while avoiding potential duplication with other initiatives, the Network of Aquaculture Centres in Asia-Pacific (NACA) in collaboration with relevant partners (FAO and OIE) and country experts will undertake a project to:

1. Collect and collate available information, existing regulations, guidelines and awareness materials on aquaculture biosecurity for small-scale farms from selected countries in the AP region;
2. Identify gaps and challenges in the implementation of above document especially at the farm level; and,
3. Analyse the gaps, challenges and commonality from the collected information/data.

A project report will be prepared to support Members understand how to utilise the available resources or further improve their regulation, awareness materials and technical guidelines.

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