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**REGIONAL CONSULTATION FOR ASIA ON THE DEVELOPMENT
OF GUIDELINES FOR SUSTAINABLE AQUACULTURE**

Virtual Meeting, 30 November–2 December 2020

Report of the
Regional Consultation for Asia on the development of Guidelines for Sustainable Aquaculture
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PREPARATION OF THIS DOCUMENT

This document provides a summary of the presentations, discussions, conclusions and recommendations of the Regional Consultation for Asia on the development of Guidelines for Sustainable Aquaculture (GSA), held virtually from 30 November to 2 December 2020. The consultation was prepared and coordinated by the FAO Fisheries and Aquaculture Division in collaboration with the FAO Regional Office for Asia and the Pacific.

ABSTRACT

The Regional Consultation for Asia on the development of Guidelines for Sustainable Aquaculture (GSA) was held virtually from 30 November to 2 December 2020. A total of 45 participants attended the consultation: 26 government representatives, 7 representatives from academia, non-governmental organizations and intergovernmental organizations, and 12 FAO staff members and consultants. This was the second of the series of regional consultations.

The objectives of the regional consultation were to: (i) share current policies and practices related to aquaculture in the region; (ii) review existing regional and national governance instruments for sustainable aquaculture; (iii) develop a list of priority thematic modules, including regional and national strengths and challenges; (iv) discuss regional case study concepts; and (v) identify regional priority areas to be included in the GSA.

During the consultation, the participants were informed about the list of 72 thematic modules composing the GSA. The consultation was organized into plenary and breakout sessions. The participants proposed 43 case studies.

The participants were informed of the following next steps to be led by FAO for the development of the GSA: (i) subject to available funding, webinars and complementary current regional meetings, e.g. in Africa, Asia, Latin America and Small Island Developing States, and drafting of the GSA (2019–2021); (ii) the 34th Session of the Committee on Fisheries (COFI) is informed of the GSA process (postponed to 2021)); (iii) GSA is submitted to the Eleventh Session of the COFI Sub-Committee on Aquaculture in Mexico for review and adoption (2021); (iv) GSA is submitted to the 35th Session of COFI for endorsement (2022); (v) publication of GSA (2022–2023); and (vi) implementation (capacity building, etc.) (from 2022–2023 onward).

CONTENTS

Preparation of this document.....	iii
Abstract	iv
Acknowledgements	vi
Abbreviations and acronyms	vii
Background	1
Opening remarks	1
Session 1: Workshop overview	2
Working group session	2
Plenary session	3
Session 3: Case study concepts	4
Working group session	4
Plenary session	5
Session 4: Regional priorities	6
Plenary session	6
Session 5: The way forward and closing session	6
References	8

APPENDIXES

Appendix 1 – List of participants	9
Appendix 2 – Opening statement	12
Appendix 3 – Agenda	13
Appendix 4 – Working Groups	15
Appendix 5 – Session results on existing governance instruments in Asia.....	16
Appendix 6 – Session results on thematic modules	31
Appendix 7 – Proposed case studies concepts for use during group discussions.....	45
Appendix 8 – Session results on case study concepts	48
Appendix 9 – Identified regional priorities for GSA in Asia	58
Appendix 10 – Session results on regional priorities for GSA in Asia	63
Appendix 11 – Closing statement.....	67

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ABBREVIATIONS AND ACRONYMS

AMR	antimicrobial resistance
AMU	Antimicrobial use
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
ASEAN-AMAF	ASEAN Ministers on Agriculture and Forestry
BMP	better management practice
BOBP-IGO	Bay of Bengal Inter-Governmental Organization
CEST	Central European Summer Time
COFI	Committee on Fisheries (FAO)
COFI:AQ	COFI Sub-Committee on Aquaculture
EMFF	European Maritime and Fisheries Fund
FAO	Food and Agriculture Organization of the United Nations
GAP	good agricultural practice
GAqP	good aquaculture practices
GIS	Geographical Information System
HACCP	hazard analysis and critical control points
ICSF	International Collective in Support of Fishworkers
IGO	intergovernmental organization
IMTA	integrated multi-trophic aquaculture
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
NACA	Network of Aquaculture Centres in Asia-Pacific
NFI	FAO Fisheries and Aquaculture Division
NFP	National Fisheries Policy (India)
NGO	non-governmental organization
PMP-AB	progressive management pathway for improving aquaculture biosecurity
R&D	research and development
SDG	Sustainable Development Goal
SEAFDEC	Southeast Asian Fisheries Development Center
SIFFS	small indigenous freshwater fish species
SME	small and medium-sized enterprises
TM	thematic module
WAS	World Aquaculture Society
WHO	World Health Organization
WOAH	World Organisation for Animal Health

BACKGROUND

1. The Ninth Session of the FAO Sub-Committee on Aquaculture of the Committee on Fisheries (COFI:AQ), held in Rome, Italy, from 24 to 27 October 2017, recognized the growing global significance of sustainable aquaculture development and its potential contributions to global food security and nutrition as well as the achievement of a wide range of Sustainable Development Goal (SDG) targets. COFI:AQ further recognized the increasing need for implementation of best practices in aquaculture in many countries and regions and recommended that FAO should develop global Guidelines for Sustainable Aquaculture (GSA).
2. The purpose of the GSA is to provide practical guidance to government authorities and policymakers in their efforts of promoting the implementation of the Code of Conduct for Responsible Fisheries (CCRF) and enable aquaculture to effectively participate in the implementation of the 2030 Agenda for Sustainable Development. The guidelines will further help FAO Members to enhance their capacity development programmes for the sustainable management of the sector.
3. In line with the recommendation of COFI:AQ to develop the GSA as endorsed by the Committee on Fisheries (COFI) at its Thirty-third Session, held in Rome, Italy, from 9 to 13 July 2018, a document containing the possible scope, structure and content of such guidelines was drafted and presented at the Expert Consultation on the development of the GSA, held in Rome, Italy, from 17 to 20 June 2019. The consultation brought together 15 experts from governments, international organizations, research institutes and academia, ensuring that all regions would be represented. The Expert Consultation produced: (i) a methodology for developing the GSA, including making use of existing guidelines; (ii) a methodology, including criteria, for selecting case studies aimed at providing lessons learned; (iii) a methodology for identifying lessons learned; (iv) a list of thematic modules, which GSA should cover; and (v) an updated roadmap for the production of GSA.
4. The outcomes of the Expert Consultation were presented at the Tenth Session of COFI:AQ, held in Trondheim, Norway, from 23 to 27 August 2019. COFI:AQ commended FAO's work on the guidelines and provided guidance on the way forward, including support for regional consultations.
5. Within this context, the Regional Consultation for Asia on the development of GSA was held virtually from 30 November to 2 December 2020. This was the second of the series of regional consultations.
6. A total of 45 participants attended the consultation: 26 government representatives, 7 representatives from academia, non-governmental organizations (NGOs) and intergovernmental organizations (IGOs), and 12 FAO staff members and consultants. The list of participants is given in Appendix 1.

OPENING REMARKS

7. Mr Rodrigo Roubach, Senior Aquaculture Officer, FAO Fisheries and Aquaculture Division, moderated the regional consultation and welcomed the participants.
8. Mr Audun Lem, Deputy Director, FAO Fisheries and Aquaculture Division, officially opened the consultation. In his remarks, he emphasized the importance of the GSA regional meeting process in identifying possible success factors and pathways that can improve knowledge about sustainable and successful aquaculture development and provide appropriate guidance to ensure continued sustainable growth. The full text of the opening remarks is presented in Appendix 2.

SESSION 1: WORKSHOP OVERVIEW

9. The Secretariat introduced the background and objectives of the GSA, the methodology for their development, the progress made to date in undertaking the consultation process, as well as the objectives, expected outputs and agenda (Appendix 3).

10. The objectives of the regional consultation were stated as follows: (i) share current policies and practices related to aquaculture in the regions to inform Guidelines for Sustainable Aquaculture (GSA), currently under development by the FAO Secretariat; (ii) review existing regional sustainable aquaculture guidance that has been developed, and assess if there are gaps that the GSA could help fill; (iii) develop a list of priority thematic modules considering regional and national strengths and challenges; (iv) propose case studies topics from Asia countries; and (v) identify regional priority areas to be included in GSA.

11. The expected outputs of the regional consultation include a list of: (i) existing regional governance instruments for sustainable aquaculture; (ii) regionally prioritized thematic modules considering strengths and challenges for each of the 72 thematic modules; (iii) proposed case study concepts mapped against the thematic modules; and (iv) regional priorities to be included in the GSA with linkages to the thematic modules and proposed case studies.

12. Session 2: Existing governance instruments in Asia and thematic modules.

13. The Secretariat introduced the objectives of the session. First, the participants were invited to share information on regional and national existing governance instruments related to sustainable aquaculture and recommend useful information for developing the GSA. The participants were then asked to review the list of 72 thematic modules endorsed by COFI:AQ at its Tenth Session and to develop a list of regional strengths and regional challenges to help refine and prioritize the list of thematic modules.

14. Afterwards, the Secretariat described the concept of a thematic module and presented the list of thematic modules. The expected deliverables of the session were to: (i) produce a list of existing regional governance instruments in Asia; and (ii) provide a list of proposed regional strengths and challenges based on existing guidelines on each specific topic by the 72 thematic modules. The reporting templates were also presented. The relevant documentation and reporting templates were shared with the participants prior to the consultation. The session results are in Appendix 5.

Working group session

15. The participants were divided into two working groups based on a balanced distribution of affiliations and geographical locations. The information on working groups A and B are presented in Appendix 4. The discussions were facilitated by Mr Sijit Das, Technical Officer, Intergovernmental Organization for Marketing Information and Technical Advisory Services for Fishery Products in the Asia and Pacific Region (INFOFISH), for Working Group A; and by Mr Yugraj Singh Yadava, Director, Bay of Bengal Programme Organization (BOBP-IGO), for Working Group B.

16. The working groups proposed a list of 52 existing government instruments in Asia, related to the following categories: policy (11), legislation (10), guidelines (14), and others (17). The detailed results of the session on the existing governance instruments are reported in Appendix 5. The 72 thematic modules were found relevant for the Asian region; and five were identified as priority areas, namely capacity building, gender issues, food security, incorporation of the ecosystem approach, and climate resilience.

17. The working groups also identified additional relevant areas as follows: (i) water availability and water regulation; (ii) water availability and water regulation, transboundary movement of aquatic animals; (iii) improving the information base and knowledge management; (iv) scheme of “Blue/Green

Tax and Polluter Pays”; (v) aging farmers/labour and their welfare; (vi) holistic financing system to incentivize good farm practices to small farms; (vii) low carbon footprint aquaculture chain; and (viii) aquatic animal disease surveillance, monitoring and early warning.

18. Following that discussion, the thematic modules of major relevance as well as the regional strengths and challenges were discussed. The detailed results of the session on the thematic modules are reported in Appendix 6.

Plenary session

19. The facilitators reported the results of the working group discussions in the plenary session. Afterwards, the participants identified and agreed on the regional strengths, weaknesses and priorities.

20. In Chapter 1 “Sustainable aquaculture and the 2030 Agenda”, the identified regional strengths are well-established industrial chain; research and education system; and active participation of women, aged people and youth in aquaculture. The regional challenges are vulnerability, weak capacity and skills of small farmers; and lack of involvement of women in policy and business decision-making. In addition, the thematic modules were prioritized in order: Capacity development (TM 7); Gender in aquaculture (TM 4); Food security, nutrition and improved diets (TM 6); Equitable and inclusive development (TM 3); and Sustainable livelihoods, social protection and safety nets in aquaculture (TM 5).

21. In Chapter 2 “Governing and planning aquaculture development”, the development of rice-fish aquaculture in the Asia region was highlighted. The identified regional strengths are diversity of farming systems; abundant water resources; strong regulations for aquaculture; successful technology and adoption, e.g. disaster monitoring and early warning system. The regional challenges are restriction on access of aquaculture to land and waterbodies; lack of investment, infrastructure support, and market linkage; and recovery capacity of small farmers. In addition, the thematic modules were prioritized in order: Ecosystem Approach to Aquaculture (TM 8); Climate-smart aquaculture (TM 33); Stakeholder participation (TM 22); and Aquaculture planning and policy (TM 23).

22. In Chapter 3 “Biodiversity and genetic resources”, the identified regional strengths are rich and diversified genetic resources; and progress in genetic improvement of culture species. The regional challenges are lack of good mechanism for genetic resources across the region; and limited species and limited supply. In addition, the thematic modules were prioritized in order: Biodiversity, habitat, ecosystems functions and aquaculture (TM 34); and Genetic resource management, development and conservation (TM 35).

23. In Chapter 4 “Better Management Practices in Aquaculture”, the identified regional strengths are seed production with broodstock, methodology; and guidelines are available and applied in some countries (pilot scale). The regional challenges are limited adoption because of limited human capacity; weak ability of farmers in managing the risks; and natural disasters and market volatility (e.g. trade conflict, COVID-19). In addition, the thematic modules were prioritized: Risk management and insurance (TM 39).

24. In Chapter 5, “Sustainable feed” has been highlighted several times by the national representatives, NGOs and IGOs; more diversity of fish species is required; and continued R&D capacity improvement to find alternative feeds. The identified regional strengths are well-established aquafeed industry, commercial feed industry and technology; and increasing political will and public interest to environmental protection. The regional challenges are lack of financial capability for small farmers; and lack of effective and practical regulatory scheme and tools, such as the “Blue/Green Tax and Polluter Pays”. In addition, the thematic modules were prioritized: Nutrition, feed and feeding (formulation of natural, farm-made and commercial) (TM 51).

25. In Chapter 6 “Water management”, the identified regional strengths are well-established environmental parameters for culture environment, while the regional challenges are the lack of culture effluent discharge standards.

26. In Chapter 7 “Biosecurity, aquatic animal health and animal well-being”, the identified regional strengths are the well-established global framework and technical capacity. The regional challenges are lack of successful examples; lack of alternatives to antibiotics; and lack of uniform dose-specific use of antibiotics at aquafarms.

27. In Chapter 8 “Specific farming systems”, the identified regional strengths are supportive government policy, technology advancement and evolvement of farming systems/practices and success models. The regional challenges are financial capability and the skill gaps of small-scale farmers, as well as the lack of wide adoption of new technology. In addition, the thematic modules were prioritized: Integrated aquaculture systems (TM 62).

28. In Chapter 9 “Aquaculture value chains, consumers, markets and trade”, the identified regional strengths are availability of standards and national and private certification schemes. The regional challenges are the economic burden to smallholders and infrastructure limitation. In addition, the thematic modules were prioritized in order: Quality certification and voluntary schemes (TM 70); Compliance with international standards (TM 71).

29. In Chapter 10 “Aquaculture statistics and information”, the identified regional strengths are availability of vast information and the national statistic system. The regional challenges are lack of online platform, poor access by small-scale farmers and the public; language barrier in sharing; monitoring data and statistics; guidelines should be established on environmental monitoring requirements and the acceptable level of impact for tropical regions in Asia; and the need for gender disaggregate data by activity along the value chain.

SESSION 3: CASE STUDY CONCEPTS

30. The Secretariat introduced the objectives of the session as follows: (i) identify case study concepts among the proposed ones during the Expert Consultation on the development of the GSA (held in Rome, Italy, from 17 to 20 June 2019) and the Tenth Session of the COFI:AQ (Appendix 7) and taking into account the selection criteria; (ii) suggest additional case study concepts, if any; and (iii) recommend a list of case study concepts, which include the links to thematic modules, countries and lessons learned. The Secretariat also stated that the purpose of the case study is to develop GSA (pathways) using lessons learned from case studies, and that the definition of case study is an in-depth description that includes adequate information of an aquaculture-related process, strategy and/or experience.

31. The Secretariat introduced features in Asia-Pacific aquaculture and presented criteria for selecting the case studies and the case study concepts selected by the previous Africa regional consultation. The Secretariat concluded by displaying the reporting template for the working group discussion. The relevant documentation and reporting template were shared with the participants prior to the consultation.

Working group session

32. The participants were divided into two working groups following the same composition of the previous session. The detailed results of each group discussion are reported in Appendix 8.

33. The objectives of the session were to identify the proposed case study concepts, selection criteria, and case study templates and to suggest additional case study concepts and recommend a list of case study concepts that link thematic modules, countries and lessons learned. The case study concepts would

follow the discussion of the previous session on existing governance instruments and regional strengths and weaknesses. A list of 43 proposed case study concepts was shared as a handout during the session. The list of proposed case studies is presented in Appendix 7.

Plenary session

34. The facilitators reported the results of the group discussion in the plenary session. The groups considered about 32 additional case study concepts and presented their reports in the plenary. The considered case study topics are presented in Appendix 8.

35. The groups were of the view that the case study concepts were extensive and that a case study can cover multiple thematic modules and can be implemented in multiple countries. The groups also suggested additional case studies based on regional and national contexts. The new case study concepts proposed during the session are the following:

- decent work and social protection measures in various aquaculture systems (upstream, midstream and downstream industries of aquaculture), including implications of migration for aquaculture labour;
- land tenure rights in different types of aquaculture systems and their implications.
- effective mechanism to address regulatory concerns affecting the trade of aquaculture commodity of regional importance: the case of attempted delisting of carrageenan in the USDA organic food standards;
- aquatic animal food bank project in Thailand to provide people in the project target community to have sufficient aquatic animal products to generate income and reduce household expenses;
- blue swimming crab broodfish bank to get fishers/fisheries communities involved in conservation of blue swimming crab resources in a viable manner (Thailand).
- government support on risk management in aquaculture using financial tool: fisheries and aquaculture insurance in China (FAO, 2017);
- Strengthening small aquaculture entrepreneurs: the case of a women's association in the Philippines (Gonzal, Pongthanapanich and Bueno, 2019);
- cost-benefit analysis on the use of food by-products as feed and to assess the feed's feasibility.
- role of aquaculture in promoting economic development in salt-affected inland areas (India).
- standard operating procedures (SOPs) for broodstock multiplication for production of certified specific pathogen-free seed in the Breed Multiplication Centres to see how adoption of SOPs can improve quality of stocking material in shrimp farming;
- genetically improved farmed tilapia farming in Pakistan. Pakistan is using aquaculture to address multiple development objectives, including food security and income generation. The sector is in a nascent stage, and the case study would throw light on integrating aquaculture in the national development strategy and the role of public support in aquaculture promotion;
- rice-fish culture: Integrated fish and rice farming is gaining popularity, as it is cost-effective and has less impacts on the natural ecosystem. The experiences of rice-fish culture if documented can contribute to its propagation;
- the role of the local culture in aquaculture growth. The scope of the proposed case study is to trace the history of aquaculture development in Asia and the reasons for its success (multi-country);
- how animal protein is contributing to aquaculture – linkage of wild fishery and aquaculture.
- role of feed in aquaculture. Feed constitutes approximately 60 percent to the total input costs. Lessons learned from the Asian fish feed industry can also be translated into the development of feed industry in Africa;
- fugu value chain in China: fugu farming was originally developed as an exportable item to Japan. However, subsequently, national strategies were formulated to mitigate trade risks by

promoting trained fugu chefs in local restaurants. The case study will shed light on domestic market planning for aquaculture, especially to address situations such as the ongoing pandemic;

- biofloc aquaculture: It is an emerging technology to support intensification of farming practices. The lessons learned so far can help in propagation of this technology;
- trade-offs between productivity and sustainability in the Asian context.

SESSION 4: REGIONAL PRIORITIES

36. The Secretariat stated that the objectives of the session were to: (i) revisit and verify the regional priorities identified in Session 2 and other exercises; (ii) propose additional priority areas to be included in the GSA; and (iii) link the regional priorities to the proposed case studies.

37. The expected outputs of the session were to: (i) develop a full list of regional priorities to be included in the GSA; (ii) agree on regional strengths and challenges in the identified priority areas; and (iii) map the linkage between the regional priorities and the case studies.

38. The Secretariat next presented the identified regional priorities for GSA in Asia based on the day 1 and day 2 sessions (Appendix 9) and displayed the reporting template for the plenary discussion. The reporting template was shared with the participants prior to the consultation.

Plenary session

39. The participants stayed in the plenary for open discussion. The discussions were facilitated by Mr Yadava. The session results are presented in Appendix 10.

40. The following regional priorities were identified at the consultation:

- maximize the use of information technology systems, digital innovation and satellite mapping;
- utilize the Internet of Things and artificial intelligence to develop more efficient and inclusive traceability systems;
- develop regional disease early warning forecasting and reporting system;
- establish mechanisms to increase cooperation;
- ensure access to high-quality and cost-effective feed for small-scale farmers;
- implement guidance for farmers on good feed practices in an ecological and nutritional context using different inputs, e.g. use of good local materials in tech-intensive farming;
- implement guidance on harmonization of standards;
- governments and social society to increase overall social acceptability of aquaculture;
- implement guidance on technical barriers in international trade; and
- measure the contribution of aquaculture in the blue economy.

SESSION 5: THE WAY FORWARD AND CLOSING SESSION

41. The Secretariat presented the format of GSA as follows: (i) it is proposed that the format of the GSA follow the model of the FAO guidance on “Transforming Food and Agriculture to Achieve the SDGs” (FAO, 2019) ; (ii) GSA should relate and contribute to the Sustainable Development Goals; and (iii) GSA should be a live document that can be updated as more information becomes available, and will be distributed in the form of a guidance manual (African regional consultation, November 2019).

42. The five key principles for the SDGs are to: (i) increase productivity, employment and value addition in the food system; (ii) protect and enhance natural resources; (iii) improve livelihoods and

foster inclusive economic growth; (iv) enhance the resilience of people, communities and ecosystems; and (v) adopt governance to new challenges.

43. The Secretariat provided an outline of the steps to be taken to develop and implement the GSA. The timeline for these activities is as follows: (i) subject to available funding, webinars and complementary current regional meetings, e.g. in Africa, Asia, Latin America and Small Island Developing States and drafting of the GSA (2019–2021); (ii) the 34th Session of COFI is informed of the GSA process (postponed to 2021); (iii) GSA is submitted to the Eleventh Session of the COFI Sub-Committee on Aquaculture in Mexico for review and adoption (2021); (iv) GSA is submitted to the 35th Session of COFI for endorsement (2022); (v) publication of GSA (2022–2023); and (vi) implementation (capacity building, etc.) (2022–2023 onward).

44. The closing address was provided by Mr Audun Lem, Deputy Director, FAO Fisheries and Aquaculture Division. He thanked the participants, facilitators and support staff for their attendance and contributions. He noted that, in the past, FAO has supported aquaculture development in the Asia region, and will continue to do so in the future. He reiterated the importance of developing the GSA as a tool for guiding policymakers, enhancing sustainable aquaculture and maximizing its contribution to the 2030 Agenda for Sustainable Development. He stressed the importance of the regional consultation process in the GSA development process. The full text of the closing statement is presented in Appendix 11.

45. Mr Roubach closed the consultation by providing a brief summary of the three-day meeting. He thanked everyone for attending and contributing to the consultation.

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APPENDIX 2 – OPENING STATEMENT

OPENING ADDRESS BY AUDUN LEM, DEPUTY DIRECTOR, FAO FISHERIES AND AQUACULTURE DIVISION

Ladies and gentlemen, good morning, afternoon, night!

On behalf of FAO, I wish you all a convivial welcome. We are looking forward to having a merry and enjoyable time together.

Great thanks to you for your participation in this regional Asia virtual meeting towards the development of “Guidelines for Sustainable Aquaculture”.

Please allow me first to thank our Regional Office for Asia to help organize this webinar. And under this capacity, our appreciation for their continuing endeavour to provide technical assistance to all Asian and Pacific Member Countries, and to facilitate an intergovernmental dialogue on sustainable and responsible aquaculture development. Also to FAO’s work programme within its Strategic Programmes and relevant partners and stakeholders.

Aquaculture is recognized as an important production system throughout the region. Therefore, this regional meeting is an essential step towards improving our knowledge on sustainable and successful aquaculture developments and towards the identification of possible success factors and pathways that might provide for suitable guidance to ensure its continued sustainable growth in all possible aquaculture sets and stages of development.

We look forward to the continuing Member Countries collaboration with FAO in order to provide all of us for a better view of the existing and new paths of success and methodologies to use for the development of the Guidelines for Sustainable Aquaculture in Asia.

Let me close these opening remarks by wishing you all a fruitful meeting that will help put the contribution of this workshop on the map for the benefit and growth of a truly sustainable aquaculture for all, without exceptions, in all Asia.

APPENDIX 3 – AGENDA

Time (CEST)	Day 1: 30 November 2020	
09.00–09.05	Instruction and rules	Mr Rodrigo Roubach, FAO Ms Turan Rahimzadeh, FAO
09.05–09.15	Opening ceremony: Opening remarks	Mr Audun Lem, Deputy Director, FAO Fisheries and Aquaculture Division
09.15–09.30	Session 1: Introduction to GSA and regional consultation	Mr KwangSuk Oh, FAO
09.30–09.45	Session 2: Existing governance instruments and thematic modules of importance	Ms Ana Menezes, FAO
09.45–09.50	Instructions for group discussions	Ms Yumi Son, FAO
09.50–10.00	Break	
10.00–11.50	Working Group A discussions on Sessions 1 and 2	Mr KwangSuk Oh and Ms Ana Menezes, FAO, Moderators Mr Sijit Das, Technical Officer, INFOFISH, Facilitator Ms Yumi Son, FAO, Note taker
	Working Group B discussions on Sessions 1 and 2	Mr Weimin Maio and Mr Rodrigo Roubach, FAO, Moderators Mr Yugraj Singh Yadava, Director, Bay of Bengal Programme, Facilitator Ms Yeseul Byun and Mr Pierre Murekezi, FAO, Note takers
11.50–12.00	Wrap up	Mr Rodrigo Roubach, FAO

Time (CEST)	Day 2: 1 December 2020	
09.00–09.30	Working Group A summary and report on Sessions 1 and 2	Mr Sijit Das, Technical Officer, INFOFISH, Facilitator
	Working Group B summary and report on Sessions 1 and 2	Mr Yugraj Singh Yadava, Director, Bay of Bengal Programme, Facilitator
09.30–09.50	Session 3: Case study concepts	Mr KwangSuk Oh, FAO
09.50–10.30	Working Group A discussions on Session 3	Mr KwangSuk Oh and Ms Ana Menezes, FAO, Moderators Mr Sijit Das, Technical Officer, INFOFISH, Facilitator Ms Yumi Son, FAO, Note taker
10.30–16.30	Working Group B discussions on Session 3	Mr Weimin Maio and Mr Rodrigo Roubach, FAO, Moderators Mr Yugraj Singh Yadava, Director, Bay of Bengal Programme, Facilitator Ms Yeseul Byun and Mr Pierre Murekezi, FAO, Note takers
16.30–16.40	Presentation of regional consultation survey	Ms Yumi Son, FAO
16.40–16.50	Wrap up	Mr Rodrigo Roubach, FAO

Time (CEST)	Day 3: 2 December 2020	
14.00–14.15	Working Group A summary and report on Session 3	Mr Sijit Das, Technical Officer, INFOFISH, Facilitator
14.15–14.30	Working Group B summary and report on Session 3	Mr Yugraj Singh Yadava, Director, Bay of Bengal Programme, Facilitator
14.30–14.35	Session 4: Introduction to regional priorities	Mr Weimin Maio, FAO
14.35–15.50	Discussion on Session 4	Mr Weimin Maio, FAO, Moderators Mr Yugraj Singh Yadava, Director, Bay of Bengal Programme, Facilitator Ms Yeseul Byun and Mr Pierre Murekezi, FAO, Note takers
15.50–16.05	Break	
16.05–16.35	Reporting back on Session 4	Mr Mr Sijit Das, Technical Officer, INFOFISH, Facilitator Mr Yugraj Singh Yadava, Director, Bay of Bengal Programme, Facilitator
16.35–16.50	Session 5: Summary of the regional consultation's results	Ms Ana Menezes, FAO
16.50–17.00	Session 6: Presentation of survey results	Mr Rodrigo Roubach, FAO
17.00–17.10	Next steps on the development of the GSA	Mr KwangSuk Oh, FAO
17.10–17.20	Closing remarks	Mr Audun Lem, Deputy Director, FAO Fisheries and Aquaculture Division

APPENDIX 4 – WORKING GROUPS

GROUP A	GROUP B
Australia	Bhutan
New Zealand and Nauru	India
Indonesia	Pakistan
Philippines	Iran (Islamic Republic of)
Japan	Nepal
Thailand	Sri Lanka
Viet Nam	Afghanistan
Singapore	Lao People's Democratic Republic
Cambodia	Myanmar
Malaysia	China
INFOFISH – Facilitator	Thailand
SEAFDEC	BOBP-IGO – Facilitator
ICSF	WAS-Asia
APEC	NACA

APPENDIX 5 – SESSION RESULTS ON EXISTING GOVERNANCE INSTRUMENTS IN ASIA

The tables below encompass all inputs received by participants prior to this consultation through homework, during the consultation through working group discussions and after the consultation.

Title of the existing regionally developed aquaculture governance instruments	Category (policy, guidelines, legislation, etc.)	Area (country, subregion, region, subregional body)	Remarks
National Fisheries Policy 2020	Policy	India	<p>The policy is based on the cardinal principles of equity and equality and adopts a people centric and participatory approach, mainstreams gender and maintains intergenerational equity. The policy has a vision to develop an ecologically healthy, economically viable and socially inclusive sector contributing to the economic prosperity and well-being of fishers and fish farmers and provides food and nutritional security to the country.</p> <p>Socioeconomic upliftment and economic prosperity of fishers and fish farmers, especially small-scale and traditional is the core of the policy.</p> <p>Ecological considerations: Conserve and manage native fish genetic stocks and associated habitats and ecosystems; culture of identified exotic species with high production and profit potential to be introduced with biosecurity protocols adopting better management practices (BMPs) and good agricultural practices (GAPs); aquaculture zones to be demarcated for better planning and regulation; BMPs will be promoted; diversification using native species, especially those with high preference and demand in domestic market (thereby the focus is on domestic consumption); propagation of area-specific integrated culture to be adopted; regulation of exotics and installation of quarantine facilities; the government will take steps to control the proliferation of fishmeal plants to check overfishing caused by it; conservation of indigenous fisheries and aquatic biodiversity will become integral part of the fisheries management; with regard to species for culture, all native species will be encouraged, whereas all exotics will be prohibited other than in land-based closed aquaculture systems. Genetically modified species will not be allowed for mariculture activities.</p> <p>Social considerations: With regard to human rights, access to institutional credit as priority lending, especially to small and marginal fish farmers; promote community partnerships and effective cooperative movement (also includes private participation); farmer-producer organizations will be formed to cater to small pond-holder needs; the National Fisheries Policy (NFP) advises that the</p>

Title of the existing regionally developed aquaculture governance instruments	Category (policy, guidelines, legislation, etc.)	Area (country, subregion, region, subregional body)	Remarks
			<p>National Water Policy 2012 include the minimal right to water for fisheries and aquaculture; enhance support to women cooperatives and self-help groups, as well as through women-friendly financial support schemes.</p> <p>Social security/social protection: Document and handhold fish farmers with smallholdings through schemes and programmes.</p> <p>Tenure rights: Leasing policy will be developed with leasing priority to be given to local fishing communities and their cooperatives groups/dwellers; minimal lease value will be determined also on the ground of equity and long-term sustainable utilization.</p> <p>Gender equality and decent work: One of the strategies named under the NFP 2020 is focused intervention towards gender mainstreaming, creation of congenial workplace environment, including amenities and working conditions (there is a stress for this in post-harvest activities). The policy focuses on interventions to improve socioeconomic status and well-being of women.</p>
Pradhan Mantri Matsya Sampada Yojana (PMMSY)	Scheme	India	<p>The scheme aims at sustainable, responsible, inclusive and equitable harnessing of fisheries potential; and also aims at social, physical and economic security of fishers and fish farmers.</p> <p>Species diversification, promotion of <i>Penaeus indicus</i> (a locally available shrimp), etc., is stressed; promotion of good agricultural practices and organic aquaculture practices emphasized; aquatic health management given focus; aquaparks to be developed in a hub-and-spoke model integrating clusters to end-to-end solution based on local needs and specific themes; promotion of organic aquaculture practices; promotion of domestic consumption stressed.</p> <p>Human rights aspects: One such aspect is encouraging collectivization of fishers and fish farmers through fish farmers' producer organizations to increase the bargaining power of fishers and fish farmers in PMMSY's new strategy.</p> <p>Social security/social protection: Fish farmers are also beneficiaries in the PMMSY.</p>
Coastal Aquaculture Authority Act 2005	Legislation	India	<p>Regulate activities connected with coastal aquaculture; issue guidelines to ensure coastal aquaculture does not negatively impact on the coastal environment and encourage responsible aquaculture; establish regulations for the construction and operation of aquaculture farms in coastal areas; inspect these farms</p>

Title of the existing regionally developed aquaculture governance instruments	Category (policy, guidelines, legislation, etc.)	Area (country, subregion, region, subregional body)	Remarks
			<p>for any environmental impact; register the farms; order removal of any farms not complying with regulations and causing environmental damage.</p> <p>Human rights aspects include regulating coastal activities and protecting the livelihoods of coastal communities.</p>
Coastal Aquaculture Authority Rules 2005	Rules	India	<p>Ecological considerations: The rules set down that no agricultural, mangrove, saltpans, wetlands, common village lands and those used for public purposes, land under sanctuaries and national parks are converted to aquaculture farms; advise state governments to come up with common water intake and discharge canals and establish common effluent treatment plan.</p> <p>The instrument must fix standards regarding the use of seed, feed and other growth supplements used in coastal aquaculture; monitor the compliance of the farms to environmental protection measures; responsible for collection and dissemination of socioeconomic data with respect to coastal aquaculture. Popularize sustainable utilization and fair and equitable sharing of coastal resources.</p>
Guidelines for Regulating Coastal Aquaculture 2005	Guidelines	India	<p>Focus of the guidelines is largely on environmentally responsible and socially acceptable shrimp aquaculture to enhance positive contributions to coastal communities; the guidelines, while encouraging practising extensive/traditional as well as improved traditional methods, discourage semi-intensive or intensive methods of culture, as they exert greater pressure on the environment and have larger social impacts; the document gives a list of drugs that are banned for use in shrimp culture and establishes the maximum permissible limits of certain chemicals in fish and fishery products; the guidelines also lay down steps for environment impact assessment, encourage a cluster approach of shrimp farm development, and focus on imparting training on better management practices.</p> <p>Human rights measures include measures to protect the livelihoods of coastal communities.</p>
Guidelines for Fisheries Development in Reservoirs	Guidelines	India	<p>The guidelines call for the establishment of reservoir policy by every state as a prerequisite for further development of reservoirs.</p> <p>Social security/social protection: Guidelines advise that policies should name beneficiaries to whom the socioeconomic benefits would accrue and the development of reservoirs should ensure it benefits the poorest.</p> <p>Tenure rights: The guidelines underline the importance of clear leasing rights and leasing periods.</p>

Title of the existing regionally developed aquaculture governance instruments	Category (policy, guidelines, legislation, etc.)	Area (country, subregion, region, subregional body)	Remarks
Guidelines for Cage Culture in Inland Open Waterbodies of India	Guidelines	India	<p>These guidelines caution against unplanned expansion that could harm environmental and social equity. The document advises against augmenting fish production by negatively impacting the livelihood of traditional/local fishing communities; the need to ensure aquaculture growth to be sustainable and inclusive stressed; the document underlines the importance of being in harmony with principles of ecological integrity, natural resource conservation without conflict with other users of water and land; the document further goes on to guide on the carrying capacity of reservoirs and gives a fair picture of the number of cages that can be allowed based on different types of waterbodies and suggests that users should follow a precautionary approach while dealing with data deficient systems.</p> <p>Tenure rights: This document clearly acknowledges the importance of tenurial rights on cages as well as rights on the fish resource which the document insists is the primary right of the local fisher communities.</p> <p>Social protection: Guidelines indicate that cage culture should be of social relevance; and one of the main goals from cage culture other than increased production should be an improved standard of living for the weakest of the population.</p> <p>Decent work: The guidelines emphasize the safety of workers.</p>
Kerala Inland and Fisheries Act 2010	Act	Sub-national (State of Kerala, India)	<p>Human rights: Regulate and control responsible aquaculture and ensure protection of livelihoods and traditional rights of fishers; ensure availability of nutritious fish and food security to people.</p> <p>Tenure rights: The act, though, has the power to notify any public waterbody for aquaculture- related development or public interest of the aquaculture sector; this, however could be done only after consultation with local self-government institutions.</p> <p>Ecological considerations: The act could prohibit/limit the destruction or conversion in any manner any water resource endangering existing ecological conditions; could limit propagation, rearing and marketing of fish species which are not indigenous; could restrict or limit intensive/ highly intensive culture harming environment; could restrict use of ecologically important areas, such as mangroves or fish breeding and nursery sites for aquaculture; restrict indiscriminate fish farming without considering the carrying capacity of inland water areas; no person shall engage in aquaculture without licence or registration obtained in accordance with acts and rules.</p>

Title of the existing regionally developed aquaculture governance instruments	Category (policy, guidelines, legislation, etc.)	Area (country, subregion, region, subregional body)	Remarks
			<p>Gender equality: With regard to representation of women in the Fisheries Act, the act has acknowledged the spouses and widows of fishers. Though this is a progressive step, it is important to note that the role of women as fishers and fish farmers is missing in the act.</p>
Kerala Fisheries Policy 2019	Policy	Sub-national (State of Kerala, India)	<p>The policy is premised on the belief that interventions to increase fish production should be achieved considering the unique environmental conditions existent; the policy states that the rotational culture of finfish after a shrimp harvest will be encouraged to reduce the load on the system as well as to prevent disease outbreaks (this could help in local consumption of fish); greater focus on developing improved seeds of indigenous varieties of a fish; aquaculture will be carried out in individual waterbodies after estimating the carrying capacity of each resource under consideration; emphasis will be given to organic aquaculture; promotion of traditional aquaculture practices such as those seen in pokkali, kol and kaippad areas will be encouraged; cage culture in large and medium reservoirs (allowable number of cage will be estimated prior) will be encouraged and its management will be given to nearby fisheries cooperatives, self-help groups (SHGs), Scheduled Caste/Scheduled Tribe (SC/ST) cooperatives, etc.; identify areas suitable for mariculture.</p> <p>Social security and protection: The primary aim of the policy is underlined as improving the lives of fishers, and any intervention in this sector should be seen as part of putting in place safety security measures; cage culture in large and medium reservoirs (allowable number of cage will be estimated prior) will be encouraged and its management will be given to the nearby fisheries cooperatives, SHGs, SC/ST cooperatives, etc.; identify areas suitable for mariculture and areas thus identified will be allocated to fisher groups for mariculture.</p> <p>Human rights: Underscores the importance of conservation through people's participation; aquaculture should be treated on par with agriculture, and loans should be made available at minimal interest rates to farmers along with providing electricity at subsidized rates as provided to agriculture; crop insurance will be introduced in aquaculture.</p> <p>Gender: The policy acknowledges that 66 percent of workers in the fisheries and aquaculture value chain in the state are women and therefore a targeted approach for their empowerment and upliftment is a need.</p>

Title of the existing regionally developed aquaculture governance instruments	Category (policy, guidelines, legislation, etc.)	Area (country, subregion, region, subregional body)	Remarks
Andhra Pradesh Fisheries Policy 2015–2020	Policy	Sub-national (Andhra Pradesh, India)	Ensure sustainable aquaculture for ecological integrity and biodiversity; assist in domestic market development.
Odisha Fisheries Policy 2015	Policy	Sub-national (Odisha State, India)	<p>Objective includes tapping the untapped potential of aquaculture to contribute to food and nutritional security.</p> <p>Ecological considerations: Aquaculture production to be vertically and horizontally expanded using scientific and eco-friendly methods. Special attention for small-scale aquaculture to improve practices through extension services, capacity building, entrepreneurship development training etc.; promotion of integrated farming, rice-fish farming, fish culture in watershed/water harvesting structures; backyard/household ponds; adoption of good agricultural practices; organic farming promoted; conversion of existing single species hatcheries to multispecies hatcheries as a measure to diversify species in freshwater aquaculture. With regard to mariculture, state should adopt a precautionary approach, with emphasis to diligently evaluate and come up with a management framework before the approach is approved.</p> <p>Social security, social protection and human rights: For reservoir tanks/cages, preference will be given to Primary Fishermen Co-operative Societies/authorized self-help groups or Pani Panchayat of that reservoir or waterbody; special focus is on small indigenous freshwater fish species (SIFFS) – for their role in providing micronutrition – is promoted to address the micronutrient deficiencies in the rural poor, children, and pregnant and lactating women, and thus SIFFS culture in small sized seasonal/perennial ponds, backyard ponds, water-logged rice fields, etc., will be encouraged; a farmer friendly policy termed as “social fishery” will be initiated to encourage farmers to grow SIFFS along with Indian major carps. This sustainable approach is expected to economically and nutritionally benefit poor farmers and is hoped to reduce the pressure on wild stocks of SIFFS. Efforts to include SIFFS in midday meal scheme will be undertaken and information on the nutritional benefits of the same will be disseminated.</p>

Title of the existing regionally developed aquaculture governance instruments	Category (policy, guidelines, legislation, etc.)	Area (country, subregion, region, subregional body)	Remarks
			<p>On human rights: Fiscal incentives will be given to aquaculture on par with agriculture; it is envisaged that the fisheries sector will move towards a more democratic, participatory management system based on a co-management approach.</p> <p>Labour: The policy also indicates the number of jobs that will be provided by each planned intervention (a welcome change from the usual approach where only production is the only highlight and provision of labour is not given any importance).</p>
Tamil Nadu Fisheries Policy Note 2020–2021	Policy Note	Sub-national (Tamil Nadu State, India)	Generate additional rural employment through aquaculture.
Guidelines for Adoption of MGNREGA Ponds for Aquaculture	Guidelines	National	<p>This scheme is a social protection measure. This is a convergence of the Centrally Sponsored Scheme on Blue Revolution (CSS-BR) and the Mahatma Gandhi National Rural Employment Guarantee Scheme. This helps small and marginal farmers to build multipurpose farm ponds, which includes pisciculture. When infrastructure creation is done under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) 2005, the input cost will be borne by CSS-BR. This not only gives guaranteed employment to small and marginal farmers but also helps sustain income through fish culture. Even the ponds dug for agriculture will be done in such a way as to encourage fish culture (shorter water retention to be used for seed rearing and will be dovetailed with Mission Fingerling Programme; and longer ones as grow-out ponds). More farm ponds will be encouraged to undertake pisciculture and extension services will be provided; maintenance of community ponds will also be allowed under MGNREGA.</p>
Kisan Credit Card	Policy	National	<p>Human rights: The Kisan Credit Card has been extended to fisheries and aquaculture, and the first time such a move was initiated was in the budget of 2018–2019. This is to meet working capital requirement of farmers; meet short-term credit requirements; the beneficiaries include women’s groups, such as the self-help groups. The scale of finance includes working capital components of aquaculture, which includes recurring costs towards farm inputs, including seed, feed, labour, lease rent, etc.</p>

Title of the existing regionally developed aquaculture governance instruments	Category (policy, guidelines, legislation, etc.)	Area (country, subregion, region, subregional body)	Remarks
Guideline on the development of Standard Operating Procedures (SOPs) for health certification and quarantine measures for the responsible movement of live food finfish	Guideline	Regional	-
Standard Operating Procedures for responsible movement of live aquatic animals for the Association of Southeast Asian Nations (ASEAN)	Guideline	Regional	-
Guideline for use of chemicals in aquaculture and measures to eliminate the use of harmful chemicals	Guideline	Regional	-
Regional guidelines on traceability system for aquaculture products in the ASEAN region	Guideline	Regional	-
Guideline on ASEAN Good Aquaculture	Guideline	Regional	-

Title of the existing regionally developed aquaculture governance instruments	Category (policy, guidelines, legislation, etc.)	Area (country, subregion, region, subregional body)	Remarks
Practices (ASEAN GAqP for food fish)			
Royal Ordinance on Fisheries B.E. 2558 (2015)	Legislation	Thailand	-
The Enhancement and Conservation of National Environmental Quality Act, B.E. 2535 (1992)	Legislation	Thailand	-
Agricultural Commodity Standards Act, B.E. 2551 (2008)	Legislation	Thailand	-
Animal Epidemics Act, B.E. 2558 (2015)	Legislation	Thailand	-
Food Act B.E. 2522	Legislation	Thailand	-
Animal Feed Control Act, B.E. 2558 (2015)	Legislation	Thailand	-
The Enhancement and Conservation of National Environmental Quality Act, B.E. 2535 (1992)	Legislation	Thailand	-
National Strategy (2018–2037)	Policy	Thailand	-

Title of the existing regionally developed aquaculture governance instruments	Category (policy, guidelines, legislation, etc.)	Area (country, subregion, region, subregional body)	Remarks
The Twelfth National Economic and Social Development Plan (2017–2021)	Policy	Thailand	
Strategy of Agriculture and Cooperatives (2018–2037); Strategy of Department of Fisheries (2017–2021)	Policy	Thailand	
Strategy of Inland Aquaculture Research and Development Division (2017–2026)	Policy	Thailand	
Regional Guidelines for Responsible Fisheries in Southeast Asia – Responsible Aquaculture	Guidelines	Southeast Asia	
Have new law related to Fisheries (including Aquaculture): Emergency Decree on Fisheries, B.E. 2558, 2560	Legislation	Thailand	
The development and support of responsible aquaculture on regional and transboundary	Proposed project under the Mekong Basin-wide	The Lower Mekong Basin: Cambodia,	Looking for funding support to implement

Title of the existing regionally developed aquaculture governance instruments	Category (policy, guidelines, legislation, etc.)	Area (country, subregion, region, subregional body)	Remarks
levels in the Lower Mekong Basin	Fisheries Management and Development Strategy	Lao People's Democratic Republic, Thailand and Viet Nam	
COFI 2018–19: The 2030 Agenda for Sustainable Development	Guideline	Regional	The 2030 Agenda for Sustainable Development: The Challenge for Aquaculture Development and Management
Building a Common Vision for Sustainable Food and Agriculture (Principles and Approaches)	Guideline	Regional	It is one of the document/guidelines to be used as reference for the 2030 Agenda for Sustainable Development
Regional Consultation on the Development of Guidelines for Sustainable Aquaculture (GSA)	Report	Regional	This consultation was the first of a series of regional consultations on the Development of “Guidelines for Sustainable Aquaculture (GSA)”
Transforming food and agriculture to achieve the SDGs	Guideline	Regional	Twenty interconnected actions to guide decision makers in achieving the SDGs
Report of the 33rd Session of the Committee on Fisheries	Report	Regional	—
Decisions and recommendations of the Ninth Session of the COFI	Report	Regional	—

Title of the existing regionally developed aquaculture governance instruments	Category (policy, guidelines, legislation, etc.)	Area (country, subregion, region, subregional body)	Remarks
Sub-committee on Aquaculture, Rome, Italy, 24–27 October 2017			
Report of the Ninth Session of the Sub-Committee on Aquaculture	Report	Regional	–
Supplementary documentation and analysis towards the preparation of sustainable aquaculture guidelines	Report	Regional	–
Special event on better management practices and guidelines for sustainable aquaculture development	Report	Regional	
Basin Development Strategy 2016–2020	Strategy	Regional (the Lower Mekong Basin – Cambodia, Lao People’s Democratic Republic, Thailand)	This strategy has been an expected output of “The development and support of responsible aquaculture on regional and transboundary levels in the Lower Mekong Basin” (i) Impact of aquaculture on environment, biodiversity, genetic diversity (ii) Indigenous species have been recommended to promote (iii) Funding availability

Title of the existing regionally developed aquaculture governance instruments	Category (policy, guidelines, legislation, etc.)	Area (country, subregion, region, subregional body)	Remarks
		and Viet Nam)	
Technical guidance for environmentally friendly aquaculture development	Technical guidance	Regional (the Lower Mekong Basin – Cambodia, Lao People’s Democratic Republic, Thailand and Viet Nam)	This technical guidance has been an expected output of “The development and support of responsible aquaculture on regional and transboundary levels in the Lower Mekong Basin” (i) Impact of aquaculture on environment, biodiversity, genetic diversity (ii) Indigenous species has been recommended to promote (iii) Funding availability
“Green healthy aquaculture development” (2020) by the Ministry of Aquaculture in China	Strategy and guidance	China	The Ministry of Aquaculture in China developed the Action Plan to Safeguard Livelihoods and the Environment, promoting ecologically sustainable production and wastewater treatment and regulating chemical use. Government encourages fish farmers to produce farmed fish with less waste in aquaculture activities. After data analysis, need to add a new module on markets and good guidance. Government regulates all aquaculture activity since 1980. Many aquafarms had to close because of noncompliance to the regulation. Regulated measures about pollution and unregulated discharge apply especially to lakes and reservoirs. Regulation on manufacturing/processing marine product should be based on the standard of aquaculture product quality. Zoning by local government will allow limited aquaculture activity in classified zones. Environmental feasibility study should be conducted regarding aquaculture activity. China has developed a number of national standards for culture of different species in specific systems.

Title of the existing regionally developed aquaculture governance instruments	Category (policy, guidelines, legislation, etc.)	Area (country, subregion, region, subregional body)	Remarks
Developed the evaluation process for introduction of alien fish species	Strategy	China	
The Law of Biosafety and Biosecurity in 2020	Legislation	China	In 2020, China issued “The Law of Biosafety and Biosecurity”. This law also covered biosecurity issues in aquaculture.
The Opinions on Accelerating the Green Development of Aquaculture in 2019	Guideline	China	In 2019, the Ministry of Agriculture and Rural Affairs, the Ministry of Ecology and Environment, the Ministry of Natural Resources and the National Development and Reform Commission jointly issued “the Opinions on Accelerating the Green Development of Aquaculture”. This is the first guiding document approved by the State Council since the founding of the People’s Republic of China, which is specifically aimed at the aquaculture industry. It is of great significance to the transformation and upgrading of the aquaculture industry.
National Policy for Fisheries and Aquaculture	Policy	Pakistan	National Policy for Fisheries and Aquaculture in Pakistan (Technical Cooperation Programme project: work in progress). Currently, there is no aquaculture-specific regulation. There are the aquaculture standards for the exporting of goods developed by local governments. Government is currently reviewing the existing fishery federal legislation on fisheries and plans to amend in a way to include good aquaculture practices for enhanced quality of farmed fish.
Sustainable Aquaculture Project	Project	Myanmar	In Myanmar, the development of Sustainable Aquaculture Project funded by the German Agency for International Cooperation (GIZ) is ongoing; the project’s goals are food security (high-quality products for domestic consumption), nutrition and employment. The project is also aiming to enhance the competitiveness of small and medium-sized enterprises (SMEs) operating in coastal and inland aquaculture value chains.
Mangrove-based aquaculture	Strategy	Myanmar	Promotion of mangrove-friendly shrimp aquaculture in Myanmar. The strategy is a combination of mangrove habit restoration, local farmers’ better livelihoods and the climate resilience of the country’s coastal area. Mangrove fishery is popular in the ASEAN region.

Title of the existing regionally developed aquaculture governance instruments	Category (policy, guidelines, legislation, etc.)	Area (country, subregion, region, subregional body)	Remarks
Fishery regulation focuses on inland activity	Regulation	Lao People's Democratic Republic	The country's fishery regulation focuses on inland activity. Government plans to develop aquaculture guideline specifically tailored to the nature of Mekong River Basin.

APPENDIX 6 – SESSION RESULTS ON THEMATIC MODULES

The tables below encompass all inputs received by participants prior to this consultation through homework and during the consultation through working group discussions.

Chapters of thematic modules	Country or regional strengths	Country or regional challenges	Priorities (5 = first priority and 0 = least priority)	Comments	Proposed by
Chapter 1: Sustainable Aquaculture and the 2030 Agenda					
	A large labour force already in the agriculture sector is easily able to engage in aquaculture	Reliable statistics on the number of aquaculture farmers in the region Lack of gender disaggregated data	5		Myanmar
	Asian region constitutes 95.5 percent of aquafarmers of the world			Guidelines should ensure protection of human rights in aquaculture; decent and safe work in aquaculture; improve labour conditions; eliminate child labour, etc., in aquaculture A module dedicated to workers in aquaculture is long due. Human rights and labour rights should be brought up here under this chapter and not just as good practices as this is key to ensure sustainable aquaculture development	ICSF
	Existence of young workforce and unbiased	Lack of funds in implementing all	Capacity building/training of farmers for sustainable aquaculture		Philippines

Chapters of thematic modules	Country or regional strengths	Country or regional challenges	Priorities (5 = first priority and 0 = least priority)	Comments	Proposed by
	gender employment in aquaculture Incorporation of eco-friendly and nutritious feeds and diet in aquaculture Increased production yearly for food security	sustainable aquaculture plans and activities Need more training for farmers and new professionals in schemes and trends for sustainable aquaculture There is still insufficient sustainable livelihoods, especially in small-scale farmers and social protection from the government in aquaculture	Finding budget from various sources nationally and internationally to achieve sustainable aquaculture Addressing low investments by local government units in extension services (devolved governance)		
Chapter 2: Governing and Planning Aquaculture Development					
	Ability to supplement current crop-based agriculture	Limited access to finance prevents further investment in the sector	5		Myanmar
	Range of climate regimes throughout Myanmar allowing for a greater range of fish species to be farmed		5		Myanmar
		Damage caused by natural disasters and inclement weather, intensified climate change	4		Myanmar
				Planning and policy development should favour local livelihoods,	ICSF

Chapters of thematic modules	Country or regional strengths	Country or regional challenges	Priorities (5 = first priority and 0 = least priority)	Comments	Proposed by
				<p>food and nutritional security, income security, etc.</p> <p>Highlight initiatives in this regard and study the effectiveness of such measures. For example, the fisheries policy of Odisha, India</p>	
	<p>Government policies are in place for aquaculture</p> <p>Good public-private partnerships</p> <p>Implementation of good aquaculture practices (GAqP)</p> <p>Stakeholders are willing to participate in the government's projects in sustainable aquaculture</p> <p>Protocols in place in aid of humanitarian relief efforts</p>	<p>Still insufficient favourable environment</p> <p>Insufficient support during natural disasters</p> <p>Insurance schemes as aid still not feasible</p> <p>Theft is still a problem with small-scale farmers</p> <p>Existence in certain countries of laws and strategic plans dedicated to aquaculture</p> <p>There are countries with emergency and early warning systems, but there are still some that lack them</p>	<p>Emergency situations and early warning systems</p> <p>Favourable environment (infrastructure to be used in natural disasters, such as typhoons, to prevent and minimize losses in aquaculture)</p> <p>Governance/collective management of common resources</p> <p>Favourable environment: research, funding, capacity building</p> <p>Aid schemes, especially during natural disasters</p> <p>Strengthening of industry national representations</p> <p>GIS-based tools for marine aquaculture monitoring and marine spatial planning</p>		Philippines

Chapters of thematic modules	Country or regional strengths	Country or regional challenges	Priorities (5 = first priority and 0 = least priority)	Comments	Proposed by
TM 27: Enabling environment	In Thailand, environment protection issues have been addressed by law	Comprehensive management of environment needs coordination Conflict between aquaculture development and environment less addressed Green aquaculture training for farmers and management and stable and reliable online monitoring technology needs to be added Environment pollution is still serious	1		Thailand
TM 33: Climate change and aquaculture	Diverse species, production systems	Disease outbreak	Prioritize climate-smart aquaculture	Need to focus on diverse species	INFOFISH
Chapter 3: Biodiversity and Genetic Resources					
				Emphasis on the promotion of indigenous species for culture and local domestic consumption as seen in the states of Odisha and West Bengal in India	ICSF
	There have been risk analysis conducted and studies in the introduction and	The use of genetically modified organisms is still rare in aquaculture	Introduction and transfer of species for aquaculture purposes to have an alternative in farming		Philippines

Chapters of thematic modules	Country or regional strengths	Country or regional challenges	Priorities (5 = first priority and 0 = least priority)	Comments	Proposed by
	transfer of species for aquaculture purposes There are laws, government bodies and non-government bodies that are tasked and that are concerned in protecting and maintaining the biodiversity, habitats and ecosystem of fishes	Management, development and conservation of genetic resources are still not widespread in aquaculture	Biodiversity, habitat, ecosystem functions and aquaculture		
TM 35: Genetic resource management, development and conservation	High market demand of specific pathogen free/ specific pathogen resistant post-larvae, broodstock and high-yielding variety	Increasing population	Disease resistant and high yield trait development	Need to focus on smart genomics	INFOFISH
Chapter 4: Better Management Practices in Aquaculture		Increasing input costs making operation less competitive	3		Myanmar
		Damage caused by natural disasters and inclement weather, intensified climate change	5		Myanmar
	There are in place known controls to most predators and undesirable organisms (plant, fish, etc.) in aquaculture	Increased collaboration of aquaculturists, clusters and professional associations to achieve higher sustainability in aquaculture	Enhanced implementation of good aquaculture practices Efficient use and recycling of resources to reduce waste in aquaculture		Philippines

Chapters of thematic modules	Country or regional strengths	Country or regional challenges	Priorities (5 = first priority and 0 = least priority)	Comments	Proposed by
	<p>The use of good aquaculture practices in farms has been documented and are known to be effective</p> <p>Population density is high in aquaculture due to intensification, and there are many practices used to maximize profit such as polyculture</p> <p>System for monitoring and issuance of alerts for harmful algal blooms are in place</p>	<p>In the country, security of tenure is still a big issue in work</p> <p>There is still evidence to poor reduction of losses and waste in some aquaculture farms</p>	Much stable security of tenure to aquaculture workers and professionals		
TM 38: Business management; and TM 39: Risk management and insurance	Attracted by young and new entrepreneurs	Lack of finance and insurance support	Financial support and risk coverage should be included in National Fisheries Policies	Need to focus on aquaculture insurance and sustainable investment	INFOFISH
Chapter 5: Sustainable Feed					
		Conversion of low-value fish from food to feed and its impacts on local food/nutrition security, livelihoods and income security		<p>Guidelines should ensure that this is not allowed if the SDGs are to be achieved</p> <p>This needs to be studied and documented. Such activities should be actively discouraged</p>	ICSF

Chapters of thematic modules	Country or regional strengths	Country or regional challenges	Priorities (5 = first priority and 0 = least priority)	Comments	Proposed by
	The use of sustainable feeds in the region has been known way before BMPs on feeding management (tilapia and milkfish)	Sourcing of cheap but good source of nutrients to be incorporated in diet formulations	Research on feeds which are eco-friendly and efficient		Philippines
TM 51: Nutrition, feed and feeding (formulation of natural, farm-made and commercial); and TM 52: Use of fish, fish oil and fishmeal in aquaculture feed, Use of alternative feed ingredients to fish oil and fishmeal i.e. algae, insect meal, single cell protein, plant protein, etc.	Several initiatives from the private sector	Still need time for mainstreaming	Yeast-, bacteria-, algae- and insect-based proteins; functional feed and feed additives	Seaweed- and algae-based protein has immense regional and global prospects	INFOFISH
Chapter 6: Water Management					
	Surplus fallow and vacant land area in states and regions that also possess water resources to develop aquaculture	Aquaculture is prioritized well behind rice cultivation for access to irrigation water, and the cost of using irrigation water for aquaculture per unit volume is higher	4		Myanmar
	There are still only a few farms incorporating alternative energy	Mining is still one of the critical issues that affects not only aquaculture but	Incorporation of alternative sources of energy such as solar panels to reduce		Philippines

Chapters of thematic modules	Country or regional strengths	Country or regional challenges	Priorities (5 = first priority and 0 = least priority)	Comments	Proposed by
	resources, such as solar panels, in aquaculture Many farms have withdrawal and conservation ponds used in aquaculture	also flooding in certain areas Effluent management in some farms are still not managed	electricity consumption in farms Fortified campaign against mining Better effluent and waste management		
Chapter 7: Biosecurity, Aquatic Animal Health and Animal Well-being					
				The effect on indigenous fish species and the need for biosecurity to protect and conserve aquatic health. This could directly have implications on the food/nutritional security of the local population wherever exotic varieties are being considered	ICSF
	Research on disease prevention is strongly supported. Research on health issues is being strengthened. Quarantine regulations are in place. Specific pathogen-free fry/post-larvae is becoming popular, and regular diagnosis is developing in commercial production	Disease reporting and emergency response are not yet strengthened Disease prevention technologies in production need to be developed. Background knowledge of pathogens need to be updated	3		Thailand

Chapters of thematic modules	Country or regional strengths	Country or regional challenges	Priorities (5 = first priority and 0 = least priority)	Comments	Proposed by
	<p>Biosecurity and aquatic health management are in place in most farms</p> <p>Increasing power and collaboration with regard to microbiological control (AMR)</p> <p>Laws are in place with regard to animal welfare</p>	<p>Small-scale farms still lack biosecurity and aquatic health management</p> <p>AMR is still a global challenge</p> <p>Animal welfare implementation and safeguards should be implemented and monitored</p>	<p>Increased training in aquatic animal health management in aquaculture and biosecurity</p> <p>Increased awareness in antimicrobial use and resistance in aquaculture</p> <p>Increased awareness on animal welfare</p>		Philippines
TM 58: Biosecurity and aquatic health management	Biosecurity principles are generally followed in Thailand	<p>Biosecurity concept is not officially emphasized, It is little practice in freshwater aquaculture.</p> <p>Training about biosecurity needs to be added.</p> <p>The factories and farmers don't pay attention to biosecurity</p>	2		Thailand
TM 58: Biosecurity and aquatic health management; and TM 60: Animal well-being	Increasing awareness on AMR and application of alternatives to antibiotics	Absence of unified dose for aquaculture antibiotics and application of veterinary antibiotics for aquaculture species	One Health approach by FAO-WOAH-WHO/PMP-AB	<p>AAHMP (Aquatic Animal Health Management Products) Manufacture, Registration, Dosing, Trade and Marketing review needed.</p> <p>Standard operating procedures for seafood value chains during pandemic outbreak (e.g. COVID-19) should be included</p>	INFOFISH
Chapter 8: Specific Farming Systems					

Chapters of thematic modules	Country or regional strengths	Country or regional challenges	Priorities (5 = first priority and 0 = least priority)	Comments	Proposed by
		Weak investment climate, and poor transport infrastructure and electricity supply	4		Myanmar
				<p>Promotion of small-scale aquaculture; emphasis on its role in ensuring food and nutrition to local communities, resulting in health and well-being, which is one of the main outcomes intended by the SDGs</p> <p>Promotion of integrated aquaculture systems</p> <p>Promotion of polyculture systems using indigenous varieties wherever appropriate</p> <p>Monitoring of other systems (especially intensive aquaculture systems; systems using exotic culture organisms, etc.) and their social and environmental impacts</p>	ICSF
	There are integrated aquaculture systems, such as the recirculating aquaculture system, polyculture, etc.	<p>Innovation and technology enhancement in aquaculture</p> <p>Risk analysis and trials in cultivation of cold-water aquatic species in cool environments in the country</p> <p>Documentation of estuarine capture-based aquaculture</p>	<p>Incorporation of new technologies in aquaculture for efficient and sustainable farming</p> <p>Trials and risk analysis of aquatic species that may thrive in cool environments in the country, such as rainbow</p>		Philippines

Chapters of thematic modules	Country or regional strengths	Country or regional challenges	Priorities (5 = first priority and 0 = least priority)	Comments	Proposed by
		nationwide (diverse species and vast areas to cover)	trout in the Cordillera Administrative Region		
TM 62: Integrated aquaculture systems	Already accepted by the producers	Traditional post-harvest facilities and complex marketing channel	Integration of production systems	Regional cooperation needed to initiate technology innovation platforms	INFOFISH
TM 63: Aquaculture in special environments	Supportive government policy	Lack of input services	Public-private partnerships		INFOFISH
Chapter 9: Aquaculture Value Chains, Consumers, Markets and Trade					
	Fish species to be farmed		4		Myanmar
				Encourage development of fair and equitable markets (both domestic and international) Ensure schemes are developed to promote domestic consumption	ICSF
	There is fair and productive aquaculture value chains in the entire region GAqP certification is present Marketing of aquaculture products in the country is huge	A much cheaper price for aquaculture products More compliance of farms to international standards Effective communication to address “fake news” on aquaculture commodities circulating via social media	Aquaculture value chain awareness to international standards Safety nets in the prices of aquaculture products Value-adding for increased profitability of entrepreneurs and farms		Philippines

Chapters of thematic modules	Country or regional strengths	Country or regional challenges	Priorities (5 = first priority and 0 = least priority)	Comments	Proposed by
	<p>Nutritional value, quality and safety of aquaculture products is world class</p> <p>Quality certifications such as HACCP are in place</p> <p>Public perception and acceptability are high in the country</p> <p>Most farms are compliant to international standards (CODEX, HACCP, etc.)</p>				
TM 69: Fair and productive aquaculture value chains	Adopted by some producers	Need to replicate by others	Innovation and technology in seafood value chains (farm to fork)	Valuation, standardization and certification of aquaculture technologies also needed	INFOFISH
TM 71: Compliance with international standards	Adopted by some countries	Need to replicate by others	Group/cluster certification	Country experiences on group certification need to be shared with others	INFOFISH
Chapter 10: Aquaculture Statistics and Information					
	In many countries statistics with regard to capture fisheries is already in place	Highly dispersed nature of aquaculture systems requiring immense manpower to arrive at a statistics on aquaculture. However efforts should be made given the heavy and	4	<p>Current Aquaculture Statistics include - area under production; potential area available for production and total aquaculture production data;</p> <p>Aquaculture Statistics should entail other than what indicated above –</p>	Myanmar ICSF

Chapters of thematic modules	Country or regional strengths	Country or regional challenges	Priorities (5 = first priority and 0 = least priority)	Comments	Proposed by
		continued dependence on the sector for increasing fish production		<p>systems of aquaculture production; production statistics of respective systems; a sex-disaggregated data on the number of workers in respective systems (both direct and indirect labour)</p> <p>Coming up with an aquaculture census is the need of the hour as any Asian aquaculture nation's dependence on the sector is on an upward curve. This will help evolve policies which not only focuses on increasing production but also are human rights based.</p> <p>Though Asia has more than 95 percent of the aquaculture labour, a detailed statistics of the same is still wanting. The Central Marine Fisheries Research Institute of India comes up with a Marine fisherfolk census, a similar exercise is yet to be conducted for aquaculture sector though the sector contributes 75 percent of total fish produced in the country</p>	
	Most farms have good record-keeping and analyses data for efficient aquaculture	Not all farms have good record-keeping	Incorporation of technology to ease collection, monitoring and processing of databases and information to increase data in aquaculture sustainability		Philippines

Chapters of thematic modules	Country or regional strengths	Country or regional challenges	Priorities (5 = first priority and 0 = least priority)	Comments	Proposed by
			Coordination with national statistical agency in sampling/statistical methodologies, reporting and analytics		
TM 72: Monitoring, data and statistics	Regional bodies are functioning well	Lack of online platform among regional seafood associations to exchange information on fish trade	Easy access to aquaculture statistics and information needed	Need to focus on e-commerce, domestic market, diverse markets	INFOFISH

APPENDIX 7 – PROPOSED CASE STUDIES CONCEPTS FOR USE DURING GROUP DISCUSSIONS

No.	Case study proposed	Country	Region	Proposed in
1	Integrated multi-trophic aquaculture (IMTA) approach	China	Asia	Expert consultation (June 2019)
2	Improved biosecurity in shrimp farming in Asia and Latin America		Asia and Latin America	Expert consultation (June 2019)
3	Environmentally friendly practices in shrimp farming in Asia and Latin America		Asia and Latin America	Expert consultation (June 2019)
4	Certified shrimp larvae based on selective breeding	China	Asia	Expert consultation (June 2019)
5	Papua New Guinea tilapia farming (public-private partnership, PPP)	Papua New Guinea	Asia-Pacific	Expert consultation (June 2019)
6	Ornamental production in the Federated States of Micronesia	Micronesia	Asia-Pacific	Expert consultation (June 2019)
7	Shrimp production in New Caledonia improved market access	New Caledonia	Asia-Pacific	Expert consultation (June 2019)
8	Innovative approaches to improve aquaculture image (China freshwater crab)	China	Asia	Expert consultation (June 2019)
9	Public policy in aquaculture wastes	China	Asia	Expert consultation (June 2019)
10	Intensive shrimp production	Thailand	Asia	Expert consultation (June 2019)
11	Mariculture parks	Philippines	Asia	Expert consultation (June 2019)
12	Rice-fish production	China	Asia	Expert consultation (June 2019)
13	Introduction of Pangasius	Viet Nam	China	Asia
14	Marine ranching IMTA	China and Japan	Asia	COFI:AQ (August 2019)

No.	Case study proposed	Country	Region	Proposed in
15	Shrimp breeding with biosecurity	Indonesia and Thailand	Asia	COFI:AQ (August 2019)
16	Intensive pond shrimp culture and superintensive factory shrimp culture	China and Thailand	Asia	COFI:AQ (August 2019)
17	Large-scale saltern ecological farming (clam-shrimp-fish-artemia)	China	Asia	COFI:AQ (August 2019)
18	Control of emerging white spot disease (WSD)	Queensland Australia	Asia	COFI:AQ (August 2019)
19	The value chain of farmed catfish	Viet Nam	Asia	COFI:AQ (August 2019)
20	Ecological lake fishery enhancement	China	Asia	COFI:AQ (August 2019)
21	In-pond raceway system: A way for sustainable pond culture intensification	China, Thailand, etc.	Asia	COFI:AQ (August 2019)
22	Culture-based fisheries (CBF) as a means for inland freshwater ecosystem rehabilitation	Cambodia, Lao People's Democratic Republic, and Viet Nam	Asia	COFI:AQ (August 2019)
23	Increase efficiency through use of fish by-products – use of fish skin (tilapia) to treat burns		Any	Expert consultation (June 2019)
24	Social inclusion of inhabitants in rural aquaculture development (global)		Any	Expert consultation (June 2019)
25	Alternative feed formulation based on local ingredients (global, Hasan, FAO)		Any	Expert consultation (June 2019)
26	Efficient use of natural resources (global, live feed management)		Any	Expert consultation (June 2019)
27	Improvement in molluscs production for small-scale farmers (global)		Any	Expert consultation (June 2019)

No.	Case study proposed	Country	Region	Proposed in
28	How has aquaculture contributed to poverty alleviation, gender equality, youth, etc.?		Any	Expert consultation (June 2019)
29	Environmental issues, spatial planning, waste management		Any	Expert consultation (June 2019)
30	Species diversification, alien species		Any	Expert consultation (June 2019)
31	Seed improvement, genetics, breeding hybrids, escapees		Any	Expert consultation (June 2019)
32	Feed improvement, fishmeal replacement		Any	Expert consultation (June 2019)
33	Disease prevention, diagnosis and biosecurity		Any	Expert consultation (June 2019)
34	Adaptation to climate change		Any	Expert consultation (June 2019)
35	Role of extension and education in developing aquaculture		Any	Expert consultation (June 2019)
36	Connection of R&D with stakeholders/industry/producers		Any	Expert consultation (June 2019)
37	Examples of support from the government; importance of policy/policies. A policy is needed to create a sustainable aquaculture industry		Any	Expert consultation (June 2019)
38	Conflict resolution and animal welfare		Any	Expert consultation (June 2019)
39	Positive and negative impacts of greater intensification and expansion of pond, tank and cage production systems		Any	COFI:AQ (August 2019)
40	Ecosystem health and integrity promoted as best practice for sound business, including biodiversity, biosecurity, One Health, climate-change resilience and early warning		Any	COFI:AQ (August 2019)
41	European Maritime and Fisheries Fund (EMFF) subsidies for the conservation and sustainable intensification of pond aquaculture		Any	COFI:AQ (August 2019)
42	Marine ranching (MR)		Any	COFI:AQ (August 2019)
43	Antimicrobial resistance (AMR), biosecurity, animal welfare		Any	COFI:AQ (August 2019)

APPENDIX 8 – SESSION RESULTS ON CASE STUDY CONCEPTS

The tables below encompass all inputs received by participants prior to this consultation through homework, during the consultation through working group discussions and after the consultation.

No.	Case study concept title	Thematic module supported	Country of case study	Possible lessons learned	Proposed by
1	Decent work and social protection measures in various aquaculture systems (upstream, midstream and downstream industries of aquaculture). This should also include migration for aquaculture labour and its patterns – its benefits and costs	Chapter 1: Sustainable Aquaculture and the 2030 Agenda	Bangladesh, China, India, Indonesia, Viet Nam	Will allow one to understand in-depth the contribution of aquaculture to livelihoods, income and food security, especially to local or poorer communities	ISCF
2	Case study on tenurial rights existent in different types of aquaculture systems among aquaculture producer nations	Chapter 1: Sustainable Aquaculture and the 2030 Agenda	Bangladesh, China, India, Indonesia, Viet Nam, etc.	Will help to understand the systems in place to suggest changes/ reinforcements that are required for ensuring sustainable aquaculture development, especially with regard to food and nutrition as well as livelihoods and income security	ISCF
3	Land use management	Chapter 2. Governance and Planning of Aquaculture Development	Myanmar		Myanmar
4	Access to finance	Chapter 2. Governance and Planning of Aquaculture Development	Myanmar		Myanmar
5	Trade facilitation	Chapter 2. Governance and Planning of Aquaculture Development	Myanmar		Myanmar
6	Good manufacturing practices (GMPs) among SMEs	Chapter 4: Best Management Practices in Aquaculture:	Myanmar		Myanmar

No.	Case study concept title	Thematic module supported	Country of case study	Possible lessons learned	Proposed by
		Post-harvest Storage and Processing			
7	Quality and knowledge infrastructure	Chapter 2. Governance and Planning of Aquaculture Development	Myanmar		Myanmar
8	Synergy with crop sector	Chapter 5. Sustainable Feed	Myanmar		Myanmar
9	Rural infrastructure	Chapter 2. Governance and Planning of Aquaculture Development	Myanmar		Myanmar
10	Aquatic Animal Food Bank Project in Thailand	<ol style="list-style-type: none"> 1. Aquaculture in community development planning (TM 11) 2. Agroecology in aquaculture (TM 13) 3. Access rights to land and waterbodies (TM 15) 4. Local communities and livelihoods (TM 16) 5. Stakeholder participation (TM 22) 6. Storage and stock management (feeds, inputs, equipment etc.) (TM 45) 7. Stocking density, polyculture, fertilization, environmental capacity and limits to growth (TM 48) 	<p>Project objectives</p> <ol style="list-style-type: none"> 1. To provide those in the project target community to have sufficient aquatic animal products to generate income and reduce household expenses 2. To provide communities with knowledge on freshwater aquaculture and able to manage water sources in communities to increase productivity and participate in the aquatic animal food bank 3. To increase the potential for development of aquaculture and management of community water sources, increase the productivity of freshwater animals, and work with communities to develop freshwater aquaculture efficiency and sustainability 	Thailand	

No.	Case study concept title	Thematic module supported	Country of case study	Possible lessons learned	Proposed by
		<p>8. Nutrition, feed and feeding (formulation of natural, farm-made and commercial) (TM 51)</p> <p>9. Promotion of aquaculture innovation and technology adoption among users, including BMPs (TM 61)</p> <p>10. Integrated aquaculture systems (TM 62)</p> <p>11. Capture-based aquaculture and culture-based fisheries (TM 64)</p> <p>12. Public perception and acceptability (TM 66)</p>	<p>Implementation process</p> <p>1. Set up and kick-off the project at the Department of Fisheries</p> <p>1.1 National working group 1.2 Community committee</p> <p>2. Public hearing on project implementation selection of project sites</p> <p>3. Election of the local village community-based aquaculture committee</p> <p>4. Local committee and people involved in preparing the action plan</p> <p>5. Preparing natural feeds</p> <p>6. Department of Fisheries first supported subsidy funds to the community for project implementation and material inputs, such as fingerlings and feed for nursing</p> <p>7. Nursing of fingerlings to obtain higher survival rates</p> <p>8. Target species for stocking based on the needs of the community and ecology of target community pond, such as fish or</p>		

No.	Case study concept title	Thematic module supported	Country of case study	Possible lessons learned	Proposed by
			prawns, stocking density, which will be different based on species and size, 100–4 000 fingerlings/1 600 m ² 9. Monitor growth rate and water quality 10. Monitor fish growth rate 11. Harvesting/one time harvesting, selling of one-day fishing licence, gradually harvesting 12. Cost and benefit-sharing in group		
11	Blue swimming crab broodfish bank	1. Sustainable livelihoods, social protection and safety nets in aquaculture 2. Aquaculture in integrated coastal management Local communities and livelihoods 3. Stakeholder participation 4. Corporate social responsibility, including social licence and public acceptability	Objectives 1. To get fishers/fisheries communities involved in conservation of blue swimming crab resources 2. To have sustainable production of blue swimming crab/income for local coastal fisheries communities 3. To educate/embed conservation mindset to the young generation Implementation process 1. Initially, the Department of Fisheries/other organization will	Involvement of fishing communities for sustainable of fisheries	Thailand

No.	Case study concept title	Thematic module supported	Country of case study	Possible lessons learned	Proposed by
			educate/discuss with fishers/local communities the importance of the activity 2. Provide basic equipment to communities for holding gravid female blue swimming crab in captivity until females release eggs or larvae 3. Fishers/community will monitor production on their own daily		
12	Biofloc intensive aquaculture farming system		Thailand	Absence of the standard of practice for farmers	Thailand
13	Certified hatchery for production in ponds		Thailand	Absence of the standard of practice for farmers	Thailand
14	Public-private partnership initiatives in Africa	Chapter 2: Governance and Planning of Aquaculture Development TM 23. Aquaculture planning and policy TM 27. Enabling environment/funding	Benin, Guinea, Cameroon*	Noncompliance with commitments	Philippines
15	Seaweed culture in United Republic of Tanzania, Zanzibar	Chapter 5: Sustainable Feed TM 52. Use of fish, oil and fishmeal in aquaculture feed, use of alternative food ingredients to oil and fishmeal, e.g. algae, insect meal, single-cell proteins, vegetable proteins	United Republic of Tanzania, Zanzibar*		Philippines

No.	Case study concept title	Thematic module supported	Country of case study	Possible lessons learned	Proposed by
16	Alternative formulation based on local ingredients (global, Hasan, FAO)	Chapter 5: Sustainable Animal Nutrition TM 51. Nutrition, animal feed and food (formulation of natural products, of agricultural and commercial origin)	All countries	Reduction of costs; feed availability	Philippines
17	Seed improvement; genetics, breeding hybrids, fugitives	Chapter 3: Biodiversity and Genetic Resources TM 34. Biodiversity, habitat, ecosystem functions and aquaculture TM 35. Genetic resource management, development and conservation TM 36. Species introduction and transfers for aquaculture purposes	Senegal*	Destruction of areas of aquatic flora	Philippines
18	Gene bank, stock improvement and broodstock management cases, breeding programme	Chapter 3: Biodiversity and Genetic Resources TM 35. Genetic resource management, development and conservation	Burkina Faso, Côte d'Ivoire*	- Creation and management of the gene bank; - Creation of specific endogenous strains (Bouaké strain); - Better management of inbreeding	Philippines
19	Social inclusion of populations in the development of rural (global) aquaculture	Chapter 2: Governance and Planning of Aquaculture Development; Chapter 1. Sustainable Aquaculture and the 2030 Agenda TM 3. Equitable and inclusive development TM 6. Food security, nutrition and improved diets	Guinea, Burkina Faso*	- Social cohesion factor - Better contribution to food and nutritional security at the local level - Management problem, accountability and sustainability	Philippines

No.	Case study concept title	Thematic module supported	Country of case study	Possible lessons learned	Proposed by
20	R&D connection with stakeholders, industry and producers	Chapter 2: Governance and Planning of Aquaculture Development TM 27. Enabling environment: Chapter 1: Sustainable Aquaculture and the 2030 Agenda TM 7. Capacity building	Burkina Faso*	Development of a specific improved strain	Philippines
21	Positive and negative impacts of intensification and further expansion of pond, reservoir and cage production systems	Chapter 2. Governance and Planning of Aquaculture Development TM 23. Aquaculture planning and policy TM 12. FAO Blue Growth Initiative TM 13. Agroecology in aquaculture Chapter 4: Better management practices in aquaculture TM 44. System construction, engineering, maintenance or rehabilitation TM 46. Better management practices and codes of practice TM 48. Stocking density, polyculture, fertilization, environmental capacity and limits to growth Chapter 8: Specific Aquaculture Systems	Benin, Mali, Togo, Côte d'Ivoire, Cameroon, Senegal*	<ul style="list-style-type: none"> - Valuation of existing waterbodies according to their specificities; - Intensification of production; - Diversification of farming systems; - Reduction of costs linked to water in aquaculture production; - Pollution of the ecosystem due to the lack of preliminary studies related to the carrying capacities of waterbodies; - Escape of hybrid fish in the wild; - Conflicts between different users 	Philippines

No.	Case study concept title	Thematic module supported	Country of case study	Possible lessons learned	Proposed by
		TM 61. Promotion of aquaculture innovation and technology adoption among users, including BMPs TM 62. Integrated aquaculture systems TM 63. Aquaculture in special environments			
22	Effective mechanism to address regulatory concerns affecting the trade of aquaculture commodity of regional importance: the case of attempted delisting of carrageenan in the USDA organic food standards	Chapter 9: Aquaculture Value Chains, Consumers, Markets and Trade TM 67. Nutritional value, quality and safety of aquaculture products TM 66. Public perception and acceptability	Philippines	1. Engagement of experts in formulating science-based response; 2. Government leadership in addressing technical barriers to trade; 3. Cooperation among cross-border industry association; Diplomatic channels/representation (ASEAN-AMAF and embassies) in formal resolution	Philippines
23	Biosecurity for other species; Introduction of exotic species; Growth of aquaculture; Domestication and breeding; Harnessing different farming system with domestication of few farmed fish species		India		India
24	The role of aquaculture in rural development		Pakistan	The government initiated an agriculture/fishery emergency programme; “Tilapia farming and breeding in coastal areas (2013)” in provincial areas to ensure alternative livelihoods for the rural population but with private sector investment; it became a major means of living	

No.	Case study concept title	Thematic module supported	Country of case study	Possible lessons learned	Proposed by
25	Rice-fish farming system traditionally has been encouraged by government; Income with paddy field fish farming increased; Duckweed and snails were used in paddy fields		China Australia, Bangladesh and India also have been practising rice-fish farming activities	Sustainable fish farming system; paddy fields offer additional water area for fry, fingerlings and fish production; biomass could be utilized by fish; no-waste effluent farming	
26	Local crayfish festival in aquaculture village advanced the value chain; Commercial success combined with cultural leisure input		China	Culture plays an important role in addition to policy, technology and private sector investment; traditional/historical fish farming related with sustainable aquaculture is a unique trait in the Asia region	China
27	Sustainable aquaculture system; Average yield increased	Reduced poverty and food security	Thailand	Participatory approach to establish farming system/regulation/management system promoted sense of local ownership	
28	Successful seaweed farming; Mollusc farming		Indonesia	A strong focus on product value adding, and increasing harvest quantity and quality	
29	Fish farm cage in Asia region		Indonesia	Cage fish farming: cost of harvesting and better treatment of parasites and diseases	
30	Dimethylsulfide (DMS) production from seaweed		Global		
31	COVID-19 significantly impacted aquaculture sector. Based on research/statistics of various countries, negative correlation between fish consumption and mortality rate compared to other food sectors (i.e. fruit, agricultural produce), showing that marine foods are	Public perception	Global		

No.	Case study concept title	Thematic module supported	Country of case study	Possible lessons learned	Proposed by
	strongly related to human health and nutrition				
32	Aquaculture feeds using low -quality fishmeal made of by-products		Asia		

* From the previous meeting and consultation.

APPENDIX 9 – IDENTIFIED REGIONAL PRIORITIES FOR GSA IN ASIA

REGIONAL PRIORITIES FOR GSA IN ASIA UNDER CHAPTER 1

Thematic module	Regional/country strength	Regional/country challenges
Equitable and inclusive aquaculture development	Well-established aquaculture industrial chain	Small farm holders are dominant, disadvantaged positions in risk taking and benefit-sharing
Sustainable livelihoods, social protection and safety nets in aquaculture	In many countries, government policy promotes aquaculture as important rural livelihood	Vulnerability of small farmers to different kinds of natural disasters and hazards
Capacity building along entire sectoral chain	Well-established research and education system and public services	Weak capacity and skill of a large number small farmers with low education level
Empowerment of women, youth and aged people in aquaculture	Active participation of women, aged people and youth in aquaculture because family farming is dominant	Women less involved in policy and business decision-making; declining interest of younger population in aquaculture; lack of new knowledge and skill of aged people
Aquaculture for local food security and nutrition	High efficiency and expanding production with policy support and public services	Production often targets external markets, including export

REGIONAL PRIORITIES FOR GSA IN ASIA UNDER CHAPTER 2

Thematic module	Regional/country strength	Regional/country challenges
Ecosystem approach to aquaculture	Well established aquaculture sector in expansion	Limited natural resources, strong sectoral competition and conflict
Climate-smart/low carbon footprint aquaculture and adaptation to climate change impact	Diversity of farming systems and commodities, technology advancement	Most vulnerable region climate change impact; disease outbreak owing to climate change impact
Access to land and water resources	Abundant water resources and strong regulation on land and water uses	Restriction on access of aquaculture to land and waterbodies
Good aquaculture governance	Increasing acts and regulations issued for aquaculture in the region	Poor enforcement, not balanced coverage

Thematic module	Regional/country strength	Regional/country challenges
Integrated multi-trophic aquaculture both land-based and marine environment	Successful technology and adoption in some countries	Limited scope, difficulty in adoption by smallholders
Integrated agro-aquaculture including rice-fish farming	Long history of practices, well accepted by farmers	Adapt to new production requirements and changing markets
Aquaculture planning and zonal development	Good tools and success stories	Lack of investment, infrastructure support, market linkage
Disaster preparedness, monitoring, emergency response	Progress in disaster monitoring and early warning system with modern technology	Weak preparedness and recovery capacity of small farmers, timeliness and coverage of assistance

REGIONAL PRIORITIES FOR GSA IN ASIA UNDER CHAPTER 3

Thematic module	Regional/country strength	Regional/country challenges
Biodiversity, habitat, ecosystems functions and aquaculture	Rich aquatic biodiversity and natural resources for aquaculture development	Impact of aquaculture on biodiversity (escapees, depend on wild seed, nutrient loading)
Genetic resource management, development and conservation	The region has rich and diversified genetic resources (natural and improved) for aquaculture development and strong capacity in genetic improvement	Lack of good mechanism for genetic resource conservation and exchange across the region
Genetic improvement for disease resistance, better growth performance and other desirable traits	Good progress in genetic improvement of culture species in the region (genetically improved farmed tilapia, carps, specific pathogen free/ specific pathogen resistant shrimp, etc.). High market demand of specific pathogen free/specific pathogen resistant post larvae, broodstock and high-yielding variety	Limited species, limited supply, mainly focused on growth performance and disease free/resistance, more requirements
Regulation on species introduction for aquaculture and impact assessment	Alien species contribute greatly to aquaculture industry in Asia	Impact on ecosystem and biodiversity unknown

REGIONAL PRIORITIES FOR GSA IN ASIA UNDER CHAPTER 4

Thematic module	Regional/country strength	Regional/country challenges
Reduce reliance aquaculture on wild seed	Great progress on seed production with broodstock developed in captivity, hatchery supply seed for majority of species cultured	A few species, such as lobster, eel and giant tiger prawn, still rely fully or partially on wild juveniles or broodstock
Guidelines/methodology for the assessment environment/area carrying capacity and aquaculture site selection/zonal development	Methodology and guidelines are available and applied in some countries (pilot scale)	Limited adoption due to limited human capacity and lack of institutional support
Risk management	Government disasters and risk monitoring and warning system have been strengthened gradually	Asia aquaculture sector has been strongly impacted by various risks, disease outbreaks, natural disasters and market volatility (e.g. trade conflict, COVID-19), and weak ability of farmers in managing the risks
Aquaculture insurance scheme	Good pilot schemes in some countries	The coverage cannot meet the need of farmers

REGIONAL PRIORITIES FOR GSA IN ASIA UNDER CHAPTER 5

Thematic module	Regional/country strength	Regional/country challenges
Responsible and efficient use of feed and feed ingredients	Well-established aquafeed industry, self-sufficiency of aquafeed, feed standard	Resource scarcity and competition and reliance on external sourcing of key feed ingredients
Access of small farmers to cost-effective commercial feed and farm-made feed	Well-established commercial feed industry and technology for farm-made aquafeeds	Commercial feed not always affordable or accessible to small farmers, lack of good standards for farm-made feeds
Alternative feeds, e.g. yeast, algae, insect plant proteins; functional feed and feed additives	Several initiatives from private sector and research institutions	Limited scaling-up and commercialization, lack of investment

REGIONAL PRIORITIES FOR GSA IN ASIA UNDER CHAPTER 6

Thematic module	Regional/country strength	Regional/country challenges
Culture environment standards and culture effluent discharge standards	Environmental parameters for culture environment well established, and culture effluent standards are in development	Compliance on the ground by small-scale farmers – questionable; culture effluent discharge standards yet to be implemented
Environmental regulations scheme, e.g. “Blue/Green Tax and Polluter Pays”	Increasing political will and public concern over environment protection	Lack of effective and practical regulatory schemes and tools
Financial incentive for good aquaculture practices (GAqP) by small farmers	Increasing awareness and recognition to GAqP by producers and consumers	Lack of financial capability for small farmers to follow/practice GAPqs

REGIONAL PRIORITIES FOR GSA IN ASIA UNDER CHAPTER 7

Thematic module	Regional/country strength	Regional/country challenges
Progressive management pathway for improving aquaculture biosecurity	Well-established global framework and regional awareness and technical capacity	Lack of successful examples of practical application
Good farm practices of aquatic animal health management	Good technical capacity and public services	Capacity of small farmers to effectively adopt
Prevention of antimicrobial resistance (AMR) in aquaculture under the “One Health approach”	Increasing awareness on AMR, good regulation on use of antibiotics	Lack of uniform dose-specific use of antibiotics at aquafarms – misuse, overuse; lack of alternatives to antibiotics
Transboundary movement of living aquatic animals (new)	Standard operating procedures for transboundary movement of living aquatic animals developed	Good compliance yet to be scaled up at all levels
Aquatic animal disease surveillance, monitoring and early warning	Well-established/developed in some countries	Effective operation, region-wide

REGIONAL PRIORITIES FOR GSA IN ASIA UNDER CHAPTER 8

Thematic module	Regional/country strength	Regional/country challenges
Good aquaculture practices for sustainable intensification	Success models; acceptance among farmers	Financial capability and skill gaps of small-scale farmers
Public-private partnerships	Supportive government policy	Lack of input services
Innovation and transformative changes of aquaculture	Technology advancements and evolvement of farming systems and practices	Wide adoption of new technologies, mindset changes of farmers

REGIONAL PRIORITIES FOR GSA IN ASIA UNDER CHAPTER 9

Thematic module	Regional/country strength	Regional/country challenges
Quality certification and voluntary schemes	Availability of national and private certification schemes	Economic burden to smallholders, lack of actual incentives to the compliance
Compliance with international standards	Availability of standards, effort from the buyers' interest	Additional cost to farmers, engagement of smallholders
Group/cluster certification	Adopted by some countries	Need to replicate by others
New marketing modes	Rapid development in some countries	Infrastructure limitation, farmer's capability

REGIONAL PRIORITIES FOR GSA IN ASIA UNDER CHAPTER 10

Thematic module	Regional/country strength	Regional/country challenges
Guidelines for environmental monitoring		Diversified natural conditions, farming systems and environments
Improving information base and knowledge management (new)	Availability of vast information and knowledge in the region	Poor access by small-scale farmers and public; language barrier in sharing
Aquaculture statistics and market information	National statistic system; regional bodies function well	Lack of online platforms among regional seafood associations to exchange information on fish trade, quality of statistics

APPENDIX 10 – SESSION RESULTS ON REGIONAL PRIORITIES FOR GSA IN ASIA

Additional regional priority	Linkage with case studies and the thematic modules	Regional strengths	Regional weaknesses	Proposed by
Rice-fish systems and mangrove friendly farming systems are developed and promoted	Chapter 4: Better Management Practices in Aquaculture			Myanmar
The quality management system to ensure food safety and quality is strengthened	Chapter 7. Biosecurity, Aquatic Animal Health and Animal Well-being			Myanmar
The performance and branding of fishery products to compete successfully in international markets are strengthened	Chapter 9. Aquaculture Value Chains, Consumers, Markets and Trade			Myanmar
Indigenous species nationwide are promoted and protected	Chapter 3. Biodiversity and Genetic Resources			Myanmar
Four member countries of the Mekong River Commission: Cambodia, Lao People's Democratic Republic, Thailand and Viet Nam		<ol style="list-style-type: none"> 1. Biodiversity of inland aquatic resources 2. Technical knowledge and experience of fisheries officers for the four member countries 3. Market channels and supply chains 4. Population in four member countries is more than 60 million 	<ol style="list-style-type: none"> 1. Biological data and life cycle of indigenous species to promote aquaculture development 2. Consumers have lack of information to identify native or exotic fish species or other aquatic species cultured products 	Lao People's Democratic Republic
Preparedness on the emergence of new aquatic animal diseases	Biosecurity and aquatic animal health management; Emergency preparedness and early warning system	There is a network of Asia-Pacific countries reporting diseases and announcing new diseases (WOAH and NACA); Regional technical guidelines on early warning system for aquatic animal health emergencies published by SEAFDEC		Philippines
Promotion of the code of good aquaculture practices (GAqP)	- Favourable environment: infrastructure and equipment, funding, research, extension and training, capacity building,	At present, there is an ASEAN GAqP for food fish and shrimp to be used as guideline for farms; Farm registration scheme;	Differences in the level of compliance of farmers (small-scale farms vs large farms);	Philippines

Additional regional priority	Linkage with case studies and the thematic modules	Regional strengths	Regional weaknesses	Proposed by
	<p>networks, education, access to land and water, market access</p> <ul style="list-style-type: none"> - FAO Blue Growth Initiative - Aquaculture planning and policy - Public-private partnerships in aquaculture - Chapter 4: Better management practices in aquaculture - Chapter 5: Sustainable feed - Chapter 6: Water management 	Farm certification on GAqP	Information, education and communication (IEC) for awareness on GAqP and farm certification	
Ongoing development of Multilateral Arrangement for the Mutual Recognition of Agri-food Standards and Conformity Assessment (MAMRASCA) by ASEAN	<ul style="list-style-type: none"> - Chapter 4: Better management practices in aquaculture - Compliance with international standards 	ASEAN led-activity to facilitate the establishment of an effective mechanism for operationalizing and accepting agri-food standards at both national and regional levels	Still ongoing development and country differences in administrative structures	Philippines
Progressive management pathway for improving aquaculture biosecurity	Biosecurity and aquatic animal health management; Compliance with international standards	A tool to assist countries to put into place appropriate and sustainable levels of risk management in aquaculture production systems, which can be done in the ASEAN region because of the data present in aquaculture		Philippines
One Health approach to combat antimicrobial resistance (AMR)	<p>Chapter 2: Governance and Planning of Aquaculture Development: public-private partnerships in aquaculture; precautionary principle/ precautionary approach; stakeholder participation</p> <p>Chapter 7: Biosecurity, Health and Welfare of Aquatic Animals: Microbiological control</p>	National Action Plan to Combat Antimicrobial Resistance: One Health survey on the use of antimicrobials in aquaculture; Implementation on national residue control programme in aquaculture	Awareness level of stakeholders on AMU/AMR; Implementation of surveillance programme for AMU/AMR; Laboratory capability	Philippines

Additional regional priority	Linkage with case studies and the thematic modules	Regional strengths	Regional weaknesses	Proposed by
Aquatic animal health management and tackling antimicrobial resistance (AMR)	Chapter 7, Line 65	Increasing awareness on AMR and application of alternative to antibiotics	Absence of unified dosage and instructions of aquaculture antibiotics; Application of veterinary antibiotics in aquaculture species	INFOFISH
Group/cluster certification for small-scale holders	Chapter 9, Line 80	Some adopted under national accredited bodies, e.g. Thailand	Some yet struggling, e.g. Bangladesh and Cambodia	INFOFISH
Precision farming systems	Chapter 8, Line 69	Internet of Things, sensors, artificial intelligence and machine learning, block chain, etc.	Some started applying, e.g. China, India, Indonesia and Viet Nam, but most have not	INFOFISH
Smart business operation and management	Chapter 4, Lines 42 and 43	Some start-ups applying e-commerce, mobile apps and online platform	Government fisheries agencies should give priority of transferring technologies not only in production but also in the whole value chain	INFOFISH
Innovation and technology in seafood value chains	Chapter 8, Lines 70, 71 and 73 Chapter 9, Line 76 Chapter 9, Line 78 Chapter 9, Lines 78 and 79	Integration of aquaculture systems and aquaculture in special areas; Artificial intelligence and machine learning to prevent food fraud; Responsible supply chain/cold chain management; Innovation in post-harvest processing; Fish loss and waste; Biodegradable packaging material development	Some production systems are expensive and electricity dependent	INFOFISH
Preparedness on the emergence of new aquatic animal diseases	Biosecurity and aquatic animal health management Emergency preparedness and early warning system	There is a network of Asia-Pacific countries reporting diseases and announcing new diseases (WOAH and NACA); Regional technical guidelines on early warning system for aquatic animal health emergencies published by SEAFDEC		Philippines

Additional regional priority	Linkage with case studies and the thematic modules	Regional strengths	Regional weaknesses	Proposed by
Climate/weather impact management through early warning systems	Emergency preparedness and early warning system; Extension and training; Public-private partnerships in aquaculture; Natural disaster management	Impact management of weather systems documented for all aquaculture commodities in the Philippines; Regional training centres of the World Meteorological Organization based in the Philippines	Diverse climate and weather systems	Philippines
A comprehensive data collection and management systems is established	Aquaculture statistics and information			Philippines

APPENDIX 11 – CLOSING STATEMENT

CLOSING STATEMENT BY AUDUN LEM, DEPUTY DIRECTOR, FAO FISHERIES AND AQUACULTURE DIVISION

*Distinguished participants,
colleagues,
ladies and gentlemen,*

On behalf of the Food and Agriculture Organization of the United Nations, I would like to thank all the participants for your active participation and your valuable contributions over the last three days. I would also like to thank our participants, organizers and facilitators for keeping us on track.

Distinguished experts and participants,

We gathered to share the regionally developed governance instruments, priorities of the thematic modules by chapters as well as linked with case study concepts in the Asia region. All the activities and deliverables will trim the way towards sustainable aquaculture and engage aquaculture to effectively participate in the implementation of the 2030 Agenda for Sustainable Development.

During the last three days, we have shared the existing governance instruments, regional strengths and challenges along with the importance of thematic modules, case study concepts and lessons learned, and best practices from the previous and ongoing experiences in the Asia region.

FAO will be engaging and enabling aquaculture to effectively participate in the implementation of the 2030 Agenda for Sustainable Development. We expect to include all the regional voices into the Guidelines for Sustainable Aquaculture (GSA), and its expected impact is the contribution to achieving economic, environmental and social sustainability in aquaculture production.

*Distinguished experts and participants,
Ladies and gentlemen,*

Your vigorous participation in the discussions that have taken place in the last three days has been acknowledged and highly appreciated. Informative and admirable suggestions were recorded today during this gathering given its limited duration and challenging times.

I wish to conclude my closing remarks by showing, once again, my appreciation for the privilege to register everyone's virtual presence and valuable contributions to this meeting.

We look forward to your unwavering support for a successful development and implementation of the GSA as a practical guidance with the help of relevance and ownership of the GSA to all key stakeholders.

Thank you all for your attention.

This document represents the final report of the Regional Consultation for Asia on the development of Guidelines for Sustainable Aquaculture, held virtually from 30 November to 2 December 2020. The objectives of the consultation were to: share current policies and practices related to aquaculture in the region; review existing regional and national instruments for sustainable aquaculture; develop a list of priority thematic modules considering regional and national strengths and challenges; discuss regional case study concepts; and identify regional priority areas to be included in the Guidelines for Sustainable Aquaculture.

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