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COMMITTEE ON FISHERIES

SUB-COMMITTEE ON AQUACULTURE

Eleventh Session

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IMPLEMENTATION OF THE RECOMMENDATIONS OF THE PAST SESSIONS OF THE COFI SUB-COMMITTEE ON AQUACULTURE

Executive Summary

This working document contains an overview of the efforts made by the FAO Fisheries and Aquaculture Division towards implementing the major recommendations of the past sessions of the Sub-Committee on Aquaculture of the FAO Committee on Fisheries.

Suggested action by the Sub-Committee

The Sub-Committee is invited to:

- Review and comment on the information and background documents pertaining to the FAO Fisheries and Aquaculture Division's efforts in implementing the recommendations of the past sessions of the COFI Sub-Committee on Aquaculture;
- Reflect on the progress and achievements and provide advice, as required, to strengthen and prioritize the recommendations in the next inter-sessional period;
- Invite Members and interested donors to provide financial and/or human resources to implement the priority areas in regards to aquaculture, as considered important by the Sub-Committee.

INTRODUCTION

1. The Tenth Session of the Sub-Committee was held in Trondheim, Norway, from 23 to 27 August 2019, at the kind invitation of the Government of the Kingdom of Norway. The report of the Tenth Session is provided as Information Document COFI:AQ/XI/2022/INF.5.

2. The Sub-Committee made a number of suggestions and recommendations, and identified several priority areas for future work towards achieving the full potential of aquaculture for national, regional and global food security, poverty alleviation and human development (refer to COFI:AQ/XI/2022/INF.5).

3. Since the last Sub-Committee, FAO produced the State of World Fisheries and Aquaculture 2020,¹ a Global Synthesis of Aquaculture 2020, and six regional reviews on status and trends in aquaculture development.²

4. Aquaculture represents 46 percent of total fish production and 53 percent of aquatic food production. Although the rate of growth in aquaculture production has slowed in recent decades, it is still running at 5.3 percent per annum. In 2018, global aquaculture production reached a new record high of 114.5 million tonnes (valued at USD 234 billion), including 82.1 million tonnes of fish and 32.4 million tonnes of aquatic plants. The Asian region is the predominant aquaculture producer, accounting for about 88.7 percent of world food fish production in 2018. The largest portion of aquaculture production (62.5 percent) comes from inland aquaculture. It is estimated that total world fish production will continue to expand at an annual growth rate of one percent. This growth in production is expected to be delivered almost entirely by aquaculture with cultured aquatic food production projected to reach 109 million tonnes by 2030, 37 percent higher than 2016 levels.¹

FAO response to COVID-19

5. The coronavirus disease (COVID-19) pandemic spread around the world in late 2019 and emerged as one of the greatest challenges to be faced since the creation of FAO. The COVID-19 pandemic has triggered a public health crisis followed by an on-going economic crisis due to the measures taken by countries to contain the rate of infection, such as home confinement, travel bans and business closures. With fisheries and aquaculture being one of the sectors most impacted by the pandemic, FAO has taken many steps to assess the rapidly evolving impacts and to provide a baseline for interventions and policy advice.

6. COVID-19 does not affect fish, nor is it caused by the consumption of fish. Even so, the fisheries and aquaculture sector is subject to indirect impacts of the pandemic through changing consumer demands, market access or logistical problems related to transportation and border restrictions. This in turn has had a damaging effect on fishers and fish farmers' livelihoods, as well as on food security and nutrition for populations relying heavily on fish for animal protein and essential micronutrients. In addition, the fall in demand in 2020 led to reduced investment in the new production cycle, with less supply of many species being available in 2021.

7. To assist in addressing impacts, the FAO Fisheries and Aquaculture Division established a COVID-19 Task Force to coordinate initiatives in response to the pandemic and provide coordinated support to measures and interventions addressing the impact of COVID-19 on fisheries and aquaculture. One of the functions of this team is to communicate and share information; all relevant publications can be found in a single location on the dedicated website.³ Examples of the work include policy briefs and

¹ FAO. 2020. State of the World Fisheries and Aquaculture. Rome. www.fao.org/3/ca9229en/ca9229en.pdf

² www.fao.org/fishery/regional-aquaculture-reviews/aquaculture-reviews-home/en/ The documents are also made available as Session Background Documents 11 to 17.

³ www.fao.org/fishery/covid19/en

documents at global, regional and national level, which summarize the impacts of the COVID-19 on the aquaculture sector, and provide considerations, guidance and options for managers to respond effectively.

PART I: MAJOR RECOMMENDATIONS AND SUGGESTIONS OF THE SUB-COMMITTEE

8. At its Tenth Session, the Sub-Committee requested benchmarking and evaluation of FAO activities.⁴ FAO activities are reported to Conference against the FAO Strategic Framework as part of the Programme Implementation Report⁵ and Programme Evaluation Report;⁶ these reports include assessment of biennial Outputs and an overview of results achieved.

9. The Forty-second Session of FAO Conference⁷ welcomed the Strategic Framework 2022 – 2031,⁸ and its strategic narrative of supporting the transformation, that should be encouraged in a coherent manner, as appropriate, in accordance with, and dependent on national contexts and capacities, to achieve more efficient, inclusive, resilient and sustainable agri-food systems for *better production, better nutrition, a better environment, and a better life*, leaving no one behind, to support the achievement of the 2030 Agenda and FAO’s three Global Goals of Members, while recognizing that the four betters identified in the Strategic Framework should be seen and addressed through a food systems approach, with a balance of the social, environmental and economic dimensions of sustainable development and within the framework of FAO’s mandate.

10. Programme Priority Areas (PPA) guide the programmes that FAO will implement under the four betters in order to fill critical gaps and put in place the conditions needed to drive the changes that will ultimately contribute to the achievement of the selected targets of the Sustainable Development Goals (SDG). PPAs are formulated as inter-disciplinary, issue-based technical themes, representing FAO’s strategic contribution to specific SDG targets and indicators. PPAs embody the interconnectedness and indivisibility of the SDGs. Several PPAs are of particular relevance to aquaculture, recalling their interdisciplinary nature, and the new strategic framework provides many opportunities for aquaculture, notably “Blue Transformation”.

Global Integrated Sustainable Aquaculture Programme

11. In response to a range of requests from COFI and the Sub-Committee, including the priorities for future work agreed during its Eighth Session (see COFI:AQ/XI/2022/INF.7),⁹ FAO prepared an outline for a Globally Integrated Sustainable Aquaculture Programme (GISAP). During its Thirty-fourth Session, COFI recommended the further development of GISAP, including an implementation plan (see COFI:AQ/XI/2022/INF.6).¹⁰

12. Subsequently, the FAO Fisheries and Aquaculture Division was restructured in late 2020. Built around three thematic pillars complimented by several cross-cutting teams, the new Divisional structure highlights the role of sustainable aquaculture as one of these pillars. The strategy within the Thematic Area on Sustainable Aquaculture has been designed in consideration of the priorities outlined by Members, incorporating important themes and cross-cutting issues, and adapted to reflect current and

⁴ COFI:AQ/X/2019/REPORT, para 18. www.fao.org/3/ca7417t/CA7417T.pdf

⁵ C 2021/8 www.fao.org/3/nc390en/nc390en.pdf

⁶ C 2021/4 www.fao.org/3/ne002en/ne002en.pdf

⁷ C 2021/REP www.fao.org/3/ng170en/ng170en.pdf

⁸ C 2021/7 www.fao.org/3/ne577en/ne577en.pdf

⁹ COFI:AQ/VIII/2015/REPORT, para 38. www.fao.org/3/i5191t/i5191t.pdf

¹⁰ COFI/34/2021/REPORT, para 10b. www.fao.org/3/ne907en/ne907en.pdf

ongoing activities. Overall, the new structure is expected to enable a more focused, coordinated and integrated approach to effectively support and meet the sustainable fisheries and aquaculture development needs of Members. It will engender a fully collaborative and cohesive approach across FAO, and with its strategic partners, in addressing the global, regional and emerging issues, and will promote multi-donor engagement and support coordinated action. In light of the restructure and the ongoing strategy development, the need for and focus of GISAP will be reviewed to ensure that the needs outlined by Members are fully addressed.

Global Conference on Aquaculture Millennium +20 in Shanghai, 22-25 September 2021

13. Recognizing the critical importance of aquaculture, and the need to exchange and discuss reliable information to further enhance its contribution to sustainable development, FAO was requested by the Thirty-third Session of the Committee on Fisheries (COFI)¹¹ to collaborate with the Network of Aquaculture Centres in Asia-Pacific (NACA) with preparations for a Global Conference on Aquaculture Millennium +20 (GCA +20), as was done previously in 2000 and 2010. The Tenth Session of the COFI Sub-Committee on Aquaculture¹² welcomed and supported the proposal of the People's Republic of China to host the GCA +20 in Shanghai, and the Thirty-fourth Session of COFI¹³ welcomed the holding of the GCA +20 and encouraged all Members to participate in it.

14. The GCA +20 was successfully held from 22 to 25 September 2021 in Shanghai, China,¹⁴ as a hybrid event, with a limited number of participants attending in person, and the rest attending virtually. Under the theme "Aquaculture for food and sustainable development", the GCA +20 brought stakeholders from government, business, academia and civil society together to identify the policy and technology innovations, investment opportunities and fruitful areas of cooperation in aquaculture for food and sustainable development.

15. The participants of the GCA +20 unanimously adopted the *Shanghai Declaration - Aquaculture for Food and Sustainable Development* which highlights the principles and pathways to maximize sustainable aquaculture in achieving the Sustainable Development Goals, and specifically presents a shared vision of sustainable aquaculture; five overarching commitments, ten strategic priorities, and a call for action.

16. Key outputs of the GCA +20 will be presented to this Session of the Sub-Committee during the Special Event on the Global Conference on Aquaculture Millennium +20 – Aquaculture for Food and Sustainable Development, and are elaborated in COFI:AQ/XI/2022/6.

Progress of the implementation of the Code of Conduct for Responsible Fisheries provisions relevant to aquaculture and culture-based fisheries

17. FAO has continued its support to regional fisheries bodies and aquaculture networks to promote the use of the Code of Conduct for Responsible Fisheries (CCRF) and associated technical guidelines in the promotion of the sustainable development of aquaculture. Working Document COFI:AQ/XI/2022/3 and Session Background Document COFI:AQ/XI/2022/SBD.1 provide progress reporting on the CCRF implementation of provisions relevant to aquaculture and culture-based fisheries, and outline changes to the CCRF and proposed updates for the future for the consideration by the Sub-Committee, respectively.

¹¹ COFI/33/2018/REPORT, para 44. www.fao.org/3/ca5184en/ca5184en.pdf

¹² COFI:AQ/X/2019/REPORT, para 73. www.fao.org/3/ca7417t/CA7417T.pdf

¹³ COFI/34/2021/REPORT, para 10h. www.fao.org/3/ne907en/ne907en.pdf

¹⁴ www.aquaculture2020.org

Summary of progress towards the development of the Guidelines for Sustainable Aquaculture

18. The Guidelines for Sustainable Aquaculture (GSA), first requested by the Sub-Committee at its Ninth Session, will target policymakers to support the visibility, recognition, and enhancement of the important role of the aquaculture sector in contributing to the implementation of the CCRF and the achievement of the 2030 Agenda for Sustainable Development. The GSA define guiding principles and minimum substantive considerations for sustainable aquaculture development and an enabling environment to address all aspects of aquaculture.

19. Additional information on the GSA is available in Working Document COFI:AQ/XI/2022/2.1, in Information Documents COFI:AQ/XI/2022/INF.9 and COFI:AQ/XI/2022/INF.10, and Session Background Documents COFI:AQ/XI/2022/SBD.2 and COFI:AQ/XI/2022/SBD.3.

Climate change, adaptation and mitigation in the aquaculture sector

20. At its Tenth Session, the Sub-Committee recommended intersessional work on guidance for concrete action on adaptation to and mitigation of impacts of climate change on aquaculture.¹⁵

21. FAO provides guidance and support for Members and partners to effectively mitigate and adapt to the impacts of climate change in the fisheries and aquaculture sector, specifically through i) strengthening the knowledge base and guidance for policy development, ii) reducing vulnerability of fishing and fish-farming communities to climate change and natural disasters, iii) raising awareness of the emissions and mitigation potential from fisheries and aquaculture, iv) increasing visibility of fisheries and aquaculture in cross-sectoral and global climate change discussions, and v) developing and implementing projects to support adaptation, risk reduction and resilience building in marine capture fisheries, inland capture fisheries and aquaculture at global, regional and national levels.

22. In 2020, FAO published *FAO's work on climate change*, which includes examples of FAO's support to countries so that they are better able to adapt to the impact of climate change in the fisheries and aquaculture sector. It also brings together FAO's most up-to-date knowledge on climate change, including a portfolio of adaptation tools and measures used to support countries' climate commitments and action plans, as well as selected FAO literature.¹⁶

23. From 2–13 December 2019, the Government of Spain hosted the 25th Session of the Conference of Parties, under the Presidency of the Government of Chile, in Madrid. FAO contributed to the United Nations Framework Convention on Climate Change discussions to ensure that fisheries and aquaculture were addressed and showcased countries' efforts to cope with climate change impacts. During a side event organized in the Green Climate Fund + Global Environment Facility pavilion on Sustainable Aquaculture and Food Security, FAO gave a presentation on aquatic food production in the context of climate change. The panel was composed of representatives from the private sector (salmon producers, feed producers, animal health), FAO and World Wildlife Foundation. The FAO presentation set the global scene in terms of climate change impacts and options for adaptation and mitigation for aquaculture.

¹⁵ COFI:AQ/X/2019/REPORT, para 71. www.fao.org/3/ca7417t/CA7417T.pdf

¹⁶ FAO. 2021. FAO's work on climate change – Fisheries and aquaculture 2020. Rome. <https://doi.org/10.4060/cb3414en>

Gender

24. At its Tenth Session, the Sub-Committee requested support for the inclusion of women and youth in policies.¹⁷ FAO's work on gender has evolved over the years, resulting in 2012 with the endorsement by FAO Members of the Organization's first Policy on Gender Equality, designed as a framework to guide FAO efforts to mainstream gender in all of its technical work. In line with the restructuring of FAO's strategic frameworks, and the upscaling of FAO's gender work, the Fisheries and Aquaculture Division has embraced a restructuration to better address the requirements of the FAO Policy on Gender¹⁸ by establishing a Gender Team.

Biosecurity including Aquatic Animal Health

25. This section provides information on accomplishments relevant to the recommendations of the Tenth Session of the Sub-Committee on Aquaculture on the above theme including work related to antimicrobial resistance (AMR), and additional information is provided in Information Document COFI:AQ/XI/2022/INF.11.

26. The document COFI/2020/Inf.9.2 Implementation of the FAO Action Plan on Antimicrobial Resistance (AMR) (2016-2020) in aquaculture and the new FAO Action Plan on AMR (2021-2025) were presented during the Thirty-fourth Session of the Committee on Fisheries.¹⁹ The Committee supported the need for an FAO Action Plan on AMR for 2021–2025, and encouraged continued collaboration between FAO, the World Organisation for Animal Health and the World Health Organization on AMR.

27. The final version of the action plan was approved by the FAO Council in April 2021 after several rounds of consultations with Members during the Twenty-seventh Session of the Committee on Agriculture, the Thirty-fourth Session of the Committee on Fisheries and the One Hundred Thirtieth Session of the Programme Committee; before its final publication and launch by the Director-General of FAO on 19 November 2021.²⁰

28. In addition to the existing FAO AMR Reference Centres, in support of Members' implementation of the FAO Action Plan on AMR, four institutions were selected as candidates for FAO Reference Centers on Aquaculture Biosecurity and AMR. These include two research institutes in China (Pearl River Fisheries Research Institute and Yellow Sea Fisheries Research Institute, both under the Chinese Academy of Fisheries Science), Nitte University in India, and Mississippi State University in the United States of America. The designation process is ongoing and is expected to be completed in early 2022.

29. The work of FAO and its partners on the further development of the Progressive Management Pathway for Improving Aquaculture Biosecurity (PMP/AB) as well as to respond to specific recommendations provided during the Tenth Session of the Sub-Committee on Aquaculture is progressing well.

30. With support from the Norwegian Agency for Development Cooperation (Norad) under the auspices of two projects,²¹ several accomplishments were achieved with respect to the further

¹⁷ COFI:AQ/X/2019/REPORT, para 45. www.fao.org/3/ca7417t/CA7417T.pdf

¹⁸ FAO, 2020. *FAO Policy on Gender Equality 2020–2030*. Rome. www.fao.org/3/cb1583en/cb1583en.pdf

¹⁹ <https://www.fao.org/3/ne907en/ne907en.pdf>

²⁰ <https://www.fao.org/documents/card/en/c/cb5545en>; <https://www.fao.org/newsroom/detail/fao-new-plan-to-counter-antimicrobial-resistance/en>

²¹ GCP/GLO/979/NOR: Improving Biosecurity Governance and Legal Framework for Efficient and Sustainable Aquaculture Production and GCP/GLO/352/NOR: Enhance partner countries and aquaculture stakeholders' capacities to improve health of aquatic animals and plants through the Progressive Management Pathway for Improving Aquaculture Biosecurity (PMP/AB).

development of the PMP/AB. These include the establishment of the PMP/AB Technical Working Group in December 2020 which includes experts from governance authorities, producer and academic/research sectors and whose main responsibility is to provide technical advice on the further development of the PMP/AB and associated tools and mechanisms.

31. Preliminary work on pilot testing of the PMP/AB (Stage 1, self-assessment and stakeholder mapping for some) have been initiated and/or are ongoing, as supported by the two Norad projects as well as other FAO Technical Cooperation Programmes and other projects as well as support from partner countries. This pilot testing includes work in: China, Indonesia, and Viet Nam (FAO); Bangladesh (Mississippi State University and United States Agency for International Development Fish Innovation Lab); Egypt, specifically on assessment, gap analysis, and a national strategy (FAO); several countries in Nile River delta: namely, Burundi, Tanzania, Rwanda, the Democratic Republic of the Congo, Kenya, Uganda, Sudan, Ethiopia, and South Sudan (EU-funded TRUE FISH project implemented by FAO [component on aquatic animal health]); Namibia and Malawi (FAO project); an Asia regional strategy (FAO and the Network of Aquaculture Centres in Asia-Pacific); and in several Gulf countries (FAO Regional Fisheries Commission).

32. Various toolkits to support the PMP/AB are under development, including tools for cost-benefit analysis and for systematic assessment of disease burden aligned with the initiatives of Global Burden of Animal Diseases. Sectoral application of PMP/AB have been initiated on shrimp, seaweed²² and molluscs.

33. Three disease strategy manuals, which are part of contingency planning of an emergency preparedness and response system, have been published²³ and four more are in preparation.

34. In terms of improving PMP/AB communication stream, the concept and application of the PMP/AB have been included in a number of virtual events (national, regional and international) and relevant publications (for example SOFIA 2020²⁴ and SOFIA 2022); the PMP/AB application guidance document is being finalised (for release in 2022) and publication of the PMP/AB in a peer reviewed journal is planned.

35. Members are invited to collaborate with FAO and partners in the pilot testing of the PMP/AB and its tools in order to generate feedback and a better understanding of strengths and limitation based on country level implementation as well as capacity building requirements.

Aquatic Genetic Resources for Food and Agriculture

36. The report on *The State of the World's Aquatic Genetic Resources for Food and Agriculture* (Report),²⁵ launched at a side event of the Tenth Session of Sub-Committee, was well received and generated interest in the press and social media (see Information Document COFI/AQ/XI/2022/INF.12). Communication of the Report's key messages is continuing and a

²² Shrimp Book II Chapter 17: The Progressive Management Pathway for Improving Aquaculture Biosecurity (PMP/AB): Relevance and Potential Application to the Shrimp Aquaculture Sector; Seaweed: A Progressive Management Pathway to Assist National and International Developments in Biosecurity for the Seaweed Aquaculture Sector (in preparation).

²³ Shrimp infectious myonecrosis: www.fao.org/documents/card/en/c/ca6052en/; Shrimp acute hepatopancreatic necrosis disease: www.fao.org/documents/card/en/c/cb2119en/; and Tilapia lake virus disease: www.fao.org/publications/card/en/c/CB7293EN

²⁴ www.fao.org/documents/card/en/c/ca9229en/; pages 191-192

²⁵ FAO. 2019. *The State of the World's Aquatic Genetic Resources for Food and Agriculture*. Rome. www.fao.org/3/CA5256EN/CA5256EN.pdf

communication strategy has been developed to promote these key messages and information on follow-up activities, and several articles have been published in relation to it.²⁶

37. More than 60 percent of the country reports that contributed to the Report have been published by FAO, with permission of countries, and are available on FAO's website.²⁷ The thematic background studies commissioned to support the report have also been published.²⁸

38. During its Thirty-fourth Session, COFI recommended the further development of a draft *Global Plan of Action for the Conservation, Sustainable Use and Development of Aquatic Genetic Resources for Food and Agriculture* (Global Plan of Action), and continuation of the development of a global information system, including a registry of farmed types.²⁹

39. Five regional workshops were held between December 2019 and December 2020.³⁰ The first regional workshop for Africa was held from 2 to 4 December 2019 in Addis Ababa, Ethiopia. Due to the COVID-19 pandemic, the remaining four workshops were held in a virtual modality: Asia and the Pacific (8 to 12 June 2020); Europe and Central Asia (5 to 8 October 2020); Latin America and the Caribbean and North America (21 to 24 September 2020); and Near East (7 to 8 December 2020). These workshops, attended by national focal points for AqGR and regional organizations, succeeded in generating feedback on the structure of a global information system for AqGR and on the strategic priorities for a Global Plan of Action for AqGR. Following these workshops, discussions have been held with several Members regarding the development of national projects to develop national strategies for AqGR.

40. A draft Global Plan of Action was prepared based on: feedback received during the regional consultation workshops; feedback received from the COFI Advisory Working Group on Aquatic Genetic Resources and Technologies (COFI Working Group); and through written submissions by Members. The Global Plan of Action identifies 21 strategic priorities under four priority areas, with associated goals, indicators and recommended actions.

41. The draft Global Plan of Action was presented to the Intergovernmental Technical Working Group of the Commission on Genetic Resources for Food and Agriculture (Commission Working Group) which held its Third Session from 1 to 3 June 2021.³¹ The Commission Working Group revised the draft Global Plan of Action which was later presented to the Eighteenth Regular Session of the Commission (27 September–1 October 2021).

42. At its Eighteen Regular Session the Commission welcomed the draft Global Plan of Action (see Information Document COFI:AQ/XI/2022/INF.13 and Session Background Document COFI:AQ/XI/2022/SBD.4), noting the inclusive preparation process, and invited the Director-General to bring it to the attention of the 168th Session of the Council with a view to its being adopted.³² The Global Plan of Action was adopted by the FAO Council at its One Hundred Sixty Eighth Session on 3 December 2021.³³

43. The Commission also positively welcomed and supported FAO's efforts in building the global information system on AqGR. It noted that the Global Plan of Action for the AqGR and global information system are closely interlinked activities and highlighted the need for the development of

²⁶ www.fao.org/3/cb4850en/cb4850en.pdf#page=51; www.fao.org/3/ca8302en/CA8302EN.pdf#page=40

²⁷ www.fao.org/aquatic-genetic-resources/activities/sow/countryreports/en/

²⁸ <https://www.fao.org/aquatic-genetic-resources/activities/sow/background-studies/en/>

²⁹ COFI/34/2021/REPORT, para 10 g. www.fao.org/3/ne907en/ne907en.pdf

³⁰ www.fao.org/fishery/static/aqgenres/FAOPublicationsRelatedAqGR.pdf

³¹ CGRFA/WG-AqGR-3/21/REPORT. www.fao.org/3/ng378en/ng378en.pdf

³² CGRFA-18/21/REPORT, para 58. www.fao.org/3/nh331en/nh331en.pdf

³³ CL 168/REP, para 38. www.fao.org/3/nh512en/nh512en.pdf

quantifiable indicators for the monitoring of the Global Plan of Action and requested that these be incorporated into the global information system under development by FAO.³⁴

44. On the cross-sectoral issues, the Commission made key recommendations on i) the role of genetic resources for food and agriculture in the mitigation of and adaptation to climate change; ii) access and benefit sharing; digital sequence information; and iii) the role of agricultural biotechnologies for conservation and sustainable use of genetic resources.³⁵

45. A prototype global information system on AqGR has been developed under project funding from the Government of Germany (see Session Background Document COFI:AQ/XI/2022/SBD.5). The information system includes a registry database for information on AqGR and interfaces for collection, validation and querying of these data. The prototype contains data for 44 countries, including a total of 114 species and over 200 primary farmed types. This project has been extended for two more years to March 2023 with the objective of expanding the prototype into a full global information system with a working title of AquaGRIS.

46. A thematic paper entitled *Sustainable management and improvement of aquatic genetic resources for aquaculture* was prepared for presentation at GCA +20 and subsequent publication. This paper contains a number of key recommendations to enhance the contribution of AqGR to sustainable aquaculture development.

International Year of Artisanal Fisheries and Aquaculture

47. The United Nations General Assembly in its Seventy-second Session in December 2017 proclaimed 2022 the “International Year of Artisanal Fisheries and Aquaculture” (IYAFA), and identified FAO to serve as the lead agency. FAO has since worked in close collaboration with relevant partners and bodies of the United Nations system, including the International Steering Committee, chaired by Peru, which is comprised of a regionally balanced group of stakeholders representing small-scale fisheries, aquaculture and processing. All resources and information materials are available on the dedicated IYAFA website³⁶ including visual identity guidelines, calendar of events and key messages. IYAFA was officially launched on 19 November 2021 during a virtual event.

48. During its Thirty-fourth Session, COFI expressed its commitment to the International Year of Artisanal Fisheries and Aquaculture, welcomed the proposed planning roadmap and invited countries and partners to be part of the activities; emphasized the opportunity to focus attention on the role of small-scale and artisanal fisheries and aquaculture in poverty eradication, ending hunger, food insecurity and all forms of malnutrition; also emphasized the need for IYAFA to increase awareness and understanding of this sector for the social and economic development of coastal communities and the provision of food of high nutritional value, sustainable use of natural resources, and COVID-19 response and recovery; recognized that IYAFA would also create a positive narrative through promoting partnerships, effective participation of small-scale and artisanal producers and exchange best practices, technical assistance and capacity building, taking into account the diverse nature of small-scale and artisanal fisheries and aquaculture.³⁷

49. To guide and focus its efforts, the International Steering Committee has developed a planning roadmap and Global Action Plan (GAP) (see Information Document COFI:AQ/XI/2022/INF.14),³⁸ which aims at building global momentum to accelerate the support required to bring small-scale artisanal

³⁴ CGRFA-18/21/REPORT, para 59. www.fao.org/3/nh331en/nh331en.pdf

³⁵ CGRFA-18/21/REPORT, paras 16-46. www.fao.org/3/nh331en/nh331en.pdf

³⁶ www.fao.org/artisanal-fisheries-aquaculture-2022/home/en/

³⁷ COFI/34/2021/REPORT, para 13h. www.fao.org/3/ne907en/ne907en.pdf

³⁸ www.fao.org/3/cb4875en/cb4875en.pdf

fisheries and aquaculture to the forefront of societal attention. The GAP outlines a series of indicative and interconnected actions from the global to the local level that are mutually reinforcing in the pillars of work. The GAP is intended to provide inspiration for what proponents of small-scale and artisanal fisheries and aquaculture can do, including local and national governments, bodies of the United Nations, non-governmental organisations, international financial institutions and other international mechanisms, regional bodies, producer organizations, academic and research institutes, civil society organizations, and the private sector.

50. All Members, relevant organizations and stakeholders involved with small-scale fisheries and aquaculture are encouraged to celebrate IYAFA actively, with many opportunities available for contribution and support at national, regional and global levels.

PART II: FAO SUPPORT TO AQUACULTURE EXTENSION AND CAPACITY BUILDING BY REGION

51. FAO has continued its support to sustainable aquaculture development through the Regional Fisheries Bodies (Article VI and Article XIV) that recognize aquaculture in their mandate, specifically, Central Asian and Caucasus Regional Fisheries and Aquaculture Commission (CACFish), Committee for Inland Fisheries and Aquaculture of Africa (CIFAA), Commission for Inland Fisheries and Aquaculture of Latin America and the Caribbean (COPESCAALC), General Fisheries Commission for the Mediterranean (GFCM), European Inland Fisheries and Aquaculture Advisory Commission (EIFAAC), Regional Commission for Fisheries (RECOFI).

52. At national level, FAO has continued its efforts supporting capacity development, in all its levels, to support the long-term strengthening of inclusive extension systems through various projects, summarized below by region.

Africa

53. In Benin, FAO is supporting a COVID-19 recovery project with a component that will focus on reinforcing the access to good quality aquaculture feed: analysing the quality of the aquaculture feed currently available in the country; enhancing the capacity of aquaculture feed production plants technicians (training and equipment provision); creating a network among feed producers and aquaculture farmers; and reviewing national regulations concerning aquaculture feed quality controls and capacity building of the relevant feed quality control institutions staff.

54. In Burkina Faso, FAO is supporting a project on developing national fish seed production (*Clarias* sp. and *Heterobranchus* sp.) through training of hatchery producers, technology transfer and support to fingerling production units in areas with high aquaculture potential.

55. In Burkina Faso, Guinea Bissau, Mali and Uganda, FAO supported adoption of rice-fish practices through pilot projects and capacity development, as well as strengthening hatchery production. Preliminary results show that integration of aquaculture within rice fields results in more rice yield per hectare, in addition to the fish harvest.

56. In Côte d'Ivoire, FAO is supporting an integrated project, which includes components to target the employment and income creation for women and young people in aquaculture value chains through the processing, packaging and marketing of aquaculture products. Additionally, the project will address the access and availability of quality fish seed and fish feed through rehabilitation of a tilapia hatchery and aquaculture station.

57. In Djibouti, FAO supported clam aquaculture, through species and site selection, seed production, and capacity building activities working with cooperatives of youth and women who were supported in technology transfer, communications, adaptation to extreme weather and marketing.

58. In Ghana, FAO supported the introduction of tank-based aquaculture, and this approach has been successfully introduced where youth groups received fish tanks and starter kits, and has led to increased self-confidence of the youth who formed four production cooperatives, which eventually formed a fish processing union. That union produces high-quality smoked, vacuum-sealed and branded catfish product.

59. In Liberia, FAO is investigating the potential of sea cucumber aquaculture through a study and pilot farm.

60. In Nigeria, FAO supported aquaculture development as a livelihood-generating option for unemployed youth. Considerable efforts are being undertaken to support refugees and internally displaced persons (IDPs) in the Lake Chad Basin. Project interventions include breeding of catfish, which already are part of many people's diets, especially in smoked form. Catfish aquaculture can provide a source of income for displaced fishers, reduce pressure on existing fish stocks and help improve the quality of fish sold. Interventions include the establishment of tank-based backyard fish culture activities, supporting the integration of the IDPs into the host communities. Integrated aquaculture-agriculture, growing fish and providing their hosts with the wastewater for irrigation of their crops, by which they strongly reduced their use of fertilizers.

61. In Senegal, FAO prepared a business model manual for young entrepreneurs to support the establishment of tilapia aquaculture farms.

62. In Togo, FAO is supporting the evaluation of commercial fish farms, identification of rehabilitation requirements, and expansion of existing farms.

63. In Zambia, FAO is supporting the Zambia Aquaculture Enterprise Development Project which aims to contribute to economic growth and food security and aims to improve livelihoods and living standards through enhanced aquaculture production.

64. The status of the Committee for Inland Fisheries and Aquaculture of Africa (CIFAA), its future and related challenges have been discussed at various fora; including: Extraordinary Session, Lusaka, Zambia, 1 to 2 December 2014, Working Group Meeting in Addis Ababa, Ethiopia, 10 to 11 March 2015, Working Group Meeting, Dakar, Senegal, 14 to 15 June 2015, 17th Regular Session, Banjul, The Gambia, 20 to 22 April 2016, and 18th Regular Session, Bamako, Mali, 26 to 28 November 2019. In all cases, Members decided to maintain CIFAA as an Article VI body under the FAO Constitution and recommended a review of the current statutes and rules of procedure to enable the Committee to address specific technical and scientific matters to effectively deliver its mandate. To that effect, the FAO Regional Office for Africa commissioned a study, "Independent Review for strategic reorientation and strengthened regional fisheries governance and scientific advice processes in the Committee on Inland Fisheries and Aquaculture of Africa". The study aims to develop and implement innovative approaches in support of an improved functioning of CIFAA including an analysis of the benefits and costs of the different approaches. This study will inform a possible strategic reorientation process of CIFAA to facilitate development of sustainable inland fisheries and aquaculture in Africa to meet the national and international obligations set out in the relevant agreements and instruments.

65. In regards to the Aquaculture Network for Africa (ANAF), the COFI Sub-Committee on Aquaculture during its Ninth Session recommended ANAF's institutionalization within the African

Union – InterAfrican Bureau for Animal Resources (AU-IBAR).³⁹ FAO has facilitated this integration, which became effective in 2018, and since then ANAF has carried out several activities, including its regular annual meetings, the last of which was held from 17 to 19 February 2020 in Accra, Ghana. During this Session, it was recommended that AU-IBAR: (i) fast-track the process of drafting of legal instruments (Rules of Procedures) of ANAF to secure its key role in sustainable aquaculture development in the Continent; (ii) utilize the final legal instruments for setting up and hosting a new ANAF web site within the African Union web site; (iii) expand the ANAF mandate including knowledge generation and delivery of capacity building; (iv) ensure that the network is operational and that the role played by the Regional Economic Communities are well defined. AU-IBAR is expected to submit the finalized ANAF Rules of Procedures and other legal instruments to the AU General Assembly prior to the next session of the African Union Development Agency’s Specialized Technical Committee on Agriculture, Rural Development, Water and Environment, for its consideration. With the support of Member countries, the objectives should be fully achieved before the next regular meeting of ANAF.

Asia and the Pacific

66. The Regional Technical Platform on Aquaculture (RTP-AQ) is a new FAO initiative to support sustainable development of the sector by promoting best practices, sharing innovations, facilitating dialogues and disseminating information and knowledge products. The RTP-AQ is envisioned to be a dynamic and interactive platform serving the needs of multiple stakeholders including FAO offices, governments, farmer organizations, financiers, researchers, private sector, CSOs, etc. The RTP-AQ aims to improve access to information from a wide range of sources and provide forums for dialogue between experts and stakeholders to share knowledge, perspectives and experiences, and to develop and finance new projects. The platform would open up global and regional opportunities to share best practice and innovation and develop networks both regionally and internationally, including increasing the opportunities for south-south collaboration and leveraging global and regional efforts and investment.

67. FAO prepared the Regional AMR Monitoring and Surveillance Guidelines Volume 3: *Monitoring and surveillance of AMR in bacteria from aquaculture*. This publication is part of a series of regional guidelines for antimicrobial resistance in agriculture initiated by the Food and Agriculture Organization of the United Nations Regional Office for Asia and the Pacific.

68. FAO prepared a policy brief on the effects of COVID-19 on fisheries and aquaculture in Asia,⁴⁰ which was translated into Arabic, French and Spanish. Concurrent activities aim to strengthen multi-sectoral coordination across relevant sectors to mitigate risks of COVID-19 transmission along the food supply chain.

69. FAO continues to support the development of the Micronesian Association for Sustainable Aquaculture (MASA); its Members are the Federated States of Micronesia, Marshall Islands, Nauru and Palau. Activities include engagement with the regional fisheries body and the Pacific Community (SPC); development of a regional strategy. FAO provided support in-depth aquaculture risk assessment and business investment planning. Similar work was conducted in Kiribati. The strategies highlight key pre-conditions and technical recommendations required for countries to ensure sustainable and economically viable aquaculture developments.

70. In Bangladesh, FAO supported, integrated agricultural development for nutrition improvement through the development of improved climate resilient agricultural system considering appropriate species and varieties is highly essential to sustain productivity under changing environmental conditions. In addition to crop production, the agricultural systems include animal-source protein production, such as livestock, poultry and aquaculture. A better integration of components of the agricultural systems in

³⁹ COFI:AQ/IX/2017/REPORT, para 13bis. www.fao.org/3/I8886T/i8886t.pdf

⁴⁰ www.fao.org/policy-support/tools-and-publications/resources-details/en/c/1294675/

the region can result in improved production of nutritious foods for healthy diets on a farm basis, especially under ongoing adverse environmental conditions and the COVID-19 pandemic. Two trainings were held: 1) Sustainable and climate resilient fish culture practices in seasonal waterbodies and flooded lands [600 beneficiaries] and 2) Integrated farming systems for smallholder farms with better farm productivity, nutrition and income [600 beneficiaries].

71. In Bangladesh, FAO provided support to seaweed cultivation, processing and marketing through assessment and capacity development. The project boosted the production, processing and marketing of seaweed in the coastal districts of Bangladesh to support livelihood, food security and better nutrition for Bangladeshi population with particular focus on developing the capacity of coastal communities in seaweed farming, processing and marketing. Based on a study conducted under the project, the national draft proposal for future expansion of seaweed industry in Bangladesh was developed, and demonstration sites and training were carried out in three coastal districts, namely Patuakhali, Satkhira and Bagerhat.

72. In Fiji, FAO provided emergency support to re-establish agriculture and fisheries livelihoods of households affected by Tropical Cyclone Yasa in Fiji, with activities including registration of all affected aquaculture farmers and provision of fish feed to local tilapia farmers.

73. In India, Indonesia and Viet Nam, FAO provided support to the mitigation of Antimicrobial Resistance (AMR) risk associated with aquaculture. Activities included: awareness raising and improved understanding of the AMR/Antimicrobial Use problems associated with aquaculture; strengthening of laws and regulations governing the use of antimicrobials in aquaculture; capacity-building on good management practices for farmers to conduct of animal health management/biosecurity control for prudent and effective use of antimicrobial; and strengthening national laboratory capacity for effective monitoring and surveillance of AMR in aquaculture.

74. In Indonesia, FAO provided support for increasing the traceability of farmed shrimp, improving food safety and strengthening inclusive value chain development. Activities included introduction of improved farming practices and effective implementation of traceability system for farmed shrimp following the new standard of IndoGAP and data recording for traceability system.

75. In Myanmar, FAO provided support to small-scale integrated aquaculture schemes towards the improvement of food security and nutrition in vulnerable populations. Activities included rehabilitations and construction of ponds and training of trainers, both of which were adapted for compliance with COVID-19 restrictions.

76. In Pakistan, FAO provided support to the development of a national policy and implementation plan for the fisheries and aquaculture sector, which included a sectoral analysis of the fisheries and aquaculture and aimed to create an enabling environment for the development and promotion of fisheries sector on a sustained basis through revised legislation.

77. In Samoa, FAO supported the implementation of recommendations to improve Samoa's community-based fisheries management program, including community trainings and awareness on farming and restocking programs of giant clams in community-based fisheries management areas.

78. In Tuvalu, FAO provided support to pilot sites for subsistence aquaculture for milkfish, including assessment studies and recommendations. Also in Tuvalu, FAO provided emergency assistance to reduce impacts and build resilience in the fisheries sector caused by Cyclone Tino and COVID-19, including provision of lost cages and strengthening of local food production to increase food security.

Europe and Central Asia

79. In the Central Asia subregion, FAO supported regional guidelines for feed use in carp and trout production systems, and supported capacity building for sustainable aquaculture management.

80. In Albania, FAO conducted an assessment on the impact of climate change on fisheries and aquaculture, and defined quantified adaptation targets.

81. In the Kyrgyz Republic, FAO provided support to improvements to common carp production, introducing low-cost heating methods to improve breeding success. FAO also provided support to innovative production technologies for rainbow trout production, including intensive hatchery production and feed manufacturing, and supported aquaculture cooperatives and women's groups to strengthen local employment opportunities. National fish production rose 14-fold during the six-year project period, reaching a high of over 5 000 tonnes in 2020.

82. In Uzbekistan, FAO supported the development of a national aquaculture development framework.

Near East and North Africa

83. In the Maghreb, FAO conducted a survey to assess the impact of the pandemic on the socio-economic aspects, in particular employment and workers' means of subsistence. More than 200 key actors representing the whole value chain of the sector were targeted through a questionnaire conducted between March and August 2020. Five national and one sub-regional reports have been published: Algeria, Libya, Mauritania, Morocco and Tunisia.

84. In Bahrain and the United Arab Emirates, FAO has provided support to aquaculture innovations in arid areas, noting the importance of developing local food production in light of the COVID-19. The harsh natural environment and limited freshwater resources required the use of water-efficient aquaculture technologies, including aquaponics, integrated aquaculture, and recirculating aquaculture systems. FAO also supported the development of sustainable marine aquaculture of native species, including through use of coastal barges or offshore cage culture. FAO provided technical support to develop locally adapted business models, as well as supporting an enabling environment encompassing statistics, hatchery production, biosecurity, consumers' preferences and vocational training in support to the Blue Transformation of the local food systems.

85. In Mauritania, FAO supported small-scale fishery communities and fish processors facing the effects of Covid-19, through the establishment of infrastructures needed for the development of inland fishery and fish farming. Activities include strengthening the technical capacities of fishers and fish processor cooperatives through capacity development in sustainable fishing techniques and fish processing and through the establishment of a hatchery for fish farming and market infrastructures for selling fish products.

86. In Morocco, FAO supported Aquaculture capacity development through the establishment of an aquaculture demonstration center for the training of qualified personnel. This center will be used for practical training in marine aquaculture techniques and will be combined with theoretical and practical training.

87. In Tunisia, and in collaboration with General Fisheries Commission for the Mediterranean (GFCM), FAO supported activities to identify suitable zones for aquaculture and the evaluation of the carrying capacity with the aim of proposing allocated zones for aquaculture. Also in Tunisia, FAO is supporting the elaboration of a management plan for the Bizerte lagoon in Tunisia for a territorial socio-economic development.

Latin America and the Caribbean

88. FAO's support to aquaculture in the Latin America and Caribbean region is organized around regional initiatives.

89. Under Regional Initiative 1: *Transforming food systems with healthy diets for everyone*, FAO has supported comprehensive use of fishery and aquaculture products in human nutrition; nutritional improvement of rural school children and other vulnerable groups with higher fish consumption; and increase in availability and access to fish protein in vulnerable groups through public purchases and supply strategies. In Guatemala and Honduras, FAO supported the development of pilot school feeding programmes, and has supported the development of related national policies in Guatemala, Honduras and Paraguay. Preliminary impact assessment in Honduras has revealed an improvement in the nutritional condition of school children as a result of fish consumption.

90. Under Regional Initiative 2: *Hand in hand towards more prosperous and inclusive rural societies*, FAO has supported using aquaculture as a catalyst for local economies towards a territorial approach to rural development, as a tool to enable productive empowerment of rural women and youth through the integration of aquaculture extension services and promotion of competitiveness, in establishing more efficient value chains and more inclusive markets, and in strengthening artisanal fisheries with access rights, social protection and occupational safety. In Guatemala, El Salvador, Colombia and Paraguay, FAO conducted surveys to identify gaps in social protection for small-scale aquaculture farmers as a basis for improved Social Protection Policies. In Colombia, FAO assisted, through the National Aquaculture Extension Program, the adoption by a number of small-scale aquaculture organizations, of a monetary rotational fund whose aim has been to provide families with some extra cash for contingencies. In Peru, FAO worked with the World Bank on innovative processes and technology in the aquaculture value chain, specifically for rainbow trout and Bay scallop.

91. Under Regional Initiative 3: *Sustainable and climate resilient agriculture*, FAO has supported Climate-resilient aquaculture systems and species, adaptation and technological innovation of fishing and aquaculture to the challenges of new climate scenarios, inter-sectoral action to prevent zoonotic and transboundary diseases through One Health, and the responsible use and conservation of aquatic biodiversity. In Nicaragua, FAO conducted a climate change vulnerability assessment of fishing and aquaculture communities, as a basis for a territorial adaptation plan.

92. Under the Climate Change Adaptation of the Eastern Caribbean Fisheries Sector (CC4FISH) project, FAO has supported aquaculture demonstration sites are being established across the Eastern Caribbean in Antigua and Barbuda, Dominica, Saint Kitts and Nevis, Saint Lucia and Trinidad and Tobago. These sites include aquaponics and shrimp aquaculture farms designed to meet the Caribbean's climate change needs and provide capacity training to prospective farmers looking for meaningful and productive sources of income.

93. In Dominica, FAO supported the rehabilitation of the hatchery after its destruction by Tropical Storm Erica in 2016 and Hurricane Maria in 2017, with features designed to withstand future extreme weather events and ensure long-term success and productivity. The hatchery produced its first batch of post larvae in August 2020, and is now able to produce high quality post larvae for an aquaculture industry that not only provides local, fresh, nutritious protein to local populations, but also a good source of income and meaningful work for local entrepreneurs. The hatchery also serves as a location for capacity building and technology transfer trainings to further develop the industry.

94. In Saint Lucia, FAO supported seamoss (carrageenan-producing red macroalgae *Kappaphycus/Eucheuma* spp.) aquaculture including through the development a seamoss manual for Caribbean producers, to include best practices for site selection, farm management, climate change mitigation activities, post-production activities, business planning and record keeping.

GUIDANCE SOUGHT

95. The Sub-Committee is invited to:
- Review and comment on the information and background documents pertaining to the FAO Fisheries and Aquaculture Division's efforts in implementing the recommendations of the past sessions of the COFI Sub-Committee on Aquaculture;
 - Reflect on the progress and achievements and provide advice, as required, to strengthen and prioritize the recommendations in the next inter-sessional period;
 - Invite Members and interested donors to provide financial and/or human resources to implement the priority areas in regards to aquaculture, as considered important by the Sub-Committee.