

**ELECTRONIC OPTIONS FOR MONITORING IMPLEMENTATION
OF THE FAO CODE OF CONDUCT FOR RESPONSIBLE FISHERIES**



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ELECTRONIC OPTIONS FOR MONITORING IMPLEMENTATION OF THE FAO CODE OF CONDUCT FOR RESPONSIBLE FISHERIES

by

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PREPARATION OF THIS DOCUMENT

This document was prepared by FAO Consultants P. Macgillivray, G. Hosch and P. Bueno to provide the twenty-eight session of COFI (2009) with an assessment of the technical practicability, advantages, constraints and cost of using electronic reporting for the biennial survey on the implementation of the 1995 FAO Code of Conduct for Responsible Fisheries.

Macgillivray, P.; Hosch, G.; Bueno, P.

Electronic options for monitoring implementation of the FAO Code of Conduct for Responsible Fisheries.

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ABSTRACT

This circular provides an assessment of the technical practicability, advantages, constraints and cost of using electronic reporting as part of the biennial survey on the implementation of the 1995 FAO Code of Conduct for Responsible Fisheries. In this context, electronic reporting is defined as conducting a survey (questionnaire) electronically in a format that enables statistical analysis and reports to be generated without re-entering the survey information manually. Two types of electronic reporting are investigated: spreadsheet-based surveys and Web-based surveys.

This project was initiated by FAO based on an interest in exploring cost-effective options for collecting and analysing information on Code implementation, taking full advantage of electronic technology. In conducting this work, it is understood that the biennial questionnaire will continue to be based on self-assessment and that FAO Members, regional fishery bodies and non-governmental organizations will continue to have the option of reporting in the current paper format. Accordingly, the option of electronic reporting as part of the biennial survey on the Code's implementation should be viewed as complementing the current reporting approach rather than as replacing it.

Our analysis concludes that there are potential benefits associated with allowing electronic reporting, in particular, improving data quality, automating data analysis and generating statistical reports automatically. At this time, the option of spreadsheet-based reporting has clear advantages over the Web-based approach. MS Excel is best-suited for use by the majority of FAO Members. Over time, as technology evolves and access to the internet improves, many of the constraints associated with Web-based surveys may be addressed.

Specific recommendations are presented to address issues related to information gathering, analysis and reporting and questionnaire design.

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ACRONYMS

FAO	Food and Agriculture Organization of the United Nations
RFB	Regional fishery body
COFI	FAO Committee on Fisheries
NGO	Non-governmental organizations
UN	United Nations
GFCM	General Fisheries Commission for the Mediterranean

EXECUTIVE SUMMARY

Every two years, FAO Members, regional fishery bodies (RFBs) and civil society are asked to complete a self-assessment questionnaire on the implementation of the 1995 FAO Code of Conduct for Responsible Fisheries (the Code). Information collected from the questionnaires is consolidated and a report is presented to the FAO Committee on Fisheries (COFI), for consideration and action, as appropriate.

Currently, the biennial survey questionnaire is distributed in the form of an MS Word document. FAO sends the questionnaire by e-mail. Respondents are requested to complete the questionnaire either electronically or in hand-written format and return it to FAO by a set date. While many of the returns are in electronic MS Word format, some are completed by hand and sent back by either fax or through the postal service.

To facilitate the analysis of information contained in questionnaires, individual responses are manually inputted into an MS Excel spreadsheet. This step is done for questionnaires returned as MS Word files as well as those filled in by hand. A report summarizing the results of the survey presents aggregated information.

The purpose of this circular is to provide an assessment of the technical practicability, advantages, constraints and cost of using electronic reporting as part of the biennial reporting on the Code. In this context, electronic reporting is defined as conducting a survey (questionnaire) electronically in a format that enables statistical analysis and reports to be generated without re-entering the survey information manually. Two types of electronic reporting are investigated – spreadsheet-based surveys and Web-based surveys.

This project was initiated by FAO based on an interest in exploring cost-effective options for collecting and analysing information on Code implementation, taking full advantage of electronic technology. In conducting this work, it is understood that the biennial questionnaire will continue to be based on self-assessment and that FAO Members, RFBs and civil society will continue to have the option of reporting in the current paper format. Accordingly, the option of electronic reporting as part of the biennial survey on Code implementation should be viewed as complementing the current reporting approach rather than as replacing it.

Our findings and recommendations are presented below.

- Consistent with recent COFI direction, the main tool used to monitor implementation of the Code is and should remain a biennial survey.
- There are three interrelated elements associated with conducting such a survey: (a) overall planning and questionnaire design; (b) information gathering; and (c) analysis and reporting.
- As specified in the terms of reference for this project, we have dedicated most of our effort to the information gathering element. However, we provide some observations on the other two elements as well.
- There are potential benefits associated with allowing electronic reporting, in particular, improving data quality, automating data analysis and generating statistical reports automatically.
- At this time, the option of spreadsheet-based reporting has clear advantages over the Web-based approach. MS Excel is best-suited for use by the majority of FAO

Members. Over time, as technology evolves and access to the internet improves, many of the constraints associated with Web-based surveys may be addressed.

The following specific recommendations are presented to address issues related to information gathering, analysis and reporting, and questionnaire design.

Recommendation 1: Respondents to the biennial survey on the Code's implementation should have the option of reporting in either the current format or in an electronic format that enables returns to be analysed without being re-entered manually. A proposal to enable this enhancement of the current survey should be developed by FAO for consideration by COFI.

Recommendation 2: The proposed electronic survey option should be made available on a voluntary basis using MS Excel.

Recommendation 3: The proposed electronic survey option should be pre-tested with at least five FAO Members before being introduced. This will allow potential problems to be identified and adjustments made, where warranted.

Recommendation 4: The user-interface in the electronic survey option should contain an introductory page that identifies the specific thematic areas of the questionnaire (e.g. aquaculture, fisheries management, trade, etc.) and allows a respondent to go directly to questions related to each theme.

Recommendation 5: A set of instructions and guidelines should be developed to make the task of completing the questionnaire as easy as possible, thereby encouraging greater participation in the survey. This information could include sharing "best practices" used by respondents (e.g. identifying a person to coordinate responses with inputs from several subject experts).

Recommendation 6: Consider the use of incentives to boost the rate of FAO Member responses to the survey and ensure regular follow-up by FAO field representatives during the reporting period to encourage FAO Members to respond within the stated deadline.

Recommendation 7: Before the proposed electronic survey option is made available, the system for data input, storage and automated analysis must be built, using the pre-tested version described in Recommendation 3. This will allow the standardized set of summary tables currently attached to the biennial report to COFI to be generated automatically.

Recommendation 8: Provide feedback to respondents, through an automated and customized country report containing graphs and tables showing the country's situation relative to the regional and global situations. These individual FAO Member situation reports would remain confidential. This would become feasible if an electronic reporting and analysis system, designed to undertake this task, was introduced, and may help increase the response rate.

Recommendation 9: Future reports on Code implementation should continue to focus on progress in the previous biennium but should also include trend analysis, where appropriate and useful.

Recommendation 10: In light of Code monitoring activities currently being undertaken within the COFI Sub-Committee on Aquaculture and the COFI Sub-Committee on Fish

Trade, a strategy should be developed by FAO to coordinate these information-gathering initiatives and avoid duplication with the biennial survey.

Recommendation 11: If changes are to be made to the biennial questionnaire, these should precede the introduction of an electronic reporting option.

1. INTRODUCTION

Purpose

Every two years, FAO Members, regional fishery bodies (RFBs) and civil society are asked to complete a self-assessment questionnaire on the implementation of the 1995 FAO Code of Conduct for Responsible Fisheries (the Code). Information collected from the questionnaires is consolidated and a report is presented to the FAO Committee on Fisheries (COFI), for consideration and action, as appropriate. This reporting on the Code's implementation occurs on a biennial basis, in accordance with Article 4 of the Code.

The purpose of this report is to provide an assessment of the technical practicability, advantages, constraints and cost of using a Web-based survey as part of the biennial reporting on the Code. A Web-based survey involves the collection of information through a self-administered electronic set of questions on the Web. During the past decade, the internet has been used increasingly as a means of conducting questionnaire surveys on a wide variety of topics.

This project was initiated by FAO based on an interest in exploring cost-effective options for collecting and analysing information on Code implementation, taking full advantage of electronic technology. In conducting this work, it is understood that the biennial questionnaire will continue to be based on self-assessment and that FAO Members, RFBs and civil society will continue to have the option of reporting in the current paper format. Accordingly, the option of a Web-based survey as part of the biennial reporting on the Code should be viewed as complementing the current reporting approach rather than as replacing it.

Background

When the Code was adopted in 1995, it included provisions for monitoring and reporting on implementation. In particular, the Code states that FAO "*will monitor the application and implementation of the Code and its effects on fisheries and the Secretariat will report accordingly to the Committee on Fisheries (COFI)*".¹

To assist with the task of monitoring and reporting on Code implementation, FAO designed a detailed questionnaire which was used for the first time in 1998. Since then, FAO Members have been asked to complete the self-assessment questionnaire biennially, providing specific information concerning their efforts and achievements to implement the Code. In 2001, RFBs and non-governmental organizations (NGOs) were invited to participate in the biennial questionnaire as well, thereby establishing a formal role for these groups in monitoring Code implementation.

The remainder of this report explores the feasibility of options that may enhance the cost-effectiveness of collecting, analysing and reporting on Code implementation.

¹ FAO, 1995, Article 4.

2. CURRENT APPROACH TO REPORTING ON THE CODE'S IMPLEMENTATION

Currently, the primary means of monitoring the Code's implementation centres on a biennial self-assessment questionnaire, a report to COFI and FAO Member statements presented at COFI meetings. Other activities have been initiated to gain a better understanding of certain aspects of Code implementation.² These initiatives include ongoing work within the COFI Subcommittees on Aquaculture and Trade as well as a consultant's assessment of the information contained in the five biennial surveys conducted to date. A brief summary of Code implementation monitoring activities follows.

Questionnaire and process

The biennial questionnaire is designed to assess progress in implementing the Code and related instruments. For FAO Member States, the questionnaire covers Articles 7 to 12 of the Code as well as questions on the 1993 FAO Compliance Agreement and the 1995 UN Fish Stocks Agreement. The questionnaire also covers the four international plans of action (Management of Fishing Capacity, Sharks, Seabirds, and Illegal, Unreported and Unregulated Fishing) and the Strategy for Improving Information on Status and Trends of Capture Fisheries. The questionnaire for RFBs and NGOs is shorter because not all articles of the Code are relevant to these groups. A copy of the questionnaire for Member States is attached in Appendix I.

The biennial questionnaire contains over 40 questions (some of which are subdivided into sub-questions). One of the salient features of the questionnaire is that it addresses every substantive article of the Code and the Code-related instruments. As a result, only a limited number of key issues are addressed under each article and instrument. This is necessary to limit the length of the questionnaire and encourage a maximum of questionnaire returns from member countries.³ Typically, some four or five core issues are covered under each technical article and Code-related instruments.

Completed questionnaires are submitted to FAO and their contents analysed. Information provided by each respondent is confidential, thus only aggregated summaries of the results are made available for distribution. Up to 2007 (inclusive), five such reports have been presented to COFI.^{4,5,6,7,8}

While the questionnaire has changed little since 1999, the analysis and reporting to COFI has evolved substantially. Since 2002, the report (submitted to the twenty-fifth session of COFI in 2003) has included a statistical appendix, which itself has evolved in complexity over the short period of its existence, endeavouring to establish detailed quantitative indicators for almost all questions contained in the questionnaire.

² Since the adoption of the Code, FAO has conducted many capacity building initiatives at both national and regional level and these on ongoing.

³ In general, there is an inverse relationship between survey length and number of returns achieved (i.e. the longer the questionnaire, the fewer the returns that can be expected).

⁴ FAO, 1998.

⁵ FAO, 2000.

⁶ FAO, 2002.

⁷ FAO, 2004.

⁸ FAO, 2006a.

The questionnaire is distributed to FAO Members, RFBs and NGOs in the form of an MS Word document. FAO sends the questionnaire by e-mail. Respondents are requested to complete the questionnaire either electronically or in hand-written format and return it to FAO by a set date. While many of the returns are in electronic MS Word format, a substantial number are completed by hand and sent back by either fax or through the postal service.

To facilitate the analysis of information contained in questionnaires, individual responses are manually inputted into an MS Excel spreadsheet. This step is done for questionnaires returned as MS Word files as well as those filled in by hand. A report summarizing the results of the survey presents aggregated information.

Results from country surveys, and RFB and NGO surveys

Table 1 – Summary of country responses to biennial Code implementation monitoring surveys 1998-2006

	1998 ⁹	2000	2002	2004	2006
Responses from Members (number of questionnaires returned)	69	103	105	49	70
Responses from Members (% of total)	38%	56%	57%	27%	37%
Responses from RFBs (number of questionnaires returned)	N/A	14	19	17	19
Responses from NGOs (number of questionnaires returned)	N/A	4	5	4	9

Returns from Members, RFBs and NGOs to the questionnaire have fluctuated over time. Table 1 presents information on responses to each of the surveys conducted over the past 10 years. What is apparent from figures presented is that returns in the first three surveys were generally higher than the more recent surveys. The relatively low number of returns in 2004 and 2006 is problematic, especially when considering regional analysis. The response rate in some regions is considerably lower than the overall return rate, therefore those results cannot readily be viewed as representative of a particular regional situation.¹⁰ In all years, a number of responses continued to be submitted to FAO well past the deadline for submission, and could not be included in data analysis and the biennial COFI monitoring report.¹¹

Little quantitative data was presented in the 1998 and 2000 reports (presented to COFI sessions in 1999 and 2001 respectively). Most statements related to the implementation of technical aspects of the Code were qualitative in nature, and difficult to incorporate into trend analysis. In 2002, the report included for the first time a statistical appendix and figures were computed summarizing survey results for a number of questions. The statistical appendix was expanded in 2004, to include figures for virtually all questions in the survey.

The five reports that have been generated so far paint a global picture of the Code's implementation status across a wide range of issues. The statistical appendix presents global figures and provides regional summaries for all questions. The reports are generally limited to summarizing the current status of implementation, rather than trends.

⁹ In 1998, the first year of monitoring, the questionnaire was only sent to member countries and not to organizations. Among the 69 returned questionnaires, only about half were complete.

¹⁰ The European Union counts as one country in the survey but included 25 countries at the time of the last survey, and 27 countries today.

¹¹ The FAO Aquaculture Management and Conservation Service (FIMA), however, has made use of full returns to raise a second more comprehensive set of figures specific for aquaculture.

The RFB and NGO surveys, and the reports based on these, have produced very little quantitative data since monitoring began. All responses are qualitative in nature. Many of the statements are related to declarations of intent, appraisals of the importance of the Code and observations on the general effectiveness of Code implementation.

Recent developments in monitoring Code implementation within FAO

Several issues associated with monitoring the Code's implementation and the biennial questionnaire were discussed at recent COFI sessions. In 2007, the frequency of the questionnaire surveys was an issue. In response, the FAO Secretariat proposed that the detailed questionnaire be distributed every four years, supplemented by a more general review every two years. However, COFI was in favour of maintaining the status quo (i.e. detailed biennial questionnaire).

In addition, COFI in 2007 provided direction to the Sub-Committees on Aquaculture and Fish Trade concerning monitoring their respective articles of the Code. This discussion was initiated as a result of recommendations put forward by the Sub-Committee on Aquaculture. Specifically, in October 2006, the Secretariat of the COFI Sub-Committee on Aquaculture proposed a number of changes to the biennial monitoring of the Code's implementation, including the possible revision of the questionnaire format with a view to extend aquaculture related questions. The relevant sections of this report are appended in Appendix 2.¹² The Aquaculture Sub-Committee's final report¹³ contains recommendations on the biennial questionnaire for evaluating the progress being made in the implementation of the Code. In particular the report states that "*most Members supported some expansion to include socio-economic and other areas as long as these were within the context of Article 9 of the Code and the priorities of the Sub-Committee*". These recommendations are appended in Appendix 3.

COFI, in its twenty-seventh session final report in March 2007¹⁴ recommended that the Sub-Committees on Fish Trade and Aquaculture "*take responsibility for monitoring the implementation of Articles 9 and 11 of the Code with the format and frequency of more detailed monitoring to be determined by the Sub-Committees at their 2008 Sessions*". In addition, COFI concluded that "*the 2008 questionnaire on the Code will not change and that the biennial reporting will continue*". The full COFI recommendation (paragraph 21) is appended in Appendix 4.

The recent proposal of the FAO Secretariat to the Sub-Committee on Fish Trade on this issue is appended in Appendix 5¹⁵, as well as the relevant sections retained in the final Sub-Committee report (in Appendix 6), which was still unpublished at the time of writing this report. The thrust of these recommendations is to provide more detailed reporting on Code implementation with respect to trade, and to run separate surveys to gather this information, to supplement trade questions included in the main survey.

The FAO Fisheries and Aquaculture Department is now in the process of developing specific approaches for trade and aquaculture for monitoring the Code's implementation, at periods

¹² FAO, 2006b.

¹³ FAO, 2006c.

¹⁴ FAO, 2007.

¹⁵ FAO, 2008.

that differ from when the full and original questionnaire survey is being run. The timing of these information-gathering initiatives will be influenced by the sub-committee meeting schedules. Currently, the COFI Sub-Committee on Fish Trade meets in the period between March and June, and the COFI Sub-Committee on Aquaculture meets around October: both meetings prior to COFI, which usually takes place in March of the following year.

In addition to the developments described above, a separate FAO initiative is examining the results of the questionnaires conducted between 1998 and 2006. The analysis aims to identify trends in the implementation of the Code's principles and recommendations. This work was initiated by FAO in 2008, on the basis of the first five reports and recommendations inherent to the 2006 Code monitoring report submitted to COFI.¹⁶

Observations

This section of the report contains several observations on the format of the biennial questionnaire and the procedures used to collect information, conduct analysis and report to COFI on the Code's implementation. These observations may be instructive in identifying possible ways to improve the quality of information and effectiveness of the biennial survey. Matters relating to the nature of the questions themselves and their potential revision are beyond the scope of this report and are not addressed.

The following observations have been identified from numerous sources, including FAO reports, direct communication with FAO staff, and input from consultants:

- The response rate to the biennial survey is a concern. In particular, the percentage of FAO member countries responding to the last three surveys dropped significantly (from over 50 percent in 2000 and 2002 to 27 percent in 2004, 37 percent in 2006 and about 25 percent in 2008). In addition to the overall low response rates, many major fishing nations are not responding to the survey. This situation raises concerns about how representative the survey results are of all FAO Members and on a regional basis.
- The current questionnaire may be returned by fax, as an MS Word document by e-mail, in scanned format by e-mail, or in hard copy through the postal service. Some FAO Members face limited options concerning how their completed questionnaires are returned because e-mail servers may not handle large picture files (scans) or because international phone lines for sending faxes are not available. These constraints sometimes result in questionnaires being received well past set deadlines so that information thus provided is not integrated into data analysis.
- In some instances, questions are not properly understood, and questionnaires are filled in wrongly – providing poor quality information.
- A significant amount of specialist time and money is required to input data by hand into MS Excel to facilitate statistical analysis.
- Other than seeing the survey results summarized in reports to COFI, FAO Members are not provided customized feedback. Such feedback, which could have cost implications for the Fisheries and Aquaculture Department, could enhance the usefulness of the exercise, thus also providing an additional incentive to respond to the questionnaire

¹⁶ To be submitted as an FAO Fisheries Circular to the twenty-eighth session of COFI in 2009 (in press).

3. DESCRIPTION OF ELECTRONIC REPORTING OPTIONS

Potential approaches to electronic reporting

In this section, potential electronic reporting options for the biennial survey on Code implementation are identified. In this context, electronic reporting is defined as conducting a survey (questionnaire) electronically in a format that enables statistical analysis and reports to be generated without re-entering the survey information manually. Two types of electronic reporting are investigated: spreadsheet-based surveys and Web-based surveys.

The current approach of distributing the Code questionnaire by e-mail as an MS Word document and receiving the completed questionnaire in the same format does not meet the above definition of electronic reporting because responses (i.e. data) are manually transferred into MS Excel to facilitate analysis and reporting.

A brief description of two electronic reporting options follows.

Collecting information electronically using spreadsheets

This approach involves developing a spreadsheet-based questionnaire (e.g. MS Excel) to solicit specific information from individual respondents. For example, the current questionnaire on the Code's implementation (biennial survey) could be put into a format that results in responses to each question being saved in an MS Excel spreadsheet rather than saved in an MS Word document.

The spreadsheet-based survey could be distributed by e-mail, enabling FAO Members, RFBs and NGOs to enter their responses. Once completed, the spreadsheet would be returned by e-mail. The data from all returned spreadsheets are then pooled and analysed through custom-built, automated routines. This would enable statistical analysis and reports to be generated without re-entering the survey information manually.

Collecting information electronically using a Web-based survey

A Web-based survey involves the collection of information through a self-administered electronic set of questions placed on purpose-built Web pages. Web-based surveys are different from the spreadsheet approach described above because the survey software is accessed via an internet browser. Currently, there are dozens of Web-based survey tools available in the private sector.

In some instances companies offer "hosted" services to conduct a survey where the full software package, database, and settings are hosted on the company's servers. Another option is to purchase a licence that provides access to a software package that can be downloaded and installed to run on your own Web server. The download approach is generally best suited to larger organizations that have dedicated technology resources, server administrators and stringent security protocols.

Similar to the spreadsheet approach described above, the current questionnaire on the Code's implementation (biennial survey) could be put into a format suitable for a Web-based survey. This would enable online data collection whereby responses would be directly entered into a database for analysis. Again, returned data would be pooled and analysed through custom-

built, automated routines, doing away with manual data manipulation. It is also possible to have real time error checking and correction to increase the accuracy of the data collection process.

Experience within the UN and Other Organizations

The use of electronic surveys for data collection has grown in popularity over the last decade. Web-based surveying is now widely used in marketing, social science and educational research.

In particular, a growing number of businesses have shifted from paper and telephone surveys to conducting Web-based surveys. This enables businesses to quickly and cost-effectively analyse customer satisfaction, product awareness and employee attitudes.

The use of Web-based surveys within the UN and other organizations is much less common. Information management staff within FAO has considered the experience of Web-based approaches in circumstances similar to those of the present exercise, but, for good reasons, have largely avoided them. Based on experience such as the General Fisheries Commission for the Mediterranean (GFCM) use of MS Excel questionnaires, FAO staff expressed a strong preference for using spreadsheets to gather information rather than using Web-based surveys. The reasons for this preference are explored in Section 4 of this report.

4. ASSESSMENT OF ELECTRONIC REPORTING

In this section, electronic reporting options are examined to assess their potential application in the context of the biennial survey on the Code's implementation. First, the potential of utilizing electronic reporting to complement the current approach used to conduct the biennial survey is assessed. This is followed by a detailed examination of the two electronic reporting options identified above: spreadsheet-based reporting and Web-based reporting.

Potential of electronic reporting to complement current methods

Technical considerations

- A variety of electronic reporting tools are now being used extensively to conduct surveys and the technical requirements vary from one product to another.
- One technical consideration associated with the use of these survey tools is the “electronic gap” between developing countries and developed countries. As a result, not all tools can be used with equal ease around the world. The accessibility of electronic reporting tools is examined further in the next section of the report.
- Since the option of completing the questionnaire by hand would continue, there would be no new or added technical constraints preventing potential respondents from participating in the survey as they have done before.

Advantages of allowing electronic reporting

- In general, mixed-mode surveys tend to improve the response rate as some respondents prefer to be surveyed in one particular mode as opposed to another. The current biennial questionnaire represents such a mixed-mode survey – that is, some returns are hand-written while the majority are completed as MS Word documents. Providing the option of spreadsheet or Web-based reporting could have a positive impact on response rates, although this impact is not likely to be substantial.
- The primary advantage of adding the option of reporting electronically is related to automating data analysis and producing statistical reports. Data returned electronically can be pooled into a custom-built database, similar to the one currently used to analyse the survey, thereby avoiding the task of manually manipulating the information from the returned questionnaires.
- In cases where the hard copy of the questionnaire is returned to FAO, this information can be manually inputted, using the software put in place to automatically process the data.
- Electronic reporting has the potential to improve the quality of information collected through the biennial survey. Active content assistance imbedded in the user-interface (specific explanations for particular questions through hyperlinks and help boxes) can enhance the understanding of questions and make for more accurate country feedback.
- Customized feedback to countries could be provided through another set of automated routines, producing country reports, showing individual countries where they stand on particular issues, relative to their region and the global situation, which in turn may help increase response rates.
- A positive environmental impact is to be expected, as electronic reporting minimizes paper use.

Constraints associated with electronic reporting

There are a limited number of constraints associated with electronic reporting.

- Although electronic surveys are used extensively, there may be some concerns about the risks related to the introduction a new reporting option, e.g. user acceptance, security, reliability of the technology.
- Potential constraints associated with electronic reporting depend largely on the approach used (e.g. spreadsheet vs. Web-based) and these issues are explored in the next section of this report.
- Finally, there is the initial additional work and cost associated with putting the questionnaire into a proper format and designing the software applications to download information, conducting analysis and generating standardized reports.

Cost considerations

- The main FAO costs associated with the current biennial survey are directly related to analysing the information from the returned questionnaires. In particular, processing responses submitted in five languages requires translators and fisheries experts to handle and digitize the data. On average, the processing of one single questionnaire (already translated), takes about one hour. Data processing currently constitutes about 90 percent of the report-generating activities. FAO typically contracts a fisheries specialist to digitize the data and produce statistical reports. The combined cost of these activities is in the order of US\$20 000.
- To provide the option of electronic reporting, an initial investment would be required to design several applications, in particular: (a) the questionnaire would need to be put into electronic format (i.e. the survey user-interface, whether spreadsheet or Web-based); (b) responses from individual electronic returns would be downloaded (rather than re-entered manually) and stored; and (c) statistical reports would be generated automatically from these data. Cost estimates associated with the tasks identified above are contained in Appendix 7.
- Some of the initial costs could be offset by the cost-savings associated with no longer having to manually re-enter all survey returns. It is anticipated that, if an electronic reporting format was available, at least 67 percent of the responses would come in that format. This is based on the fact that in 2004, 67 percent of the survey responses were submitted to FAO electronically, as MS Word documents. At the time of writing this report, FAO had received 44 responses to the 2008 survey and only 4 (i.e. less than 10 percent) were hand-written. Those respondents currently returning the questionnaire in MS Word format would be expected to utilize the spreadsheet or Web-based format, if it were available.
- Under a fully automated electronic reporting system, expert time to process data would be reduced dramatically. Some time would have to be spent to check for inconsistencies in the data. However, with a well-designed system, data validation rules and input masks would minimize the need for manual data checking. It is estimated that the current costs related to expert time could be reduced to less than 25 percent of the current needs, thereby reducing the cost of this activity by about US\$15 000.
- A final cost consideration relates to the possibility of a donor making the initial investment in electronic reporting and FAO maintaining responsibility for the ongoing operating costs of the new system. This would ensure that the option of electronic

reporting could be introduced in a way that is either cost-neutral to FAO or results in FAO cost savings.

Assessment of spreadsheet-based reporting and Web-based reporting

The previous section highlighted the potential benefits of utilizing electronic reporting to complement the current approach used to conduct the biennial survey. It is equally important to note the key differences between spreadsheet-based reporting and Web-based reporting to determine which tool is best-suited for use in the biennial survey.

Accessibility

- Computers are commonly used in fisheries administrations around the world and software packages such as MS Word and MS Excel are now being used extensively.
- FAO Members, RFBs and NGOs are familiar with receiving the biennial survey from FAO by e-mail in MS Word format. In 2008, the vast majority of responses to the survey were returned electronically in MS Word format.
- It would be quite easy to put the current questionnaire into a user-friendly MS Excel spreadsheet format. Respondents would not need to have a working knowledge of MS Excel to complete the survey since they would be led through each section with prompts asking them to enter specific information.
- Accordingly, accessibility would generally not be a concern associated with offering the option of participating in the biennial survey using MS Excel format.
- However, accessibility would be a concern using the Web-based survey format. In particular, many fisheries management agencies do not have reliable access to high speed internet. Several other factors would make the Web-based survey format difficult for some respondents, including the following:
 - Unreliable Web-access is a reality in many places. If there was a temporary Web failure or electrical power outage while a Web-based survey was being completed, the responses entered up to that point are likely to be lost.
 - Respondents would be wary of partly completing the survey and returning to it later to complete due to concerns about losing responses if the Web connection were interrupted.
 - It is sometimes difficult to access Web sites.¹⁷
 - Screen configurations may appear different from one respondent to another, depending on settings of individual computers.
 - Failure to complete a questionnaire or abandonment is a concern in Web surveys which could have a negative impact on response rates.
 - Different people are likely to respond to different parts of the questionnaire, requiring administration of usernames and passwords for each country.

User-friendliness

- It is important to make electronic surveys easy to use and graphically appealing.
- Both spreadsheet and Web-based surveys can be designed to be user-friendly.

¹⁷ For example, the mandatory UN security training and associated test (Basic Security in the Field Training) is available online. However, it is common for individuals (e.g. consultants) to experience difficulties in gaining access to the site.

- However, the spreadsheet format has one distinct advantage in the context of the biennial Code implementation survey. Because the questionnaire covers a wide range of topics (aquaculture, fisheries management, trade, etc.), it is common for several individuals to provide information to complete one questionnaire. The spreadsheet-based survey can be easily accessed by individuals responsible for a given section and the entire completed survey returned to FAO once “signed-off” by the proper agency representative. However, it would be technologically much more challenging to accommodate multiple respondents to a single questionnaire using the Web-based survey.

Security

- Both spreadsheet and Web-based surveys can be designed to achieve a high degree of security.
- Security concerns would likely be highest with the “hosted” Web-based survey because responses would be compiled external to FAO (i.e. on a private server).

5. CONCLUSIONS AND RECOMMENDATIONS

General

This report focuses primarily on assessing the feasibility of complementing the current reporting on the Code's implementation with the option of electronic reporting. In carrying out this work, it was understood that the survey would continue to be conducted biennially on a self-assessment basis and that respondents would continue to have the option of using the current reporting format.

Our findings and recommendations are presented below.

- Consistent with recent COFI direction, the main tool used to monitor implementation of the Code is and should remain a biennial survey.
- There are three interrelated elements associated with conducting such a survey: (a) overall planning and questionnaire design; (b) information gathering; and (c) analysis and reporting.
- As specified in the terms of reference for this project, we have dedicated most of our effort to the information gathering element. However, we provide some observations on the other two elements as well.
- There are potential benefits associated with allowing electronic reporting, in particular, improving data quality, automating data analysis and generating statistical reports automatically.
- At this time, providing the option of spreadsheet-based reporting has clear advantages over the Web-based approach. The latter is considered not practical at this stage. MS Excel provides the spreadsheet best-suited for use by the majority of FAO Members. Over time, as technology evolves and access to the internet improves, many of the constraints associated with Web-based surveys may be addressed.

Information gathering

Recommendation 1: Respondents to the biennial survey on the Code's implementation should have the option of reporting in either the current format or in an electronic format that enables returns to be analysed without being re-entered manually. A proposal to enable this enhancement of the current survey should be developed by FAO for consideration by COFI.

Recommendation 2: The proposed electronic survey option should be made available on a voluntary basis using MS Excel.

Recommendation 3: The proposed electronic survey option should be pre-tested with at least five FAO Members before being introduced. This will allow potential problems to be identified and adjustments made, where warranted.

Recommendation 4: The user-interface in the electronic survey option should contain an introductory page that identifies the specific thematic areas of the questionnaire (e.g., aquaculture, fisheries management, trade, etc.) and allows a respondent to go directly to questions related to each theme.

Recommendation 5: A set of instructions and guidelines should be developed to make the task of completing the questionnaire as easy as possible, thereby encouraging greater participation in the survey. This information could include sharing "best practices" used by

respondents (e.g. identifying a person to coordinate responses with inputs from several subject experts).

Recommendation 6: Consider the use of incentives to boost the rate of FAO Member responses to the survey and ensure regular follow-up by FAO field representatives during the reporting period to encourage FAO Members to respond within the stated deadline.

Analysis and reporting

Recommendation 7: Before the proposed electronic survey option is made available, the system for data input, storage and automated analysis must be built, using the pre-tested version described in Recommendation 3. This will allow the standardized set of summary tables currently attached to the biennial report to COFI to be generated automatically.

Recommendation 8: Provide feedback to respondents, through an automated and customized country report containing graphs and tables showing the country's situation relative to the regional and global situations. These individual FAO Members situation reports would remain confidential. This would become feasible if an electronic reporting and analysis system, designed to undertake this task, was introduced, and may help increase the response rate.

Recommendation 9: Future reports on Code implementation should continue to focus on progress in the previous biennium but should also include trend analysis, where appropriate and useful.

Questionnaire design

Recommendation 10

In light of Code monitoring activities currently being undertaken within the COFI Sub-Committee on Aquaculture and the COFI Sub-Committee on Fish Trade, a strategy should be developed by FAO to coordinate these information-gathering initiatives and avoid duplication with the biennial survey.

Recommendation 11: If changes are to be made to the biennial questionnaire, these should precede the introduction of an electronic reporting option.

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Appendix 1

Questionnaire for the biennial monitoring of Code implementation (2006 version)

Country:
 Name of person (optional):.....
 Date:

QUESTIONNAIRE FOR MONITORING THE IMPLEMENTATION OF THE 1995 FAO
 CODE OF CONDUCT FOR RESPONSIBLE FISHERIES, THE INTERNATIONAL
 PLANS OF ACTION ON CAPACITY, SHARKS, SEABIRDS, AND ILLEGAL,
 UNREPORTED AND UNREGULATED FISHING AND THE STRATEGY FOR
 IMPROVING INFORMATION ON STATUS AND TRENDS OF CAPTURE FISHERIES

GENERAL QUESTIONS

1. Article 2 of the Code of Conduct lists ten objectives. Please rank your perception of the relevance of these objectives for the various types of fisheries including inland capture fisheries and aquaculture developments in your country.		1 = not very relevant 3 = relevant 5 = extremely relevant				
Objectives		Rating				
		1	2	3	4	5
1	Establish principles for responsible fishing and fisheries activities considering all their relevant biological, technical, economic, social, environmental and commercial aspects					
2	Establish principles and criteria to implement policies for the conservation of fishery resources and fisheries management and development					
3	Serve as an instrument of reference to improve legal and institutional framework for appropriate management measures					
4	Provide guidance to formulate and implement international agreements and other legal instruments					
5	Facilitate and promote co-operation in the conservation of fisheries resources, fisheries management and development					
6	Promote the contribution of fisheries to food security and food quality giving priority to the nutritional needs of local communities					
7	Promote protection of living aquatic resources and their environments and coastal areas					
8	Promote the trade in fish and fishery products in conformity with relevant international rules					
9	Promote research on fisheries as well as on associated ecosystems and relevant environmental factors					
10	Provide standards of conduct for all involved in the fisheries sector					

2. Please list in priority order the 3 main constraints to implementation of the Code in your country and propose possible solutions.			
Main Constraints		Suggested Solutions	
1			
2			
3			
3. Do fisheries legislation and policies in your country conform to the Code of Conduct?		Yes	No
3.a If no, does your country intend to introduce changes to its fisheries legislation and/or policy to bring them into conformity with the Code of Conduct?			
3.b If yes to 3.a, when do you expect to introduce those changes?		Date	
4. Please describe efforts that have been made to make the Code more widely known and understood within your country.			
5. Please indicate the level of priority your country attaches to the following substantive themes that are developed in the Code and in the relevant FAO Technical Guidelines for Responsible Fisheries¹			
	Top Priority	Priority	Low Priority
Fisheries Management			
Fishing Operations			
Aquaculture Development			
Integration of Fisheries into Coastal and Basin Area Management			
Post-Harvest Practices			
Trade			
Fisheries Research			

¹ FAO has elaborated as of February 2004 the following Technical Guidelines on the Code: Fishing operations; Vessel monitoring systems; Precautionary approach to capture fisheries and species introductions; Integration of fisheries into coastal area management; Fisheries management; Conservation and management of sharks; Aquaculture development; Good aquaculture feed manufacturing practice; Inland fisheries; Responsible fish utilization; Indicators for sustainable development of marine capture fisheries and Implementation of the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU). Further guidelines are being developed.

ARTICLE 7 OF THE CODE OF CONDUCT - FISHERIES MANAGEMENT

	Marine Capture Fisheries	Inland Capture fisheries	None
6. How many of the fisheries in your country have fisheries management plans in place?			
6.a If your country has fisheries management plans, how many have been implemented?			
6.b If your country has Marine fisheries management plans, do all or any of them:		Yes	No
Contain measures to ensure the level of fishing is commensurate with the state of fisheries resources			
Contain measures to allow depleted stocks to recover			
Contain stock specific target reference points			
Address selectivity of fishing gear			
Prohibit destructive fishing methods and practices (e.g. dynamiting and poisoning)			
Address fishing capacity including the economic conditions under which the fishing industry operates			
Address the biodiversity of aquatic habitats and ecosystems, including identifying essential fish habitats			
Provide for stakeholder participation in determining management decisions			
Address the protection of endangered species			
Address the interests of small-scale fishers			
6.c If your country has Inland fisheries management plans, do all or any of them:		Yes	No
Contain measures to ensure the level of fishing is commensurate with the state of fisheries resources			
Contain measures to allow depleted stocks to recover			
Contain stock specific target reference points			
Address selectivity of fishing gear			
Prohibit destructive fishing methods and practices (e.g. dynamiting and poisoning)			
Address fishing capacity including the economic conditions under which the fishing industry operates			
Address the biodiversity of aquatic habitats and ecosystems, including identifying essential fish habitats			
Provide for stakeholder participation in determining management decisions			
Address the protection of endangered species			
Address the interests of small-scale fishers			
Contain measures to ensure the level of fishing is commensurate with the state of fisheries resources			
Contain measures to allow depleted stocks to recover			

7. Please provide any additional information you would like to submit on management measures in your country that may not be part of a specific fisheries management plan.			
8. For which stocks has your country developed stock specific target reference points?²		None	
8.a If none , what other indicators or thresholds are used for managing stocks?			
8.b If your country has developed stock specific target reference points:	Have they been exceeded?	Yes	No
	Are they being approached?		
8.c If exceeded , what action has been, or will be taken to remedy the situation?			
9. Has the precautionary approach been applied to the management of fisheries resources in your country?		Yes	No
9.a If yes , please describe the manner in which it is being implemented in your fishery management procedures.			

² See FAO Code of Conduct for Responsible Fisheries – Technical Guidelines for Responsible Fisheries No. 4 for information/definitions of “reference points”.

ARTICLE 8 OF THE CODE OF CONDUCT – FISHING OPERATIONS

10. What steps has your country taken to ensure that only fishing operations authorized by the licensing authority are conducted within waters under its jurisdiction?			
1. 2. 3. None ____			
11. What steps has your country taken to ensure that fishing activities of vessels flying its flag undertaken in international waters or waters under the jurisdiction of another State are reported, monitored and carried out in a responsible manner?			
1. 2. 3. None ____			
12. What measures has your country taken to limit bycatch (e.g. juveniles, non-target species, non-fish species) and discards?			
1. 2. 3. None ____			
13. Has your country implemented a vessel monitoring system (VMS) for: (please check (x) one)	The entire fishing fleet	A portion of the fishing fleet	None of the fishing fleet
13.a If your country has not implemented VMS for any of its vessels, is it planning to do so in the future?	Yes	No	

ARTICLE 9 OF THE CODE OF CONDUCT – AQUACULTURE DEVELOPMENT

14. Please briefly describe the legal and institutional framework your country has for the development of responsible aquaculture.		
No Framework _____		
15. Has a code or instrument of best practices for aquaculture been developed or adopted by government agencies, producer organizations, suppliers, manufacturers and/or other stakeholders in your country?	Yes	No
Government agencies		
Producer organizations		
Suppliers		
Manufacturers		
Other stakeholders		
15.a If yes, please provide a brief description of that code or instrument or attach a copy of it		
16. Are there procedures in place to:	Yes	No
Undertake environmental assessments of aquaculture operations?		
Monitor aquaculture operations?		
Minimize the harmful effects of the introduction of non-native species or genetically altered stocks used for aquaculture?		
16.a If “yes”, please provide your assessment of the effectiveness, and identify needs for improvement, of such measures.	Assessment of Effectiveness	Needs for Improvement
Environmental assessments of aquaculture operations		
Monitoring aquaculture operations		
Minimizing the harmful effects of the introduction of non-native species or genetically altered stocks used for aquaculture		
17. Please list in order of importance up to three measures (including policies and practices) that are being advanced and/or supported to promote responsible aquaculture practices in support of rural communities, producer organizations and fish farmers.		
1.		
2.		
3.		
17.a For those measures which are being developed, please provide your assessment of specific assistance needs.		
1.		
2.		
3.		

**ARTICLE 10 OF THE CODE OF CONDUCT – INTEGRATION OF FISHERIES INTO COASTAL
AREA MANAGEMENT**

18. Please identify the laws constituting the legal framework in place in your country for integrated coastal area management.				
None ____				
19. Please indicate the level of conflict in your country within the fisheries sector and between the fisheries sector and the activities of other sectors.				
Conflict between:	Strong	Moderate	Light	None
Coastal fisheries and industrial fisheries				
Coastal fisheries and coastal aquaculture				
Gear types operating in the coastal area				
Fisheries and recreational development				
Fisheries and port development				
Fisheries and mineral extraction activities				
20. Does your country have a mechanism to resolve conflicts over the use of coastal resources in the following areas?			Yes	No
Coastal fisheries versus industrial fisheries				
Coastal fisheries versus coastal aquaculture				
Conflicts between gear types operating in the coastal area				
Conflicts between fisheries and recreational development				
Conflicts between fisheries and port development				
Conflicts between fisheries and mineral extraction				

ARTICLE 11 OF THE CODE OF CONDUCT – POST-HARVEST PRACTICES AND TRADE

21. Is an effective food safety and quality assurance system for fisheries products in place?	Yes	No
22. What measures have been taken to encourage those involved in fish processing, distribution and marketing to reduce post-harvest losses and wastes, starting with the most effective.		
1. 2. 3. None ____		
23. What measures have been taken to encourage those involved in fish processing, distribution and marketing to improve the use of bycatch, starting with the most effective.		
1. 2. 3. None ____		
24. Can processor and/or consumers easily identify the origin of the product raw material?	Yes	No
Processors		
Consumers		
25. Please describe measures that have been taken to ensure that fisheries processors, brokers and dealers do not process or trade in illegally harvested fisheries resources.		
1. 2. 3. None ____		

ARTICLE 12 OF THE CODE OF CONDUCT – FISHERIES RESEARCH

26.	For how many stocks in your country have you obtained reliable estimates of the status of the stocks (e.g. biomass or state of exploitation) within the last three years?	Number:	
26.a	Please represent this as a percentage of the total number of stocks important to your national fisheries.	Percentage:	
27.	Is your country collecting timely, complete and reliable statistics on catch and fishing effort?	Yes	No
28.	Does your country have the qualified personnel needed to generate the necessary data to sustainably manage fisheries?		
28.a	If no, in what subject areas do you have the greatest need for additional qualified personnel?		
29.	Are the following used to provide data for the development of fisheries management plans?	Yes	No
	Catch and effort data from commercial and artisanal fisheries (small or large scale)		
	Research vessel surveys		
	On-board sampling from commercial vessels		
	In-port sampling surveys		
	Other – please specify		
30.	Please identify key data gaps in managing your country's fisheries resources, along with measures taken to address them and constraints faced in that task.		
	Key Data Gaps	Measures Taken	Constraints
	1.		
	2.		
	3.		
31.	Is your country routinely monitoring the state of the marine environment?	Yes	No
31.a	If yes, please briefly describe your efforts in this area.		
32.	Is your country routinely monitoring bycatch and/or discarded species?	Yes	No
32.a	If yes, please briefly describe your efforts in this area.		

**INTERNATIONAL PLANS OF ACTION (IPOA) ON
CAPACITY, SHARKS, SEABIRDS, ILLEGAL, UNREPORTED AND UNREGULATED (IUU)
FISHING AND
STRATEGY FOR IMPROVING INFORMATION ON STATUS AND TRENDS OF CAPTURE
FISHERIES**

IPOA - MANAGEMENT OF FISHING CAPACITY

<p>The objective of the IPOA-Capacity is to achieve worldwide, but no later than 2005, an efficient, equitable and transparent management of fishing capacity. Toward that end, the IPOA states that a preliminary assessment of the fishing capacity at the national level should be completed by the end of 2000.</p>		
33. Has your country begun that preliminary assessment?	Yes	No
33.a If yes, what is the status of that assessment?		
33.b If no, are there plans underway to commence such an assessment to meet the 2005 deadline?	Yes	No
33.c If yes to 33, what methods have been used to measure capacity in that assessment?		
1.		
2.		
3.		
34. If your country has not begun to supply a record of fishing vessels authorized to operate on the high seas to the FAO following the model indicated in the 1993 FAO Compliance Agreement, when do you intend to begin providing that record?	Date:	
35. Where excess capacity exists, which three measures, in order of importance, have been established to reduce capacity?		
1.		
2.		
3.		
None _____		
36. Which three steps in order of importance, have been taken to prevent excess fishing capacity?		
1.		
2.		
3.		
None _____		

IPOA - SHARKS

<p>The IPOA-Sharks applies to States in the waters of which sharks are caught by their own or foreign vessels, and to States the vessels of which catch sharks on the high seas.</p> <p>The IPOA-Sharks states that States should carry out a regular assessment of the status of shark stocks subject to fishing to determine if there is a need for development of a shark plan, and that States should strive to have a national <i>Shark-plan</i> by 2001.</p>		
	Yes	No
37. Are sharks caught in the waters of your country by foreign vessels, or do your country's vessels conduct directed fisheries for sharks or regularly catch sharks in non-directed fisheries in your country's waters or on the high seas?		
37.a If yes , has your country conducted an assessment of the shark stocks subject to fishing to determine if there is a need for development of a shark plan?		
37.b If yes , does your country have a national <i>Shark-plan</i> in place now?		
37.c If no , when do you intend to complete a national <i>Shark-plan</i> ?	Date:	

IPOA - SEABIRDS

<p>The IPOA-Seabirds states that States with longline fisheries should conduct an assessment of those fisheries to determine if a problem exists with respect to the incidental catch of seabirds. If a problem exists, States should have adopted a national plan of action by 2001 for reducing the incidental catches of seabirds in longline fisheries.</p>		
	Yes	No
38. Does your country conduct longline fisheries?		
38.a If yes , have you assessed those fisheries to determine if a problem exists with respect to the incidental catch of seabirds?		
38.b If yes , has your assessment concluded that a plan of action is needed?		
38.c If yes , does your country have a national plan of action?		
38.d If no , is there an intention to develop a national plan of action?		
38.e If yes , when will that be?	Date:	
39. Please list any of the mitigation measures in the IPOA-Seabirds you have applied to your longline fisheries.		

IPOA - IUU FISHING

<p>The IPOA-IUU states that States should develop and implement, as soon as possible, but not later than 2004, National Plans of Action (NPOAs) to further achieve the objectives of the IPOA and give full effect to its provisions as an integral part of their fisheries management programmes and budgets.</p>		
40. Has IUU fishing been identified as a problem in your country?	Yes	No
<p>40.a If yes, briefly describe the nature and severity of the IUU problems as they impact your efforts to achieve sustainable fisheries.</p>		
41. Has your country taken steps to develop a national plan of action to combat IUU fishing?	Yes	No
41.a If yes, when was the plan developed, or when will it be developed?	Date:	
41.b If no, is there an intention to develop a national plan of action?	Yes	No
41.c If yes, when will that be?	Date:	
42. Please list any measures in the IPOA-IUU that your country has taken to combat IUU fishing.		

FAO STRATEGY FOR IMPROVING INFORMATION ON STATUS AND TRENDS OF CAPTURE FISHERIES

<p>The FAO Strategy for Improving Information on Status and Trends of Capture Fisheries (Strategy-STF) was adopted by the FAO Committee on Fisheries (COFI) and the FAO Council in 2003. The overall objective of the Strategy-STF is to provide a framework, strategy and plan for the improvement of knowledge and understanding of fishery status and trends as a basis for fisheries policy-making and management.</p>		
43. Are relevant authorities in your country aware of the Strategy-STF?	Yes	No
<p>43.a If yes, are plans and programmes being elaborated to implement the Strategy-STF?</p>		
<p>43.b If yes, please briefly describe such plans or programmes.</p>		

CONCLUDING QUESTIONS

44. Has your country ratified, acceded or accepted the:	Yes	No
1993 FAO Compliance Agreement (1993 FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas)		
1995 UN Fish Stocks Agreement (1995 UN 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)		
44.a. If no , has your country initiated the process to ratify, accede or accept, as the case may be the:	Yes	No
1993 FAO Compliance Agreement		
1995 UN Fish Stocks Agreement		
44.b. If yes , when do you expect to ratify, accede or accept the Agreement(s), as the case may be?	Date(s):	
45. Article 5 of the Code of Conduct urges that the special requirements of developing countries be taken into account in implementing the provisions of the Code. Please provide any comments you may have regarding cooperation in implementing the Code between developing and developed countries and regions.		
46. Which of these FAO Technical Guidelines for Responsible Fisheries have you received?	Yes	No
1. Fishing Operations		
1.1 Vessel Monitoring Systems		
2. Precautionary Approach to Capture Fisheries and Species Introductions		
3. Integration of Fisheries into Coastal Area Management		
4. Fisheries Management		
4.1 Conservation and Management of Sharks		
4.2 Ecosystem approach to Fisheries		
5. Aquaculture Development		
5.1. Good Aquaculture Feed Manufacturing Practice		
6. Inland Fisheries		
7. Responsible Fish Utilization		
8. Indicators for Sustainable Development of Marine Capture Fisheries		
9. Implementation of the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing		
47. Please submit any other comments or information you wish to provide regarding implementation of the Code of Conduct in your country.		
48. Please enclose copies, electronically or in hard copy, of National Plans of Action if they have been developed and/or national legislation relevant to implementation of the Code of Conduct.	Enclosures	
49. DONOR COUNTRIES, please indicate technical or financial assistance provided to developing countries for implementation of the Code.		

Appendix 2

COFI Sub-Committee on Aquaculture Secretariat proposals on monitoring Code implementation (September 2006)¹

CONCLUDING REMARKS ON GENERAL TRENDS, PERSPECTIVES AND EXPERIENCES

50. The Sub-Committee is invited to discuss the current apparent decrease in responses to the CCRF surveys while considering that the questionnaire actually can be seen as an effective instrument for driving national appraisals of the fishery and aquaculture sectors, which may lead to refining planning objectives, improved evaluation of opportunities for economic and social development, clear identification of the needs for assistance and promotion of cooperation at all levels.

51. At the same time, the Sub-Committee might want to further pursue the achievement of objectives identified at its 2nd Session, by enhancing the effectiveness of such questionnaire-based analysis of their aquaculture sectors.

52. For this purpose, two avenues are proposed for consideration. First, greater involvement of regional fisheries and aquaculture bodies is proposed for the development of analytical reviews of CCRF implementation, providing opportunities for both more detailed recognition and appraisal of issues and trends at the regional levels and for more dynamic, closer and regular contact with responsible national authorities. Regional Bodies should assist Members in better understanding and using the questionnaire, emphasizing the need for multi-disciplinary and multi-institutional approaches in formulating responses (e.g., through temporary working groups) and for more regular monitoring at national levels. More active participation of FAO and non-FAO regional fisheries and aquaculture bodies, will help to identify the initiatives already promoting responsible aquaculture development at national level, will enhance the identification of opportunities for regional cooperation and information exchange and will favour inter-regional bilateral and multilateral relationships.

53. A second avenue could be to expand the scope of questions in the CCRF questionnaire beyond Article 9, as already done in 1999 for the Consultation on the Application of CCRF Article 9 in the Mediterranean Region. Additional questions could be formulated in the questionnaire to include themes frequently indicated as priorities by responding Members and already identified as major areas of intervention, such as aquaculture integration into coastal management, aquaculture contribution to food security, to rural development and to enhancements of livelihood of local communities.

54. The present analysis of the responses to the questionnaire indicates the necessity of in-depth analysis of the responses being made available to the Members (through the COFI and its Sub-Committees), with a view to present progress made at regional and global level towards the development of responsible aquaculture and thereby supplying a permanent information base and evaluation of resources made available and of the results achieved.

55. In the meantime Members responding to the questionnaire should be invited to supply, as far as possible, the most accurate indications of major bottlenecks and key issues limiting aquaculture development. This would increase the effectiveness of cooperation instruments like FAO's Technical Cooperation Programme and enhance the formulation of specific medium- to large-scale projects (including trust fund or UTF projects). Precise indications are also useful for FAO to identify essential or emerging issues to be addressed by expert groups or technical papers and guidelines.

¹ FAO. 2006. Progress made on the implementation of the aquaculture related provisions of the Code of Conduct for Responsible Fisheries. FAO Fisheries Sub-committee on Aquaculture Meeting document COFI:AQ/III/2006/3. New Delhi – India, FAO.

SUGGESTED ACTION BY THE SUB-COMMITTEE

56. The Sub-Committee is invited to discuss progress made in the promotion and implementation of the aquaculture-related provisions of the CCRF. In addition, the Sub-Committee is invited: to consider the possible revision of the CCRF questionnaire format, with a view to extend aquaculture related questions to issues like ecosystem resources management, enhancement of livelihoods of rural and coastal communities, and greater involvement of research institutions;

- to enhance the emphasis on the need of integrating the management of aquaculture development within general national development plans; and
- to strengthen the involvement of FAO and non-FAO Regional Fisheries and Aquaculture Bodies in the conduct of the questionnaire analysis of sustainable aquaculture sector development.

Appendix 3

COFI Sub-Committee on Aquaculture final report conclusions on monitoring Code implementation (September, 2006)¹

18. The Sub-Committee was invited: (i) to consider the possible revision of the CCRF questionnaire with extended aquaculture-related questions; (ii) to enhance the emphasis on the need for integrating the management of aquaculture development within national development projects and, (iii) to strengthen the involvement of FAO and non-FAO Regional Fishery Bodies (RFBs) in the data collection and analysis on the implementation of the Code's provisions on aquaculture.

(...)

22. With regard to the questionnaire for evaluating the progress being made in the implementation of the Code, most Members supported some expansion to include socio-economic and other areas as long as these were within the context of Article 9 of the Code and the priorities of the Sub-Committee. While it was felt that Regional Fishery Bodies should play a strong role in the implementation of the Code, it was also felt that FAO should continue to analyse the progress made in implementation, make periodic evaluations and report to the Sub-Committee in a timely manner.

23. Members related several constraints to implementation and reporting on the CCRF including the need to sensitise stakeholders as to its use and the need to translate it into various languages to create understanding and promote application. Members stressed that some practical constraints have limited the reporting processes, but they are being addressed and feedback systems are being developed which will facilitate future monitoring and evaluation.

¹ FAO. 2006. Report of the third session of the Sub-Committee on Aquaculture. New Delhi, India, 4-8 September 2006. FAO Fisheries Report No. 816. Rome, FAO. 85p.

Appendix 4

COFI 2007 (twenty-seventh session) recommendations on changing certain Code reporting mechanisms (March, 2007) ¹

21. The Committee agreed that the Sub-Committees on Aquaculture and on Fish Trade, respectively, should take responsibility for monitoring the implementation of Articles 9 and 11 of the Code with the format and frequency of more detailed monitoring to be determined by the Sub-Committees at their 2008 Sessions. It was further agreed that future Sub-Committee reports presented to COFI would contain information on progress with the implementation of these Articles. To ensure that there was continuity in reporting and to enable the Sub-Committees to take responsibility for more detailed monitoring and reporting, the 2008 questionnaire on the Code will not change. The Committee noted that there would be no change to current arrangements for the monitoring and reporting for the Code and that biennial reporting will continue.

¹ FAO. 2007. Report of the twenty-seventh session of the Committee on Fisheries. Rome, 5-9 March 2007. FAO Fisheries Report No. 830. Rome, FAO. 74p.

Appendix 5

COFI Sub-Committee on Fish Trade Secretariat proposals on monitoring Code implementation (June, 2008)¹

CONCLUSIONS DRAWN FROM EXISTING MONITORING ACTIVITIES

1. The monitoring activities related to Article 11 of the Code are based on the feedback related to four questions that address post harvest practices and trade. Two of the questions are qualitative and two are quantitative. As can be seen below, the replies to these questions only provide a limited basis to monitor implementation of Article 11. In addition, they do not provide respondents with the opportunity to more specifically identify areas where implementation remains a challenge.

(...)

PROPOSED FORMAT AND FREQUENCY OF MORE DETAILED MONITORING

FORMAT

2. A revised questionnaire, focusing on trade related aspects of the Code will be developed. The questionnaire will be distributed to all FAO Members, regional fishery bodies and non-governmental organizations. The trade related questionnaire will be updated to:

- cover current and relevant trade-related issues;
- be a diagnostic tool that both monitors implementation and identifies challenges to implementation of the Code.

3. The Secretariat will develop the questionnaire with a view to making it more user-friendly.

4. The Secretariat will compile and analyse the feedback obtained from the questionnaire. The analysis will be submitted to the COFI:FT for its consideration. The analysis will then be submitted to COFI.

5. Two options are available to undertake the monitoring activity:

1. The overall monitoring questionnaire is updated so that the trade-related questions are more user-friendly and brought up to date. (The updated trade-related questions will be different from the questions that have been included in the original monitoring questionnaire to date.) With this option, FAO Members will continue to respond to one questionnaire as they have in the past.
2. A separate trade-related questionnaire is developed and sent to FAO Members. The main advantage of this option is that a trade specific questionnaire will be developed to address trade specific issues. With this option, FAO Members will have to respond to two separate questionnaires.

TIMING

6. If the Sub-Committee agrees on option 1 (including updated trade-related questions in the overall monitoring questionnaire), the questionnaire will be sent to FAO Members in the first half of 2010. The Sub-Committee will discuss the questionnaire's results during its

¹ FAO. 2008. Monitoring implementation of article 11 of the Code of Conduct for Responsible Fisheries. FAO Fisheries Sub-Committee on Fish Trade Meeting document COFI:FT/XI/2008/9. Rome, FAO.

thirteenth session in 2012 and will report on its findings to the thirtieth session of COFI in 2013.

7. If the Sub-Committee agrees on option 2 (separate trade-specific questionnaire), the updated questionnaire will be sent to FAO Members during the first half of 2009. The Sub-Committee will discuss the questionnaires' results during its twelfth Session in 2010 and will report on its findings to the twenty-ninth session of COFI in 2011.

FREQUENCY

8. If the Sub-Committee opts for option 1, the frequency of the monitoring activity will be determined by COFI as the trade-specific monitoring activity will be included in the overall monitoring questionnaire.

9. If the Sub-Committee opts for option 2, it is invited to consider whether the trade-related questionnaire should be administered every two years or every four years.

OTHER MONITORING ACTIVITIES

10. In addition to the trade-related questionnaire, the monitoring activity could also, as necessary, focus on specific aspects of Article 11 (Post-Harvest Practice and Trade) that the Sub-Committee determines will benefit from more detailed monitoring. The benefit of this approach is that it permits a more careful consideration of specific challenges FAO Members face in implementing specific components of Article 11 of the Code.

SECRETARIAT RECOMMENDATION

11. The Secretariat recommends option 2 for the trade-related monitoring activity. Under option 2, a separate trade-related questionnaire is developed and sent to FAO Members. This will require FAO members to complete two questionnaires (the overall monitoring questionnaire and the trade-related questionnaire) but will allow for a more in-depth monitoring activity in relation to Article 11. Option 2 will also permit the monitoring activity to be initiated a full two years earlier than under option 1.

12. The Secretariat furthermore recommends that the monitoring activity be undertaken every two years to coincide with COFI.

SUGGESTED ACTION BY THE SUB-COMMITTEE

13. The Sub-Committee is invited to comment on the proposed format and frequency of more detailed monitoring of the trade related aspects of the Code. The Sub-Committee is, in particular, invited to comment on the Secretariat's recommendation to develop a separate questionnaire for Article 11 of the Code and to undertake the monitoring activity every two years.

Appendix 6

COFI Sub-Committee on Fish Trade final report conclusions on monitoring Code implementation (2008, unpublished)

MONITORING IMPLEMENTATION OF ARTICLE 11 OF THE CODE OF CONDUCT FOR RESPONSIBLE FISHERIES (CCRF) – Agenda Item 11

55. The Sub-Committee agreed that a separate questionnaire should be developed to monitor implementation of article 11 of the Code of Conduct for Responsible Fisheries. The questionnaire will be distributed to FAO members in the first half of 2009 and the results will be discussed by the Sub-Committee at its 12th session in 2010.

56. The Sub-Committee requested that the questionnaire be biennial and updated to reflect current developments and the dynamic nature of trade in fish products. Questions should also be well targeted in order to avoid wide interpretation. The Sub-Committee noted the need to analyze the responses in a manner that will help identify priority work areas.

57. It was agreed that it will be useful for the Sub-Committee to monitor the effectiveness of the separate questionnaire

Appendix 7

Estimated cost of MS Excel spreadsheet questionnaire

Task	Working months		Cost (US\$)	
	min.	max.	min.	max.
Design, production and testing of questionnaire and Excel spreadsheets in three languages	1.5	2.0	7 500	10 000
The design of the storage DB and development of the procedure consolidating all countries data	0.3	0.5	1 732	2 309
The design of the procedures enabling calculation of summary statistics, and publishing of resulting tables and graphs	0.5	0.7	2 309	3 464
The design of the parameter-driven procedure(s) enabling production of customized summary country reports (20 to 30 graphs)	0.5	1.0	2 500	5 006
The development of the parameter-driven procedure(s) enabling production of customized summary country reports (20 to 30 graphs)	2.0	3.0	10 006	15 012
Documentation (import/export/procedure operation instructions, test cases and development notes.)	0.5	0.7	2 309	3 464
Contingencies - 5%	-	-	1 318	1 963
Total development costs	5.3	7.9	27 675	41 218
FAO Standard Project Support Cost - 13%	-	-	4 135	6 159
TOTAL	5.3	7.9	31 810	47 377

Estimate of minimum and maximum cost of developing the new system (one month cost estimated at US\$5 000)

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