



COMMITTEE ON FISHERIES

SUB-COMMITTEE ON FISHERIES MANAGEMENT

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CURRENT FISHERIES MANAGEMENT PRACTICES WITH SPECIAL CONSIDERATIONS FOR SMALL-SCALE FISHERIES

Executive Summary

This document highlights the importance of understanding which components of fisheries management require more attention by Members, proposes the need for a better system to understand and measure fisheries management effectiveness, and stresses the need to explicitly broaden current practices of fisheries management to include ecological, social, economic, nutritional and gender objectives and the trade-offs among them. It also highlights the importance of understanding which management approaches and tools are most suitable for marine and inland small-scale fisheries and provide suggestions for enabling conditions to improve fisheries sustainability.

Suggested action by the Sub-Committee

The Sub-Committee is invited to:

- share information and national experiences in the design and implementation of effective fisheries management tools and processes, particularly for marine and inland small-scale fisheries and in developing countries contexts;
- share successful examples of, and challenges in explicitly considering ecological, social, economic, nutrition and gender objectives and their tradeoffs in fisheries management, in line with the Ecosystem Approach to Fisheries;
- consider the need for FAO to develop guidance for fisheries management and governance, explicitly acknowledging ecological, social, economic, nutrition and gender objectives, with special considerations for marine and inland small-scale fisheries;
- provide suggestions on how FAO should strengthen capacity development, including tools and processes, for cost-effective data and information systems to inform fisheries

management, and for the implementation of tailored approaches for generation of management advice, particularly for marine and inland small-scale fisheries;

- Consider the need to develop a systematic framework to collate and analyse the experiences of Members on fisheries management aimed at understanding management effectiveness at global and regional levels.

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I. INTRODUCTION

1. Fisheries management is key to achieving sustainable fisheries. While in many cases fisheries management has been successful in achieving the intended sustainability objectives, many challenges exist mostly related to weak human, financial and technical capacities, particularly in least developed countries (LDC) and for marine and inland small-scale fisheries (SSF), and/or to the lack of political will to strengthen the institutions necessary for the proper implementation of management systems.
2. Fisheries management science and management measures that have been developed and implemented in countries with specific fishery, ecological, social and economic situations are often unsuitable for application in countries with different socio-ecological and cultural contexts. Therefore, management measures need to be adapted and tailored to the local socio-economic and cultural contexts of the fishery in which they are being implemented.
3. Notwithstanding progress being made in the implementation of Ecosystem Approach to Fisheries (EAF), fisheries management is still mostly applied with the objective of maximizing production (catches), while maintaining the function and structure of the ecosystem, but often with less consideration given to the social, economic, nutrition, or gender dimensions of the fishery. While there is considerable generic guidance for related good practices through international agreements and commitments, challenges with their practical implementation persist.
4. The FAO Committee on Fisheries (COFI), in its 35th Session, “emphasized the need to improve fisheries management based on the precautionary and an ecosystem approach and including through strengthened collaboration with and within regional fisheries management organizations (RFMOs), and other relevant Regional Fisheries Advisory Bodies (RFABs) and civil society as appropriate, including through building capacity and strengthening the link between decision making on fisheries management and the best available science”.
5. In relation to SSF, COFI35 encouraged increased work on small-scale fisheries sustainable resource use and management through participatory approaches (e.g. co-management and community-based management) and reiterated the fundamental role that a new Sub-Committee on Fisheries Management could play in relation to sustainable SSF.
6. Improving fisheries management requires an understanding of what arrangements, tools and institutions are most suitable for a particular fishery and socio-economic and cultural context, as well as additional technical, human and financial resources for their implementation and monitoring. This is particularly the case for LDC and for marine and inland SSF.

II. OVERVIEW OF RESULTS FROM THE CODE OF CONDUCT FOR RESPONSIBLE FISHERIES QUESTIONNAIRE IN AREAS RELATED TO FISHERIES MANAGEMENT

A. Approach

7. As per Article 4 of the 1995 FAO Code of Conduct for Responsible Fisheries (the Code), COFI Secretariat has been presenting key findings on the progress of implementation of the Code based on the responses to the questionnaire by Members, regional fishery bodies (RFBs) and non-governmental organizations (NGOs) for two decades. The questionnaire covers a wide range of issues pertaining to the Code and related instruments, some of them being specific and/or relevant to how fisheries management is being implemented.
8. In order to obtain relevant insights into how Members are implementing fisheries management, a two-step approach in analysing relevant sections of the responses to the questionnaires submitted in

2020¹ was developed: (1) identification of questions relevant to fisheries management and grouping them into topics (i.e. management plans, management strategies, legislations, enforcement, and data and research); (2) compilation of answers to develop quantitative indices denoting management intensity² by topic, with a scoring from 0 (least intense) to 1 (most intense)³.

B. Analysis of the responses

9. A detailed statistical analysis of responses to the rating-scale questions is available as COFI:FM/I/2024/Inf.5 to be read in conjunction with this document. Figure 1 summarizes the findings below.

10. In terms of fisheries legislations, including questions regarding national plans of action for sharks and seabirds, to combat Illegal, Unreported and Unregulated (IUU) fishing, or to manage fishing capacity, among others, the average score was 0.64 (out of 1.0), with 40 percent of responding Members achieving a score of 0.7 or higher. The lowest scores were associated to questions regarding the intention of developing national plans of action when these have not yet been developed.

11. With respect to management plans, including questions about the number and scope of plans, including ecosystem considerations, the overall score was 0.78, with 70 percent of Members⁴ achieving a score of 0.7 or higher. In addition, the average proportion of fisheries with management plans by country at a global level was 0.66, suggesting there may still be a substantial percentage of fisheries globally that remain unmanaged (34 percent global average). For inland fisheries, no responses on the proportion of fisheries with management plans were obtained.

12. For management strategies, including questions associated with the implementation of bycatch mitigation measures, strategies to monitor fisheries, or to reduce fishing effort, Members reported an average score of 0.72, with 47 percent of Members scoring 0.7 or higher. Although with regional variability, most common management tools or processes included prohibiting destructive fishing methods and practices, including stakeholder participation in determining management decisions, and addressing the interests and rights of small-scale fishers. Most common rebuilding strategies (i.e. when reference points have been exceeded) included ‘carrying out research’, ‘limiting fishing effort’, ‘strengthening monitoring, control and surveillance (MCS)’ and ‘closing the fishery’.

13. In relation to enforcement, including questions related to the use and control of vessels through a vessel monitoring system (VMS), penalties, sanctions, and mandatory logbooks and reporting systems, the average score for all Members was 0.70, with 70 percent of Members scoring 0.7 or higher. Only 25 percent of the Members responded having VMS implemented in the entire fleet, 53 percent in a portion of the fleet, and 22 percent in none of the fleet.

14. In terms of data and research, including questions related to data sources used to inform fisheries management (historical data, fishery independent surveys, tag-recapture, etc.), the average score at global level was 0.75; with 70 percent of the Members scoring 0.7 or higher. Moreover, most Member (48 percent) reported data gaps in terms of stock status, followed by IUU data and/or MCS data (37 percent) and ecosystem data (34 percent).

15. With respect to reliable estimates of stock status, often needed to inform management measures and particularly to fulfil monitoring and reporting commitments (e.g. Sustainable Development Goals

¹Complete responses were received from 113 Member countries plus EU Member.

² Management intensity refers to the number of legislative, operational and institutional processes and tools in place.

³ Full description of methodology in COFI:FM/I/2024/Inf.5

⁴ Percentages are calculated based on number of Members responding to the questionnaire for each indicator.

(SDGs)⁵, the Agreement on Fisheries Subsidies of the World Trade Organization⁶), 18 percent of Members reported no (zero) stocks with reliable stock status while 22 percent of the Members reported at least 81 percent of their stocks had reliable estimates of stock status.

16. Eighty-seven percent of Members responded that they have SSF in their country but information on the volume and value derived from SSF and the people working in SSF was scarce, suggesting a lack of SSF data, particularly socio-economic information. In terms of management of SSF, most of the Members responded that they do have laws, regulations, policies and plans or strategies to manage these fisheries.

17. In summary, Members' responses highlight the need for additional efforts on all components of fisheries management reported within the Code questionnaire. The scope and nature of these effort depend on the region, country, and type of fishery, demanding a tailored approach to the design and implementation of tools and processes to ensure effective fisheries management.

18. Overall, while the questionnaire of the Code has some strengths such as global comprehensiveness and periodic updates, it does not appear to be entirely adequate for summarizing the intensity and current practices in global fisheries management, and particularly for evaluating effectiveness, and for distinguishing management practices between large- and small-scale fisheries. This kind of information is critical to designing effective tailored approaches as outlined above.

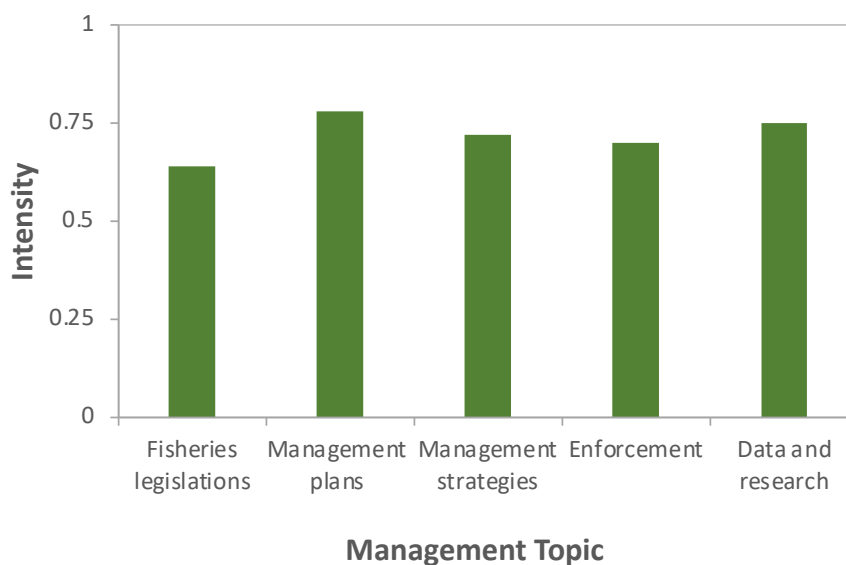


Figure 1. Summary of Members' responses to specific management topics and their intensity. Global averages for each topic range from 0.64 to 0.78, indicating efforts are still needed in the implementation of the different components of fisheries management.

III. CURRENT PRACTICES IN FISHERIES MANAGEMENT

19. Overexploitation and weak or improper management of fishery resources have undermined their stock health with a critical impact on biodiversity, food security and livelihoods. Based on FAO's

⁵ Refers to Sustainable Development Goal 14 Target 14.4.1: "Proportion of fish stocks within biologically sustainable levels"

⁶ Refers to the World Trade Organization Agreement on Fisheries Subsidies, which prohibits subsidies for fishing or fishing related activities regarding a stock in an overfished condition as determined by a coastal Member or RFMO/A within its competence.

assessment, in 2019, around 64.6% of assessed world's marine fish stocks were within biological sustainable levels, although suffering a 1.2% deterioration from 2017. When weighted by catch volumes, biologically sustainable stocks as defined by FAO⁷ represented 82.5 percent of the 2019 fishery landings of assessed stocks monitored by FAO, a 3.8 percent improvement from the previous assessment. This is consistent with the evidence that larger fishery stocks with higher market value are better managed and that this management is producing positive outcomes.

20. However, the situation is more worrisome in regions with less-developed fisheries management systems, which have on average 3-fold greater harvest rates and half the abundance than those with more developed management systems^{8,9}. For marine and inland SSF, information on stock status and their sustainability at regional and global levels is mostly lacking.

21. For most fisheries, knowledge of the economic and social sustainability status is lacking. This applies even to many fisheries for which stock status is considered to be known. Devising simple and cost-effective processes to assess the social and economic status of fisheries, that integrate with the assessment of the biological or ecological status, is essential if fisheries are to be managed to reach social, economic and biological goals.

22. Fisheries management is a complex process that should be multidisciplinary both in terms of the underpinning of the scientific and knowledge framework and its objectives, considering resource conservation, the economic implications of alternative management strategies, and the social context within which management decisions are taken. The relative weights assigned to these diverse considerations can vary substantially in different settings.

23. Throughout most of the 20th century, fisheries management objectives were centered around maximizing yield from capture fisheries. In the latter part of the 20th century and in the 21st century, a broader view of fisheries management objectives gradually developed. Stated management objectives began to include reducing the risk of overfishing of target stocks and protecting biodiversity of both target stocks and wider marine ecosystems supporting those stocks as well as livelihoods. For inland fisheries, moving towards integrated watershed or basin management, recognizing the impact of factors outside the sector (e.g. irrigation, hydropower) is being increasingly advocated. These changes involved a growing recognition and implementation of precautionary approaches, broadening management objectives to increasingly encompass economic and social objectives, including creating livelihood opportunities, provision of nutrients for human consumption and labour rights. The ensemble of these broader objectives is embodied in the EAF.

24. Fisheries management measures often entail the implementation of multiple tools and regulations, including input (e.g. effort limitations) and output controls (e.g. catch quotas), spatial and/or temporal harvest strategies (e.g. no-take areas, rotational harvest) and harvest control rules (e.g. closing a fishery after catch quotas have been achieved), among others. However, the most appropriate or viable management measures differ between species, according to their life history traits (e.g. benthic vs pelagic species), as well as between fishery types (e.g. large-scale vs. small-scale)¹⁰. These management measures are not mutually exclusive and often need to be implemented simultaneously to increase fisheries management effectiveness¹¹.

25. Regardless of the management practices, tools and measures in place, the availability of both good quality, representative data and information about the fishery to be managed and the human capacity to convert it into actionable knowledge and management advice are critical components in achieving effective, evidence-based management. Most fisheries globally, and particularly those in LDC and

⁷ <https://www.fao.org/3/i2389e/i2389e.pdf>

⁸ <https://www.nature.com/articles/s41559-017-0179>

⁹ <https://www.pnas.org/doi/10.1073/pnas.1909726116>

¹⁰ For example, while Territorial Use Rights for Fishing (TURFs) may be an effective option for sedentary resources with discrete boundary limits, this strategy is mostly unfeasible for highly migratory tuna species.

¹¹ <https://link.springer.com/article/10.1023/A:1008829909601>

marine and inland SSF are often data-limited and/or capacity-limited due to scarce human, financial and technical resources available. Multiple examples exist where challenges in accessing the information and capacity needed for fisheries management has been solved, including the use of traditional or local fishery knowledge, development of community-based data collection programs, training in data curation, management and interpretation, use of empirical indicators or data-limited assessment methods, among others.

26. While designing and implementing the most suitable management tools and arrangement is a key aspect of effective fisheries management, it is also important to recognize the need to build institutional capacities for science-based management advice, for compliance and enforcement, and monitoring of recommendations.

27. When it comes to the management of marine fisheries exploiting shared, straddling or high seas fish stocks, international cooperation as being facilitated by RFMOs and RFBs is key. Several RFMOs are taking steps towards implementing the Ecosystem Approach to Fisheries, that includes adopting the precautionary approach, promoting transparency, and enhancing compliance. However, more attention and particularly enhanced cooperation across RFMOs and RFBs should be promoted to advance fisheries sustainability in exploiting these resources.

28. Understanding progress, or lack of, fisheries management effectiveness is important as it helps identify and prioritize additional resources and support needed for effective management of all fisheries. Since the adoption of the Code and related instruments, there has been an increasing level of understanding of the conditions affecting the performance of fisheries management approaches and measures, including through different reviews carried out by FAO, academic institutions, and other organizations. Specific tools for evaluating and monitoring management performance according to different approaches have also been developed. For instance, FAO currently provides estimates and trends of the state of the stocks as a measure of biological fisheries sustainability. However, at present, no global framework for systematically monitoring the intensity and effectiveness of management systems at regional and global levels exists. Moreover, there is no comprehensive account of how many fisheries globally are under management systems.

IV. CHALLENGES AND OPPORTUNITIES IN MANAGING MARINE AND INLAND SMALL-SCALE FISHERIES

29. While the basic fisheries management tools in principle apply to all fisheries irrespective of their scale and nature, current practices in SSF management have evolved to address the unique challenges and opportunities associated with these fisheries (e.g. often with low gross value of production, remote and sparse landings, and often multi-species, multi-gear operations). Moreover, fisheries in countries with limited human, financial and technical resources need to adopt management frameworks and measures that can be realistically complied with. Finally, in these situations, where centralized management systems are weak, fisheries can be effectively managed through participatory arrangements including co-management and tenure and access rights, as called for in the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines).

30. It has been estimated that SSF provides at least 40 percent (36.9 million tonnes) of global fisheries catch and makes direct contributions to the daily nutrition supply and well-being of about 226 million people. Globally, the livelihood of one in every twelve people, nearly half of them women, depends at

least partially¹² on small-scale fishing, for example, altogether generating an estimated 44 percent (USD 77.2 billion) of total fisheries landed economic value¹³.

31. It is well recognized that fisheries management based on quantitative scientific information, stock assessments and output controls measures (e.g. total allowable catches) that has formed the basis of fisheries management in the Global North and in many large-scale fisheries, is often not applicable to SSF that are multi-species, multi-gear, characterized by mobile or seasonal groups of harvesters, and usually data- and capacity-limited. Therefore, pursuit of this form of management has in many cases delayed fisheries management based on agreed objectives and supported by research to assist in policy formulation.

32. Noting the challenges related to these more conventional fisheries management approaches, particularly in developing countries, a range of alternative processes and tools have been implemented in many small-scale fisheries, including community-based data collection programs and use of traditional ecological knowledge, empirical assessments and harvest control rules, and self-enforced input control measures, such as spatial and temporal closures, gear and capacity restrictions and minimum sizes, among others.

33. Moreover, decentralization and participation at the community level (i.e. co-management) has been growing in the last decades. Although one-fits-all solutions are not realistic, it has been demonstrated that where certain attributes are present, such as suitable institutional frameworks, strong leadership and social cohesion, co-management can lead to improved ecological, social and institutional outcomes¹⁴. As with other management arrangements, there is a need to evaluate, monitor and strengthen co-management to ensure their effectiveness.

34. Providing fishers with tenure rights of access and withdrawal (e.g. the right to access fishing areas and the right to harvest fish from them) constitutes the basis for just and effective small-scale fisheries management. This is particularly important as SSF often occur in areas where there are potential overlaps or conflict in resource management mandates and use/interest (e.g. tourism, environment conservation, ports). Moreover, when fishers are also devolved the rights of management, exclusion, and transferability¹⁵, coupled with supportive institutional structures, they become significantly more empowered to manage their fisheries.

35. The introduction of one or more of these approaches presumes that the policy trade-offs have been made and that enabling conditions (e.g. legislative framework, institutional capacity) exist.

36. Most of the challenges and opportunities mentioned above also apply to inland fisheries. However, inland fisheries often operate in water bodies where water management systems and infrastructure in place may not specifically cater to or include fisheries. Moreover, inland fisheries are particularly vulnerable to the influences from other sectors, including agriculture, industry, or urbanization. Altering fisheries environments to meet other sectoral objectives can undermine functional fisheries management suggesting the need for integrated water management.

37. A more detailed overview of all of these issues as well as related examples is provided in the document COFI:FM/I/2024/Inf.6 and COFI:FM/I/2024/Inf.7, as well as COFI:FM/I/2024/Sbd.1.

¹² “At least partially dependent” refers to those people employed in small-scale fisheries, engaged in subsistence activities or at least partially dependent upon either. See COFI:FM/I/2024/Sbd.1

¹³ These figures refer to 2013-2017 averages. See <https://www.fao.org/3/cc4576en/cc4576en.pdf>

¹⁴ <https://www.nature.com/articles/nature09689>

¹⁵ Management is the right to regulate internal use patterns and transform the resource by making improvements. Exclusion is the right to determine who will have an access right, and how that right may be transferred. Transferability is the right to sell or lease either or both of the above collective choice rights. <https://www.fao.org/3/cc4576en/cc4576en.pdf>

V. CONCLUSIONS

38. Management systems and related governance frameworks and institutional capacities need to operate effectively so that fishery resources are maintained at productive levels, and support the delivery of social, economic, cultural, and nutritional benefits within an Ecosystem Approach to Fisheries, explicitly acknowledging their trade-offs.

39. There is a wide diversity of fisheries and management systems around the world, requiring a systematic approach to describe, document, and monitor these systems. Understanding how fisheries are being managed around the world and how this is changing over time, what the challenges and opportunities are in particular fishery and socio-economic and cultural contexts, and what specific aspects of fisheries management systems need improvements in different regions or countries is key in achieving effective fisheries management. In this respect, FAO is well positioned to collect, process and analyze this information aimed at producing guidance for the design and implementation of tailored, effective fisheries management.

40. While SSF are critical for food security and nutrition and livelihoods, most are still unmanaged due to lack of adequate resources for monitoring and management as well as a poor understanding of what makes marine and inland SSF management successful in different socio-economic and cultural contexts. Participatory management, including co-management, and access rights can incentivize fishers' stewardship resulting in more effective management systems.

41. Access to good quality data is key to achieving effective, evidence-based management. Therefore, multi-dimensional (e.g. ecological, social, economic, gender) cost-effective data generation and access mechanisms should be improved by adapting, scaling up and institutionalizing successful examples currently in place to move fisheries from data-poor to information rich.

42. Monitoring how fisheries management is being implemented and how effective it is in achieving the intended objectives can contribute to the understanding on whether the inputs, efforts, actions, and budgets allocated to fisheries management systems are having the intended results. It can also help identify related challenges and needs, supporting the development of targeted and long-term capacity development programs, consistent with the objective in the Blue Transformation Roadmap of ensuring that one hundred percent of marine and inland fisheries are placed under effective management to deliver healthy stocks and secure equitable livelihoods.