



Food and Agriculture
Organization of the
United Nations



Regional Consultation on Responsible Production and Use of Feed and Feed Ingredients for Sustainable Growth of Aquaculture in Asia-Pacific

7-9 March 2017

Centara Grand Hotel at Central Plaza Ladprao, Bangkok, Thailand

Background

Aquaculture has been one of the fastest growing food production sectors in the past three decades globally. The sector achieved average annual production growth of 8 percent from 1984 to 2014. As the major contributor to the world aquaculture production, Asia achieved an average annual growth of 8.4 percent in the same period, and the production reached 92.8 tonnes in 2014, accounting for 91.7 percent of the world total. Currently, Asian aquaculture supplies some 60 percent of food fish for people's consumption while contributing significantly to the livelihoods for rural and urban. The rapid production growth has been largely attributed to intensification of production with increasing dependence on artificial feeds. Finfish and crustacean are two major groups of cultured aquatic animals that require artificial feeds, in the forms of commercial feeds, farm-made feeds, and fresh feeds. Their global production reached 56.8 million tonnes in 2014, including some 6.92 million tonnes of crustacean and 49.9 million tonnes of finfish. With silver carp, catla and bighead (filter feeder on plankton) excluded, 38.8 million tonnes of finfish out of the total 49.9 million tonnes were estimated to be produced through entire or partial feeding based on feeding habits and common culture practices. Aquaculture commodities produced through partial or complete feeding accounted for 45.2 percent globally in 2014, while it was only 42.5 percent 10 years back. The total production of aquaculture species depending on artificial feeding increased by 97.9 percent in the 10 years.

The rapid growth of production of fed species in aquaculture has resulted in drastic increase in demand for commercial feed. As a result, the aquaculture feed industry has grown rapidly in the past two decades. In 1995, the total production of industrial compound aqua-feed was only 7.6 million tonnes. By 2010, the total production had increased by 4.5-fold to 34.1 million tonnes and further to 40.2 million tonnes in 2012. Industrial aqua-feed production has increased at the average annual rate of 11 percent since 1995, which was significantly higher than the annual aquaculture production growth of about 8 per cent. The increased use of feed in aquaculture has greatly contributed to production efficiency and quality of products, and enabled farmers to better meet market requirements and achieve sound economic benefit.

On the other hand, rapid increase in use of feed in aquaculture has also caused a number of issues which may threaten the sustainable growth of the industry. The major issues include the following.

- Increased feed cost has caused significant reduction of profit margin in production of many important aquaculture commodities. Feed cost often accounts for 70 percent for

commodities that entirely depend on artificial feed. This problem is largely caused by high cost of feed that is often non-locally produced and with poor utilization efficiency. What has made the situation worse is that the prices of aquaculture products have been declining since 2013 and the trend will remain until 2020 according to the prediction (FAO, 2016)

- In general, Asian aquaculture feed production has become overly dependent on externally sourced feed ingredients, and this has resulted in significant problem in supply and costs. For instance, fishmeal price increased significantly from 2006 to 2013, peaking at US\$1,747 per tonne in 2013 and has remained high since. This is also because the amount of the captured fish destined for non-food use has fallen, down from 34.2 million tonnes in 1994 to 20.9 million tonnes in 2014.
- In order to sustain capture fisheries and maintain marine ecosystem functions and services, there has been increasing effort to combat IUU fishing globally. It is believed considerable proportion of products from IUU fishing is used for aquaculture purpose in the region. In order to cut off the demand for IUU products for aquaculture purpose, responsible sourcing of feed ingredients free from IUU fishing will soon be a certification requirement in international trade. Export of aquaculture products from the region will be impacted if appropriate actions are not taken timely.

With the foreseen population increase and economy growth, the demand for food fish will increase significantly in the coming decades. It is projected that the world apparent fish consumption will increase by 31 million tonnes in the next decade to reach 178 million tonnes in 2025 (FAO, 2016, SOFIA). Therefore, it is important to maintain the sustainable growth of aquaculture to meet the global demand for fish as there is little prospect for capture fisheries to grow significant in the near future. With the limited land and water resource in the region, aquaculture efficiency will need to be further improved, issues related to aquaculture feed and feed ingredients, considered as determining factors for sustainable growth of aquaculture in the region, warrant an immediate attention and need to be addressed effectively.

Purpose

The objective of the regional consultation is to review the current situation of aquaculture feed production and use, in respects of production status, demand and supply, sourcing of ingredients, government policies and institutional support, ongoing progress and development gaps. The consultation will also try to put forward regional strategies and develop plans of action to promote responsible utilization of feed and feed ingredients for sustainable growth of aquaculture in Asia-Pacific through sharing of available knowledge, technological innovations and scaling up successful practices and further research and technology development.

Expected outputs

The regional consultation is expected to deliver the following major outputs:

- Available knowledge and successful technologies and good management practices related to responsible use of aquaculture feed and feed ingredients are shared in the region;
- Major issues and technology gaps related to responsible use of aquaculture feed and feed ingredients are identified;

- Appropriate strategy and follow-up actions for promoting responsible use of aquaculture feed and feed ingredients are recommended for the member governments.

Main themes of the consultation

- Development and use of alternatives of fishmeal and other high cost feed ingredients in aquaculture
- Traceability of aquaculture products in relation to feed and feed ingredients
- Promote cost-effective aquaculture feed made of locally available feed ingredients
- Innovation in aquaculture farming and feeding practices for reduced feed costs and environment impacts at farm level

Organization

This regional technical consultation will be primary funded by FAO and jointly organized by FAO and the Network of Aquaculture Centres in Asia-Pacific and with support of the Department of Fisheries of Royal Thai Government and other partners.

Participants

The consultation will be multi-stakeholder in nature. It will be participated by representatives from the country governments, relevant international and national organizations, aquaculture feed industry and experts.

Conduct of the meeting

The consultation will be conducted in three major modalities:

- Session I: Plenary session for country presentations on status of aquaculture feed and feed ingredient production and utilization;
- Session II: Plenary session for presentations on various thematic topics by resource persons on issues and recent progress;
- Session III: Working group session followed by the plenary presentation 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.

Contact Information

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Program

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7 March 2017	
09.00-10.00	Opening Session Welcome remark by Director General/Representative, Department of Fisheries, Thailand Welcome remark by Dr. Cherdsak Virapat, Director General of NACA Opening remark by Assistant Director General/Representative, FAO RAP
10.00-10.30	Group Photo & Coffee Break
10.30-12.30	Session I: Country presentations on status of aquaculture feed and feed ingredient production and utilization Bangladesh, Cambodia, China, India, Indonesia, Iran
12.30-13.30	Lunch Break
13.30-15.30	Session I: Country presentations on status of aquaculture feed and feed ingredient production and utilization (continued) Lao PDR, Malaysia, Maldives, Myanmar, Nepal, Pakistan
15.30-15.50	Coffee break
15.50-17.30	Session I: Country presentations on status of aquaculture feed and feed ingredient production and utilization (continued) Philippines, Republic of Korea, Sri Lanka, Thailand, Vietnam
17.30-17.45	Wrap Up for Day 1
18.00-19.30	Welcome Dinner

8 March 2017 Session II: Thematic presentations by resource persons on issues and recent progress	
08.30-09.00	Presentation 1: Overview of Aquaculture Feed Production and Use in Asia-Pacific Region Professor Sena S De Silva, Deakin University, Australia
09.00-09.30	Presentation 2: Development and use of alternatives of fishmeal and other high cost feed ingredients in aquaculture Dr. Mae R. Catacutan, SEAFDEC
09.30-10.00	Presentation 3: Promote cost-effective aquaculture feed made of locally available feed ingredients Dr. Roger Edward Mamauag, SEAFDEC
10.00-10.30	Coffee Break
10.30-11.00	Presentation 4: Traceability of aquaculture products in relation to feed and feed ingredients Ms. Laddawan Krongpong, DoF, Thailand
11:00-11.30	Presentation 5: Innovation in aquaculture farming and feeding practices for reduced feed costs and environment impacts at farm level Dr. Yuan Derun, NACA
11.30-12.00	Presentation 6: Government policy and enabling environment supporting and managing aquaculture feed production and marketing for sustainable aquaculture development Dr. Liu Bo, FFRC, Chinese Academy of Fisheries Science, China
12.00-13.00	Lunch Break
13.00-13.30	Presentation 7: Government policy and enabling environment supporting and managing aquaculture feed production and marketing for sustainable aquaculture development in Thailand Mrs. Pisamai Somsue, DoF, Thailand
13.30-14.00	Presentation 8: Efforts of private feed sector supporting sustainable aquaculture development Dr. Atip Asvanund, Charoen Pokphand Group Co., Ltd. Thailand
14.00-14.30	Presentation 9: Efforts of private feed sector supporting sustainable aquaculture development Dr. Supis Tongrod, Thai Union Feed Mill Co. Ltd., Thailand
14.30-15.00	Presentation 10: Certification of aquaculture feed and feed ingredient Ms. Maggie Xu, International Marine Ingredients Organization
15.00-15.30	Coffee Break
Session III: Issues and gap identifications and regional strategy and action plan development to promote responsible production and use feed and feed ingredients in aquaculture for sustainable growth of the sector	
15.30-17.30	Working group discussion 1: Major issues and gaps in feed production and use for sustainable growth of aquaculture sector in Asia-Pacific

9 March 2017	
Session III: Issues and gap identifications and regional strategy and action plan development to promote responsible production and use feed and feed ingredients in aquaculture for sustainable growth of the sector	
08.30-10.00	Presentation of results of working group session 1 and plenary discussion
10.00-10.30	Coffee Break
10.30-12.30	Working Group Session II: Regional strategy and action plan development to promote responsible production and use feed and feed ingredients in aquaculture for sustainable growth of the sector
12.30-13.30	Lunch
13.30-14.30	Working Group Session II (continued)
14.30-15.00	Coffee Break
15.00-16.30	Presentation of outputs from Working Group Session II & Discussion
16.30-17.00	Wrapping up and closing of the consultation