



International systems for monitoring and verifying fisheries agreements

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International fisheries agreements have been gathering significant momentum on a global scale, particularly since the 1992 United Nations Conference on Environment and Development (UNCED). A number of post-UNCED international fisheries instruments have been developed that build on the general framework established in the 1982 United Nations Convention on the Law of the Sea,¹ and address issues connected to such concerns as unsustainable fishing practices, inadequate fisheries management and insufficient controls on the high seas. They have responded to the need for clearer global agreement on emerging fisheries problems and their solutions, and for continuing recognition of the role of fisheries in food security.²

There is no doubt that these mechanisms were needed. Information continues to confirm that, despite local and regional differences, the global potential for marine capture fisheries has been reached.³ From 1974–2003 there was a consistent downward trend in the proportion of stocks offering scope for the expansion of fishing. At the same time, there has been a rise in the proportion of overexploited and depleted stocks, although this appears to have stabilized in recent years.⁴

More specifically, the Food and Agriculture Organization (FAO) of the United Nations (UN), the leading international fisheries institution, has estimated that about one-quarter of the main fisheries stocks monitored in 2003 were underexploited (three per cent) or moderately exploited (21 per cent).⁵ About one-half of the stocks were fully exploited (52 per cent) and producing catches close to their maximum sustainable limit. Approximately one-quarter were overexploited (16 per cent) or depleted (eight per cent), up from an estimated ten per cent in the mid-1970s.

Yet there may be cause for a degree of cautious optimism that the status of fish stocks will improve over the medium-to-long term. Given the strengthened inter-

national framework for fisheries governance developed over the past decade, including monitoring and verification systems, the surging international commitment to tackle over-fishing and growing social pressure to generate sustainable fisheries, and technological advances, it is conceivable that the proportion of stocks currently being over-fished could decrease significantly in coming decades.⁶

This chapter describes the key post-UNCED international fisheries instruments, as well as the monitoring mechanisms of the principal international institution—FAO—that facilitates their implementation. It also analyzes the activities of, and the measures introduced by, the regional institutions through which these instruments are put into effect, the regional fishery bodies or arrangements (RFBS), and a voluntary network that monitors compliance with international agreements. Throughout the chapter, areas of concern with respect to future monitoring and verification are noted.

International fisheries instruments and institutions

International instruments

Four major post-UNCED fisheries instruments constitute the framework for international fisheries governance. Two of these are legally binding on parties, and two are voluntary. Monitoring and verification are important elements of all of them.

The two legally binding international instruments, or core ‘rulebooks’, focus on principal areas like fisheries management, flag state responsibilities,⁷ monitoring, compliance and enforcement and dispute settlement.

- **1993 Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (FAO Compliance Agreement).**⁸ Its primary objective is to respond to the problem of fishing vessels acquiring and operating under ‘flags of convenience’ to avoid complying with conservation and management measures agreed by regional fisheries management organizations (RFMOs) (a subset of the RFBS mandated to adopt binding fisheries conservation and management measures). It applies to fishing vessels that are used for fishing on the high seas and contains detailed provisions regarding the information that states parties should supply to FAO.⁹

- **1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UN Fish Stocks Agreement).**¹⁰ It elaborates on the provisions of the Law of the Sea Convention, and is applied in the context of, and is consistent with, that convention.¹¹ Its objective is ‘to ensure the long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks through effective implementation of the relevant provisions of this Convention’.¹² It concerns the conservation and management of straddling fish stocks and highly migratory fish stocks that are situated beyond areas under national jurisdiction, with the following exceptions: employment of the precautionary approach;¹³ compatibility of conservation and management measures; and application by the coastal state of the general principles governing conservation and management.¹⁴ It contains provisions on the collection and supply of information and on co-operation,¹⁵ and standard requirements for the procurement and sharing of data.¹⁶

Importantly, both instruments specify requirements concerning compliance, information, catch verification and reporting for the purposes of monitoring and enforcement. See Table 1 for details of the measures that a state must adopt under Article 18(3) of the UN Fish Stocks Agreement with respect to vessels flying its flag.

Although the instruments apply mainly to high seas fishing, many of their requirements have been widely implemented by the RFMOs and states and, as appropriate, have been extended to fisheries within areas of national jurisdiction. Their provisions have also formed the basis for the establishment of two new RFMOs: the South-East Atlantic Fisheries Organization (SEAFO); and the Western Central Pacific Fisheries Commission (WCPFC).

The two voluntary international instruments, meanwhile, are holistic and inter-related. They can be seen to comprise a comprehensive blueprint for responsible fisheries.¹⁷ They are management oriented, and were formulated to be interpreted and applied in line with relevant international law. They address threats to the long term sustainability of fisheries and the contribution of fisheries to the world’s food supply, including overexploitation of important fish stocks, modifications to

Table 1 Measures that a state must adopt under Article 18(3) of the UN Fish Stocks Agreement with respect to vessels flying its flag

• Control such vessels on the high seas by means of fishing licences, authorizations or permits.
• Establish regulations to apply terms and conditions to such licences, authorizations or permits.
• Prohibit fishing without authorization on the high seas.
• Require that vessels fishing on the high seas have the licence, authorization or permit on-board at all times and produce it on demand for inspection.
• Ensure that vessels flying its flag do not conduct unauthorized fishing in areas under the national jurisdiction of other states.
• Establish a national record of fishing vessels allowed to fish on the high seas and provide access to the record, on request, to states with a direct interest, taking into account any national laws of the flag state regarding the release of such information.
• Require marking of fishing vessels and gear for identification in accordance with uniform and internationally recognizable vessel- and gear-marking systems.
• Require the recording of, and timely reporting on, vessel position and relevant fisheries data.
• Require catch verification through observer programmes, inspection schemes, unloading reports, supervision of trans-shipments and monitoring of landed catches and market statistics.
• Require the monitoring, control and surveillance of such vessels and their fishing operations via national inspection and observer schemes and vessel monitoring systems.
• Regulate trans-shipment on the high seas to ensure that the effectiveness of conservation and management measures is not undermined.
• Regulate fishing activities to ensure compliance with global, regional or sub-regional measures.

ecosystems, significant economic losses and international conflicts over the management of fisheries, and trade in fish and fish products. Irresponsible fishing activity that directly undermines management efforts is clearly identified, as are steps that should be taken by the flag state and others to counter such action.

- **1995 FAO Code of Conduct for Responsible Fisheries (FAO Code of Conduct)**,¹⁸ with its continuing series of Technical Guidelines for implementation, its four International Plans of Action (IPOAs)¹⁹ and the 2003 FAO Strategy for Improving Information on Status and Trends of Capture Fisheries (FAO Strategy). The

substantive articles of the Code of Conduct address general principles, fisheries management, fishing operations, aquaculture development, integration of fisheries into coastal area management, post-harvest practices and trade and fisheries research. The Code of Conduct was purposely designed to be non-binding and voluntary. Drafted in a legally friendly format, its requirements can, as appropriate, be easily transformed into binding provisions and embedded in national legislation or regional agreements.

- **2002 Johannesburg Political Declaration on Sustainable Development and Plan of Implementation of the World Summit on Sustainable Development (WSSD-POI).**²⁰ This seeks to ‘reinvigorate the global commitment to sustainable development’, and accords high prominence to fisheries issues.²¹ It is difficult to locate in the WSSD-POI aspects of fisheries not addressed by the Code of Conduct. In fact, many of the specific WSSD-POI fisheries provisions are a reflection of commitments contained in the four FAO IPOAs adopted within the framework of the Code of Conduct, although the various issues are treated unequally in terms of detail in the two instruments.

Both the Code of Conduct and the WSSD-POI aim to reduce fleet capacity, rebuild fish stocks, combat illegal, unreported and unregulated (IUU) fishing and minimize the impact of fishing on biodiversity and the environment. In addition, they foresee broad stakeholder participation, transparency, strengthening of institutions and implementation of the precautionary and ecosystem approaches.

The WSSD-POI recognizes the need for certain activities and more decisive implementation of fishery instruments within specified timeframes, including: implementation of the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU) and the establishment of a process for global marine assessment by 2004; implementation of the IPOA-Capacity²² by 2005; application of the ecosystem approach to fisheries and a significant reduction in the rate of loss of biological diversity by 2010; the creation of networks of marine protected areas (MPAs) by 2012; and the maintenance or restoration of fish stocks to levels that can generate maximum sustainable yields by 2015.

Other agreements have been reached and documents signed to implement the above instruments at the global, regional, sub-regional and bilateral levels.²³ In addi-

tion, many of the RFMOs are implementing these instruments in accordance with their mandates, and states are incorporating the requirements into national legislation.

There is a significant number of bilateral and multilateral fisheries access treaties and agreements between coastal states and fishing states or entities. While it is beyond the scope of this chapter to describe and analyze them, it is important to note that coastal states are increasingly adopting regional and international standards for required information and monitoring purposes. Such standards include details of the information to be supplied on fishing operations and vessels, and the installation and maintenance of automatic location communicators for vessel monitoring systems.

International institutions

The only organization with a global fisheries mandate is FAO. The Committee on Fisheries (COFI), consisting of 188 FAO members,²⁴ meets biennially and, among other things, reviews the Programme of Work for fisheries.²⁵ At its twenty-fifth session, in February 2003, COFI identified a number of priorities for FAO's Fisheries Department, including implementation of the Code of Conduct and related instruments like the IPOAs, as well as elaboration of technical guidelines and execution of the strategy for improving status and trends reporting (see below).²⁶

FAO enjoys working relations with environmental and other international organizations, including other UN agencies and forums, that serve to strengthen implementation of the Code of Conduct and the IPOAs.²⁷ The FAO/International Labour Organization (ILO)/International Maritime Organization (IMO) Working Group, for example, is updating existing guidelines and developing working papers to promote the implementation of the Code of Conduct.

Some international institutions that do not have fisheries-specific mandates, such as the Organisation for Economic Co-operation and Development (OECD),²⁸ are considering particular fisheries issues highlighted by post-UNCED instruments. Although this is a positive step towards achieving sustainable fisheries, it is beyond the scope of this chapter to describe all such actions.

Regional fishery bodies or arrangements

Major contributions to implementing fisheries agreements have been made at the regional level by the RFBS, including the RFMOs. There are over 30 RFBS globally,

with areas of competence in all of the world's oceans. While their mandates, membership, functions and funding levels vary, many have made great progress in strengthening fisheries governance at the regional level by implementing international fisheries instruments.²⁹

Both the FAO Compliance Agreement and the UN Fish Stocks Agreement afford a prominent role to the RFMOs through requirements relating to the adoption of 'international conservation and management measures'. These are defined as measures to conserve or manage one or more species of living marine resources that are adopted and applied in accordance with the relevant rules of international law as reflected in the Law of the Sea Convention. Such measures may be adopted either by global, regional or sub-regional fisheries organizations, subject to the rights and obligations of their members, or as part of treaties or other international agreements. The corresponding decision-making role of the RFMOs has also taken on a new significance in these instruments.³⁰

The Code of Conduct encourages the RFMOs to collaborate in fulfilling and implementing its objectives and principles. The roles and functions that they are called on to perform are quite extensive.³¹ The Code of Conduct, together with the other post-UNCED instruments, underlines the need for all such bodies to address related issues and to be strengthened appropriately to deal with new responsibilities.

Monitoring and verification arrangements for fisheries

International level

Most, if not all, fisheries problems are global in nature and require global solutions. Monitoring and verification arrangements at the local or national levels often employ the type of arrangement and require reporting information that is determined in agreed regional or international standards or models. This is especially beneficial for the fisheries sector due to the mobile nature of the resource: many species move between areas under national jurisdiction and the high seas. Moreover, it also allows for the development of coherent standards for regional or global databases.

However, although common, and effective, monitoring and verification standards are agreed at the international level, implementing arrangements are unevenly developed at the local and state levels as a result of constraints such as inadequate

human or institutional capacity or a relatively weak legal framework. It is a positive development that increasing implementation of the international instruments, together with ongoing initiatives to establish capacity development programmes (for example the programme linked to the FAO Strategy described below), are strengthening the framework within which the implementing arrangements can be advanced.

International monitoring arrangements for the primary voluntary international instrument, the Code of Conduct, and, by association, the WSSD-POI, are extensive. Monitoring is an ongoing FAO activity, utilizing informal and formal mechanisms. The most important monitoring resource is the self-assessment information provided biennially by governments and stakeholders in response to an FAO questionnaire. Over 100 FAO members responded to the questionnaires distributed in 2000 and 2002, providing a sound profile of activity.³² The information is collated and analyzed by FAO, and, in turn, is presented to COFI at each of its biennial sessions for review, in accordance with the request made at its twenty-second session in 1997. COFI, in its deliberations, suggests measures that might be adopted by the organization to broaden and deepen implementation of the Code of Conduct.

The constraints and proposed solutions identified by FAO members in response to the 2002 FAO questionnaire on the implementation of the Code of Conduct and reported to COFI at its twenty-fifth session in 2003 were wide ranging (see below). It is encouraging that the proposed solutions addressed such important matters as the need for policy and legislation reviews, greater emphasis on the social and economic aspects of fisheries management and enhanced fisheries monitoring, control and surveillance (MCS) systems.

Recurring constraints across regions included:

- a lack of political will to support implementation;
- fisheries not being assigned high priority nationally because of the small economic contribution that they make and the fisheries sector being poorly organized;
- high levels of over-fishing in open-access fisheries not subject to management;
- insufficient attention being paid to the development of management plans and the application of the precautionary approach;

- strong social and economic pressures on fisheries, including vulnerability to poverty and a lack of alternative employment opportunities for members of fishing communities;
- insufficient resources (funds, trained personnel, equipment, research capabilities and facilities);
- poor levels of scientific research and weak institutional capacity (including national inter-agency coordination);
- conflicts between artisanal and industrial fishers;
- meagre and inappropriate policy and legal frameworks;
- poorly developed MCS systems;
- lack of participation by fishers in decisions concerning management;
- lack of awareness by stakeholders, including officials, about the Code of Conduct and implications for fishing communities, co-operation and irresponsible action;
- continual IUU fishing;
- failure to adapt the Code of Conduct to local needs; and
- insufficient copies of the Code of Conduct and related instruments for distribution and limited numbers of documents in local languages.

Proposed solutions included:

- the provision of additional technical support from FAO and the international donor community to strengthen capacity and institutions (including training and meetings to disseminate information about the Code of Conduct to officials and other stakeholders);
- improved national inter-agency co-operation to enhance implementation of the Code of Conduct;
- the expansion of vessel buy-back programmes and industry restructuring arrangements to reduce fishing capacity;
- enhancing the research capacity of FAO members, with emphasis possibly being placed on 'twinning', or co-operative arrangements between the research facilities of different members;
- the implementation of plans to enable the recovery of overexploited stocks;
- the placement of observers on vessels to promote the implementation of better fisheries management controls;

- paying greater attention to the social and economic aspects of fisheries management;
- the initiation of policy and legislation reviews (to incorporate elements of the Code of Conduct);
- making improvements to MCS systems;
- the promotion of alternative employment opportunities for fishers;
- the translation of the Code of Conduct and related instruments into local languages so as to widen dissemination and increase awareness—while also ensuring that adequate numbers of copies of the Code of Conduct are available;
- launching education and outreach campaigns to improve awareness of the Code of Conduct, including encouraging stakeholders to better organize themselves; and
- the development of technical guidelines for small-scale fisheries management, the provision of support to encourage greater involvement by non-governmental organizations (NGOs) in the implementation of the Code of Conduct, and the facilitation of co-operation among fishers and national and regional organizations concerned with fisheries management.

A recent development has broadened the scope of the FAO Secretariat's responsibilities for monitoring implementation of the Code of Conduct. The Advisory Committee on Fisheries Research (ACFR), at its fourth session in December 2002, welcomed a draft strategy for improving information on the status of, and trends in, capture fisheries. It was later developed by a Technical Consultation,³³ which concluded that improved information on the status of, and trends in, capture fisheries should be afforded high priority in respect to implementation of the Code of Conduct. The FAO Strategy, which is scheduled to come into effect in late 2004, sets out guiding principles³⁴ and required actions³⁵ for its implementation.

As a first step, the FAO Strategy aims to determine what fishery statistical and data collection systems related to fisheries are being used by states and RFBS, and what stocks or management units are being monitored. This information will form the basis of efforts to identify gaps in monitoring and, above all, to assess the quality of the systems being employed. Subsequently, the FAO Strategy will address capacity-building initiatives in developing countries. The FAO Strategy is considered

to be even more necessary following the WSSD-POI, because better information is needed to monitor progress towards the time-bound goals for fisheries that it established.

FAO maintains other mechanisms for monitoring information on the world's fisheries, generally and specifically. On a general level, the *State of World Fisheries and Aquaculture (SOFIA)*³⁶ is the Fisheries Department's premier advocacy document. Published every two years, it provides policymakers, civil society representatives and those who derive their livelihood from the fisheries sector with a comprehensive, objective and global appraisal of capture fisheries and aquaculture, including associated policy issues. Although SOFIA does not monitor the implementation of specific treaties or agreements, it does indicate trends in fisheries resources, including production, utilization and trade, and this information can be used in assessing the effectiveness of the implementation of international agreements. SOFIA also looks at particular issues facing fishers and aquaculture—in 2002, these included the importance of reliable statistics in effective fisheries management, and catch certification and documentation—and reviews the fisheries activities of country groupings, another useful monitoring tool.

There are a number of components of FAO's fisheries information systems³⁷ that provide information on world fisheries that facilitates monitoring. In practice, the systems perform both monitoring and information functions. Some key examples are set out below:

- The Fisheries Global Information System (FIGIS)³⁸ was conceived in a context of global concern about the great stress being placed on most major fisheries and the non-sustainable applications of such resources. When the Code of Conduct was approved in 1995, a major need for reliable, high-quality and relevant information on the state of the world's fisheries was identified. FIGIS was created to meet this need. It serves as a tool to implement the FAO Strategy currently being established.
- The High Seas Vessels Authorization Record (HSVAR) is a database that is part of FIGIS. The HSVAR implements requirements contained in the Compliance Agreement regarding the need for flag states to report on vessels that they have authorized for high seas fishing. There were 5,517 vessel records in the database

as of August 2004, including vessels registered in Canada, Japan and the United States, as well as in member states of the European Union (EU).³⁹ The user may query the database for a particular vessel by radio call sign, flag state, vessel name or port or registration number, and may request details of all queries made in the past seven days. Information categories include agreements, exemptions and recent additions.

- GLOBEFISH⁴⁰ is the unit in the FAO Fisheries Department responsible for providing information on the international fish trade, and at its core is the GLOBEFISH Databank. GLOBEFISH produces a number of publications, including fish price reports (European Fish Price Report), market studies (GLOBEFISH Research Programme) and trend analysis (GLOBEFISH Highlights). GLOBEFISH is an integral part of the FISH INFONetwork (FIN)⁴¹ and performs a coordinating role with regard to its activities.
- ARTFISH, which stands for Approaches, Rules and Techniques for Fisheries statistical monitoring, is a standardized tool that can be adapted to most fisheries in developing countries. Its design was driven by the need to provide users with robust, user-friendly and error-free approaches and computer software, and to implement cost-effective fishery statistical systems with minimal external assistance.

Implementation of the Code of Conduct is addressed at all meetings of the FAO RFBS. The meetings promote the Code of Conduct and garner feedback on national implementation schemes underway, as well as on difficulties being encountered. This has resulted in numerous initiatives, including the organization of technical consultations, workshops and seminars at various levels with a view to strengthening regional co-operation and facilitating the exchange of experiences, materials and expertise, which could assist in the implementation of the Code of Conduct at the national, regional and sub-regional levels. Most non-FAO RFBS are active in implementing the Code of Conduct.⁴²

In addition to addressing the Code of Conduct and the IPOAs generally, some RFBS are focusing on specific issues like the precautionary approach, ecosystem-based management, enhanced MCS systems and vessel monitoring systems (VMS) and measures to deal more effectively with 'flag of convenience' or non-compliant

vessels. It is recognized that regional action is indispensable in promoting implementation of the Code of Conduct and the IPOAs.

FAO has facilitated the convening of biennial meetings of FAO and non-FAO regional fishery bodies or arrangements to identify and address common problems and constraints, identify and develop strategies and mechanisms to respond to them, and to share experiences and lessons learned. These meetings, held in tandem with COFI sessions, have, among other things, considered ways in which the RFBS can promote implementation of the Code of Conduct as part of the series of recent international instruments and initiatives. They have also noted related implementation activities (such as developing regional plans of action in support of IPOAs), the WSSD goals calling for the IPOAs relating to IUU fishing and capacity to be put into effect by 2004 and 2005 respectively, and the need for strengthening the RFBS and developing ecosystem management.

FAO has also contributed to the development of future monitoring and verification arrangements by convening a series of technical consultations for its members to consider current issues and make recommendations to COFI, which, inter alia, address gaps in existing arrangements. In 2004, these have included the Technical Consultation to Review Progress and Promote the Full Implementation of the IPOA-IUU and the IPOA-Capacity,⁴³ the FAO Technical Consultation on the Use of Subsidies in the Fisheries Sector and a Technical Consultation to Address Substantive Issues Relating to the Role of the Port State to Prevent, Deter and Eliminate IUU Fishing.

Regional level

In addition to monitoring and verification arrangements at the international level, including through international coordination and co-operation among RFBS as described above, a great deal of activity is taking place at the regional level through individual RFBS. The 2001 IPOA to combat IUU fishing incorporated and built on activities and measures that had already been undertaken by RFBS, and provided a framework for future measures and action. The definition of IUU fishing in the IPOA-IUU relates, inter alia, to contravention of regional and international obligations or laws,⁴⁴ including the two legally binding post-UNCED international fisheries instruments described above. Its provisions are comprehensive and cover a wide range of tools for monitoring and verification. The monitoring and verification

activities of the RFBS can therefore, to a great extent, be described through reviewing their implementation of the IPOA-IUU.

In 2003, the RFBS were asked to respond to an FAO questionnaire on implementation of the IPOA-IUU.⁴⁵ Of the 15 respondents, most perceived the main causes of IUU fishing to be lack of effective flag state control by both members and non-members (of the responding RFB), the operation of open registries and the profit motive. Flag state control was also highlighted as an area where some effective steps have been taken, but mostly where improved measures are required.

A predominant issue for most RFBS was the MCS system. MCS activities were identified as major challenges in combating IUU fishing activity, and certain MCS measures were cited as 'effective' by some and 'needed' by others. Trade and marketing measures, a major issue for those RFBS that have already adopted this type of initiative, were described as both effective and having a positive impact on reducing IUU fishing.

In general, the responding RFBS pointed to significant activity in implementing certain aspects of the information, institutional and policy provisions of the IPOA-IUU, and in developing MCS and compliance measures. Items where moderate but increasing activity was reported tended to be those that were prominent in the battle against IUU fishing, such as flag state responsibility, port state control and the development of action plans.

In the case of items where only a few respondents reported implementation activity, items largely focused on initiatives that were not completely applicable, such as those relating to marketing, trade, chartering arrangements and coordination with other RFBS on matters concerning policy and enforcement.

More specifically, the greatest number of 'yes' responses (ten or 11 RFBS responding per item) were related to the following points:⁴⁶

- institutional strengthening to enhance the capacity to combat IUU fishing;
- compiling and exchanging records of authorized vessels;
- developing compliance measures;
- maintaining a record of authorized fishing vessels;
- compilation and exchange of information on details of measures introduced to counter IUU fishing; and

- regularizing coordination with other RFMOs in respect of information exchanges.

Each of the following points was identified as ‘under review’ by three RFBS. This is a significant number considering that, for all of the other items on the questionnaire, up to two RFBS stated that they were reviewing the matter. The activity shown indicates that there may be future strengthening in the areas noted below, many of which relate to monitoring and other information activities.

- MCS port control measures.
- Development of boarding and inspection regimes.
- Development of observer programmes.
- Market-related measures to combat IUU fishing.
- Development of action plans to counter IUU fishing.
- Determination of policy objectives for coordination with the RFMOs.
- Regularizing coordination with other RFMOs in respect of information exchanges.
- Initiatives relating to flag state responsibility.

Three items were marked as being ‘highly effective’:

- the exchange of information on IUU fishing and support vessels;
- the development of observer programmes; and
- the creation of action plans to combat IUU fishing.

When asked to identify major challenges to tackling IUU fishing, a number of RFBS expressed concern about the lack of flag state control, the difficulty of carrying out MCS/inspections at sea, inadequate reporting, economic or trade disincentives and the need for co-operation with other states. Other challenges reported by RFBS related to aspects of fisheries management included the exchange of information on industrial vessels, limiting destructive fishing practices, gaps in fisheries regulatory regimes, assessing fishing by non-members, awareness-raising, weak capacity and a lack of political will. Trends indicate that the RFBS are continuing to adopt an increasing number of measures to implement the IPOA-IUU, but that there is a need for intensified effort to combat IUU fishing on a global scale, accompanied by timely monitoring and evaluation.

International MCS network

The International Monitoring, Control and Surveillance Network is another effective tool in the fight against IUU fishing, including the monitoring of international agreements and obligations. The network, created in 2001, consists of governmental MCS organizations and others that co-operate voluntarily and share information and experiences. The purposes of the network include advancing MCS efficiency, sharing training, building MCS capacity, and helping countries satisfy their national MCS responsibilities and international commitments.⁴⁷ The network is proving highly useful in MCS information dissemination and as a means of verifying background data related to vessel registration applications.

Conclusion

Monitoring and verification arrangements for international fisheries instruments take many forms and are in effect at all levels. This chapter has focused on the international and regional levels, while acknowledging that the primary actors are the states that co-operate through the relevant institutions.

At the international level, FAO members continue to place a high priority on implementation of the Code of Conduct and, by association, other international fisheries instruments. In this context, constraints on implementation and proposed solutions are continuously monitored and the latter are advanced as appropriate. The FAO Strategy, as it is implemented, will strengthen databases for future monitoring and verification purposes. Increasingly, other international institutions are also addressing issues related to the monitoring and verification of fisheries instruments.

It is encouraging that fisheries governance through the RFBS is continuously being strengthened via a range of activities, including implementation of international instruments (legally binding and voluntary), the establishment of new RFMOs, the development of international and regional databases, implementation by the RFBS of new technology, such as the VMS, the creation of 'IUU vessel lists' and 'authorized vessel lists' and agreement on actions to be taken against IUU vessels, and increasing co-operation among the RFBS, between the RFBS and non-parties and between the RFBS and international institutions.

Ultimate responsibility for implementation of international fisheries instruments lies at the national level—the will and ability of states to act and to introduce the measures needed to ensure implementation. Support through human capacity development and the provision of technical assistance, for example, reflects recognition of the importance of achieving the objectives of the international instruments—long-term sustainable use of fisheries resources. It underlies the optimism, described above, that global fish stocks may now have the opportunity of enjoying a period of stability and gradual recovery.

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Endnotes

- 1 Opened for signature on 10 December 1982 and entered into force on 16 November 1994.
- 2 The United Nations Millennium Declaration of September 2000 consolidated broad consensus reached on specific time-bound targets. A set of International Development Goals (IDGs) constitutes a global agenda for the twenty-first century. All 191 UN member states have pledged to eradicate, inter alia, extreme poverty and hunger by 2015, including by halving the number of people living on less than one US dollar a day.
- 3 This information is based on 427 stocks monitored by FAO in 2003 and for which assessment information is available. There are wide variations among fishing regions in the percentage of stocks exploited at or beyond their maximum sustainable level.
- 4 The plateau is around 25 per cent, according to reports contained in *The State of World Fisheries and Aquaculture 2002*, Food and Agriculture Organization (FAO), Rome, Italy, 2002, and preliminary information for *The State of World Fisheries and Aquaculture 2004*.
- 5 Based on initial data for *The State of World Fisheries and Aquaculture 2004*.
- 6 For a full discussion, see Serge Garcia and David Doulman, 'FAO's Fisheries Programme and the Implementation of the Plan of Action from the World Summit on Sustainable Development', in Syma Ebbin, Alf Hoel and Are Sydnes (eds), *A Sea of Change: The Exclusive Economic Zone and Governance Institutions for Living Marine Resources*, Kluwer Academic Publishers, Dordrecht, Netherlands (forthcoming 2004).
- 7 That is, the state that authorized the vessel to fly its flag and which, therefore, has certain legal responsibilities in relation to that vessel.
- 8 Entered into force on 24 April 2003. As of 29 October 2004, the agreement had 29 states parties and one international organization party (the European Community).
- 9 Article VI, FAO Compliance Agreement.
- 10 Entered into force on 11 December 2001. As of 29 October 2004, the agreement had 52 states parties and 59 states signatories. It specifies mechanisms for international co-operation, describes the roles and responsibilities of non-members and non-participants in regional fisheries management organizations or arrangements, sets out the duties of the flag state and provides for compliance and enforcement. The requirements of developing states and methods of dispute settlement are additional important matters that fall within its framework.
- 11 Article 4, UN Fish Stocks Agreement.
- 12 Article 2, UN Fish Stocks Agreement.
- 13 Principle 15 of the 1992 Rio Declaration codified for the first time at the global level the precautionary approach, which indicates that lack of scientific certainty is no reason to postpone action to avoid potentially serious or irreversible harm to the environment. Central to Principle 15 is the element of anticipation, where effective environmental measures need to be based on actions that take a long term approach and that might anticipate changes on the basis of scientific knowledge.
- 14 Article 3, UN Fish Stocks Agreement.
- 15 Article 14, UN Fish Stocks Agreement.
- 16 The requirements include: general principles; principles concerning data collection; compilation and exchange; basic fishery data; vessel data and information; reporting; data verification; and data exchange. See Annex I, UN Fish Stocks Agreement.
- 17 For a full discussion of these instruments and the relationships between them, see Garcia and Doulman.
- 18 FAO, 'Code of Conduct for Responsible Fisheries', FAO, Rome, 1995, p. 41.
- 19 FAO, 'International Plan of Action for reducing incidental catch of seabirds in longline fisheries. International Plan of Action for the conservation and management of sharks. International Plan of

- Action for the management of fishing capacity', FAO, Rome, 1999, p. 26, and FAO, 'International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing', FAO, Rome, 2001, p. 24.
- 20 United Nations, 'Johannesburg Declaration on Sustainable Development and Plan of Action of the World Summit on Sustainable Development', UN, New York, 2003, p. 89.
- 21 The WSSD-POI addresses many aspects of responsible fisheries, including: international fishery instruments and mechanisms; high-level goals (reduction of hunger and the restoration of stocks); factors that lead directly to unsustainable fisheries (fishing capacity and illegal, unreported and unregulated (IUU) fishing) and associated factors (subsidies and poor gear selectivity); primary consequences of unsustainable resource use (over-fishing); collateral effects (destructive practices, by-catch and discards, threats to biodiversity); and mitigating measures (marine protected areas and closed areas or seasons).
- 22 See endnote 19.
- 23 For example, the 2000 Convention on the Conservation of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean and the various FAO Technical Guidelines for implementation of the Code of Conduct.
- 24 On 3 December 2003 FAO's membership was 187 states and one organization (the European Community).
- 25 COFI's terms of reference as set out in Rule XXX of the General Rules of the Organization include: review the organization's programmes of work in the field of fisheries; conduct periodic general reviews of fishery problems of an international character and examine possible solutions with a view to concerted action by nations, FAO and other intergovernmental bodies; similarly review specific matters relating to fisheries referred to the COFI by the FAO Council or the Director-General, or placed by the COFI on its agenda at the request of a member state in accordance with the Rules of Procedure, and make recommendations as may be appropriate; consider the desirability of preparing and submitting to member states an international convention under Article XIV of the FAO Constitution to ensure effective international co-operation and consultation on a global scale; and report to the FAO Council or tender advice to the Director-General, as appropriate, on matters considered by the COFI.
- 26 FAO, *Report of the Twenty-fifth Session of the Committee on Fisheries, Rome, 24–28 February 2003*, FAO Fisheries Report, No. 702, 2003, p. 88.
- 27 These include intergovernmental organizations and the secretariats of international conventions with competence in promoting sustainability in aquatic systems, other regional organizations, global and regional development banks, and agencies or organizations like the Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES), the International Labour Organization (ILO), the International Maritime Organization (IMO), the International Union for the Conservation of Nature (IUCN), the Network of Aquaculture Centres in the Asia-Pacific (NACA), the United Nations Division for Ocean Affairs and the Law of the Sea (UN/DOALOS), the United Nations Educational, Scientific and Cultural Organization–Intergovernmental Oceanographic Commission (UNESCO–IOC), the United Nations Environment Programme (UNEP) and the United Nations Global Environmental Facility (GEF). FAO participates in the United Nations Informal Open-ended Consultative Process on Oceans and the Law of the Sea.
- 28 In 2003, the OECD established a Ministerial Task Force on IUU fishing under its Round Table on Sustainable Development. Its work takes into account the IPOA-IUU.
- 29 For a review of the measures introduced by the RFBS to implement the post-UNCED fisheries instruments, see Judith Swan, 'Summary information on the role of international fishery organizations or arrangements and other bodies concerned with the conservation and management of living aquatic resources', *FAO Fisheries Circular*, no. 985, 2003, p. 114, and Judith Swan, 'International action and responses by regional fishery bodies or arrangements to prevent, deter and eliminate illegal, unreported and unregulated fishing', *FAO Fisheries Circular*, no. 996, 2004, p. 64.

- 30 Judith Swan, 'Decision-making in regional fishery bodies or arrangements: the evolving role of RFBS and international agreement on decision-making processes', *FAO Fisheries Circular*, no. 995, 2004, p. 82.
- 31 These include: to apply a precautionary approach widely to the conservation and management of resources; to promote compliance with, and the enforcement of, management measures; to adopt appropriate measures aimed at maintaining or restoring stocks to the maximum sustainable yield (MSY), as qualified by relevant environmental and economic factors; to compile and distribute data; to determine stock-specific reference points; to promote the use of selective and environmentally safe gear; to promote and implement effective monitoring, control and surveillance (MCS) systems and law enforcement mechanisms; and to encourage members to deter the activities of non-member vessels that engage in activities that undermine effective conservation and management initiatives.
- 32 These can be accessed at www.fao.org/DOCREP/MEETING/005/Y8370E.HTM.
- 33 The Technical Consultation involved participants from 60 FAO member states, as well as observers from regional fishery bodies and other organizations.
- 34 The guiding principles (Part 4 of the FAO Strategy) comprise: sustainability; best scientific evidence; participation and co-operation; objectivity and transparency; and timeliness and flexibility.
- 35 The required actions are described in Part 5 of the FAO Strategy, and consist of: the need for capacity building in developing countries; data collection systems in small-scale fisheries and multi-species fisheries; an expansion of the scope of information on the status of, and trends in, fisheries, including the incorporation of ecosystem considerations into fisheries management; global inventory of fish stocks and fisheries; the participation of the Fisheries Global Information System (FIGIS) in structuring and capacity building; the development of criteria and methods for ensuring the quality of information and its security; the development of arrangements for the provision and exchange of information; the role of working groups in assessing the status of, and trends in, fisheries; sustaining data collection, information on the status of, and trends in, fisheries.
- 36 See www.fao.org/sof/sofia/index_en.htm.
- 37 The full list can be found at www.fao.org/fi/default_all.asp.
- 38 See www.fao.org/figis/servlet/static?dom=root&xml=index.xml.
- 39 As of 2 August 2004, the HSVAR database provided the following breakdown of vessel records according to state: Canada (six); Japan (1,890); US (874); and the European Union (2,747) (consisting of vessels registered in Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden and the United Kingdom). The HSVAR database also noted that new vessel data had been received, but had not yet been inputted—for Benin (12), Cyprus (54), Ghana (110), Namibia (six) and Syria (22).
- 40 See www.globefish.org/index.php?id=994.
- 41 The FISHINFONETWORK (FIN) consists of seven independent intergovernmental and governmental organizations plus the GLOBEFISH unit, situated in FAO's Fisheries Department. Set up to assist the fishery sector, particularly in developing nations and in countries in transition, the network provides services to private industry and governments. The execution of multilateral and bilateral projects is one of the main activities of the network. It is also widely known for its range of publications and periodicals, as well as for its organization of international conferences, workshops and training seminars. FIN has more than 70 full-time staff members and works with over 100 additional international consultants in all fields of fisheries. Fifty governments have signed international agreements with the different FIN services and are using their expertise to develop the fishery sector worldwide.
- 42 See Swan, 'FAO Summary information on the role of international fishery organizations or arrangements and other bodies concerned with the conservation and management of living aquatic resources'.
- 43 At the twenty-fifth session of COFI, held in 2003, the body: agreed that strenuous efforts should be made to control fleet capacity, particularly that of large-scale fishing vessels, and, as appropriate, to

implement measures to reduce overcapacity and prevent the excess fleet capacity from migrating to other fully-exploited or overexploited fisheries; noted the need to monitor the fleet capacity of large-scale fishing vessels on a global basis; and endorsed a Japanese proposal that FAO should convene a Technical Consultation in 2004 to review progress and promote full implementation of the IPOA-IUU and the IPOA-Capacity.

- 44 Definitions of illegal, unreported and unregulated fishing are provided in paragraph 3 of the IPOA-IUU.
- 3.1 Illegal fishing refers to activities:
- 3.1.1 conducted by national or foreign vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations;
- 3.1.2 conducted by vessels flying the flag of States that are parties to a relevant regional fisheries management organization but operate in contravention of the conservation and management measures adopted by that organization and by which the States are bound, or relevant provisions of the applicable international law; or
- 3.1.3 in violation of national laws or international obligations, including those undertaken by co-operating States to a relevant regional fisheries management organization.
- 3.2 Unreported fishing refers to fishing activities:
- 3.2.1 which have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations; or
- 3.2.2 undertaken in the area of competence of a relevant regional fisheries management organization which have not been reported or have been misreported, in contravention of the reporting procedures of that organization.
- 3.3 Unregulated fishing refers to fishing activities:
- 3.3.1 in the area of application of a relevant regional fisheries management organization that are conducted by vessels without nationality, or by those flying the flag of a State not party to that organization, or by a fishing entity, in a manner that is not consistent with or contravenes the conservation and management measures of that organization; or
- 3.3.2 in areas or for fish stocks in relation to which there are no applicable conservation or management measures and where such fishing activities are conducted in a manner inconsistent with State responsibilities for the conservation of living marine resources under international law’.
- 45 See Swan, ‘International action and responses by regional fishery bodies or arrangements to prevent, deter and eliminate illegal, unreported and unregulated fishing’. A total of 34 RFBS were polled. Responses were received from 22 marine RFBS, and, of these, the total field of responses reported and assessed was 15: 12 RFMOS; and three RFBS that do not have a management mandate. Seven respondents, including four RFMOS, advised that implementation of the IPOA-IUU was not then possible or relevant to their activities and/or did not complete the questionnaire. All 16 RFMOS in existence in October 2004 responded either to the questionnaire or by providing other information.
- 46 Generally, only between one and three RFBS said ‘no’ to each of these points.
- 47 As of 2 August 2004, the International Monitoring, Control and Surveillance Network comprised 19 member states and entities; other states are reported to be actively considering membership. See www.imcsnet.org (user name: mcs; password: mcsnet).
- 48 The views expressed in this chapter are solely those of the author.

