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**Regional Consultation and Related Study on Antimicrobial Resistance (AMR) Risk to
Aquaculture in Asia
and
Preliminary Consultation on Monitoring of AMR in Bacterial Pathogens in Aquaculture**

**4-7 September 2018
Amari Watergate Hotel, Bangkok, Thailand**

PROSPECTUS

Introduction

Asia contributes over 90 percent of the world aquaculture production, with intensification as a major contributor to the fast growth of aquaculture industry. Aquaculture intensification, however, has resulted in increased disease problems of cultured animals. Increasing transboundary movement of aquatic animals related to seed supply and trade has further intensified the problem. Antimicrobials are most commonly used drug to prevent and control common aquatic animal diseases in aquaculture. Although the control over the use of antimicrobial has been strengthened over the past decade mainly for trade related purpose, they are still commonly used in aquaculture in region. The control over the production and use of antimicrobial for aquaculture is far from adequate and effective in many Asian countries although some regulatory frameworks are already in place due to the character of the sector. Un-prudent and poorly controlled use of antimicrobial in aquaculture can have significant contribution to AMR risk due to the feature of aquaculture environment and the ways in which cultured animal diseases are handled.

With the foreseen population growth and expected economy recovery and growth, it is anticipated the demand for food fish will increase significantly in the coming decades. It is projected that World apparent fish consumption will increase by 31 million tonnes in the next decade to reach 178 million tonnes in 2025 (FAO, 2016, SOFIA). In order to meet the increasing demand for food fish globally, it is vital to maintain the sustainable growth of aquaculture in Asia. The trend of aquaculture intensification is very likely to continue in general with the limited national resources particularly water and land and increasing competition among the different users. Effective control of infectious diseases of cultured aquatic animals will be key factor to productivity and efficiency in aquaculture.

Ensuring the availability and use of effective antimicrobial drugs in aquatic animals is essential to their health and productivity. This contributes to food security, food safety and animal welfare, and

in turn, to the protection of livelihoods and the sustainability of aquatics and fisheries. However, it is also now globally recognized that misuse and overuse of these substances contribute to the emergence and spread of antimicrobial resistance (AMR). Because of the considerable impacts to the health of humans, animals, and plants alike, actions addressing this global issue need to be put forward.

Considering the scale of use of antimicrobial in Asian aquaculture and desire for sustainable growth of the sector, actions to address the AMR risk related to aquaculture are timely needed. Moreover, the lack of systematic and regular collection of high-quality information on antimicrobial resistance (AMR) in livestock and aquaculture is perhaps one of the most critical gaps relevant to AMR mitigation in agriculture. Organizing a regional consultation is an appropriate entry point to assess the use of antimicrobial in Asian aquaculture and its risks in contributing to AMR and to identify the desirable interventions to address the issue and long term strategy to minimize AMR risk related to Asian aquaculture.

In this context, the Food and Agriculture Organization of the United Nation (FAO) and the Network of Aquaculture Centres in Asia-Pacific (NACA) are working together to undertake a regional assessment on antimicrobial use (AMU) and its risk in the development of AMR in aquaculture. This regional study will assess current status of AMU in aquaculture in selected countries in Asia as well as regulation and governance of use of antimicrobials. Major issues, gaps and constraints in minimizing AMR risks related to aquaculture will also be identified. Strategy and actions for effective addressing the AMR risk associated with aquaculture will be recommended through regional consultation. Additionally, FAO through the support of the USAID Project (OSRO/RAS/502: Addressing Antimicrobial Usage in Asia's Livestock , Aquaculture and Crop Production Systems) has been collaborating closely with countries and partners to develop regional guidelines and strengthen capacities to reinforce the Global Action Plan on AMR and the respective national action plans of countries in the Asia-Pacific Region. As part of a suite of initiatives towards this end, FAO RAP has also embarked in facilitating the development of a series of regionally harmonized guidelines relevant to this sector: AMR surveillance in food-borne bacteria from healthy animals intended for food consumption (Regional Guideline #1); AMR surveillance in animal pathogens recovered from clinically or sub-clinically diseased livestock and poultry (Regional AMR Surveillance Guideline #2) and aquaculture (Regional AMR Surveillance Guideline #3); and AMR monitoring in animal settings/environment (Regional AMR Surveillance Guideline #4). In addition, to further complement these efforts on monitoring and surveillance on antimicrobial resistance in animals, a guideline on collecting data on antimicrobial usage (Regional AMR Surveillance Guideline #5) will also be included.

Purpose

The regional consultation will focus on the identification of major issues, gaps and constraints in minimizing risks associated with AMR in aquaculture, based on a well-designed country assessment on the status of AMU and AMR in 8 selected countries in the region. Strategies will be formulated to address the issues and gaps, and to raise awareness on AMU and AMR, while recommendations will

also be formulated to promote responsible and prudent AMU in aquaculture towards a more sustainable production.

The consultation on AMR monitoring will focus on AMR monitoring among priority pathogens from aquaculture in the region using harmonized approaches. It will be comprised of AMR experts from major aquaculture industries in the region including Singapore as the ASEAN lead country on AMR surveillance in aquatic animals, and technical experts from FAO RAP, NACA, and CU VET AMR (as the forthcoming FAO Regional Reference Center for AMR).

Expected Outputs

The following are the expected outputs from this joint consultation:

- A regional assessment on the use of anti-microbial in Asian Aquaculture, its governance and the related AMR risks (major issues, gaps and constraints in minimizing AMR risks related to Aquaculture) through well designed country studies (8 selected countries in Asia);
- Available knowledge on AMR are shared and the awareness of different stakeholders on importance and urgency to address AMR risk related to aquaculture in Asia is promoted;
- Recommended strategy and actions for effectively addressing AMR risks related to antimicrobial in Asian aquaculture;
- A draft for joint FAO-NACA publication on the regional consultation produced;
- Guideline for AMR surveillance in aquaculture pathogens which is envisioned to contribute towards the development of evidence-based treatment guidelines for common pathogens in aquatic animals. In the process, it is also foreseen to contribute to strengthening mechanisms that will promote and reinforce good veterinary practices including timely disease diagnosis and evidence-based treatments in lieu of unwarranted metaphylaxis and broad-spectrum preventive treatments.

Main themes of the consultation

- Available knowledge on AMR and Initiatives by FAO and NACA in addressing AMR associated with aquaculture;
- Status of AMU and AMR in aquaculture in selected countries in the region;
- Identification of gaps and issues in the implementation of AMR surveillance in the aquaculture sectors;
- Formulation of recommendations in addressing gaps and issues on AMR and AMR surveillance in aquaculture
- Formulation of AMR Regional Surveillance Guideline.

Organization

This regional technical consultation will be primarily funded by FAO-RAP and USAID, and jointly organized by FAO-RAP and the Network of Aquaculture Centres in Asia-Pacific.

Participants

The consultation will be multi-stakeholder in nature. It will be participated by representatives from the country governments as well as relevant international and national organizations. It is expected the consultation will have around 50 participants representing around 20 countries and 8 international and regional organizations/donor agencies.

Conduct of the meeting

The consultation will be conducted in three major modalities:

- **Session I:** Plenary session for expert presentations on the status and importance of antimicrobial use and antimicrobial resistance in aquaculture and the risk it poses in the aquaculture industry and food safety;
- **Session II:** Plenary session for presentations on country assessment reports;
- **Session III:** Working group session following the plenary presentations and discussions for identification of issues and gaps, and development of regional strategy and action plans to promote responsible production and use feed and feed ingredients in aquaculture for sustainable growth of the sector.
- **Session IV:** Plenary session in developing framework for AMR monitoring and surveillance in Asia including a Regional Guideline on sampling approaches, laboratory testing, and data management.

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