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How to monitor implementation of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries?

About this online consultation

This document summarizes the online consultation *How to monitor implementation of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries?* held on the Food and Agriculture Organization of the United Nations's (FAO) Global Forum on Food Security and Nutrition (FSN Forum) from 17 February to 16 March 2020. The consultation was facilitated by the Small-Scale Fisheries Core Team from FAO in Rome, Italy.

The goal of this online consultation was to solicit views, suggestions and recommendations for monitoring the implementation of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines), which were endorsed in 2014 by the FAO Committee on Fisheries. Input received during this consultation will feed into FAO's work on measuring progress in the implementation of the SSF Guidelines at the national level.

During the consultation, participants first shared ideas on how progress towards securing small-scale fisheries can be defined, selecting the most important chapters and paragraphs of the SSF Guidelines in this regard and discussing the geographical scales at which progress should be measured. Next, participants proposed indicators for assessing progress, with some of them sharing information on relevant monitoring and evaluation frameworks. Last, participants identified key elements of successful participatory monitoring and shared their own experiences in this field.

Over the four weeks of discussion, participants from 24 countries shared 45 contributions. The topic introduction and the consultation questions proposed, as well as the contributions received, are available on the consultation page: www.fao.org/fsnforum/activities/discussions/monitoring_SSF_Guidelines

1. Defining progress towards securing sustainable small-scale fisheries

Relevant chapters of the SSF Guidelines for assessing progress towards securing sustainable small-scale fisheries

Multiple participants stressed that all chapters of the SSF Guidelines are not only relevant for assessing progress towards securing sustainable small-scale fisheries, but are also interlinked (Manuel Robert Jänig, Germany; Mustafa Mirani, Pakistan) – and therefore should be considered as a whole (Manuel Robert Jänig, Germany; Joromana Phiri, Zambia). At the same time, however, comments stressed that the vast range of topics can be overwhelming for those intending to implement the Guidelines. Accordingly, the focus should be on the realization of responsible governance of tenure (Chapter 5), as this would be a prerequisite for achieving many other objectives (Arjan Heinen, Philippines). Other participants believed that the focus should be on gender equality (Chapter 8). They pointed out that despite women's heavy involvement in small-scale fisheries, public authorities are often not aware of the gender dimension of the sector. This hinders improvements in women's status, and therefore hinders progress in the sector in general (Gender in Aquaculture and Fisheries Section, Malaysia – GAFS).

No consensus emerged among participants who selected multiple topics, which seems to reflect the fact that priorities

in measurement are context-dependent. Some participants chose a set of chapters as a basis of monitoring for specific topics, as detailed below.

Chapters focusing on human rights

The following chapters reaffirm human rights principles; sector-specific human rights issues are highlighted for each chapter:

- ▶ **Responsible governance of tenure** (Chapter 5a): Communities' control over and access to resources is indispensable for the realization of human rights.
- ▶ **Social development, employment and decent work** (Chapter 6): Dispossession from fishing grounds leads to loss of livelihoods. Also, in relation to this, social services are crucial to the sector.
- ▶ **Value chains, post-harvest and trade** (Chapter 7): The expansion of food systems and increased export orientation negatively affect small-scale value chain actors.



- ▶ **Gender equality** (Chapter 8): Women play a key role in small-scale fisheries and often have a double work burden, but continue to be politically marginalized.
- ▶ **Disaster risks and climate change** (Chapter 9): Coastal communities are among the most affected by climate change while contributing little to global warming. In fact, they play a crucial role in sustainable ecosystem management ([Transnational Institute \[TNI\]](#) and [FoodFirst Information and Action Network International \[FIAN International\]](#)).

Except for Chapter 7, the above set of chapters was selected by another participant who highlighted that many fishers lack access to human rights, which hinders adequate governance and sustainable resource use. In relation to frameworks addressing climate change, integration of local practices and knowledge is particularly important ([Vivienne Solis-Rivera](#), Costa Rica).

Chapters framing the basis for monitoring and evaluation, and cooperation

"Guiding principles" (Chapter 3), "Relationship with other international instruments" (Chapter 4), "Policy coherence, institutional coordination and collaboration" (Chapter 10), "Information, research and communication" (Chapter 11), and "Implementation support and monitoring" (Chapter 13) ([Manuel Robert Jänig](#), Germany).

Chapters that best cover the basic principles of the SSF Guidelines

"Governance of tenure in small-scale fisheries and resource management" (Chapter 5), "Gender equality" (Chapter 8), "Disaster risks and climate change" (Chapter 9), "Information, research and communication" (Chapter 11), and "Implementation support and monitoring" (Chapter 13) ([Fatou Camara](#), Gambia).

Chapters covering the principal activities for small-scale fisheries management

- ▶ **Objectives** (Chapter 1): This provides an overview of the objectives of the SSF Guidelines.
- ▶ **Responsible governance of tenure** (Chapter 5a): Small-scale fishing communities' vulnerability and marginalization need to be addressed by securing their tenure rights to the resources that form the basis of their livelihood.
- ▶ **Value chains, post-harvest and trade** (Chapter 7): Post-harvest losses are a major problem due to the high perishability of fish, and a lack of knowledge and post-harvest facilities.

- ▶ **Disaster risks and climate change** (Chapter 9): The effects of climate change on the small-scale fisheries sector are complex, and lead to vulnerability. This should be addressed by urgent action in accordance with global processes and frameworks such as United Nations Framework Convention on Climate Change (UNFCCC) and Rio+20.
- ▶ **Information, research and communication** (Chapter 11): Research and data collection are needed to inform decision-making on small-scale fisheries management, with a view to ensuring sustainability of ecosystems in a transparent manner ([Stephen Ajagbe](#), Nigeria).

Paragraphs interlinked with other sections, and reflecting tangible facts

The following paragraphs are linked with and include recommendations from other paragraphs, and engage small-scale fisheries stakeholders on the ground – i.e. they do not just constitute "paper commitments":

- ▶ **Tenure rights in small-scale fisheries** (paragraph 5.3): Securing land rights is the main protection against coastal industrial fishing, which is a major threat to almost all small-scale fisheries. Furthermore, this allows management to be circumscribed on a spatial basis and identifies actors to be mobilized. Paragraph 5.3 includes recommendations from and interlinkages with paragraphs 5.4, 5.5, 5.7, 5.9, 5.19, 10.2 and 11.6.
- ▶ **Appropriate management systems** (paragraph 5.13): This is the central objective to be achieved. This paragraph relates to and includes recommendations from paragraphs 5.14 – 5.17, 5.20, 7.1, 7.2, 7.8, 9.2, 10.7 and 12.4.
- ▶ **Children's education** (paragraph 6.15): Children's education levels are often correlated with their future living conditions. Interrelated paragraphs are 6.2, 6.5, 6.7, 6.8, 6.13 and 7.4.
- ▶ **Organization of the small-scale fisheries sector** (paragraph 7.4): This is one of the requirements for the processes described in paragraphs 5.3 and 11.9. Promotion of organizations has a cost, which has to be borne by states through different mechanisms as a prerequisite for good governance practices. This paragraph also facilitates other recommendations expressed in paragraphs 7.6, 7.10, 12.1 and 8.2.
- ▶ **Collaborative research** (paragraph 11.9): This research is a means for building cooperation within small-scale fisheries, which is a prerequisite for their sustainable management (paragraph 5.13). The collaborative research process, defined through consultation, is linked to recommendations from paragraphs 11.1, 11.3 – 11.5, 11.7, 11.8, 11.10, and 12.3.

This type of research should contribute to the general monitoring of the implementation of the SSF Guidelines, as far as this emerges as a recommendation from the consultations. In this way, it can measure stakeholder ownership of the SSF Guidelines (see paragraph 13.4) (Marc Leopold, Madagascar).

Other participants did not clearly select a set of topics, but commented on each chapter, explaining why it should be prioritized:

- ▶ **Governance of tenure in small-scale fisheries and resource management** (Chapter 5): Secure tenure rights, paired with science-based limitations and accountability systems, are the backbone of sustainable management (Alexis Rife, United States of America).
- **Responsible governance of tenure** (Chapter 5a): Urbanization and coastal development have displaced many fishing communities, often without compensation or relocation. Securing access to resources means fulfilling the right to food and employment (Kafayat Fakoya, Nigeria).

- **Sustainable resource management** (Chapter 5b): This is a key topic, as adequate and sustainable resource management determines the availability and maintenance of exploitable resources – without which all other elements become irrelevant (Vittoria Elliott, Cambodia). Research suggests that participatory governance can address current failures in resource management (Kafayat Fakoya, Nigeria).

- ▶ **Social development, employment and decent work** (Chapter 6): The small-scale fisheries sector is unattractive due to a lack of social amenities, services and infrastructure, which contributes to persistent poverty among workers in the sector (Kafayat Fakoya, Nigeria).
- ▶ **Disaster risks and climate change** (Chapter 9): The small-scale fisheries sector is significantly threatened by climate change, and states must act now to get fisheries management in place (Alexis Rife, United States of America).
- ▶ **Policy coherence, institutional coordination and collaboration** (Chapter 10): Lack of policy coherence and overlapping jurisdictional boundaries result in confusion

Defining and measuring progress in the Latin America and the Caribbean region

Latin America and the Caribbean (LAC)

In the LAC region, first of all, governance of tenure and resource management (Chapter 5) would be crucial, as research in the region suggests that securing fishing rights positively affects sustainable resource use. Second, social development, employment and decent work (Chapter 6) are important, as the region's small-scale fisheries sector suffers from a lack of labour and social rights. Third, gender equality (Chapter 8) is essential. Research carried out in the region shows that women tend to focus more on sustainable resource use than men, and are therefore essential in finding responses to environmental challenges. Finally, disaster risks and climate change (Chapter 9) are essential (Fernanda Fitzmaurice, Mexico) as well, and are in fact the most relevant topic for the Caribbean subregion (Shelly-Ann Cox, Barbados).

Brazil

In the context of Brazil, currently characterized by a loss of social and economic rights and threats to the environment, Chapters 5–9 are very relevant: "Governance of tenure in small-scale fisheries and resources management", "Social development, employment and decent work", "Value chains, post-harvest and trade", "Gender equality",

and "Disaster risks and climate change". Furthermore, "Relationship with other international instruments" (Chapter 4) and "Political coherence, institutional coordination and collaboration" (Chapter 10) deserve specific attention (Sérgio Mattos, Brazil).

Colombia

In the Colombian Caribbean, progress requires an environment in which ecosystems facilitate breeding, mangroves are abundant, and juveniles are protected. Development potential in small-scale fishing communities would lie in the sustainable exploitation and commercialization of fish resources, facilitated by coordination among relevant authorities. Progress should be measured by constantly monitoring fisheries to better understand the behaviour of species and improve decision-making. Aspects to be monitored include fish length and weight, month of capture, ratio of male to female fish, and fishing areas and gear. Furthermore, attention should be paid to industrial development and its negative impacts on ecosystems, and generally, to targets under Sustainable Development Goal (SDG) 14: Life below water (Confederation of Artisanal Fishermen and Fish Farmers of the Colombian Caribbean – Confepescar, Colombia).

and power struggles over common resources. A holistic and inclusive approach requires defining clear responsibilities, linking different institutions, and harmonizing policies.

- ▶ **Information, research and communication** (Chapter 11): Information on small-scale fisheries is scarce, and fishworkers, indigenous people and older fishers are often excluded from research processes (Kafayat Fakoya, Nigeria).
- ▶ **Capacity development** (Chapter 12): Mutually respectful stakeholder participation in management systems is

critical for their successful uptake and implementation (Alexis Rife, United States of America).

- ▶ **Implementation support and monitoring** (Chapter 13): Key elements of implementation and monitoring are needed in order to ascertain that progress is being made (Vittoria Elliott, Cambodia). The paragraph on financial resources (13.2) is important, as funds are required for sustainable management. Moreover, states should report on financial resources used to advance sustainable small-scale fisheries (Alexis Rife, United States of America).

Priorities for assessing progress in the small-scale fisheries sector in Madagascar

Blue Ventures Conservation shared some ideas for assessing progress based on its experiences with the small-scale fisheries sector in Madagascar. First of all, disaster risks and climate change (Chapter 9) deserve specific attention, as they significantly affect the ability of the country's coastal communities to manage resources sustainably. Second, with small-scale fisheries still falling under an open-access regime, the topic of tenure rights (Chapter 5a) is crucial. Fishers would benefit from regulations that recognize their traditional rights and address destructive

industrial fishing methods. Third, improving value chains (Chapter 7) is essential: many people in Madagascar could particularly benefit from improved, sustainable exploitation of octopus and crab. Fourth, policy coherence and institutional coordination (Chapter 10) is a crucial topic, as a lack of interministerial coordination can cause problems in small-scale fisheries management at the local level. Last, capacity development (Chapter 12) and community empowerment are essential to allow fishers to have a role in small-scale fisheries governance.



Measuring progress: choosing the appropriate geographical scale

Multiple participants stressed the importance of measuring progress at the local level, pointing out that this is where the action occurs (Manuel Robert Jänig, Germany), and that in this way, different realities can be considered (GAFS, Malaysia). Others argued that monitoring should start at the local level, as the SSF Guidelines are based on human rights and focus on small-scale fishing communities, which should be part of the monitoring process (TNI and FIAN International).

Many participants agreed that progress should be measured at multiple scales and that once monitoring mechanisms are established at the local level, these can then inform and join monitoring efforts at the regional, national and/or international levels. For this to be possible, there should be simple monitoring structures at the local level as well as mechanism at the national and subnational level to ensure data credibility and to perform gap analysis (Joromana Phiri, Zambia). Furthermore, data gathered at the local level should be aggregated into information that is relevant at the national level and eventually comparable between nations (Vittoria Elliott, Cambodia).

Other comments highlighted that monitoring at the national level is important, as states are the entities required to

implement the SSF Guidelines according to their human rights obligations (TNI and FIAN International). State assessments could consist of a summary of sectoral components, broken down by administrative sectors and/or sectors targeting different branches of small-scale fisheries at national, subnational and local levels (Marc Leopold, Madagascar).

Furthermore, comments stressed that the geographical scale at which progress should be measured would depend on the type of fishery. Where fisheries cross country borders, it may be best to consider the level of the fishery, as different fisheries generally involve different actors. However, there may be some overlap where progress in one type of fishery supports development in another, which may require exchanges and coordination at the national and regional level (Blue Ventures Conservation).

Another consideration is the need to reduce costs as much as possible due to budget constraints in many developing countries. Therefore, progress may be best measured at the subnational level or across geopolitical zones; or sample surveys could be conducted at local levels within each geopolitical or agro-ecological zone, and then used as proxies at subnational and national levels (Kafayat Fakoya, Nigeria).

2. Meaningful and feasible indicators: How can we measure progress?

Indicators for measuring progress

Some participants highlighted that before developing indicators – which should be both quantitative and qualitative – it is crucial to first establish the principles and objectives of monitoring, and that this entire exercise needs to be carried out in close cooperation with small-scale fisheries stakeholders. Therefore, rather than compiling indicators, at this stage the focus should be on defining the process that will lead to the establishment of a consistent monitoring framework (TNI and FIAN International).

Other participants shared general suggestions in relation to indicators for measuring progress, which covered a wide range of topics, such as the number and quality of managed stocks and fishing areas (Arjan Heinen, Philippines), fish production and value chains, human rights, food security, governance structures (Foluke Areola, Nigeria), and pollution along the small-scale fisheries value chain (KBN Rayana, India).

Still others proposed indicators for specific chapters of the SSF Guidelines.

Chapter 5a: Responsible governance of tenure

- ▶ Proportion of the adult population who perceive their tenure rights as legally secure, regardless of whether these rights are documented;
- ▶ proportion of adult population with secure tenure rights who possess legal documentation, disaggregated by sex, type of tenure and cultural identity;
- ▶ existence of legal and technical support for coastal communities regarding their tenure and access rights (Fernanda Fitzmaurice, Mexico);
- ▶ nature and content of legal texts instituting tenure rights in small-scale fisheries (Marc Leopold from Madagascar – referring to paragraph 5.3);
- ▶ extent of relevant legal instruments in place;
- ▶ extent of co-management of fisheries (Vittoria Elliott, Cambodia);

- ▶ percentage of fishing households with formal, traditional or historical access rights to a given fishery, land or shoreline, or evidence of legal land ownership or customary rights to land ownership;
- ▶ percentage loss of fisheries and shoreline due to the change of use of these resources for other purposes;
- ▶ percentage of fishing households with traditional use of or historical access to a given fishery resource for subsistence, commercial or ceremonial use;
- ▶ number of fishing households or workers involved in conflicts over land, water and fisheries resources within the wider fishing community;
- ▶ number of evicted fishing communities ([Kafayat Fakoya](#), Nigeria).

Chapter 5b: Sustainable resource management

- ▶ Percentage of artisanal fishers who participate in the planning and establishment of management categories of marine zones, disaggregated by sex;
- ▶ number of fisheries that have specific long-term objectives to achieve sustainability in the sector;
- ▶ number of fisheries that meet some international sustainability standard ([Fernanda Fitzmaurice](#), Mexico);
- ▶ appropriate management systems (paragraph 5.13) require two sets of indicators:
 - related to actors involved in small-scale fisheries: quantitative biological and socio-economic indicators, including level of resource biomass; quantity and value of catches; level of household income from small-scale fisheries on a weekly, monthly and annual scale; and degree of sharing of the value produced along the chain;
 - related to actors involved in administration: good practice indicators and governance indicators that are generally qualitative, including existence and adaptive nature of management measures in time and space; existence and level of sanctions in case of non-compliance with rules; existence and functioning of co-decision bodies for management measures; and gathering and sharing of relevant data and analyses on the status and evolution of small-scale fisheries ([Marc Leopold](#), Madagascar);
- ▶ existence of measures (tested and adapted locally) promoting the long-term conservation and sustainable use of fisheries resources and securing an ecological foundation for food production, as well as existence of legal frameworks to implement these measures;

- ▶ extent to which stakeholders have rights over resources and consider themselves responsible for conservation and sustainable use;
- ▶ definition of benchmarks for sustainable resource use ([Vittoria Elliott](#), Cambodia);
- ▶ size-based catch indicators: a) mean length of all species in the catch or by size classes; b) weighted mean of the maximum size that the species in the catch can have in their lifetime; c) weighted mean of the trophic level of the species in the catch;
- ▶ functional catch indicators: a) relative abundance of species belonging to the trophic guilds: herbivore, invertivore, omnivore, piscivore and planktivory; b) relative abundance of species associated with a specific habitat in the water column: demersal, benthopelagic and pelagic;
- ▶ conservation catch indicators: a) relative abundance of endangered species based on categories established by International Union for Conservation of Nature (IUCN); b) relative abundance of species that are not intentionally targeted and usually discarded;
- ▶ percentage of protected area coverage;
- ▶ percentage of endangered habitats;
- ▶ percentage of the area covered by a given habitat;
- ▶ fishery productivity: production from fishing using all fishing gear (kg/day/household), catch per unit effort, revenues per unit effort;
- ▶ stakeholder engagement in the small-scale fisheries management system, to be measured by: a) existence of legal framework and mechanisms that allow for engagement of stakeholders in planning, designing and execution of the fisheries management plan, policies and Monitoring, control and surveillance (MCS) system; b) stakeholder diversity; c) stakeholder representation; d) methods chosen to involve stakeholders; e) timing and frequency of stakeholder involvement; f) degree to which information/knowledge is provided to stakeholders; and g) extent of stakeholders' influence in and control over decision-making;
- ▶ percentage of fishers who comply with relevant existing fisheries regulations ([Kafayat Fakoya](#), Nigeria).

Chapter 6: Social development, employment and decent work

- ▶ Percentage of fishworkers aged 15–29 in the labour force;
- ▶ percentage of fishworkers under 15 years in the labour force;
- ▶ percentage of the labour force that is self-employed;

- ▶ percentage of females over 15 years employed in fisheries;
- ▶ percentage of fishing households with access to conventional schools ([Kafayat Fakoya](#), Nigeria);
- ▶ educational level of people under 16 years in fishers' households ([Marc Leopold](#) from Madagascar – referring to paragraph 6.15);
- ▶ percentage of fishing households with access to (vocational) training centres;
- ▶ percentage of fishing households with access to conventional health facilities;
- ▶ number of fishers within households;
- ▶ household attitude towards fishing as an occupation;
- ▶ percentage of fishing households with access to adequate housing conditions;
- ▶ percentage of fishing households with access to safe drinking water, basic sanitation and sustainable and safe energy sources;
- ▶ percentage of fishing households with access to conventional savings, credit and insurance schemes;
- ▶ percentage of fishing households with access to social security schemes;
- ▶ percentage of fishing households who feel they have a high level of security and access to justice in cases of violence, organized crime activities, piracy, theft, sexual abuse, corruption and abuse of authority in the community;
- ▶ number of job-related accidents and deaths that occur per year in the fishery and/or community;
- ▶ percentage of fishworkers employed in forced labour;
- ▶ percentage of fishworkers participating in fish harvester organizations;

- ▶ percentage of fishworkers earning an average wage higher than the living wage;
- ▶ changes in average gross fishery earnings;
- ▶ percentage of non-residential (migrant) workers employed in the sector ([Kafayat Fakoya](#), Nigeria).

Chapter 7: Value chains, post-harvest and trade

- ▶ Nature, size and capacities of small-scale fisheries organizations (e.g. level and use of budget, scope of financial autonomy, number and quality of staff);
- ▶ involvement in the planning of small-scale fisheries (monitoring, decision-making process, scale of intervention) ([Marc Leopold](#) from Madagascar – referring to paragraph 7.4 on the organization of the small-scale fisheries sector).

Chapter 8: Gender equality

- ▶ Number of people carrying out work along the value chain that is not remunerated, broken down by sex, age and fishing cooperative;
- ▶ number of women and men in fishing communities, broken down by type of leadership position;
- ▶ percentage of female members in each fishing organization at the governmental and civil level;
- ▶ number and percentage of women in management positions at each fishing organization at the governmental and civil level;
- ▶ number and percentage of women in fisheries decision-making institutions, by type of organization and scope of influence;
- ▶ attitudes towards male/female participation in fishing and aquaculture activities ([Fernanda Fitzmaurice](#), Mexico).

Chapter 9: Disaster risks and climate change

Direct agriculture loss attributed to disasters, which has two components:

- ▶ production loss, with the following indicators: a) the difference between expected and actual value of fisheries/aquaculture capture in the disaster year, and b) the pre-disaster value of production lost in fully damaged aquaculture areas;
- ▶ asset damage, which measures disaster impact on facilities, machinery, tools, and key infrastructure; the monetary value of damaged assets is calculated using the replacement or repair cost and accounted under damage ([Shanali Pethiyagoda](#), Italy).



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Chapter 10: Policy coherence, institutional coordination and collaboration

- ▶ Number of spatial planning approaches in inland and marine fisheries;
- ▶ level of coordination among various sectors and levels of government in fisheries management;
- ▶ evidence of holistic, institutional structures and linkages at local, subnational and national levels and networks for achieving cross-sectoral collaboration;
- ▶ existence of specific mandates and mechanisms that allow public bodies to share information, to align respective sectoral programmes, policies and budgets, and to allocate responsibilities and other resources to the implementation of the SSF Guidelines;
- ▶ evidence of policy measures to ensure harmonization of policies affecting the health of marine and inland bodies of water and ecosystems;
- ▶ existence of formal provisions or mandates to regularly monitor and report progress on policy coherence;
- ▶ existence of coordination mechanisms that allow for systematic consultation, collaboration and alignment of efforts at the national, subnational and local level;
- ▶ existence of formal commitment to the implementation of the SSF Guidelines in national legislation, strategies or action plans ([Kafayat Fakoya](#), Nigeria).

Chapter 11: Information, research and communication

- ▶ Number of small-scale fisheries research projects and collaborative and participatory data collection and analyses;
- ▶ proportion of the budget for small-scale fisheries that is allocated to research;
- ▶ inclusion of fishing communities' knowledge, culture, traditions and practices in governance and sustainable development processes;
- ▶ number of research projects focusing on working conditions of migrants and fishworkers, health, education, and decision-making in the context of gender relations ([Kafayat Fakoya](#), Nigeria).
- ▶ nature of small-scale fisheries research projects (issues addressed, research design strategy, scale of intervention, duration);
- ▶ adaptability of research to the small-scale fisheries context, and articulation with small-scale fisheries and administrations (nature of partnerships, respective responsibilities of small-scale fisheries stakeholders and researchers, data and information exchange, use of research results for management purposes);
- ▶ financial and technical articulation with other small-scale fisheries intervention agencies; origin and sustainability of funding; total budget and budget relative to the value of small-scale fisheries products ([Marc Leopold](#) from Madagascar – referring to paragraph 11.9 on collaborative research).

Relevant monitoring and evaluation frameworks and data sources

Participants also discussed monitoring and evaluation frameworks that could be drawn on to measure the indicators proposed, and that could be useful more generally when defining indicators. Some argued that indicators should be linked with other efforts and frameworks such as the SDGs ([TNI and FIAN International](#); [Joromana Phiri](#), Zambia; [Godswill Chimdugam Wachukwu](#), Nigeria), but others highlighted some problems in this regard. For instance, the SDG framework is not comprehensive – specifically, SDG 14 (Life under water) does not include gender-specific targets ([GAFS](#), Malaysia). Furthermore, the framework is not entirely applicable to local scales and therefore must be complemented by easy-to-use indicators. These can be derived from other frameworks, such as the European Union Marine Strategy Framework Directive (EU MSFD) or IUCN's Red List Assessment. Related to this, frameworks focusing on data-deficient small-scale fisheries contexts could be useful, such as those outlined in publications by Ye, Cochrane and Qiu (2011) and McDonald *et al.* (2018) ([Manuel Robert Jänig](#), Germany).

Participants also shared information on more general frameworks for socio-economic analysis of fisheries management, which include the Framework for Integrated Stock and Habitat Evaluation from the Environmental Defense Fund (2016), the Fishery Performance Indicators by the Institute for Sustainable Food Systems (2017), an article by Smith *et al.* (2019) on the Fishery Socioeconomic Outcomes Tool, and the Sustainable Fisheries Toolkit from the Environmental Defense Fund (2020) ([Alexis Rife](#), United States of America).

Participants also shared frameworks and information sources relevant to specific chapters and paragraphs of the SSF Guidelines:

- ▶ **Responsible governance of tenure** (Chapter 5a): The publication by Wilusz (2010) on quantitative indicators for common property tenure security would be useful ([Fernanda Fitzmaurice](#), Mexico) as well as the Sustainable Fisheries Toolkit from the Environmental Defense

Fund (2020), with the latter of particular relevance to paragraphs 5.3 and 5.4 (Alexis Rife, United States of America). In relation to paragraph 5.3, progress can be monitored by creating a simple inventory and by monitoring the legal texts instituting tenure rights for small-scale fisheries (Marc Leopold, Madagascar).

- ▶ **Sustainable resource management** (Chapter 5b): The Marine Stewardship Council (2016) has published a practical guide for fisheries to improve sustainability, which could be useful for this chapter in general (Fernanda Fitzmaurice, Mexico). The Sustainable Fisheries Toolkit from the Environmental Defense Fund (2020) is relevant for paragraphs 5.13, 5.14 and 5.15 (Alexis Rife, United States of America). For paragraph 5.13 on appropriate management systems, official statistics on fisheries can be used to reconstruct more realistic estimates of certain economic or biological indicators through collaborative research. For indicators related to governance, the publication by Léopold, Thébaud and Charles (2019) on co-management in small-scale fisheries through action research could be useful, as well as data from transdisciplinary research and projects with an action-research approach.
- ▶ **Social development, employment and decent work** (Chapter 6): For paragraph 6.15 on children's education, assessments can be carried out with data from household surveys, such as dedicated or socio-economic surveys.
- ▶ **Value chains, post-harvest and trade** (Chapter 7): For paragraph 7.4, indicators can be measured based on data sources, such as progress reports from small-scale fisheries organizations, civil society organizations and

Recording small-scale fisheries catches: The Sea Around Us

In the context of the research initiative The Sea Around Us, independent scientists from all over the globe have thoroughly researched and shared the currently best available estimates about small-scale fisheries, and subsistence and recreational marine catches. Using this resource systematically and encouraging research in more countries could help improve the conditions of fisheries management across the world. In particular, taking these estimates as a starting point for further improvement in recording data could help government administrations and others to strengthen their efforts for the implementation of the SSF Guidelines and revalue the importance of domestic and regional small-scale fisheries (Cornelia Nauen, Belgium).

fisheries administrations, and trans-disciplinary research or projects with an action-research approach (Marc Leopold, Madagascar).

- ▶ **Gender equality** (Chapter 8): Guidance on monitoring and indicators could be developed from the work of UN Women, which compiled all the gender indicators in the various SDGs (see UN Women, 2018). For example, selected indicators in SDG 5 (Gender equality) and several other indicators can be adapted for small-scale fisheries (see Annex 1, suggested by GAFS, Malaysia). Indicators will also need to be drawn from case studies or data drawn

Developing monitoring frameworks and indicators in regional organizations

Caribbean Regional Fisheries Mechanism

For the countries of the Caribbean Regional Fisheries Mechanism, the aim has been to integrate indicators for the SSF Guidelines into other monitoring and evaluation schemes to allow for regional, subregional and national reporting. Common and specific indicators are foreseen for all three levels. Furthermore, the objective is to monitor how donor-funded projects contribute to the implementation of the SSF Guidelines in the same way that many projects now report on their contribution to the SDGs (Patrick McConney, Barbados).

General Fisheries Commission for the Mediterranean

In 2018, the General Fisheries Commission for the Mediterranean adopted a Regional Plan of Action for

Small-Scale Fisheries in the Mediterranean and Black Sea (RPOA-SSF), which supports the implementation of the SSF Guidelines at the regional level. In 2019, a consultation process was organized with stakeholders, fisheries administrations and relevant experts to develop a monitoring framework for the implementation of the RPOA-SSF. This framework seeks to identify priority actions for short-term implementation, as well as indicators – coupled with short-, mid- and long-term objectives – to measure implementation. Recommendations based on this process include: a) set objectives within a specific timeframe, and break objectives into achievable steps; b) allow for flexibility, but set in place a mechanism for regularly assessing the state of implementation; and c) keep indicators simple (Anna Carlson, Italy).

together from proxy data, while big data approaches may also be considered. Publications by Data2x. (2019) and Williams *et al.* (2019) may be useful in this regard (GAFS, Malaysia), as well as an article by Aguilar (2000) and information from UN Women (2014) (Fernanda Fitzmaurice, Mexico).

► **Information, research and communication** (Chapter 11): For paragraph 11.9 on collaborative research, indicators can be measured using information from completed research projects. Other sources of data include reports and scientific publications with a transdisciplinary or action-research approach (Marc Leopold, Madagascar).

3. Participatory monitoring: key elements and experiences

Key elements of successful participatory monitoring

Some participants put forth the idea that an enabling environment needs to be in place for participatory monitoring to become successful. Awareness of the existence of the SSF Guidelines should be promoted among fishers as well as government actors (GAFS, Malaysia), and clear policies for community-based monitoring projects should be in place. In this context, establishing adequate legal provisions would guarantee stakeholder ownership (Kafayat Fakoya, Nigeria; Vittoria Elliott, Cambodia) and encourage local participation and commitment (Kafayat Fakoya, Nigeria). In fact, facilitating meaningful stakeholder engagement requires an understanding of the motivational factors and enabling conditions that promote participation (Blue Ventures Conservation). In this regard, leveraging existing partnerships (Alexis Rife, United States of America) or establishing new ones could be beneficial, as it could promote collective action as a concept (Marc Leopold, Madagascar). However, it is

crucial that monitoring processes be based on trust among the different stakeholders involved (Blue Ventures Conservation; Vittoria Elliott, Cambodia; Kafayat Fakoya, Nigeria).

Other participants highlighted aspects that need to be part of the approach to participatory monitoring in order for it to be a successful exercise. Specifically, participatory monitoring should be characterized by:

► **A human rights-based approach** (Gaoussou Gueye, Senegal). Freedom of expression and the right to autonomy of fisherfolk should be respected. Fisherfolk should be protected against repercussions in cases where they speak truth to power, and accountability and transparency should be ensured in the process. Furthermore, there is a need to strengthen fishers' capacity to claim their rights and plan actions in line with their needs (TNI and FIAN International).



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- ▶ **Adequate stakeholder representation.** The monitoring process should be accessible and involve all stakeholders (*Blue Ventures Conservation*), including local communities – engaging them early in the process (*Fernanda Fitzmaurice*, Mexico) – while ensuring participation of people from different genders, ages (*Vivienne Solis-Rivera*, Costa Rica) and disciplines (*Manuel Robert Jänig*, Germany). Those involved need to have clear roles and responsibilities (*Alexis Rife*, United States of America). Participants highlighted different aspects regarding balanced representation. Some argued that the process should be as inclusive as possible, ensuring that as many different groups as possible can contribute (*Anna Carlson*, Italy) and avoiding dominance by any one particular group of people (*Kafayat Fakoya*, Nigeria). Others stressed that indeed, the process should be inclusive, but that the level of inclusiveness depends on the nature and complexity of the data being collected (*Marc Leopold*, Madagascar). Other participants underlined the need for the process to be centred on the participation of fishers (*TNI* and *FIAN International*).
- ▶ **A central focus on the knowledge of fishers and their organizations** (*TNI* and *FIAN International*). Specifically, traditional and local ecological knowledge should be recognized (*Lilian Ibengwe*, United Republic of Tanzania).
- ▶ **Adaptation and application to different levels.** Participatory monitoring should be applied and contextualized at the national, regional and international level (*TNI* and *FIAN International*). For participatory monitoring to be successful, it should also be scalable (*Blue Ventures Conservation*).
- ▶ **Local relevance, usefulness and suitability.** Monitoring should be carried out with tools that are adapted to stakeholder capacities (*El Hadji Abdoulaye Coume*, Senegal). Sustained commitment is needed to ensure that those involved in the process really have the skills and knowledge needed to be part of it (*Blue Ventures*

Conservation). Furthermore, monitoring is often linked to achieving the SDGs, but these are often perceived as detached from daily life (*Patrick McConney*, Barbados). Therefore, simple indicators are needed (*Patrick McConney*, Barbados; *Vittoria Elliott*, Cambodia), and indicators built by small-scale fishing communities should be used (*TNI* and *FIAN International*). Furthermore, participants' capacity to use the results from monitoring exercises should be guaranteed (*Vittoria Elliott*, Cambodia).

- ▶ **Multifunctionality.** The monitoring exercise should have several beneficial outcomes to which participants along different segments of the fisheries value chain, or in different fisheries or organizations, can easily relate over a reasonable period (*Patrick McConney*, Barbados).
- ▶ **Rigorous methods for data collection.** There should be a strict protocol for data collection (*Marc Leopold*, Madagascar) and methodologies to validate the data being gathered (*Fernanda Fitzmaurice*, Mexico). In addition, regular documentation and monitoring is essential (*GAFS*, Malaysia; *Kafayat Fakoya*, Nigeria).
- ▶ **Comprehensive and scrupulous data analysis.** Quantitative as well as qualitative data should be analysed, taking into account the diversity of viewpoints (*El Hadji Abdoulaye Coume*, Senegal). The involvement of an organization that is capable of managing, processing and analysing data according to a strict methodology may also be needed (*Marc Leopold*, Madagascar).
- ▶ **Flexibility and open-endedness.** The process should allow for a review of indicators and steps that have been carried out, leaving space for discussion on what is being measured and how this is perceived by communities (*Vivienne Solis-Rivera*, Costa Rica). Furthermore, the process should not seek specific outcomes but rather encourage new perspectives, creating opportunities to learn from each other (*Kafayat Fakoya*, Nigeria).

Participatory monitoring: experiences and lessons learned

Participants shared experiences and lessons learned in relation to participatory monitoring, with their contributions covering multiple countries:

Cambodia

In Cambodia, WorldFish has set up three participatory monitoring systems for the Mekong river: a) a system for measuring inland fisheries resource availability, working

with community members serving as citizen-scientists; b) a voluntary network of inland fishers for monitoring fishery harvests; and c) local community monitoring for determining impacts of conservation and fisheries management interventions. WorldFish's engagement with communities has supported heightened awareness of the purpose and outcomes of monitoring, and how these can be applied to adaptive management and a community-led ecosystem approach to fisheries management (*Vittoria Elliott*, Cambodia).

Cameroon

In Cameroon, participatory monitoring is still a rather new approach. However, while public officials used to intervene in local contexts without the consent of communities, today there is a growing level of confidence and consciousness in using a participatory approach, which has already resulted in the gathering of certain data on small-scale fisheries that was previously missing ([Eyongetta Njieassam](#), Cameroon).

Colombia

The Confederation of Artisanal Fishermen and Fish Farmers of the Colombian Caribbean has been involved in monitoring exercises. As a result, species that are most affected by overfishing and illegal fishing have been identified ([Confepescar](#), Colombia).

Costa Rica

In Costa Rica, local monitoring initiatives of small-scale fishers have been evaluated several times, each time a new opportunity for learning. Experience shows that the monitoring system can be best designed and implemented by field technicians and local small-scale fishing community leaders. Furthermore, the process should be approached as a learning experience ([Vivienne Solis-Rivera](#), Costa Rica).

Mexico

Over the past 20 years, *Comunidad 7 Biodiversidad* (COBI) has designed and implemented a community-based monitoring system for the kelp forests in Baja California in the Pacific, the rocky reefs of the Gulf of California, and the coral reefs of the Mesoamerican Reef System. The project aims to practice science-based conservation by engaging local communities in data collection, while improving their livelihoods through increased knowledge and the provision of temporary employment. Specifically, 400 artisanal fishers and members of coastal communities have participated in the national marine reserve programme, and 222 fishers have been trained to conduct underwater censuses. Furthermore, COBI's monitoring programmes aim to improve the understanding of regional fisheries by collecting information in data-poor regions. To this end, they have trained small-scale fishers from seven communities in the Gulf of California, Pacific Ocean, Mexican Caribbean and Gulf of Mexico to collect data on invertebrates and finfish, while civil society organizations and the National Institute for Fisheries and Aquaculture have taught participants to deploy different tools ([Fernanda Fitzmaurice](#), Mexico).

Lessons for participatory monitoring from workshops on the SSF Guidelines

TNI and FIAN International shared some lessons they learned during a series of national- and regional-level workshops on the use of the SSF Guidelines, which are relevant in relation to participatory monitoring. First, during the workshops, the fact emerged that small-scale fishing communities have a profound understanding of the local and national context relating to the objectives and principles of the SSF Guidelines. Second, these communities are also knowledgeable and well positioned to articulate views on the current scale and extent of the implementation of the SSF Guidelines in their country. In various countries where workshops took place, governments are lagging behind in the implementation of the SSF Guidelines.

Myanmar

In Myanmar, fishers' associations are incorporating rules in line with the SSF Guidelines to ensure that illegal, unreported and unregulated (IUU) fishing does not occur. However, this form of participatory monitoring is complex, as sometimes it is dangerous for fisherfolk to accuse the perpetrators of IUU fishing ([Michael Akester](#), Myanmar).

Empowering small-scale fishers for integrated fisheries management

Practice shows that operationalizing the nexus between marine ecosystems, water, energy, food, social organization and other dimensions playing out in small-scale fisheries communities remains difficult in policymaking. Input from local people is needed to develop integrated policies, but government silos remain strong and the higher up the ranks of formalization and institutions, the more difficult it becomes to bring these people's experiences and knowledge to bear on policy-making processes. This hinders the creation of robust solutions based on dialogue and negotiations, and marine spatial planning approaches may fall victim to such shortcomings. In order to help address this issue, *Mundus Maris* has supported the establishment of an academy to empower small-scale fishers to exchange among themselves in families, communities and along value chains, and to speak up for themselves ([Cornelia Nauen](#), Belgium).

United Republic of Tanzania

In the United Republic of Tanzania, community-based fisheries management approaches such as Beach Management Units and Collaborative Fisheries Management Areas are

practiced, consisting of institutional arrangements for sharing responsibilities between government and local communities in managing fisheries resources (Lilian Ibengwe, United Republic of Tanzania).

Key actors to involve in the design and implementation of a monitoring system

Many participants addressed the question of which actors would need to be involved in the process of designing and implementing a monitoring system. Some argued that central government agencies would first need to establish the data collection framework and then form a national oversight committee consisting of government agencies, civil society organizations, fishers and their cooperatives, and women's organizations (GAFS, Malaysia). Others stressed that fisheries authorities should design the monitoring system with early and continuous participation of communities (Confepescar, Colombia), and that stakeholders in general should be involved from the creation to the implementation phase (Gaoussou Gueye, Senegal).

Other participants pointed out that engagement of different actors would depend on the level at which monitoring is carried out. At the international level, the Advisory Group of the SSF Guidelines Global Strategic Framework (SSF-GSF) should develop a monitoring framework and indicators that could be adapted to different contexts. The Advisory Group would also be an essential actor for enhancing monitoring efforts and ensuring the adoption of a human rights-based approach. At the national and local level, small-scale fishing communities and indigenous people should be the key actors in designing and implementing the monitoring system. As state authorities are required to implement the SSF Guidelines based on their human rights obligations, they need to ensure proper monitoring of the human rights situation of small-scale fishers. Last, participants stressed that country-level efforts should inform international monitoring processes. To this end, a clear mechanism needs to be in place that ensures the participation of civil society, which could produce reports that feed into the global monitoring process (TNI and FIAN International).

Other participants shared their views on those actors who should be engaged in designing and implementing a monitoring system in general. These included:

- ▶ local fishers and their cooperatives, and representatives of fishing communities (multiple contributors);

- ▶ civil society organizations (GAFS, Malaysia; Fernanda Fitzmaurice, Mexico; Kafayat Fakoya, Nigeria; Lilian Ibengwe, United Republic of Tanzania; Marc Leopold, Madagascar) and non-governmental organizations (Lilian Ibengwe, United Republic of Tanzania; Alexis Rife, United States of America) concerned with human rights and fisheries management (Blue Ventures Conservation);
- ▶ national, regional and local governments (multiple contributors), including representatives of ministries and public bodies concerned with fisheries, the environment (Marc Leopold, Madagascar; Vittoria Elliott, Cambodia), labour, value chains, finance (Vittoria Elliott, Cambodia), research (Marc Leopold, Madagascar), statistics (Manuel Robert Jänig, Germany) and extension (Joromana Phiri, Zambia);
- ▶ international organizations (Eyongetta Njieassam, Cameroon) such as FAO (Vittoria Elliott, Cambodia);
- ▶ academic institutions (Fernanda Fitzmaurice, Mexico; Kafayat Fakoya, Nigeria; Alexis Rife, United States of America), researchers (GAFS, Malaysia; Kafayat Fakoya, Nigeria; Marc Leopold, Madagascar) and scientists (Manuel Robert Jänig, Germany) – both national and international (Vittoria Elliott, Cambodia);
- ▶ private sector organizations (Blue Ventures Conservation), including those involved in the production, processing (Marc Leopold, Madagascar; Fernanda Fitzmaurice, Mexico) and commercialization phases (Fernanda Fitzmaurice, Mexico), as well as exporters (Marc Leopold, Madagascar);
- ▶ independent experts who can act as mediators and provide an overall perspective to the process (Vittoria Elliott, Cambodia).

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SDG gender targets and possible adaptation for SSF Guidelines as suggested by GAFS, Malaysia

(see UN Women, 2018, for further targets)

| SELECTION OF SDG GENDER TARGETS WITH RELEVANCE TO SMALL-SCALE FISHERIES | POSSIBLE GENDER TARGETS FOR SMALL-SCALE FISHERIES |
|---|---|
| 1. NO POVERTY | |
| 1.1.1 Population living below USD 1.90 per day, by sex | Small-scale fisheries population living below USD 1.90 per day, by sex |
| 1.2.1 Population living below the national poverty line, by sex | Small-scale fisheries population living below the national poverty line, by sex |
| 1.3.1 Population covered by social protection, by sex | Small-scale fisheries population covered by social protection, by sex |
| 1.4.2 Secure tenure rights to land, by sex | Secure tenure rights for small-scale fisheries to coastal land (housing, ports, landing areas), by sex, community |
| 1.b.1 Proportion of government spending to sectors benefiting women, poor and vulnerable groups | Proportion of government funding to small-scale fisheries benefiting women |
| 2. NO HUNGER | |
| 2.3.2 Average income of small-scale food producers, by sex | Average income of small-scale fish producers, by sex (see also 1.1.1) |
| 3. GOOD HEALTH AND WELL-BEING | |
| 3.1.1 Maternal mortality ratio | Maternal mortality ratio in small-scale fishing communities |
| 3.1.2 Births attended by skilled health personnel | Births attended by skilled health professionals in small-scale fishing communities |
| 3.3.1 New HIV infections, by sex | New HIV infections in small-scale fishing communities, by sex |
| 3.7.1 Satisfactory family planning with modern methods | Satisfactory family planning with modern methods in small-scale fishing communities |
| 3.7.2 Adolescent birth rate | Adolescent birth rates in small-scale fishing communities |
| 3.8.1 Coverage of essential health services, including reproductive and maternal health | Coverage of essential health services, including reproductive and maternal health, in small-scale fishing communities |
| 4. QUALITY EDUCATION | |
| 4.3.1 Participation of youth and adults in education, by sex | Participation of small-scale fisheries youth and adults, by sex, in training and extension |
| 4.6.1 Proficiency (at a given age group) in functional literacy and numeracy skills, by sex | Proficiency (at a given age group) in functional literacy and numeracy skills, by sex, in small-scale fishing communities |

continued

| SELECTION OF SDG GENDER TARGETS WITH RELEVANCE TO SMALL-SCALE FISHERIES | POSSIBLE GENDER TARGETS FOR SMALL-SCALE FISHERIES |
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| 5. GENDER EQUALITY | |
| 5.1.1 Legal frameworks to promote, enforce and monitor equality and non-discrimination based on sex | Policies and legal fisheries frameworks to promote, enforce and monitor equality and non-discrimination based on sex |
| 5.2.1 Women and girls subjected to intimate partner violence | Level of reported violence against women and girls in fishing communities |
| 5.4.1 Unpaid domestic and care work, by sex | Measure (e.g. population numbers) of unpaid fisheries sector and community care work, by sex |
| 5.5.1 Women in parliaments and local governments | Women in small-scale fisheries management bodies |
| 5.5.2 Women in managerial positions | Women in small-scale fisheries leadership positions |
| 5.a.1 Ownership of or secure rights to agricultural land, by sex | Ownership of or secure rights to small-scale fisheries resources Ownership of or secure rights to coastal/riverine/lacustrine living space for small-scale fisheries, by sex or community group |
| 5.a.2 Laws that guarantee equal land rights | Laws that protect small-scale fisheries resource and living space rights |
| 5.b.1 Women who own a mobile phone | People in small-scale fishing communities who own a mobile phone, by sex |
| 5.c.1 Countries with system(s) to track gender equality | Countries with system(s) to track gender equality in small-scale fisheries |
| 8. DECENT WORK AND ECONOMIC GROWTH | |
| 8.3.1 Proportion of informal employment, by sex | (see also 5.2.1) |
| 8.7.1 Proportion and number of children engaged in child labour, by sex | Proportion and number of children engaged in child labour in small-scale fisheries, by sex |
| 8.8.2 National fulfilment of labour rights, by sex | National fulfilment of labour rights in small-scale fisheries, by sex |
| 10. REDUCED INEQUALITIES | |
| 10.2.1 People living below 50% of median income, by sex | Small-scale fishing community members living below 50% median income, by sex |
| 13. CLIMATE ACTION | |
| 13.b.1 LDCs and SIDS receiving support for climate change-related planning and management | Evidence that climate change policies and actions relevant to small-scale fisheries are gender-sensitive |

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Agricultural Development Economics Division (ESA)
 Food and Agriculture Organization of the United Nations
www.fao.org/fsnforum ► fsn-moderator@fao.org



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