



منظمة الأغذية  
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联合国  
粮食及  
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Food  
and  
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Organization  
of  
the  
United  
Nations

Organisation  
des  
Nations  
Unies  
pour  
l'alimentation  
et  
l'agriculture

Продовольственная и  
сельскохозяйственная  
организация  
Объединенных  
Наций

Organización  
de las  
Naciones  
Unidas  
para la  
Agricultura  
y la  
Alimentación

## COMMITTEE ON FISHERIES

### SUB-COMMITTEE ON AQUACULTURE

#### Fourth Session

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### IMPROVING THE PROGRESS REPORTING ON THE IMPLEMENTATION OF THE 1995 FAO CODE OF CONDUCT FOR RESPONSIBLE FISHERIES (CCRF), PROVISIONS RELEVANT TO AQUACULTURE AND CULTURE-BASED FISHERIES

#### SUMMARY

This document comprises two parts: the status of progress in implementing the aquaculture and culture-based fisheries provisions of the 1995 FAO Code of Conduct for Responsible Fisheries (CCRF) as informed by member countries and a proposal to improve global monitoring and reporting by countries of progress in complying with those provisions. Part I describes trends in the progress of implementation, globally and by region, based on comparable data from the 2004 and 2006 surveys. Owing to the low responses and the overall poor quality of information obtained from the questionnaire surveys, it is difficult to comprehend the assistance required by the members in better implementing the CCRF provisions. This provides justification for Part II, which proposes further improvements to the reporting mechanism. The Sub-Committee is invited to comment on the analysis and proposal, to recommend specific follow-up actions to develop and implement the recommended reporting mechanism and to recommend a time frame for the completion of the task.

### TRENDS IN THE PROGRESS OF IMPLEMENTING THE CCRF PROVISIONS ON AQUACULTURE AND CULTURE-BASED FISHERIES

#### INTRODUCTION

1. FAO has been monitoring the implementation of the 1995 FAO Code of Conduct for Responsible Fisheries (hereinafter referred to as the Code or CCRF) with a standard questionnaire distributed to member countries, Regional Fishery Bodies and Non

Governmental Organizations<sup>1</sup>. The questionnaire includes sections on aquaculture, in particular article 9 and some elements in articles 5 and 10.

2. Article 4.2 of the Code states, *inter alia*, that FAO will report to the FAO Committee on Fisheries (COFI) on the application and implementation of the Code. In this regard, the COFI Secretariat biannually reviews the responses received from FAO Members, regional fishery bodies (RFBs), and International non-governmental organizations (INGOs), to a standard questionnaire, on the implementation of the Code, and reports the progress to COFI. The Secretariat of the COFI Sub-Committee on Aquaculture also regularly reviews the progress in the implementation of the Code's aquaculture-related provisions<sup>23</sup> using the same methodology and presents this to the Sub-Committee for discussion and decision. This document is the fourth such report prepared by the Secretariat of the Sub-Committee.
3. This report: i) summarises the reporting from member countries to the 2006 survey and, in order to assess potential improvement, compares it with responses to the 2004 survey, and ii) proposes a new questionnaire and reporting mechanism to improve the reporting process.
4. In 2006, 81 countries<sup>4</sup> (i.e. 55 percent of the countries receiving the questionnaire) responded<sup>5</sup>. This response is slightly better than that of 2004 (67 countries or 45 percent). This increased response may be a consequence of the concerns expressed at the 2005 COFI Session on the low level of reporting. COFI<sup>6</sup> and its Sub-Committee on Aquaculture continue to address the issue related to the number and quality of responses and called for special focus on aquaculture and trade through separate surveys under each Sub-Committee.<sup>7</sup>

<sup>1</sup> 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

<sup>2</sup> FAO 2002, 2003, 2006. Progress made on the implementation of the Aquaculture related provisions of the Code of conduct for responsible fisheries. COFI:AQ/I/2002/4. 8 p.; COFI:AQ/II/2003/4. 8 p.; COFI: AQ/III/2006/3. 11 p.

<sup>3</sup> FAO 2006. Progress made on the implementation of the Aquaculture related provisions of the Code of conduct for responsible fisheries. Third session of the Committee on Fisheries Sub-Committee on Aquaculture, New Delhi, India, 4-8 September 2006. COFI: AQ/III/2006/3. 11 p.

[http://ftp.fao.org/FI/DOCUMENT/COFI/Cofi\\_aq/2006/default.htm](http://ftp.fao.org/FI/DOCUMENT/COFI/Cofi_aq/2006/default.htm)

FAO. 2003. Progress in Implementing the Provisions of the Code of Conduct for Responsible Fisheries (CCRF) relevant to aquaculture and culture-based fisheries. Second Session of the Committee on Fisheries Sub-Committee on Aquaculture, Trondheim, Norway, 7-11 August 2003. COFI:AQ/II/2003/4. 8 p.

[http://ftp.fao.org/fi/DOCUMENT/cofi/cofi\\_aq/2003/y9565e.pdf](http://ftp.fao.org/fi/DOCUMENT/cofi/cofi_aq/2003/y9565e.pdf)

FAO. 2002. Towards Sustainable Aquaculture Development: Progress in the Implementation of Aquaculture-related Provisions of the Code of Conduct for Responsible Fisheries (CCRF). First Session of the Committee on Fisheries Sub-Committee on Aquaculture, Beijing, China, 18-22 April 2002. COFI:AQ/I/2002/4. 8 p.

<http://www.fao.org/docrep/meeting/004/Y3020E.htm>

<sup>4</sup> FAO 2007. Progress in the implementation of the 1995 Code of Conduct for Responsible Fisheries, related international plans of action and strategy. Twenty-seventh Session of the Committee on Fisheries. Rome, Italy, 5 - 9 March 2007. COFI/2007/2.

[http://ftp.fao.org/FI/DOCUMENT/COFI/COFI\\_27/Default.htm](http://ftp.fao.org/FI/DOCUMENT/COFI/COFI_27/Default.htm)

<sup>5</sup> While the report of the 27 session states that: "seventy FAO Members (37 percent of the FAO Members) responded to the questionnaire in comparison to 49 Members for the 2005 report (27 percent of Members)", the number of responses used in the present analysis is higher since all responses, including those coming after closure for COFI were considered. The numbers used here for the 2005 report are slightly higher than those reported to COFI 26<sup>th</sup> for the same reason.

<sup>6</sup> The Working document for COFI 27 session COFI/2007/2 stated that:" Furthermore, it had been proposed that to facilitate a more specialized focus on the Code articles addressing aquaculture development and post-harvest practices and trade that the Sub-Committees on Aquaculture and Fish Trade take responsibility for monitoring the implementation of Articles 9 and 11, respectively. The frequency of monitoring by these two Sub-Committees would be determined by their Members at their next sessions. "

<sup>7</sup> The report of the COFI 27 session states: "...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; and that future Sub-Committee reports presented to COFI would contain information on progress with the implementation of these Articles. (para. 21).

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## OVERVIEW OF RESPONSES BY FAO MEMBERS

5. This document does not include reports from RFBs and INGOs, or FAO<sup>8</sup> actions. The number of responses received for the 2006 questionnaire (81 countries or 55 percent of the countries receiving the questionnaire) limits the analysis that can be done and allows only a broad and, at best, qualitative comparison with the previous set of responses from 67 countries. The document however provides an indication of general trends and needs.
6. Priority accorded to Aquaculture. In 2006, 42 reporting countries (52 percent<sup>9</sup>) considered aquaculture sector development to be a top priority, six more countries than in 2004. The Asian region, unsurprisingly, continues to have the highest number of countries that consider aquaculture as top priority. Four European countries gave aquaculture top priority in 2006, six in 2004. In Latin America and the Caribbean, countries giving highest priority to aquaculture increased from 53 to 57 percent, with 10 countries attributing top priority to this sector. The most significant increase was in Africa: in 2004, 27 percent of African countries attributed high priority to aquaculture, 58 percent in 2006, a sign of expanding regional interest in the sector.
7. Legal and Institutional Framework. Some 56 of 81 responding countries (69 percent) reported having some type of framework, a substantial progress from 2004 when only 21 of 67 countries (31 percent) said so. All regions saw improvements in this area with Africa and Latin America and the Caribbean increasing from 5 in each region in 2004 to 17 in Africa and 15 in Latin America and the Caribbean by 2006. In Asia, it increased from 36 to 82 percent. In some countries, aquaculture is subsumed within the fisheries framework and usually treated separately in the responses. Most responses lacked specificity, which did not permit assessment of the appropriateness or effectiveness of the regulatory frameworks. Nevertheless, some of the following questions shed more light on this issue.
8. Codes of Practice Question 15. Forty-two countries (52 percent of respondents) reported some code of practice being adopted by government agencies; 30 (37 percent) reported some code adopted by producers; 19 percent reported having codes for both suppliers and manufacturers. These represent a significant increase from the 2004 survey, when 30 countries (31 percent) reported having a code adopted at the government level, only 9 percent reporting codes adopted by producers, and a mere 3 percent with codes adopted by suppliers. In 2004, none reported having a code adopted by manufacturers. It varies amongst regions: 11 (100 percent) of responding Asian countries declared having a code of practice adopted by government agencies, only 38 percent of African, 29 percent of European, 56 percent of Latin American, and 33 percent of Near East countries reported having such a code.
9. Environmental Impact Assessment (EIA): Question 16(1). Sixty-three of 81 responding countries (78 percent) declared having an EIA in place, an increase from the 42 (63 percent) in 2004. In 2006, all the countries reporting in Asia, South West Pacific and North America indicated having an EIA for aquaculture. In contrast 42 percent of the countries in Africa, 83 percent in both Latin America and Caribbean and Near East and 71 percent in Europe carry out EIAs before establishing aquaculture operations. The largest increase between 2004 and 2006 was in Africa and Latin America. As to effectiveness, only 11 countries (of the 63 countries reporting EIA across regions) felt that it was “effective” while most countries indicated difficulties and/or deficiencies in the implementation of EIAs. They admitted a slow process in improving the effectiveness of EIAs. The diversity of answers and of requests for

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<sup>8</sup> Most FAO initiatives towards implementing the provisions of CCRF are given in COFI/AQ/IV/2008/2.

<sup>9</sup> All percentage values are referred to the number of responding countries and since this number varied from the 2004 questionnaire to 2006 questionnaire, these values must be considered with care. For this reason, often the total number of member countries responding to a particular question is reported.

assistance related to this topic; partly reveal the lack of indicators or performance appraisal to evaluate “effectiveness” of the EIA process.

10. Monitoring of Operations Question 16(2). Sixty of 81 countries (72 percent) reported having some monitoring in place, from 37 countries in 2004. All of the North American and South West Pacific countries have monitoring in place, while 51 percent of the reporting African countries, 90 percent of the Asian countries, 83 percent of LAC, 67 percent of Near East and 50 percent of European countries have a monitoring system in place. However, only 9 of the 60 countries reporting said monitoring aquaculture operations was “effective”. Most countries averred to various kinds of deficiencies and bottlenecks to an effective monitoring system. The responses revealed that there is no common understanding as to what and how to monitor.
11. Exotics Question 16(3). In 2006, 59 out of the 81 responding countries (73 percent) reported having some provisions to minimize potential impacts from the use of exotic species; it was 36 countries in 2004; 20 percent said such measures were effective. A regional comparison reveals wide differences: the major increase in the application of such measures was in Africa (4 countries in 2004, 13 in 2006), and Latin America (9 in 2004, 14 in 2006). Implementation is widespread in Asia (84 percent of the 11 respondents). All of the reporting countries in North America and South West Pacific indicated having such measures. Africa and Latin America had the largest increase in the number of countries reporting on the different actions covered by this Question but only 17 percent (11) of the countries reporting such measures in 2006 said they were “effective”.
12. Promoting responsible aquaculture in support of rural communities, fish farmers and other stakeholders Question 17. The diverse responses -- in terms of content, elements and scope -- were organized into four categories: i) institutions (that included policies, strategies, norms, regulations); ii) farming technologies and training; iii) public infrastructure and facilities (e.g. state owned hatcheries) and iv) economic support to farmers. The answers to 17 (a), which solicits information on the assistance required to implement each of the above-mentioned measures, were likewise organized into the same categories to facilitate comparative analysis.
13. In 2006, 60 countries (i.e. 76 percent of the reporting countries) indicated having implemented institutional measures, 40 (49 percent) reported introducing technology and training measures and 24 (30 percent) affirmed the implementation of both infrastructure/facilities and economic support, respectively.
14. Ten of 11 Asian respondents (91 percent) confirmed the adoption of such measures in 2006; the greatest interest was in technology and training assistance (73 percent) while little interest was expressed for economic support (9 percent); there was no report of specific measures for economic support to farmers.
15. Eighteen African respondents (69 percent) have implemented institutional measures while 50 percent require assistance. Some 46 percent indicated having implemented measures related to technology and training; this constituted the largest proportion of requests for assistance from Africa. Additionally 31 percent of the reporting countries indicated having established public infrastructure/facilities and 35 percent implemented economic support measures to farmers. Compared to other regions, Africa had the most requests for assistance in these two areas (10 countries in each case).
16. In Latin America and the Caribbean, 67 percent of the respondents indicated having implemented institutional measures and 61 percent in technologies or training. These two areas account for the largest request for assistance (56 percent and 67 percent, respectively). Measures on infrastructure/facilities and economic support were less important (22 and 28

percent, respectively); level of assistance required in these areas was low (22 and 28, percent respectively).

17. Twelve European countries (57 percent of respondents) implemented institutional measures: 50 percent on technologies/training, 57 percent on public infrastructure/facilities and 57 percent on economic support.
18. All four of the South West Pacific respondents implemented institutional measures. Two requested assistance in this area, one implemented technology and training measures and one also requested assistance in technology and training. Two countries in North America confirmed having implemented institutional measures; one reported the implementation of technical and training measures.
19. In summary, over the past biennium, the surveys showed some progress on the implementation of CCRF provisions for aquaculture and culture-based fisheries. However, the low level of response and its quality has not permitted the formulation of a representative analysis of the sector globally. Therefore, it is considered important and timely to improve the reporting procedure.

### **IMPROVING REPORTING OF THE IMPLEMENTATION OF AQUACULTURE AND CULTURE-BASED FISHERIES PROVISIONS OF THE CCRF**

#### **INTRODUCTION**

20. Although FAO has been monitoring the implementation of the CCRF using the responses received from the member countries to a standard questionnaire, the declining rate of responses, irregular reporting and the poor quality of responses did not allow the Secretariat to conduct a detailed assessment of the overall progress made globally, by region, or by country.
21. Therefore, it is proposed that a new CCRF reporting mechanism on aquaculture and culture-based fisheries provisions be established with minimum cost to member countries and FAO using an instrument which could:
  - increase the number of reporting countries;
  - enhance the quality (reliability and validity) of the reports;
  - advocate the use of the reports as an assessment and management tool for countries themselves and for strengthening FAO's assistance to members; and
  - promote the implementation of CCRF aquaculture provisions by countries.

#### **SITUATION ANALYSIS**

22. The reporting of CCRF compliance since inception has been generally characterized by:
  - irregularity of feedback from countries;
  - inadequacy of the information received through the responses to questionnaire;
  - difficulty in providing a meaningful analysis of the trends and progress in implementing the provisions, mainly due to the way that the questions are framed; and
  - a number of countries with significant contribution to global aquaculture production not responding at all to the questionnaire or responding irregularly.

#### **REVISED REPORTING MECHANISM**

23. There are two purposes for revising the reporting mechanism:

- The information generated should enable the responding fisheries/aquaculture development agency to develop or revise, for its own monitoring and planning purposes, a reliable and comprehensive set of data and information. The current state of implementation of the CCRF, based on quantitative indicators and standardized qualitative statements should be benchmarked against a standard “most desirable state of implementation”. Strategies and actions towards achieving the above should be identified and prioritized. The approximate level of resources required should be estimated;
- The information provided should be adequate in order to understand and estimate the level and type of assistance required by a country or a group of countries in improving implementation of the Code’s provisions.

### **INFORMATION ON STATUS OF COMPLIANCE: RELEVANT FEATURES**

#### **Categories of information**

24. The information gathered through the new questionnaire system should provide an indication of the status of governance or management of the sector, to include:
  - command-and-control instruments (laws and regulations, government directives, guidelines, ordinances);
  - market-based instruments (market-based incentives, taxes, tradable permits, environmental/habitat restoration fund, reclamation fund, etc.); and
  - voluntary or self management/regulatory instruments (standards, Better Management Practices (BMP), Codes of Conduct, Good Aquaculture Practices, Co-management, and organized farmer groups, associations, or cooperatives adopting these codes or BMPs and monitoring their members’ compliance).
25. The information on the current state of development and implementation of these instruments and mechanisms will indicate a country’s status of compliance with CCRF. To better understand the progress of implementation, such information can be sorted into three categories:
  - essential mechanisms, without which aquaculture cannot be managed within the CCRF framework;
  - enabling mechanisms, that are necessary to support the implementation of the basic governance instruments, and
  - enhancing measures or mechanisms to further improve the overall management of the sector.

#### **Indicators of the implementation status of the governance mechanisms**

26. It is important to describe the status of the governance of the sector at a specific period of time (when the questionnaire is compiled). In this respect, a benchmark status (“most desirable level of management”) is defined against which the governance status could be compared and assessed. Comparisons should preferably be quantitatively expressed. To this end, an index should be developed giving a numerical representation of a certain state of implementation of the provisions. For instance, a scale of 1 to 5 could be established with “1” representing “nothing has been done” or “no implementation of the CCRF provisions has been taken place” and “5” representing a perfect or very close match with the benchmark or “the most desirable level of implementation” or “Ideal Status ”.
27. This scheme of benchmarking and developing criteria for the status of implementation of the CCRF would enable a country to verify the extent of its implementation in reference to the benchmark statement – “the most desirable level of implementation” (or the “Ideal Status”).

28. What would emerge from such a description is the “**status of implementation of the CCRF provisions**” of one or a group of linked management mechanisms. For instance, a preponderance of 5s and 4s in a group of command-and-control mechanisms would mean, for example, that the “country has the necessary policy and laws for a high level of implementation of the CCRF” or that “the capacity of institutions providing regulatory services is significantly strong”.

#### **Immediate self-assessment**

29. The third important attribute of the information gathering instrument is that it will enable the country to make its own assessment as to why it is at a certain level or status of implementation. An analytical protocol built into the instrument can provide a feedback of the status.
30. The questions could be closed ended. Or they could be a mix of closed-ended and open-ended questions with the latter having a menu of possible answers.
31. Another set of questions should elicit specific assistance needed to move up to the next desirable level or levels of the Code’s implementation.
32. A synthesis of the reported reasons for low or high level of management would give FAO and the global and regional aquaculture communities’ indications of common constraints to address.
33. Finally, FAO’s analyses could (a) indicate the contributions of various provisions of the code to levels of aquaculture performance; and (b) bring attention to key shortcomings in national, regional or global efforts to develop aquaculture. The analytical product would be a valuable awareness raising tool as well as a powerful mechanism for improving the public image on aquaculture. It would also make capacity building assistance more targeted. FAO could carry out these analyses on a global, regional, or country-cluster level.

#### **PROSPECTIVE ANALYSIS OF A MORE EFFECTIVE AQUACULTURE-CCRF IMPLEMENTATION REPORTING MECHANISM**

34. There are two basic factors inherent to the reporting mechanism that need to be considered, namely, the effectiveness of the information-gathering instrument and the efficiency of the entire reporting process. Other factors that are crucial to the reporting process but not inherent in the information-gathering instrument include perceptions of ownership and of benefit from replying to the questions.

#### **Proposed system**

35. It is proposed to establish an interactive questionnaire format (using CD-ROM-based format or via the Internet) that would transform the one-dimensional paper (or electronic version) format into a multidimensional Question and Answer format. An analytical protocol should be built into this instrument to provide the responding agency immediate feedback. Structured effectively, an interactive format would yield higher quality and clearer responses.

#### **Increase the response rate and improve the quality**

36. This new CD-ROM/Internet-based format could be more convenient for returning the responses as compared to the existing paper-based questionnaire. Countries with good Internet accessibility could easily access and respond to the questionnaire, while other countries can use the CD-ROM-based version. Responses can be transmitted in various modes i.e. uploaded on the web, emailed, or the CD-ROM sent by mail.

### **Improve reporting of aquaculture-CCRF implementation by countries**

37. The new mechanism would allow countries and reporting agencies to use it for self-monitoring, diagnosis, and rapid assessment of the country's status of implementing the CCRF provisions. This will help them design measures to address critical constraints as well as provide justification for requesting more resources from the government or from donors, regardless of whether the indicators show low or high performance.

### **Improve the use of the reports as an assessment and management tool for countries and for FAO**

38. The attribute as described above applies to this objective. The analytical protocol built into the instrument enables a rapid analysis and, therefore, a more timely provision of information to the country and FAO. The information stored and maintained in FAO and shared between FAO and each individual country would enable a trends analysis i.e. a moving picture of the progress of implementation by country. It will allow for a more targeted and focused assistance to the country, as well as to a cluster of countries or a region.

### **Improve the implementation of CCRF by countries**

39. A reliable and timely set of information is an essential requirement for better management. The proposed system would fulfill this requirement. As it would rapidly and reliably provide information for decision-making, a member or a particular agency would find it a useful addition to its decision tools suite. Each entity could use the system for its own purposes without waiting for the next COFI reporting cycle.
40. In sum, there is merit in developing a new reporting mechanism, as described based on the concept described here. The cost of developing it would probably be higher than the status quo<sup>10</sup> but the benefits outlined above justify the additional cost. Once developed, there will be little or no additional cost of running the system.

## **ROLES AND INVOLVEMENT OF REGIONAL FISHERIES AND AQUACULTURE BODIES AND NON GOVERNMENTAL ORGANIZATIONS**

41. COFI/AQ/III suggested greater involvement of regional fisheries and aquaculture bodies for the development of analytical reviews of CCRF implementation<sup>11</sup>, providing opportunities for more detailed recognition and appraisal of issues and trends at the regional levels and a more dynamic, closer and regular contact with responsible national authorities. Such functions can be improved and enhanced with the proposed reporting mechanism.
42. There appears to be, in general, two roles of such bodies in the reporting of Code compliance: (i) reporting on their activities to promote implementation and (ii) identifying what they and the countries (which are their members, or their clients, or some of which stakeholders in the aquaculture sector are their clients) need to do more. These are linked because the first one also indicates what they perceive as critical needs or gaps to address.
43. While both RFMOs and NGOs have identified broad areas for improvement, such as the introduction of social and environmental impact assessments, promotion of eco-labelling schemes with environmental audits, etc., it can be argued that a more useful source of information would be one which reflects the extent to which these are being addressed and whether they could be approached more efficiently under the proposed levels or domains,

<sup>10</sup> This would mean using the current questionnaire but administered only for aquaculture

<sup>11</sup> COFI/AQ/III Report



“essential”, “enabling” and “enhancing” (a set of benchmarking criteria is suggested in Appendix 1).

#### **IMPLEMENTATION OF THE NEW REPORTING SYSTEM**

44. The new reporting system can be developed and tested in a region or sub-region during the next biennium and results reported to COFI/AQ/V (2010) for adoption after modifications and improvements suggested by the trial.

#### **TIMING OF REPORTING**

45. It is proposed that detailed reporting, with specific reference to each of the measures under each level or domain (Essential, Enabling and Enhancing), be requested every four years.
46. Every two years a summary of the status of implementation of each provision could be requested. However, countries may conduct the self-assessment process (using the questionnaire as is, or a revised version to suit their particular purposes and needs) as often as they think practicable and needed. This would also facilitate responding to the survey.
47. COFI shall receive the summary of the responses focusing on the three levels or domains, improvements in implementation, and required assistance.

#### **SUGGESTED ACTIONS BY THE SUB-COMMITTEE**

48. The Committee is invited to deliberate on this important issue and in light of the presentation:
- comment on (i) the analysis, (ii) proposed reporting mechanism, (iii) suggested benchmarking criteria, and decided on the proposal;
  - recommend specific follow-up actions to develop and implement the recommended reporting mechanism; and
  - recommend a timeframe for the completion of the task.

## Appendix 1

**STATUS OF COMPLIANCE TO CCRF PROVISIONS IN AQUACULTURE AND CAPTURE BASED FISHERIES**

- 5 - Country status matches exactly or is very close to the benchmark statement  
 4 - 60-70% implementation or 60-70% match with the benchmark statement  
 3 - 50% implementation or 50% match with the benchmark statement  
 2 - 30-40% implementation 30-40% match with the benchmark statement  
 1 – Non-existent or less than 20% match with the benchmark statement

No.	Benchmarking criteria	1	2	3	4	5
<b>ESSENTIAL</b>						
1	A national aquaculture development plan is nationally implemented and fully covers all aquaculture areas and production/culture systems					
2	Legislations in support of aquaculture development plan promulgated and strongly enforced					
3	Legislation governing introduction of alien, exogenous species is promulgated and implemented strictly.					
4	Risk assessment is required and always carried out on the introduction of species					
5	Risk assessment is always carried out in the movement of live aquatic animals within the country					
6	Rules and regulations on the introduction and use of transgenic/ genetically altered species are strictly enforced					
7	Environmental impact assessment is required for applications to establish or expand aquaculture farms, cages, hatcheries					
8	Aquaculture production zones have been established and developed					
9	Zoning regulation is strictly enforced					
10	All aquaculture farms, including hatcheries are registered					
11	Banned chemical, antibiotics and other substances are prohibited and penalties strictly enforced.					
<b>ENABLING</b>						
1	Monitoring of input supplies such as feed and chemicals is carried out to prevent banned substances					
2	Monitoring of aquaculture impacts on environment always carried out					
3	Monitoring of aquaculture products safety and quality always carried out					
4	Independent, competent body to monitor aquaculture operations is established, adequately and fully operational					
5	Farmers associations are organized, strong and independent					
6	Social impact assessment is carried out					
7	Eco-labelling in place/being developed					
8	Good aquaculture practices/better management practices/ code of conduct developed and adopted					
9	Conflict resolution mechanism between aquaculture farmers and non-aquaculture sectors is in place.					
10	A national research system is in place and studies are carried out to support sustainable/responsible management of aquaculture					
11	A national extension is in place and fully operational with programmes in support of responsible management of aquaculture.					

## Appendix 1 Continued...

No.	Benchmarking criteria	1	2	3	4	5
<b>ENHANCING</b>						
1	Farmers associations voluntarily adopt better management practices					
2	Farmers associations are consulted by government in development of policies and formulation of legislation					
3	NGOs are consulted in policy formulation on aquaculture					
4	A tax on pollution from aquaculture is imposed					
5	An environmental and social insurance scheme is in place					
6	An environmental or habitat restoration fund is required					
7	Replanting of mangroves is required by regulation					
8	Replanting of mangroves is provided in better management practice or code of practice					
9	Incentives are offered for adopters of better management practices/good aquaculture practices/codes of conduct for responsible (shrimp, marine fish cage, fish) culture					
10	Valuation is undertaken of mangroves, wetlands, salt marshes, and coral reef resources					
11	Aquaculture insurance is in place and is also used to encourage adoption of better management practices					
12	Co-management of aquatic resources is practiced.					