

REGIONAL COMMISSION FOR FISHERIES

Report of the

SECOND SESSION OF THE RECOFI WORKING GROUP ON FISHERIES MANAGEMENT

Cairo, Egypt, 27–30 October 2008



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PREPARATION OF THIS DOCUMENT

This is the final report of the second session of the RECOFI Working Group on Fisheries Management that was held at the FAO Regional Office for the Near East in Cairo, Egypt, from 27 to 30 October 2008.

FAO.

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ABSTRACT

This document contains the report of the second session of the RECOFI Working Group on Fisheries Management, which was held in Cairo, Egypt, from 27 to 30 October 2008. The Working Group addressed important issues including the election of the Chairperson and Vice-Chairperson; the adoption of the agenda and arrangements for the session; the improvement of the utility and diffusion of fisheries statistical data among RECOFI Members; the transition of the Working Group on Statistics to the Working Group on Fisheries Management, including the adoption of terms of reference for the Working Group; the identification and establishment of priorities for a future plan of work for the Working Group; the consideration and adoption of terms of reference for fisheries management focal points to support the activities of the Working Group; the need for enhanced stock status reporting; the demonstration and review of several statistical applications; the consideration of other matters, the date and place of the third session of the Working Group and the adoption of the report. It will be forwarded to the fifth session of RECOFI for deliberation at its next meeting in May 2009 in the United Arab Emirates.

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OPENING OF THE SESSION

1. The second session of the Regional Commission for Fisheries (RECOFI) Working Group on Fisheries Management was held at the Food and Agriculture Organization of the United Nations Regional Office for the Near East, Cairo, Egypt, from 27 to 30 October 2008.
2. The session was attended by 11 representatives from seven FAO Members from the Near East Region. A list of representatives is attached as Appendix B.
3. Dr Piero Mannini, Senior Fisheries Officer and RECOFI Secretary, FAO Regional Office for the Near East, Cairo, Egypt, called the session to order. He welcomed the representatives and FAO colleagues noting that the documents for the Session had been available on the RECOFI Web site since early September 2008.
4. In addition, Dr Mannini reminded the meeting that delegates had been nominated by their respective governments and therefore would be representing their governments in the Working Group. He also advised the meeting that the representatives from the Islamic Republic of Iran were unable to attend the meeting. Dr Mannini added that a communication received by the Secretariat indicated that the Islamic Republic of Iran underscored the need for common approaches to fisheries management in the RECOFI region and noted that the country desired to maintain constructive relations with the Commission.
5. To facilitate the work of the Working Group, the Secretariat distributed the Agreement for the Establishment of the Regional Commission for Fisheries in Arabic because a number of the documents being discussed in the meeting referred to the Agreement. Copies of the 1995 Rome Consensus on World Fisheries and the 1999 Rome Declaration on the Implementation of the Code of Conduct for Responsible Fisheries adopted by FAO Ministerial Conferences were distributed also as background information.
6. Dr Mannini then read a statement on behalf of Dr Mohamad Ibrahim Albraithen, Assistant Director-General and Regional Representative for the Near East, FAO Regional Office for the Near East, Cairo, Egypt. *Inter alia*, the statement noted that the Working Group had been renamed and its mandate broadened and strengthened at the last RECOFI Session. Mr Albraithen's statement is in Appendix D.

ELECTION OF CHAIRPERSON AND VICE-CHAIRPERSON

7. Mr Saleh Z. Al-Hinai, Director of International Cooperation, Ministry of Fisheries Wealth, Muscat, Oman, was nominated as Chairperson of the Working Group by the representative of Bahrain and Mr Jassim S. Al-Mohammady, Assistant Director, Department of Fisheries, Doha, Qatar, was nominated as Vice-Chairperson by the representative of Kuwait. By acclamation both nominations were endorsed unanimously by the Working Group.
8. The Chairperson and Vice-Chairperson expressed their gratitude to the Working Group for the confidence in electing them to the bureau.
9. The meeting agreed that the Chairperson and Vice-Chairperson would serve for a period of two years and that for reasons of continuity and effectiveness, the Vice-Chairperson would assume the position of Chairperson upon the retirement of the incumbent. This would mean that at each regular session of the Working Group only a Vice-Chairperson would be elected.

ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION

10. The Agenda, attached as Appendix A, was adopted. The Working Group agreed to modify the timetable for the session, mindful of the heavy agenda that the Working Group had to deal with during the session. The list of documents for the session is attached as Appendix C.

IMPROVING THE UTILITY AND DIFFUSION OF FISHERIES STATISTICAL DATA AMONG RECOFI MEMBERS

11. The Secretariat introduced document RECOFI:WGFM2/2008/2 and made a presentation entitled “Summary report of improving the utility and diffusion of fisheries statistical data among RECOFI Members”. It is attached in Appendix E. The underlying concept in the presentation was to outline short- and medium-term actions to be undertaken to make present and future data collection programmes more suitable for fisheries management and regional studies. The presentation summarized fisheries statistical activities that were undertaken by the RECOFI Secretariat in the first half of 2008 including (i) a comprehensive desk study on fisheries statistical development in the region, (ii) new programmes for the statistical analysis of time series and (iii) proposals for improving the quality and comparability of collected statistics at both national and regional levels.¹

Review of national data collection systems

12. The first topic was a general review of fisheries statistical programmes currently operated in the region, with specific focus on aspects of data completeness, reliability and timeliness. The major outcome was that a systematic evaluation of all national statistical programmes should be undertaken in the foreseeable future with the purpose of providing national authorities with realistic recommendations for improving the performance of their fishery statistical programmes and facilitating data harmonization at the regional level.

13. A number of issues were raised by representatives concerning the type, geographical coverage and duration of the evaluation exercise, as well as its cost implications for Members. It was pointed out that this activity would involve all RECOFI Members which would be visited by an international expert over a period of two months. The terms of reference for the study are attached in Appendix F.

14. The evaluation of national data collection systems had been envisaged at the last session of the Commission and had not yet been implemented.

Data harmonization and integration

15. Harmonization aspects at the regional level were discussed with the view of expanding the present capture fisheries database to also include data on fleet and fishing effort. The Secretariat made a number of observations pointing to the need for RECOFI Members to intensify their efforts for further harmonization and integration of statistical data to use them more effectively for studies relating to fisheries management at the regional level.

16. With respect to the draft questionnaires for catch-effort-fleet data prepared by the Secretariat for feedback information to be obtained by RECOFI Members, the Working Group found that the section dealing with boat categories was not easily adaptable to the variety of fishing vessels operating in each national fishery. Representatives requested that a simple questionnaire should be prepared by the Secretariat with the purpose of describing national fisheries in a standard format and facilitating subsequent transcription of information on the presented questionnaires.

¹ The full text of the document is in RECOFI:WGFM2/2008/Inf.4.

17. The Secretariat prepared the requested questionnaire, explained its purpose and use and suggested that the representatives complete and submit it before the end of the meeting. It was emphasized that expanding the scope of the existing capture fisheries database was important on the grounds that exploitation indicators based solely on catch data would be of limited use for fisheries management studies.

18. The Secretariat consolidated the results of the questionnaire during the session. The consolidated results are given in Appendix G. The results summarized information by country relating to the types of fisheries, gears used, types of boats employed, whether boats and fishers were licensed and data collection systems used. The Working Group considered this as a useful starting point to develop regionally harmonized data and agreed to further elaborate the information intersessionally so that it could be presented at the Workshop to Develop Stock Status Reporting in the RECOFI region in July 2009.

19. The meeting recognized the benefits resulting from the establishment of an expanded regional database and agreed to such a development. Representatives were informed that the activity was already part of the envisaged programme of work for the Working Group on Fisheries Management, including indicative costs and tentative implementation dates.

Analysis of RECOFI catch time series

20. Three new analytical statistical systems were demonstrated. The first categorized catch time series into groups of similar shapes and produced summary statistics of catch patterns without the need to go through records and visually identify the shape of each time series. The second application compared the level of fisheries landings of species of high importance over two different periods of time. The third system was an adaptation to RECOFI region of a visual and intuitive statistical tool that was developed by the Secretariat.

21. Several questions were raised in the Working Group in relation to the methodological and operational aspects of the presented applications. The importance of the quality of source data was again emphasized and the meeting recognized that these and other analytical tools should be used with caution and with good knowledge of the data in use, so as to avoid misinterpretation of the results.

MAKING THE MOVE: THE TRANSITION OF THE WORKING GROUP ON STATISTICS TO THE WORKING GROUP ON FISHERIES MANAGEMENT, INCLUDING THE ADOPTION OF TERMS OF REFERENCE FOR THE WORKING GROUP ON FISHERIES MANAGEMENT

22. The Secretariat introduced document RECOFI:WGFM/2008/3 and made a presentation entitled "Making the move: the transition of the Working Group on Statistics to the Working Group on Fisheries Management, including the adoption of terms of reference for the Working Group on Fisheries Management". It is attached as Appendix H. The presentation reviewed, *inter alia*, the 2004 RECOFI decision to rename the Working Group from the Working Group on Statistics to the Working Group on Fisheries Management and discussed the expanded and strengthened role of the Working Group.

23. The Working Group considered the draft terms of reference. The Secretariat pointed out that they had been drafted in a conventional manner moving from general to specific statements. The terms of reference incorporated relevant aspects of the 1995 FAO Code of Conduct for Responsible Fisheries and its related documents and other international instruments as well as the fisheries management provision of the Agreement for the Establishment of the Regional Commission for Fisheries. It was noted that the terms of reference should be forward looking in character, adaptable and able to deal with emerging issues in fisheries. It was underscored that they should be seen as a "living document" that could be reviewed and amended by the Working Group as fisheries conditions in the region changed.

24. There was extensive discussion on the terms of reference and amendments were made. The Working Group welcomed the expanded role requested by the Commission to cater for biological, statistical social, economic, policy, legal and institutional aspects of fisheries management. The Working Group agreed that the terms of reference would facilitate more effective regional cooperation in fisheries including the harmonization of policies and approaches to conservation and management.

25. The terms of reference for the Working Group on Fisheries Management agreed by the meeting were as follows:

Terms of reference for the Working Group on Fisheries Management

The Working Group on Fisheries Management shall, taking into account the 1995 FAO Code of Conduct for Responsible Fisheries and its related documents and other international instruments, as appropriate:

1. Exercise the role and functions conferred on the Working Group by RECOFI including the consideration of biological, statistical, social, economic, policy, legal and institutional aspects of fisheries conservation and management with a view to ensuring the long-term sustainable development of resources in the region, and

2. Provide technical and scientific advice to RECOFI.

Specifically, the Working Group on Fisheries Management shall:

- review the state of fisheries, including the state of resources, making recommendations for appropriate research and development activities in support of better management and sustainable fisheries, as well as the rebuilding of stocks;
- review on a regular basis national statistical systems and outturns, as appropriate, to enhance and harmonize fisheries data on a regional basis;
- formulate recommendations for the implementation of conservation and management measures that will be applied in conformity with the precautionary approach to fisheries, taking account of the best scientific evidence available and the need to promote the development and proper utilization of fisheries resources;
- assess the need for harmonized conservation and management measures and formulate recommendations as appropriate, including to:
 - regulate fishing methods and fishing gear;
 - prescribe minimum sizes for particular species;
 - establish open and closed fishing seasons and areas;
 - implement marine protected areas;
 - regulate bycatch and discards;
 - prevent, deter and eliminate illegal, unreported and unregulated (IUU) fishing;
 - manage fishing capacity; and
 - regulate the amount of total catch and fishing effort and their allocation among Members.
- identify major fishery-related issues and emerging trends for fisheries management practice, including the ecosystem approach to fisheries, and make recommendations, as appropriate, for follow-up action;
- identify and apply, as appropriate, a set of regionally-agreed indicators for sustainable fisheries development;
- promote closer regional cooperation and collaboration in fisheries conservation and management, including through coordinated and harmonized policies and programmes relating to fisheries legislation, acceptance and implementation of international fisheries

instruments, adoption of fisheries and management measures and monitoring, control and surveillance (MCS) including vessels monitoring systems (VMS);

- monitor and report on adverse impacts induced by human-made activities on fisheries and their long-term sustainable management and utilization, as appropriate, and make recommendations concerning remedial measures and action;
- encourage human capacity building and institutional strengthening and enhance extension services in all aspects of sustainable fisheries management and utilization, including making recommendations for appropriate regional programmes;
- assemble, publish and disseminate information concerning the state of the region's fisheries;
- promote collaboration with other regional and international organizations, as appropriate, to enhance the sustainable fisheries management and utilization in the region; and
- undertake other activities relating to fisheries management considered important and appropriate by the Working Group or as directed by RECOFI.

The Working Group on Fisheries Management may review these terms of reference from time to time and make recommendations for their amendment, as appropriate, to RECOFI.

IDENTIFICATION AND ESTABLISHMENT OF PRIORITIES FOR A FUTURE PLAN OF WORK FOR THE WORKING GROUP ON FISHERIES MANAGEMENT

26. The Secretariat introduced document RECOFI:WGFM/2008/4 and made a presentation entitled "Identification and establishment of a regional strategy and priorities for a future plan of work for the Working Group on Fisheries Management". It is attached as Appendix I. It focused on the elaboration of a regional strategy, priorities, activities and projects to develop a programme of work for the Working Group. The meeting noted that the programme was dynamic in character and that it should be reviewed periodically to ensure that it remained relevant and up-to-date. The meeting also reviewed a draft list of activities for the RECOFI Working Group on Fisheries Management. The meeting was advised that the list would be an important aid in assisting the Working Group plan and implement its future programme of work. It was further noted that the list should be revised on a regular basis.

27. The Working Group considered both documents. With respect to the draft regional strategy and priorities for regional management, the number of priorities was reduced to seven, regional activities were extended, several new regional projects elaborated, projects ranked and major outputs for each project specified. It was noted that several of the projects had already been considered by RECOFI and notes to this effect were included in the document. All funding sources for the projects were indicated as "to be identified" because the Working Group opted to seek direction from the Commission on this matter at its next session. The Working Group agreed that it would review this document at each regular session of the Working Group so as to ensure that it remained current.

28. In its deliberations, the Working Group identified trade as an important issue that should be kept under review. Although not developing a project to support this priority at the meeting, the Working Group noted that little progress had been made to address trade issues in the region. The meeting noted that there were some unmonitored movements of fish in the RECOFI region that provided challenges for Members for the sustainable management of their fisheries.

29. There was extensive discussion about the importance of the ecosystem approach to fisheries and in particular its application in the region. The Secretariat advised the Working Group that the FAO Regional Office for the Near East (RNE) had planned tentatively to hold, in Egypt in late 2009, a regional multidisciplinary workshop on the ecosystem approach to sustainable fisheries and aquaculture development in the region facing climate change. This workshop would embrace the RECOFI membership and for this reason the Secretariat expressed the view that it would not be necessary for the Working Group to include an activity of this nature in its work plan.

30. The multidisciplinary workshop would be a major RNE activity. The workshop would seek to develop greater awareness among countries and stakeholders in the region concerning the need for an ecosystem approach to fisheries and aquaculture and to its implementation on the basis of the best knowledge and information available. It would also strive to strengthen the capacity of countries, including RECOFI Members, to plan and implement the ecosystem approach to fisheries and improve knowledge and awareness of the current and future implications of climate change for fisheries and aquaculture. Furthermore, the workshop would provide guidance on best practices for adaptive planning and management and adaptive strategies in general for coping with climate change.

31. The Working Group recognized that it had proposed a robust suite of integrated activities to be undertaken over the period from 2008 to 2011. These activities were costed at approximately US\$300 000. Discussion focused on ways and means to fund them and a range of options were considered. These options included the possibility of increasing assessed contributions, encouraging extrabudgetary voluntary contributions from Members and attempting to secure contributions from the international donor community. Some representatives noted the possibility of obtaining funds from regional banks, the private sector and other sources. The meeting acknowledged that it would probably be necessary to use a mix of these funding options to secure the required level of funds. However, the Working Group stressed that decisions relating to funding rested with RECOFI. The meeting encouraged the Commission to consider this matter at its 2009 session because without adequate funding it would not be possible to implement the work plan agreed by the Working Group.

32. The Working Group recognized that the list of activities for the RECOFI Working Group on Fisheries Management (2008–2011) would assist in forward planning and requested the Secretariat to update it for each regular session of the Working Group.

33. The Working Group proposed the RECOFI Regional Strategy and Priorities for Regional Fisheries Management (Work Plan) and the List of Activities for RECOFI Working Group on Fisheries Management (2008–2011), attached in Appendixes J and K, respectively.

TERMS OF REFERENCE FOR FISHERIES MANAGEMENT FOCAL POINTS TO SUPPORT THE ACTIVITIES OF THE WORKING GROUP ON FISHERIES MANAGEMENT

34. The Secretariat introduced document RECOFI:WGFM/2008/5 and made a presentation entitled “Terms of reference for fisheries management focal points to support the activities of the Working Group on Fisheries Management”. It is attached as Appendix L. It was noted that RECOFI Members had already nominated national focal points and focal points for aquaculture. Similar focal points were required to support the work of the Working Group on Fisheries Management.

35. The Working Group underscored the important role to be played by national focal points for fisheries management in the intersessional periods. However, it was stressed that like the national focal points for aquaculture, the national focal points for fisheries management should coordinate their activities under the national focal points for the Commission. In this way national focal points would ensure that national activities and communications with the Secretariat were synchronized.

36. An important activity for national focal points would be the receipt and dissemination of information in relation to RECOFI and other matters (e.g. important FAO meetings such as the Committee on Fisheries and new publications). It was pointed out that a network of national focal points and alternate focal points could be established to disseminate information of interest. Using this network, focal points could also transmit information to, and received information from, focal points in other countries.

37. The draft terms of reference for the focal points for fisheries management were reviewed by the Working Group. The meeting recognized that the terms of reference could be revised as the Working Group saw fit to cater for changing conditions and circumstances. The meeting was

reminded that Members should nominate national focal points for fisheries management and alternative national focal points to the RECOFI Secretary no later than 1 December 2008. In the event that a Member did not notify the Secretariat of these nominees, the Secretary will select, as an interim measure, the most senior representative from delegations attending the Working Group as the national focal point for fisheries management.

38. The meeting agreed to the following terms of reference for national focal points for fisheries management:

Terms of reference for the national focal points on fisheries management

The national focal points on fisheries management will:

- promote the activities of the Working Group, especially in the intersessional periods;
- disseminate information concerning fisheries management nationally;
- facilitate the exchange of information relating to conservation and management in the region;
- promote and enhance regional cooperation among Members and the harmonization of conservation and management measures;
- bring national conservation and management issues to the attention of the Working Group;
- advise on, and assist in the formulation of, *inter alia*, work programmes, projects and other activities;
- act to support the implementation of activities consistent with the above responsibilities; and
- liaise with the national focal point to transmit information to the Secretary to promote and facilitate the good governance of the Working Group.

Furthermore, the focal points on fisheries management will ensure that the RECOFI national focal points are briefed fully on the activities of the Working Group on Fisheries Management and, as appropriate, provide advice on the Commission's programme of work and budget and other activities, including on their relevance to national policy.

To ensure that the national focal points on fisheries management are in a position to undertake these responsibilities, they should be experienced fisheries managers with ready and regular access to RECOFI national focal points and other national policy-makers.

The Working Group on Fisheries Management may review these terms of reference from time to time and make recommendations for their amendment.

STOCK STATUS REPORTING

39. The Secretariat introduced document RECOFI:WGFM2/2008/6 and made a presentation entitled "Stock status reporting" with reference to the RECOFI area. It is attached as Appendix M. The presentation included cases of regional collaboration to support cooperative fisheries research and active management in areas with characteristics similar to those of the RECOFI region (i.e. semi-enclosed seas, occurrence of shared stocks and of multispecies and multigear fisheries).

40. As requested by the Commission at its fourth session (Jeddah, Kingdom of Saudi Arabia, 7–9 May 2007), the Working Group reviewed the stock status reporting formats as contained in Tables 1 and 2 of Annex 1 to document RECOFI:WGFM2/2008/6. The meeting concluded that Table 1 entitled "Indication of fish stock status" could serve to report the basic information on fish stocks that was available in each country. Table 2 entitled "Detailed stock assessment indicator" that was conceived primarily to accommodate the outputs from conventional stock assessment methods, would

require an amount of data and familiarity with stock assessment models that were seldom available in the region.

41. The Working Group agreed to elaborate and use for the proposed regional workshop on stock indicators and stock status reporting, tentatively scheduled for July 2009, a simplified format to accommodate, in a standardized manner, the existing information on the identified priority species and their fisheries. The immediate result would be the regional compilation and analysis of data and information available from national and subregional data collection schemes and activities.

42. The Secretariat presented the terms of reference for the regional workshop on stock indicators and stock status reporting. The meeting discussed and agreed upon the technical aspects relating to the preparation and implementation of the workshop. The Working Group also reviewed and approved the workshop's objectives and the expected outcomes as indicated in Annex 2 entitled "Draft terms of reference: Workshop on Stock Status Reporting" in document RECOFI:WGFM2/2008/6. The meeting pointed out the importance of including a pilot case study as a training component in the workshop. Representatives emphasized the urgent need to develop and enhance scientific capacity and institutional awareness in the region to better monitor resources and improve fisheries management.

43. The Secretariat also explained briefly the limitations with respect to accuracy and precision for stock assessment in the context of stock management as well as problems resulting from the conventional single-stock MSY-based management approach. The Working Group was urged to consider adopting an ecosystem system approach to fisheries management together with adaptive management procedures. The ecosystem approach would require information relating to social, economic and food security contributions by fisheries, stock status on key species in the context of their contribution to fishing communities and to vulnerable components. Adaptive management would be a feedback system based on predetermined rules in taking specific management actions. The importance in developing those rules before their application with broad acceptance was stressed and the required monitoring indicators were listed.

44. The meeting concurred on the need to promote and improve cooperation within RECOFI for the appraisal of the state of fishery resources and to formulate scientific advice for management.

45. To ensure coherency and to facilitate future work, the Working Group proceeded with an identification and listing of priority species whose stock(s) supported fisheries of common interest. The meeting agreed that the stocks of the key species, listed in Appendix N, supported main reference fisheries in the RECOFI area and should be given priority consideration at regional level. The Working Group proposed that the list of priority species be kept under review.

46. A draft set of standardized boat-gear classifications was reviewed by the Working Group and it was agreed as a basis of data provision for stock assessment for the workshop planned for July 2009. The standardized boat-gear classifications are in Appendix O. Representatives agreed to prepare data in accordance with these classifications to the extent possible using information currently available. This would be the minimum guidance and representatives were encouraged strongly to bring more detailed information to the workshop, if it was available, for further consideration and development for future data requirement standards. The importance of reporting catches at species level was stressed at least for those species identified as primary species.

DEMONSTRATION AND REVIEW OF STATISTICAL APPLICATIONS: FISHSTAT, SPECIES RANKING, BASIC SHAPE AND PATTERNS, AND TRENDS AND PATTERNS OF RECOFI CAPTURE FISHERIES PRODUCTION (1986–2006)

47. The Secretariat demonstrated the use of statistical applications using RECOFI time catch series extracted from the FishStat+ System. The demonstration included automatic identification of landing patterns, cases where catches of key species were replaced progressively by others or less valued and the XCELSIUS time series retrieval tool that was adopted by RECOFI for easy and

intuitive visualization of catch time series. At the conclusion of the demonstration, the Working Group was provided with electronic folders and CD-ROMs containing software, data, information and operations guide.

ANY OTHER MATTERS

48. The Secretariat recalled that the desk study to review fisheries legislation in RECOFI Members was underway. Representatives were encouraged to provide copies of their fisheries legislation in English to the Secretary as soon as possible so that the study could be completed by the anticipated date of January 2009. The Secretariat noted that the outcome of this study would be presented at the Workshop on Illegal, Unreported and Unregulated (IUU) fishing scheduled to be held in March or April 2009.

49. The Secretariat advised the Working Group that it would distribute officially the standard questionnaire for reporting on national fishing activities to the fifth session of RECOFI. The questionnaire was distributed also to the Working Group.

DATE AND PLACE OF THE THIRD SESSION OF THE WORKING GROUP ON FISHERIES MANAGEMENT

50. The Working Group agreed that its next session should be held in October 2009 at a location to be determined and that the Secretary would liaise with the Chairperson on the location. The 2009 session would be a special session of the Working Group and the next regular session would probably be held in January 2011 and thereafter on a two-year cyclical basis.

ADOPTION OF THE REPORT

51. The report of the session was adopted at 1430 hours on 30 October 2008.

52. The Chairperson thanked representatives for their constructive inputs and hard work during the session. He expressed the view that Members should seek to encourage technical continuity in the Working Group as turnovers in representatives could constraint its work. Similarly, he noted that continuity in the Secretariat would be highly desirable to ensure that the momentum established would not be lost. The Chairperson stated that he was optimistic that the Working Group would play a more direct and effective role in promoting harmonized approaches to fisheries management in support of long-term sustainable fisheries in the RECOFI region. He thanked the Secretariat for its efforts in preparing documents and convening the meeting. The Chairperson wished all representatives well and a safe journey back to their respective countries.

Agenda

Opening of the session

Election of Chairperson and Vice-Chairperson

Adoption of the Agenda and arrangements for the session

Improving the utility and diffusion of fisheries statistical data among RECOFI Members

Making the move: the transition of the Working Group on Statistics to the Working Group on Fisheries Management, including the adoption of terms of reference for the Working Group on Fisheries Management

Identification and establishment of a regional strategy and priorities for a future plan of work for the Working Group on Fisheries Management

Terms of reference for fisheries management focal points to support the activities of the Working Group on Fisheries Management

Stock status reporting

Demonstration and review of statistical applications: FishStat, species ranking, basic shape and patterns, and trends and patterns of RECOFI capture fisheries production (1986–2006)

Any other matters

Date and place of the third session of the Working Group on Fisheries Management

Adoption of the report

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RECOFI:WGFM2/2008/3	Making the move: the transition of the Working Group on Statistics to the Working Group on Fisheries Management, including the adoption of terms of reference for the Working Group on Fisheries Management
RECOFI:WGFM2/2008/4	Identification and establishment of a regional strategy and priorities for a future plan of work for the Working Group on Fisheries Management
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RECOFI:WGFM2/2008/Inf.6	Report of the Regional Workshop on Latest Developments in Fishery Survey Tools and Integrated Databases (Cairo, 20–22 November 2006)

Opening statement
by Mr Mohamad Ibrahim Albraithen,
Assistant Director-General
and
FAO Regional Representative for the Near East
FAO Regional Office for the Near East
Cairo, Egypt

Good morning, ladies and gentlemen:

It is my pleasure to welcome you to the FAO Regional Office for the Near East to participate in the second session of the Regional Commission for Fisheries (RECOFI) Working Group on Fisheries Management.

As you know the Working Group has been renamed and its mandate broadened. It was known formerly as the Working Group on Fishery Statistics. However, as a result of a decision taken at the 2007 RECOFI session in the Kingdom of Saudi Arabia, it was agreed to expand and strengthen the Working Group's scope, role and functions.

In broadening the Working Group's focus, fisheries management will be considered in a more comprehensive and integrated framework addressing biological, statistical, development, economic and social aspects. I believe firmly that in this way fisheries management will be improved significantly because the Working Group will be in a position to deal with all factors that influence and impact fisheries management.

We are all aware of the importance of fisheries in the Near East region. Employing and feeding many of our people, fisheries are also important in some countries for the contribution they make to the economy. We must ensure that our fisheries continue to support food and livelihood security. At the regional level stronger cooperation is needed because many of our fish stocks and fisheries are shared and management decisions or lack of management in one country can impact the health of resources in a neighboring country.

As you are all very well aware fisheries are a renewable resource and if they are managed responsibly and sustainably they will be available for use by future generations. However, if we fail to act responsibly and if we are selfish we run the risk of overfishing, depleting and even exhausting our fisheries, as has happened already in some parts of the world.

With its broader focus the Working Group will be also better placed to address emerging international fisheries issues that affect management such as the ecosystem approach to fisheries, the implementation of the precautionary approach, the role of port States in combating illegal, unreported and unregulated fishing, the global register for fishing vessels, the effect of pollution on fisheries resources and the elaboration of criteria for flag States performance. RECOFI Members must be aware of these issues and ready to address them even if they do not impinge on regional fisheries at the present time.

At this juncture I would like to remind the Working Group that RECOFI was established in accordance with Article XIV of the FAO Constitution. In Article III (b) of the Commission's Agreement I want to underscore that RECOFI is empowered to formulate and recommend measures for the conservation and management of living marine resources. In this regard it is a regional fisheries body with real teeth. The Commission has effective management powers and we should start to exercise them.

Turning to the Agenda I note that it is a heavy one. It will require hard and dedicated work over the next four days to complete it. The substantive issues address fisheries data, the enlarged functions and scope of the Working Group, the identification and establishment of priorities for the Group's future plan of work, the terms of reference for fisheries management focal points, and stock status reporting.

Finally, let me say that one of the world's most influential economists in the 1970s and 1980s remarked that there is no such thing as a free lunch! Unfortunately, we all know that this is true. The activities planned for the Working Group on Fisheries Management will require funding and Commission Members will need to bear this consideration in mind when developing priorities for future work. It is my view that we have a golden opportunity to steer the region's fisheries in a sustainable direction. It will not be plain sailing all the way but if we really want results we must be prepared to pay for them.

I wish you all a very successful meeting. I assure you that I will follow your deliberations with keen interest. I also look forward to reading the Working Group's report and recommendations. I urge you to be bold and forthright in your discussions and to propose innovative and forward looking solutions to the fisheries problems and constraints that confront us. The recommendations that you make this week will be very important because they will be transmitted to RECOFI's fifth session in the United Arab Emirates in May 2009 for consideration and review.

Thank you very much for your attention.

Summary report of improving the utility and diffusion of fisheries statistical data among RECOFI Members

Purpose

The purpose of the paper is to summarize fisheries statistical activities that were undertaken by the RECOFI Secretariat in the first half of 2008 with the general aim of improving the utility and diffusion of fisheries statistical data by RECOFI Members. Specific reference is made to a desk study that was conducted in May-June 2008 with the purpose of reviewing national data collection systems, facilitating harmonization and integration of fisheries statistical data at regional level, and developing simple methods for basic trend analysis of landings time series. The results of the desk study are described in information document RECOFI:WGFM2/2008/Inf.4.

Background

At its fourth session held during 7–9 May 2007 in Jeddah, Kingdom of Saudi Arabia, the Regional Commission for Fisheries (RECOFI) recommended that member countries continue their efforts to improve the cost-effectiveness and reliability of their national statistical programmes, increase the diffusion and utility of existing data and take further steps towards harmonization and integration of national fisheries statistical data at regional level. Acting upon these recommendations the RECOFI Secretariat initiated a number of follow-up actions, one of which was the preparation of a desk study and of a technical document concerning current issues of fisheries statistics in the region.

The report of the desk study is a comprehensive technical document that examines existing difficulties in fisheries statistics, proposes simple methodological procedures with the view of increasing the utility of existing databases, underlines the need for feedback information on statistical quality to be provided by members and, proposes short- and medium-term follow-up actions to be considered by the Working Group on Fisheries Management and the Commission for the general improvement of national and regional data and the promotion of cooperation and synergy in fisheries statistical activities among RECOFI Members.

Brief review of national data collection systems

The Commission has in the past made several requests for a systematic evaluation of the fisheries statistical programmes of its members. This evaluation, the results of which would first be communicated directly to the national authorities concerned, it has not yet taken place for a variety of reasons of which the primary two were: (i) the long vacancy of the RECOFI Secretary position and the consequent lack of follow-up and, (ii) insufficient RECOFI regular funds for such missions to be undertaken with effective duration and regional coverage. Consequently the brief review contained in this paper is limited to issues relating to the feasibility of RECOFI Members to participate in a second phase of data integration,¹ this time involving variables on fleet capacity and fishing effort. To be noted that the views expressed here do not constitute any criticism, positive or negative, of the performance of the ongoing national systems and the quality of obtained results, as such knowledge is still to be derived from *in situ* investigations and systematic formulation of performance and quality indicators and diagnostics.

RECOFI countries are at present using a variety of methods for data collection and processing, involving both census-based and sample-based schemes. The first scheme applies primarily to industrial and semi-industrial fisheries and data are directly obtained from the operators themselves, usually as part of the licensing process. The sampling approach is used for the small-scale fisheries

¹ The first phase concerned integration of RECOFI capture time series and was accomplished in 2003.

which are generally characterized by high dispersion combined with large numbers, thus making impossible the collection of information on a complete enumeration basis. An interesting common element of the sample-based fisheries statistical systems operated by RECOFI Members is that there are instances of intense and frequent sampling which would potentially become less demanding in data collection effort while maintaining present levels of reliability and accuracy. On the other hand there are cases where sampling approaches ought to be upgraded using methodological and operational standards recently published by FAO.

With regards to complete enumeration approaches these involve direct reporting (i.e. landing declarations, logbooks) as well as indirect (i.e. sales receipts, market research). One problem with the direct methods concerns statistical coverage of different fleet sectors and completeness of data collected within each sector. Concerning indirect methods (which are useful for periodic cross-checking purposes), the problem is that they are at times used as a substitute to direct ones thus resulting in difficulties in obtaining data on the type and intensity of fishing operations. There are also cases where RECOFI national administrations with limited human resources cannot sustain census-based operations for the whole fishing fleet, with the result that there are always gaps in their catch reports. This difficulty might perhaps be resolved by switching from census-based to sample-based approaches, at least for important fishery sectors for which serious coverage difficulties seem to constitute a chronic problem.

Overall, however, and despite several difficulties in maintaining their fisheries statistical programmes, RECOFI Members have improved their data collection and reporting systems at both national and international levels. Species identification for instance has gained in precision; this can be confirmed by comparing the proportions of catches of unidentified fish before and after 2001. In both RECOFI sub-areas 51.2.0 (Gulf) and 51.3.1 (Sea of Oman) the reported catches of *Marine fish nei*² has declined significantly and this is an indication of improved statistical reporting and that much less catch is now lumped under *Marine fish nei*.

Data harmonization and integration

Looking at the RECOFI fisheries statistics in a regional perspective requires that each national fisheries statistical programme becomes a component of a logical network comprising not only data but also processes and methodology. Such integration of different systems (each created through national programmes), is in general feasible when member countries use a regional set of statistical standards and apply regionally agreed definitions and classifications. Therefore, the main question at this point concerns how soon RECOFI Members will be able (using their ongoing systems as these stand at present) to proceed successfully to the next integration phase through which current annual catch statistics will be split by gear and be accompanied by fleet and effort information. Some first questions can be answered by examining feedback information provided from RECOFI national authorities and the desk study prepared a number of questionnaires to serve this purpose.

There are some important issues that affect the quality of integrated fishery statistics. The first concerns data coverage. National data might at times be incomplete in terms of range of variables and sectors covered. Consequently, the records in the regional dataset will contain gaps for which estimates will be required; these estimates should be based on good assumptions if they are to provide a reliable substitute to directly collected figures. A second issue relates to differences in statistical concepts and methodologies used by countries for assessing the accuracy of collected data. Methodological variations often make comparability of statistics a difficult task, especially when the degree of accuracy among national data is uneven. And a third point concerns the timeliness of national data, that is the time required for primary data to be processed into officially authorized statistical figures.

Although the aforementioned issues constitute a national responsibility they nevertheless have strong impact on the overall utility of regional statistics. Thus, improving data quality and timeliness and

² nei: not elsewhere indicated.

protecting the credibility of regional statistics requires interaction with countries and human effort and financial inputs invested in regional cooperation at both technical and operational levels. RECOFI has always recognized the importance of political willingness for cooperation in all fisheries issues, including fisheries information and statistics, and has been encouraging its members to pay due attention to both national and regional fisheries statistical programmes.

In discussing harmonization aspects at regional level it is perhaps worth clarifying a point which has been frequently debated at technical consultations and regional meetings. RECOFI Members have at times expressed concern that a regional harmonization exercise might hamper the operations of their respective national systems and cause disruption to historical data and time series. The present paper advocates that the term “harmonization” does not imply the introduction of a single and uniform statistical system across RECOFI member countries. It rather means the stepwise introduction of commonly agreed classifications with the view of making nationally-produced statistics comparable at regional level. RECOFI has in fact been able to accomplish a first level of harmonization through the establishment of a capture database. It is further pointed out that the introduction of methodological standards on a when/where-needed basis (particularly in sample-based data collection systems), will in fact benefit both RECOFI and its members, since the integrated datasets would contain data of known quality and completeness.

It should be noted here that harmonization of nationally-collected fisheries statistics at regional level can be achieved only progressively and only in those sectors where data are available at the required level of detail. It was mentioned earlier that the integration of annual catch data has already been achieved and that the integration process should expand to include other variables. At this stage, however, it would not be very practical to propose an all-at-once implementation of integrated databases containing monthly data on fleet, catch, effort, prices, fish size, fuel costs, etc., when it is yet not known if all RECOFI Members are in a position to participate in this exercise. This means that data types and variables on which information is to be integrated should be tailored to the capacity and structure of national fisheries and not be dependent on drastic changes to data collection operations that are being regularly operated by member countries. It is on the basis of these observations that the present note suggests that with regards to data harmonization and integration only two further steps be taken in the short- and medium-term, with the twofold purpose of: (i) expanding harmonization to include boat/gear classifications so as to integrate fleet capacity and annual effort at regional level; and (ii) introduce commonly used international standards in sample-based data collection operations, in order to set-up a minimum target for accuracy with regards to catch and effort estimates.

Patterns of RECOFI landings time series

The RECOFI desk study developed two systems for basic analysis of landings time series, both available for immediate use by the WGFMS Secretariat. The advantage of examining RECOFI landings as a long time series is that it provides a broad picture of the dynamic nature of the Gulf and Sea of Oman fisheries. The observed patterns highlight temporal changes between different fisheries. Such changes are most probably caused by four factors: market demand, environment/ecosystem variability, prolonged exploitation, and abrupt changes of data collection/recording schemes (the last factor having a statistical rather than exploitation meaning).

In analyzing time series there is a clear distinction between the terms “trend” and “pattern” or “shape”. The term “trend” is generally associated with a mathematical model that describes a relationship between the independent variable (i.e. time) and the observed variable (catch, value, etc.). This relationship, when established, permits the prediction of values of the observed variable in-between known values (this is commonly referred to as interpolation), or outside the range of observations (extrapolation to the left or to the right).

In general it is rather rare that all time series in a dataset can be described by a single mathematical model. Some time series may be closely linear, others may obey an exponential law of rise or decline; for others a dome- or U-shaped relationship would prove to be more suitable. In all cases there are special statistical diagnostics qualifying the goodness of fit (such as the coefficient of determination) so as for users to assess whether prediction of values is reliable, risky or not feasible at all. It would

thus seem reasonable to partition any dataset of time series into groups of similar shapes before deploying fitting functions; this would mean that each separate group would subsequently be fitted by a specific model that is most likely to produce satisfactory results.

The RECOFI desk study developed two systems for basic analysis of landings time series resulting from the RECOFI Capture Database. The first system is called “PATTERNS” and its main function is to categorize time series into groups of similar shapes. The principal output of this program is a summary statistics of patterns without the need to go through all records and visually identify the shape of each time series.

The second system, called “SPECIES RANKING”, analyzes catch time series to compare the level of production of species of high importance over two different periods of time. Each species time series is split into two periods (the second consisting of the last five years) and then sorted for each period in descending order. In this manner two columns are produced showing species in two different ranking orders. It might then occur that some formerly top species has been replaced by another emerging species, or the contrary: a species that showed low catch in the past now it figures amongst the top of the list. And there might be others that maintain their position.

Proposal for short- and medium-term actions

The present paper identified two major activities relating to fisheries statistical development in RECOFI. Their total cost is estimated at US\$70 000. The first activity concerns the long overdue review of national fisheries statistical programmes and involves travel to all RECOFI countries (US\$25 000) and two months’ honorarium of an international consultant (US\$15 000). The second activity (four person/months at a cost of US\$30 000) is envisaged under the assumption that there will be favourable conditions for initiating a new integration exercise including annual catch and fishing effort data.

Two electronic documents will be made available to RECOFI Members by the WGFM Secretariat: (i) an Excel workbook entitled RECOFI_CATCH_FLEET_EFFORT and, (ii) an electronic questionnaire relating to sample-based statistical standards. The RECOFI_CATCH_FLEET_EFFORT worksheet will be used by members solely for indicating whether catch can be split into boat/gear components following the proposed classification scheme of three boat and eleven gear groups. Members are also invited to indicate the feasibility of supplying figures on active vessels and estimates of individual annual vessel effort. No real data need to be returned at this stage.

The electronic questionnaire with sample-based statistical standards contains a number of simple questions with the purpose of obtaining a general picture of RECOFI sample-based national statistical programmes with respect to:

- extent to which registers of fishing vessels are used for statistical purposes and for the generation of spatial extrapolating factors for estimating total fishing effort;
- whether frame surveys are also conducted for statistical purposes;
- how sampling accuracy is measured and monitored;
- common problems in data collection (multiple use of gears, seasonal migration of fishing units).

Suggested action by the Working Group

The Working Group is invited to consider the major actions suggested by the present note (notably short- and medium-term proposals, use of questionnaires for harmonization of fleet and effort data, and use of the recently developed programs for analyzing landings time series), assess their feasibility in both operational and financial terms, and decide on their implementation.

**Terms of reference
Consultant – Fisheries Statistician (RECOFI)**

Background

During the fourth session of the Regional Commission for Fisheries (RECOFI), held from 7 to 9 May 2007 in Jeddah, Kingdom of Saudi Arabia, the Commission endorsed the implementation of activities to improve the quality, reliability and utility of fisheries statistics both the national and the regional levels.

Particularly the Commission suggested that further effort should be undertaken by member countries to improve the cost-effectiveness and reliability of their statistical programmes. In this respect use should be made of reference material and expertise available from the FAO. Furthermore, regarding issues relating to harmonization of national data for establishing regional statistical data sets, the Commission agreed that this would mainly concern species naming practices and classification practices of boat types and fishing gears. The Commission also recommended that best use should be made of available statistics. Finally, the Commission considered that guidelines are needed for the effective use of RECOFI Capture Fisheries Production Database compiled by FAO/FIES (FISHSTAT+ software).

Activities

Under the general supervision of the Senior Fisheries Officer (RECOFI Secretary), FAO Regional Office for the Near East (FAORNE), and in direct and close cooperation with the Technical Secretary of the Working Group on Fishery Statistics and Management, and in consultation with the FAO/FI Technical Units as appropriate, the incumbent will undertake the following tasks:

- Review current methods of data collection adopted by the RECOFI member countries.
- Maximize the utility of the RECOFI capture database, including grouping of landing trends into categories of similar patterns.
- Develop appropriate explanatory data handling and processing exercises using the available data and time series at the national and regional scale.
- Elaborate scenarios for data harmonization and integration identifying the most suitable stepwise approach, from the most basic to the more detailed and sophisticated, and including the assessment of data preparation effort and cost implications.
- Prepare questionnaires for distribution to RECOFI Members for the purpose of: (i) to facilitate the identification of most feasible and cost-effective integration scenarios and, (ii) to obtain an updated feedback on the actual state of national fisheries statistical programmes.
- Ensure the follow-up of questionnaire survey by contacts with national counterparts to have returned and available the filled questionnaires within two months from receipt date.
- Prepare a full technical report on the above showing the kind of results and information which could be obtained and be available for fisheries appraisal and management purposes. The report will include the appropriate guidelines and recommendations for the continued and sustainable use of the national and regional fisheries statistics data and information.

Output description

The output of the consultancy shall consist of a comprehensive technical document appraising RECOFI national and regional fisheries statistics (data characteristics, quality and trends), including the strategy to apply for their integration/use at the regional (RECOFI) level. The work is to be carried out in 30 working days. The work will commence on 1 May 2008 and be completed and submitted to FAO no later than 20

June 2008. The document will be presented at the meeting of the RECOFI Working Group on Fishery Statistics and Management in late October 2008.

Travel

The consultant will be required to travel from his residence to Cairo, Egypt to attend a four-day meeting of the RECOFI Working Group on Fishery Statistics and Management and to present the findings of his work. The meeting is tentatively scheduled from 27 to 30 October 2008. This travel is not included in the present arrangement and it will be dealt with separately in due course.

Qualifications

Advanced University Studies in statistics and minimum 12 years of experience in the design and implementation of fisheries statistical programmes. Good knowledge of English. Ability to write clear and exhaustive technical reports.

APPENDIX G

Consolidated results of the questionnaire

Country	Fishery	Gear	Main catch	Note	Boats				Licences	
					Speed boats	Dhows	Steel boat	Others	Boats	Fishers
Bahrain	Shrimp trawl	Trawls	Shrimps		X	X			Y	Y
	Wire traps (cages) – small	Traps		Fishing in coral reefs and rocks	X	X			Y	Y
	Wire traps (cages) – large	Traps		Fishing in coral reefs and rocks	X	X			Y	Y
	Crab trap	Traps	Crabs	Fishing in coral reefs and rocks	X				Y	Y
	Nets and ladle for jellyfish	Others	Jellyfish		X	X			Y	Y
	Barrier trap (Haddrah)	Barrier traps	Finfish	Haddrah build near coast and fisherman are walking to them at low tide to collect fish				No boat		
	Finfish gillnet	Gillnets	Finfish (Rabhit)	Artisanal and others	X				Y	Y
	Fixnet for Spanish mackerel	Fixnet	Spanish mackerel	Artisanal	X				Y	Y
	Finfish driftnet	Driftnet	Finfish	Artisanal	X				Y	Y
	Shrimps		Shrimps			X	X		Y	Y
Iraq	Fin fisheries		Finfish				X		Y	Y
	Shrimp trawling	Trawls	Shrimps			32	35		Y	Y
Kuwait	Finfish gillnet	Gillnets	Finfish		X	X			Y	Y
	Finfish wiretraps (cages)	Traps	Finfish		749	80			Y	Y

Country	Fishery	Gear	Main catch	Note	Boats				Licences	
					Speed boats	Dhows	Steel boat	Others	Boats	Fishers
Oman	Artisanal fisheries			Count boats and fishermen every 5 years	X	X		Shasha (Palm/ wood small boat no engine)	Y	Y
	Industrial fisheries – longliners	Longlines					X	Fiberglass (>24m)	Y	Y
	Industrial fisheries – trawlers	Trawls					X	Fiberglass (>24m)	Y	Y
	Da'kwah (beach seine)	Beach seine						No boat	Y	Y
Qatar	Traps	Traps	Finfish	Local water, traditional	X	X			Y	Y
	Gillnet	Gillnets	Finfish		X	X			Y	Y
	Driftnet	Driftnets	Finfish		X	X			Y	Y
	Hooks	Hooks	Finfish		X	X			Y	Y
	Traps	Traps	Finfish		X	X			Y	Y
	Small mesh gillnets	Gillnets	Finfish		X	X			Y	Y
Saudi Arabia	Large mesh gillnets	Hokks	Finfish		X	X			Y	Y
	Hooks	Hokks	Finfish		X	X			Y	Y
	Driftnets	Driftnets	Finfish		X	X			Y	Y
	Industrial shrimp trawl	Trawls	Shrimps			8			Y	Y
	Traps	Traps	Finfish	All artisanal fisheries operating within national waters in traditional way	X	X			Y	Y
	Gillnet	Gillnets	Finfish		X	X			Y	Y
Hooks	Hokks	Finfish	X		X			Y	Y	
Driftnets	Driftnets	Finfish	X		X			Y	Y	
Longlines	Longlines	Finfish	X		X			Y	Y	
Beach seines	Beach seines	Finfish	X		X			Y	Y	

Country	Fishery	Area of operations				Data collection					Effort data (types)			
		Gulf		Osman Sea		sample based	market inf.	logbook	landing declaration	# of boats	# of trips	# of days	# of gears	
		coastal	offshore	coastal	offshore									
Bahrain	Shrimp trawl					X				X	X			
	Wire traps (cages) – small	X				X				X	X		X	
	Wire traps (cages) – large	X				X				X	X		X	
	Crab trap	X				X				X	X		X	
	Nets and ladle for jellyfish	X				X				X	X		X	
	Barrier trap (Haddrab)	X				X					X		X	
	Finfish gillnet	X				X				X	X		X	
	Fixnet for Spanish mackerel	X				X				X	X		X	
Iraq	Finfish driftnet	X				X					X		X	
	Shrimps	X					X						X	
Kuwait	Fin fisheries	X					X						X	
	Shrimp trawling	X					X			X			X	
	Finfish gillnet	X					X			X			X	
	Finfish wiretraps (cages)	X					X			X			X	
Oman	Artisanal fisheries	X	X	X	X	X				X	X		X	
	Industrial fisheries – longliners			X	X			X			X		X	
	Industrial fisheries – trawlers			X	X			X			X		X	
	Da'kwah (beach seine)	X		X		X							X	

Country	Fishery	Area of operations				Data collection				Effort data (types)			
		Gulf		Osman Sea		sample based	market inf.	logbook	landing declaration	# of boats	# of trips	# of days	# of gears
		coastal	offshore	coastal	offshore								
Qatar	Traps	X	X			X	X			X			
	Gillnet	X	X			X	X			X			
	Driftnet	X	X			X	X			X			
	Hooks	X	X			X	X			X			
Saudi Arabia	Traps	X	X			X					X		X
	Small mesh gillnets	X	X			X					X		X
	Large mesh gillnets	X	X			X					X		X
	Hooks	X	X			X					X		X
	Driftnets	X	X			X					X		X
	Industrial shrimp trawl		X					X			X		X
Saudi Arabia	Artisanal fisheries	X	X			X					X		X
	Industrial shrimp trawl		X					X		X			X
United Arab Emirates	Traps	X	X	X	X	X				X	X	X	X
	Gillnet	X	X	X	X	X				X	X	X	X
	Hooks	X	X	X	X	X				X	X	X	X
	Driftnets	X	X	X	X	X				X	X	X	X
	Longlines	X	X	X	X	X				X	X	X	X
	Beach seines	X	X	X	X	X				X	X	X	X

Country	Fishery	Management measures			
		Season	Area	Gear	Others
Bahrain	Shrimp trawl	15/7 – 31/			
	Wire traps (cages) – small				
	Wire traps (cages) – large				
	Crab trap				
	Nets and ladle for jellyfish				
	Barrier trap (Haddrah)				
	Finfish gillnet				
	Fixnet for Spanish mackerel				
	Finfish driftnet				
	Shrimps				
Iraq	Fin fisheries				
	Shrimp trawling	closed seasons	closed areas (3mile zone)	min mesh size	
Kuwait	Finfish gillnet	closed seasons	closed areas	min mesh size	Min. size, fishing methods
	Finfish wiretraps (cages)		closed areas (3mile zone)	# of gears	
Oman	Artisanal fisheries				
	Industrial fisheries – longliners		closed area (5miles artisanal fishery area)		
	Industrial fisheries – trawlers		closed area (5miles artisanal fishery area)		
	Da'kwah (beach seine)				
Qatar	Traps				
	Gillnet				
	Driftnet				
	Hooks				

Country	Fishery	Management measures			
		Season	Area	Gear	Others
Saudi Arabia	Traps				
	Small mesh gillnets				
	Large mesh gillnets				
	Hooks				
	Driftnets				
	Industrial shrimp trawl				
United Arab Emirates	Traps		closed areas: 3 miles from island coast, 2miles form beach and lagoon		
	Gillnet				
	Hooks				
	Driftnets	Oct. – Apr.			
	Longlines				
	Beach seines				

Making the move: the transition of the Working Group on Statistics to the Working Group on Fisheries Management, including the adoption of terms of reference for the Working Group on Fisheries Management

Purpose

The purpose of the paper is to provide background information on the transition of the Working Group from the Working Group on Fishery Statistics to the Working Group on Fisheries Management; to discuss the expanded role of the Working Group as mandated by the 2007 session of the Regional Commission for Fisheries (RECOFI), and to invite the Working Group to consider and comment on its revised role and the terms of reference and to recommend them, as appropriate, to the Commission.

Background

The first session of the RECOFI Working Group on Fishery Statistics (Shiraz, Islamic Republic of Iran, 24–26 May 2004) addressed a range of issues including the provision of statistics for 2003, collection practices, international landings and associated problems, collection of population data, identification and planning for future activities, provisions of desegregated data (by species and geographical area), comments on the timing of RECOFI meetings and general perceptions concerning progress at meetings. No date or location for a second meeting of the Working Group on Fishery Statistics was proposed at that session.

The report of the first session of the Working Group on Fishery Statistics was presented to RECOFI at its third session (Doha, Qatar, 9–11 May 2005). In reviewing the report the Commission, *inter alia*, stressed the need for continuing technical assistance from FAO for developing criteria for fishery statistics and report preparation for RECOFI Members. In stressing this matter the Commission highlighted the importance it attached to comprehensive and robust statistical systems in the RECOFI region.

At the Commission's fourth session (Jeddah, Kingdom of Saudi Arabia, 7–9 May 2007), a decision was taken to re-name the Working Group on Fishery Statistics. It was decided to change its name to the Working Group on Fisheries Management.¹ The Commission made this modification with a view to expand and strengthen the Working Group's scope, role and functions. Indeed, the narrower scope and functions of the Working Group on Fishery Statistics was identified by the Commission as being one of the problems impacting negatively on RECOFI's work.²

In widening the scope of the work of the Working Group on Fisheries Management the Commission enlarged significantly the framework in which fisheries management would be considered and management measures formulated. The Working Group will address, as appropriate, biological, statistical, development, economic and social aspects of management. Its amplified role will strengthen conservation and management in the RECOFI region by enabling the Working Group to focus on, and deal with, all factors necessary for sound fisheries management.

The October 2008 session of the Working Group (Cairo, Egypt, 27–30 October 2008), and the first meeting of the Working Group on Fisheries Management, will be a transitional session. Importantly, the meeting will seek to:

¹ Paragraph 69. Paragraph 67. FAO. 2008. Report of the fourth session of the Regional Commission for Fisheries. FAO Fisheries Report No. 847. FAO. Rome. p.10.

² Paragraph 67. FAO. 2008. Report of the fourth session of the Regional Commission for Fisheries. FAO Fisheries Report No. 847. FAO. Rome. p.10.

- conclude outstanding matters from the first session of the Working Group on Statistics and subsequent Commission meetings in relation to the activities of the Working Group, and to make recommendations, as appropriate, for follow-up work;
- deliberate on improving the utility and diffusion of fisheries statistical data among RECOFI Members;
- consider the broader focus of the Working Group and recommend terms of reference to govern the Group's work;
- identify, establish priorities and recommend a future plan of work for the Working Group;
- recommend the adoption of terms of reference for fisheries management focal points to support the activities of the Working Group, and
- consider matters relating to stock status reporting.

The outcomes of this meeting will be reported to RECOFI at its fifth session (United Arab Emirates, May 2009).

Expanded role for the Working Group

Members of the Working Group on Fisheries Management are reminded that RECOFI was established in accordance with Article XIV of the FAO Constitution³ under the Agreement for the Establishment of the Regional Commission for Fisheries (the Agreement)⁴. The Working Group's attention is drawn particularly to Article III of the Agreement concerning the functions of the Commission and Article V of the Agreement relating to the recommendations on management measures. Article VII of the Agreement empowers the Commission to establish committees, working groups and special or standing committees. The Working Group on Fisheries Management was established under this Article.

RECOFI, within its Convention area, has powers to formulate and recommend management measures for its Members in relation to the conservation and management of living marine resources.⁵ This means that the Commission's powers relating to conservation and management extend beyond fish stocks.

One role of the Working Group on Fisheries Management is to recommend management measures to the Commission, in accordance with Article III b) of the Agreement, to be adopted, as appropriate, by the Commission, as provided for in Article V. Management measures may relate to the regulation of fishing methods and fishing gear, prescription of minimum sizes for individuals of specified species, establishment of open and closed fishing seasons and areas, and regulation of the amount of total catch and fishing effort and their allocation among Members, for the purpose of implementing recommendations.

The Commission also has wide responsibilities and powers to review the economic and social aspects of the fishing industry and recommend measures for its development, encourage, recommend and coordinate training and extension activities; encourage, recommend, coordinate and undertake research and development activities; assemble, publish and disseminate information regarding living marine resources and fisheries based on these resources and carry out any other activities as may be necessary for RECOFI to achieve its purpose as defined in the Agreement. Importantly, the Commission is required to apply the precautionary approach to conservation and management decisions and take into account the best scientific advice available and the need to promote the development and proper utilization of marine living resources.

³ FAO. 1992. Basic texts of the Food and Agriculture Organization of the United Nations. FAO. Rome. 247p.

⁴ See the Agreement at: <http://www.fao.org/legal/treaties/028t-e.htm>

⁵ For clarification, living marine resources are potentially or presently subject to exploitation by man for food, feed, fertilizer or the production of other products of value or use. Fish, on the other hand, refer to cover fish proper including shellfish and all other groups of marine organisms exploited for human use or consumption. See Caddy, J.F and R.C. Griffiths. 1995. Living marine resources and their sustainable development: Some environmental and institutional perspectives. FAO Fisheries Technical Paper 353. FAO. Rome. 167p.

Focusing on the long-term sustainable management of the region's living marine resources, many of which are shared among RECOFI Members, the Working Group on Fisheries Management provides the logical mechanism to promote and enhance regional fisheries cooperation and significantly, to address and attempt to resolve fisheries problems of common concern. The need for effective and on-going regional cooperation and harmonization⁶ among Members for the management of the region's living marine resources is essential given the close geographic proximity of countries, stock structures and distribution and the possibility of one country undermining regional management efforts if it acts unilaterally or not in concert with other RECOFI Members.

The Working Group on Fisheries Management, while continuing to address matters of a statistical nature in support of conservation and management, is also expected to focus on other key issues germane to fisheries management including the ecosystem approach to fisheries, the implementation of the precautionary approach, illegal, unreported and unregulated (IUU) fishing and the role of port States in combating it, the development of the global register for fishing vessels, the effect of pollution on fisheries resources and the elaboration of criteria for flag States performance. In the course of its work the Working Group will identify, prioritize and keep under review fisheries issues and activities that are important for Members and the management of resources in the RECOFI region.

Terms of reference for the Working Group

Terms of reference to guide the activities of the Working Group on Fisheries Management are required to ensure that it operates smoothly, effectively, consistently, transparently and according to the Agreement. They draw inspiration from the 1995 FAO Code of Conduct for Responsible Fisheries⁷ and initiatives to which RECOFI Members have subscribed, either individually or as countries collectively through their participation in international fora where declarations are adopted.⁸ The terms of reference also reflect the requirements of the Agreement.

Draft terms of reference for consideration of the Working Group on Fisheries Management are in Annex 1. A recommendation on them is required if it is the will of the Working Group to transmit them to 2009 session of the Commission for consideration.

Suggested action by the Working Group

The Working Group is invited to consider and comment on the Group's broader role in resource conservation and management in the region and to approve, as appropriate, the draft terms of reference for the Working Group on Fisheries Management.

⁶ It should be noted that in a fisheries context the term "harmonization" does not mean "the same" or "identical" but rather in a similar manner or consistent with.

⁷ The Code of Conduct for Responsible Fisheries, a voluntary instrument, provides the international standards for the responsible and sustainable management and utilization of fisheries and aquaculture. Related instruments concluded within its framework include the 1993 FAO Compliance Agreement, the 1999 FAO International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries, 1999 FAO International Plan of Action for the Conservation and Management of Sharks, the 1999 International Plan of Action for the Management of Fishing Capacity, 2001 FAO International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing and the 2003 FAO Strategy for Improving Information on Status and Trends of Capture Fisheries. The Code and its related instruments are supported by technical guidelines that are intended to assist countries and stakeholders to implement the instruments.

⁸ Members are invited to recall that the Rome Consensus on World Fisheries adopted by the FAO Ministerial Conference on Fisheries (FAO headquarters, Rome, Italy, 14–15 March 1995), *inter alia*, called on governments and international organizations to complete the Code of Conduct and to consider ratifying the 1993 FAO Compliance Agreement. Ministers or senior officials from Bahrain, Iraq, the Islamic Republic of Iran, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates were represented at this meeting. Subsequently, the Code of Conduct was adopted unanimously by the FAO Conference on 31 October 1995. In 1999, the Rome Declaration on the Implementation of the Code of Conduct for Responsible Fisheries was adopted by the FAO Ministerial Meeting on Fisheries (FAO headquarters, Rome, Italy, 10–11 March 1999). It called on all users of fisheries resources to apply the Code of Conduct. Ministers or senior officials from Bahrain, Iraq, the Islamic Republic of Iran, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates were represented at this meeting.

Draft terms of reference for the Working Group on Fisheries Management

The Working Group on Fisheries Management shall, taking into account the 1995 FAO Code of Conduct for Responsible Fisheries and its related documents and other international instruments, as appropriate:

1. consider and deliberate on biological, statistical, social, economic, policy, legal and institutional aspects of fisheries conservation and management with a view to ensuring the long-term sustainable development of resources in the region, and
2. make recommendations, as appropriate, to the Regional Commission for Fisheries on technical and scientific matters in relation to decisions concerning fisheries conservation and management.

Specifically, the Working Group on Fisheries Management shall:

- review the state of resources, including their level of their exploitation and the state of fisheries, making recommendations for appropriate research and development activities in support of better management;
- review on regular basis national statistical systems and outturns, as appropriate, to enhance and harmonize the compilation and consolidation of fisheries data on a regional basis;
- assess the need for harmonized conservation and management measures including, as appropriate, to:
 - regulate fishing methods and fishing gear;
 - prescribe minimum sizes for particular species;
 - establish open and closed fishing seasons and areas;
 - implement marine protected areas;
 - manage fleet capacity;
 - regulate the amount of total catch and fishing effort and their allocation among Members; and
 - make recommendations for the implementation of measures to address these issues. Recommendations will be applied in conformity with the precautionary approach to fisheries, taking account of the best scientific evidence available, the need to promote the development and proper utilization of fisheries resources.
- identify important economic and social trends in fisheries, analyze their impacts and make recommendations for appropriate follow-up action;
- identify and apply a multidisciplinary suite of regionally concerted indicators for sustainable fisheries development;
- promote closer regional cooperation and collaboration in fisheries conservation and management, including through coordinated and harmonized policies and programmes relating to fisheries legislation, acceptance and implementation of international fisheries instruments, adoption of measures, protection, monitoring, control and surveillance (MCS) and vessels monitoring systems (VMS);
- evaluate adverse environmental impacts on fisheries and their long-term sustainable management and utilization, as appropriate, and make recommendations concerning remedial measures and action;
- encourage capacity building and the strengthening of extension services in all aspects of sustainable fisheries management and utilization, including making recommendations for appropriate regional programmes;
- assemble, publish and disseminate information concerning the state of the region's fisheries; and

- undertake other activities relating to fisheries management considered important and appropriate by the Working Group or as directed by RECOFI.

The Working Group on Fisheries Management may review these terms of reference from time to time and make recommendations for their amendment, as appropriate, to RECOFI.

Identification and establishment of a regional strategy and priorities for a future plan of work for the Working Group on Fisheries Management

Purpose

The purpose of this paper is to identify a regional strategy¹ and to establish priorities and projects for a future plan of work by the Working Group.

Regional strategy, priorities, activities and projects

The rationale for the identification of a regional strategy and the establishment of regional priorities and projects for the Working Group to ensure that there is a coherent and transparent plan of work. As an initial step the Working Group should:

- agree on a regional strategy;
- agree on a list of regional priorities;
- list indicative regional activities to be undertaken to give effect to the priorities;
- agree on regional projects, target implementation dates, locations and funding options;
- rank the regional projects for implementation; and
- identify the major project outcomes.

Annex 1 identifies a draft regional strategy for RECOFI Members and priorities for fisheries management. The strategy is the first step. It is necessary to identify the strategy so that priorities can be established. Without a strategy (or overall goal) the setting of priorities makes little sense. Usually in fisheries a draft strategy incorporates issues relating to good governance, responsible behaviour and long-term sustainable development,² cultural and social values and economic benefits.

After agreeing on a strategy, priorities should be considered and agreed. In Appendix 1 the prioritized objectives are listed in alphabetical order. The list is not an exhaustive one. However, it reflects many of the priorities that are required to achieve the strategy. The list should be reviewed to determine if it is complete. Priorities should be adjusted as required: they can be added to, split, deleted or combined. However, all priorities should contribute to the strategy and before agreeing on them they should pass the “how test”: i.e. how will each priority contribute to the strategy. Once a list of priorities is agreed, they should be prioritized.

Annex 1 also contains indicative activities that might be undertaken to achieve the priorities. The list can be adjusted as appropriate.

The next step in the process requires that projects be identified, costed and funding sources identified. They also require ranking so that highest priority projects are funded ahead of lower priority projects. Appendix 1 lists several projects that have been identified in the course of preparations for this meeting. It is through the execution of projects that concrete steps are taken to implement priorities and achieve the strategy. After a complete list of projects is compiled and agreed by the Working Group they should be ranked, which indicates their priority.

Finally, when projects are being developed major project outputs should be identified and if possible, quantified (e.g. the number of countries or people that will benefit, what percentage of fisheries will be covered by a project). Projects and their outputs should strengthen the objective or objectives to which

¹ A strategy is a broad non-specific statement of an approach to accomplishing desired goals and objectives. It usually involves a set of sequential activities that require monitoring and modification as circumstances change. A strategy provides direction and coherency, especially when information or resources are limited.

² These two concepts reflect the 1995 FAO Code of Conduct for Responsible Fisheries and the outcomes of the 1992 United Nations Conference on Sustainable Development and the 2002 World Summit on Sustainable Development.

they are related (e.g. a project may assist in fulfilling more than one objective). While a project is underway activities and interim outputs should be monitored to ascertain if it is on track and if it is being implemented as intended. Upon the completion of a project a comparison of the projected and actual outputs should be undertaken. If there is a wide margin of difference between the two sets of outputs explanations should be given.

Many factors influence fisheries management and there is a need to balance activities and projects to achieve responsible and sustainable management. This requires fisheries administrations to address management in a comprehensive manner focusing on the principles and standards enshrined in the 1995 FAO Code of Conduct for Responsible Fisheries and not only particular aspects of management. Projects that have objectives and thrusts embedded in the Code will certainly promote greater responsibility and long-term sustainability in fisheries.

Review of strategies and priorities

Strategies and priorities are not static: they change through time for a range of different reasons (e.g. new issues emerge and progress is made in achieving goals already established). For this reason the strategy and priorities should be kept under review so that adjustments, as appropriate, can be made. However, as a general rule strategies and priorities do not vary greatly over time and while they should be reviewed the probability of having to amend them on a regular basis is small.

The review of the strategies and priorities can be approached in at least two different ways. They can be reviewed (i) on an ad hoc basis or (ii) systematically at Working Group sessions. Both approaches have advantages and disadvantages. Ad hoc reviews, if undertaken as and when needs arise, are probably the most efficient means of undertaking a review. However, such an approach presupposes that there is the possibility to review and amend priorities at any time. Such reviews could be undertaken electronically but they would not have the benefit of face-to-face discussion and consensus building, especially when difficult issues and decisions are faced.

Alternatively, the Working Group is scheduled to meet biennially. Given the disadvantages of ad hoc reviews it is suggested that the reviews be undertaken on a regular basis at Working Group session. Furthermore, it is proposed that the reviews be incorporated into the Agendas of future meetings as a standing item.

Draft list of activities for the Working Group

1. Annex 2 contains a draft list of activities and meetings relating to the Working Group over the coming years. The purpose of this list is to assist in the planning of work, projects and meetings of the Group. It is not a definitive list but only an indicative one to be used for planning purposes. It is proposed that it be reviewed and updated at each Working Group session.

Suggested action by the Working Group

The Working Group is invited to identify and agreed on a regional strategy and priorities to guide future work of the Working Group. It should:

- agree on a regional strategy;
- agree on a list of regional priorities;
- list indicative regional activities to be undertaken to give effect to the priorities;
- agree on regional projects, target implementation dates, locations and sources of funding; and
- rank the regional projects for implementation.

In addition, the Working Group is invited to agree on a timeframe for the review of the strategy, priorities, activities and projects, as well as the list of activities for the Working Group in Annex 2.

Draft RECOFI regional strategy and priorities for fisheries management

- STRATEGY:** Promotion of sound and effective regional fisheries governance by:
- ensuring that fisheries are exploited and utilized in a responsible and long-term sustainable manner, and
 - ensuring that fisheries generate maximum social and economic benefits for RECOFI countries.

Prioritized objectives	Regional activities	Regional projects, target implementation dates and location	Indicative cost and funding source (US\$)	Project ranking	Major project outputs
<p>To promote good science to underpin decisions for fisheries management</p>	<ul style="list-style-type: none"> ▪ Promotion of applied research (related to biodiversity and conservation and management measures) ▪ Collection and analysis of fisheries-dependent and independent data in support of fisheries appraisal and fisheries management ▪ Stock assessment to evaluate the status of stocks and development of management measures ▪ Harmonization of data collection and sets for regional analysis and management of shared stocks 	<ul style="list-style-type: none"> ▪ Project for the review of national fisheries programmes (2009 throughout region) ▪ Project for the integration of annual catch and fishing effort data (2010 throughout region) ▪ Workshop on stock status reporting (July 2009 at a location to be determined) 	<p>40 000 (Source ??)</p> <p>30 000 (Source ??)</p> <p>30 000 (Source ??)</p>		
<p>To facilitate quality economic investigation to inform fisheries management decisions and maximize economic returns</p>	<ul style="list-style-type: none"> ▪ Collection and analysis of economic data and related information (e.g. employment, value, losses due to poor handling, etc.) ▪ Promotion of responsible and sustainable fisheries development and value added activities (e.g. processing) ▪ Implementation of measures to maintain the contribution of fisheries to livelihoods especially where alternative employment opportunities are limited 	<ul style="list-style-type: none"> ▪ Workshop on fishery economic performance dynamics and trends (dates and location to be determined) 	<p>30 000 (Source ??)</p>		
<p>To encourage comprehensive environmental investigation to support fisheries management</p>	<ul style="list-style-type: none"> ▪ Review of current knowledge on environmental factors affecting fisheries productivity in the Gulfs ▪ Assessment of impacts of climate change on fisheries ▪ Assessment of land and marine pollution on fisheries 				

Prioritized objectives	Regional activities	Regional projects, target implementation dates and location	Indicative cost and funding source (US\$)	Project ranking	Major project outputs
<p>To facilitate human resource development and institutional strengthening to ensure the capacity to implement management measures</p>	<ul style="list-style-type: none"> ▪ Workshops, country attachments and other training opportunities to enhance human resource development ▪ Assessment of institutional structures and functions and review and updating of job profiles to promote robust and resilient administrations ▪ Promotion of national and regional library and information resources to support fisheries management 	<ul style="list-style-type: none"> ▪ Workshop on IUU fishing including port State measures (March or April 2009, location to be determined) 	<p>33 000 (Source ??)</p>		
<p>To promote legal discussion and the review and revision of fisheries legislation to reflect policy and international commitments</p>	<ul style="list-style-type: none"> ▪ Review and revision of fisheries legislation ▪ Acceptance and implementation of international instruments 	<ul style="list-style-type: none"> ▪ Desk study to review fisheries legislation in RECOFI Members 	<p>10 000 (Source ??)</p>		
<p>To implement effective fisheries management</p>	<ul style="list-style-type: none"> ▪ Awareness building about the need for effective fisheries management (e.g. publications, media, etc.) ▪ Implementation of the ecosystem approach to fisheries including the protection of biodiversity ▪ Development of fisheries management plans for major fisheries ▪ Assessment and implementation of conservation measures (e.g. closed areas, seasons, restrictions on species and sizes) ▪ Assessment and implementation of capacity reduction programmes ▪ Bycatch management and discards reduction (related to gear and food security issues) ▪ Implementation of the precautionary approach to fisheries when conditions are uncertain ▪ Implementation on monitoring, control and surveillance (MCS), including vessel monitoring systems (VMS) 				

Prioritized objectives	Regional activities	Regional projects, target implementation dates and location	Indicative cost and funding source (US\$)	Project ranking	Major project outputs
	<ul style="list-style-type: none"> ▪ Implementation of measures against illegal, unreported and unregulated (IUU) fishing including port States measures and flag State performance criteria ▪ Recognition of the cultural role played by fisheries especially in inshore areas and more isolated communities ▪ Promotion of fisheries activities to continue to support food security and nutrition (related to sustainable management) 				
<p>To reflect cultural and social values in policy and management decisions</p>	<ul style="list-style-type: none"> ▪ Regional discussions concerning harmonization and cooperation to strengthen management, including the identification of areas for harmonization ▪ Establishment of the regional scientific network for cooperative assessment of shared fishery resources 	<ul style="list-style-type: none"> ▪ Regional training course on fishery resources appraisal (dates and location to be determined) ▪ Pilot joint assessment of shared stocks (dates and location to be determined) 	<p>40 000 (Source ??)</p> <p>30 000 (Source ??)</p>		
<p>To promote regional cooperation and harmonization in fisheries, especially for shared stocks and fisheries</p>	<ul style="list-style-type: none"> ▪ Promotion of gear types to mitigate bycatch and environmental impacts ▪ Facilitation of practices to promote safety at sea, and improve food preservation methods and methods 				
<p>To encourage the adoption of relevant technology choices and especially technology that minimizes and reduces adverse fisheries and environmental impacts</p>					

**Draft list of activities for the RECOFI Working Group on Fisheries Management
(2008- 2012)¹**

Activity	Dates	Location	Outputs
Second session of the Working Group on Fisheries Management	27–30 October 2008	Cairo	<ul style="list-style-type: none"> ▪ Report of the Working Group ▪ A paper for RECOFI
Review of fisheries legislation in RECOFI Members	January 2009	Desk study to be undertaken at FAO headquarters, Rome	<ul style="list-style-type: none"> ▪ Report with a focus on gaps and shortcomings in fisheries legislation and measures to be taken to strengthen and harmonize it
Workshop on IUU fishing including port State measures	To be determined: possibly in March or April 2009	Location to be determined	<ul style="list-style-type: none"> ▪ Report of the Workshop: enhanced understanding of matter relating to IUU fishing and measures to combat it ▪ Paper for the third session of the Working Group on Fisheries Management
Review of national fisheries programmes	Dates to be confirmed (possibly March 2009)	Consultancy with country visits to RECOFI Members	<ul style="list-style-type: none"> ▪ Report on the review with recommendations for follow-up activity
Fifth session of RECOFI	May 2009	United Arab Emirates	<ul style="list-style-type: none"> ▪ Report of the session including guidance and direction for the Working Group on Fisheries Management
Workshop on stock status reporting	July 2009	To be determined	<ul style="list-style-type: none"> ▪ Report of the Workshop ▪ Harmonized national approaches to stock status reporting for regional compilation of data
Third session of Working Group on Fisheries Management	October 2009	Location to be determined	<ul style="list-style-type: none"> ▪ Report of the Working Group ▪ A paper for RECOFI (reporting on both the third and fourth session of the Working Group on Fisheries Management)
Review for the integration of annual catch and fishing effort data	To be confirmed (possibly March 2010)	Consultancy with country visits to RECOFI Members	<ul style="list-style-type: none"> ▪ Report on the review with recommendations for follow-up activity
Fourth session of Working Group on Fisheries Management	January 2011 (in advance of twenty-ninth session of COFI)	Location to be determined	<ul style="list-style-type: none"> ▪ Report of the Working Group ▪ A paper for RECOFI (reporting on the third and fourth session of the

¹ Subject to ongoing review, updating and change as circumstances require.

Activity	Dates	Location	Outputs
			Working Group on Fisheries Management
Sixth session of RECOFI	May 2011	State of Bahrain	<ul style="list-style-type: none"> ▪ Report of the session including guidance and direction for the Working Group on Fisheries Management

RECOFI Regional Strategy and Priorities for Regional Fisheries Management, including a workplan

- STRATEGY:** Promotion of sound and effective regional fisheries governance by:
- ensuring that fisheries are exploited and utilized in a responsible and long-term sustainable manner,
 - ensuring that fisheries generate maximum social and economic benefits for RECOFI countries, and
 - ensuring that ecosystem considerations are incorporated into conservation and management decisions.

Prioritized objectives	Regional activities	Regional projects, target implementation dates and location	Indicative cost and funding source (US\$)	Project ranking	Major project outputs
<p>1. To implement effective fisheries management through regional cooperation and harmonization, including shared stocks and fisheries of common interest</p>	<ul style="list-style-type: none"> ▪ Awareness building about the need for effective fisheries management (e.g. publications, media, etc.) ▪ Development and implementation of fisheries management plans for major fisheries ▪ Assessment and implementation of conservation measures (e.g. closed areas, seasons, restrictions on species and sizes) ▪ Assessment and implementation of fishing capacity reduction programmes ▪ Implementation of the precautionary approach to fisheries when conditions are uncertain ▪ Implementation on monitoring, control and surveillance, including vessel monitoring systems ▪ Implementation of measures against illegal, unreported and unregulated fishing including port States measures and flag State performance criteria ▪ Regional discussions concerning harmonization and cooperation to strengthen management, including the identification of areas for harmonization ▪ Establishment of a regional scientific network for cooperative fisheries appraisals 	<ul style="list-style-type: none"> ▪ Regional training workshop on fishery resources appraisal (2010/11 at a location to be determined) ▪ Pilot joint assessment of shared stocks (2011 at a location to be determined) 	<p>40 000 (Source: TBI¹)</p> <p>30 000 (Source: TBI)</p>	<p>9</p> <p>10</p>	<ul style="list-style-type: none"> ▪ Improved output of fisheries statistics ▪ Better trained personnel ▪ Increased capacity to manage fisheries ▪ Procedures for cooperative scientific work for key stocks

¹ TBI= to be identified

Prioritized objectives	Regional activities	Regional projects, target implementation dates and location	Indicative cost and funding source (US\$)	Project ranking	Major project outputs
<p>2. To facilitate human resource development and institutional strengthening to ensure the capacity to implement management measures</p>	<ul style="list-style-type: none"> ▪ Workshops, country attachments and other training opportunities to enhance human resource development ▪ Promotion of national and regional library and information resources to support fisheries management 	<ul style="list-style-type: none"> ▪ Workshop on IUU fishing including port State measures (already considered by the Commission) (March or April 2009 at a location to be determined) 	<p>33 000 (Source: RECOFI)</p>	<p>5</p>	<ul style="list-style-type: none"> ▪ Increased understanding of the adverse impacts of IUU fishing on fisheries management ▪ Better trained personnel to address IUU fishing
<p>3. To promote good science to underpin decisions for fisheries management</p>	<ul style="list-style-type: none"> ▪ Promotion of applied research (related to biodiversity and conservation and management measures) ▪ Collection and analysis of fisheries-dependent and independent data in support of fisheries appraisal and fisheries management ▪ Stock assessment to evaluate the status of stocks and development of management measures ▪ Harmonization of data collection and sets for regional analysis and management of shared stocks 	<ul style="list-style-type: none"> ▪ Project for the review of national fisheries programmes (already considered by the Commission) (2009 throughout region) ▪ Project for the integration of annual catch and fishing effort data (already considered by the Commission) (2009/10 throughout region) ▪ Workshop to develop stock status reporting in the RECOFI region (considered by the Commission and referred back to the Working Group) (July 2009 at a location to be determined) ▪ Workshop on GIS (2010 at a location to be determined) 	<p>40 000 (Source: TBI)</p> <p>30 000 (Source: TBI)</p> <p>30 000 (Source: RECOFI)</p> <p>30 000 (Source: TBI)</p>	<p>4</p> <p>2</p> <p>2</p> <p>6</p>	<ul style="list-style-type: none"> ▪ Technical reports to be submitted to the responsible national authority indicating major findings on data completeness and quality recommending short and medium-term actions for improving the performance of national statistical programmes ▪ A prototype regional database containing basic functionalities for data storage, integration and retrieval accompanied by an operations guide on other related documentation ▪ Establish a knowledge-base for key stocks in the region in support of fisheries management ▪ Agreed format for stock status reporting and integrated data ▪ Increased knowledge of GIS Steps to be taken to implement progressively GIS in support of fisheries management

Prioritized objectives	Regional activities	Regional projects, target implementation dates and location	Indicative cost and funding source (US\$)	Project ranking	Major project outputs
<p>4. To promote legal discussion and review and revise fisheries legislation to reflect policy and international commitments</p>	<ul style="list-style-type: none"> ▪ Review, revision and harmonization of fisheries legislation ▪ Acceptance and implementation of international instruments 	<ul style="list-style-type: none"> ▪ Workshop to improve the utilization of fishery dependent data (2010 at a location to be determined) ▪ Desk study to review fisheries legislation in RECOFI Members (2008/09) 	<p>30 000 (Source: TBI)</p> <p>2 000 (Source: RECOFI)</p>	<p>7</p> <p>1</p>	<ul style="list-style-type: none"> ▪ Guidelines and approaches in basic analyses of fisheries data supported by standard methodologies ▪ Improved knowledge of gaps in national fisheries legislation ▪ Enhanced basis to promote and implement regional harmonization in legislation
<p>5. To encourage the implementation of the ecosystem approach to fisheries</p>	<ul style="list-style-type: none"> ▪ Bycatch management and discards reduction (related to gear and food security issues) ▪ Implementation of the ecosystem approach to fisheries including the protection of biodiversity ▪ Promotion of gear types to mitigate bycatch and ecosystem impacts ▪ Facilitation of practices to promote safety at sea ▪ Promote improved post-harvest fish handling 				
<p>6. To reflect cultural and social values and economic consideration in fisheries management</p>	<ul style="list-style-type: none"> ▪ Recognition of the cultural role played by fisheries especially in inshore areas and more isolated communities ▪ Promotion of fisheries activities to continue to support food security and nutrition ▪ Collection and analysis of economic data and related information (e.g. employment, trade, value, cost of operations, losses due to poor handling, etc.) ▪ Promotion of responsible and sustainable fisheries development and value added activities (e.g. processing) ▪ Implementation of measures to maintain the contribution of fisheries to livelihoods especially where alternative employment opportunities are limited 	<ul style="list-style-type: none"> ▪ Workshop on fishery economic performance, dynamics and trends (2010 at a location to be determined) 	<p>30 000 (Source: TBI)</p>	<p>8</p>	<ul style="list-style-type: none"> ▪ Enhanced understanding of the economic dimensions of the fishing industry in the region with a view to the development of economic indicators

Prioritized objectives	Regional activities	Regional projects, target implementation dates and location	Indicative cost and funding source (US\$)	Project ranking	Major project outputs
7. To coordinate and promote information exchange relating to fish trade in the RECOTI region	<ul style="list-style-type: none"> ▪ Promote better cooperation in regional fish trade ▪ Establish regional standards for fish exports and imports 				

**List of activities for the RECOFI Working Group on Fisheries Management
(2008–2011)¹**

Activity	Indicative dates	Location	Outputs
Second session of the Working Group on Fisheries Management	27–30 October 2008	Cairo	<ul style="list-style-type: none"> ▪ Report of the Working Group ▪ A paper for RECOFI
Review of fisheries legislation in RECOFI Members	November 2008/January 2009	Desk study to be undertaken at FAO headquarters, Rome	<ul style="list-style-type: none"> ▪ Report with a focus on gaps and shortcomings in fisheries legislation and measures to be taken to strengthen and harmonize it
Workshop on IUU Fishing including port State measures	To be determined: possibly in March or April 2009	Location to be determined	<ul style="list-style-type: none"> ▪ Report of the Workshop: enhanced understanding of matter relating to IUU fishing and measures to combat it ▪ Paper for the third session of the Working Group on Fisheries Management
Review of national fisheries programmes	Dates to be confirmed: possibly March 2009	Consultancy with country visits to RECOFI Members	<ul style="list-style-type: none"> ▪ Report on the review with recommendations for follow-up activity
Fifth session of RECOFI	May 2009	United Arab Emirates	<ul style="list-style-type: none"> ▪ Report of the session including guidance and direction for the Working Group on Fisheries Management
Workshop to develop stock status reporting in the RECOFI region	July 2009	To be determined	<ul style="list-style-type: none"> ▪ Report of the Workshop ▪ Harmonized national approaches to stock status reporting for regional compilation of data
Third session of Working Group on Fisheries Management	October 2009	Location to be determined	<ul style="list-style-type: none"> ▪ Report of the Working Group ▪ A paper for RECOFI (reporting on both the third and fourth session of the Working Group on Fisheries Management)
Review for the integration of annual catch and fishing effort data	To be confirmed: possibly March 2010	Consultancy with country visits to RECOFI Members	<ul style="list-style-type: none"> ▪ Report on the review with recommendations for follow-up activities ▪ A prototype regional database containing basic functionalities for data storage, integration and retrieval accompanied by an operations guide on other related documentation
Workshop to improve the utilization of fishery dependent data	To be confirmed: 2010	Location to be determined	<ul style="list-style-type: none"> ▪ Guidelines and approaches in basic analyses of fisheries data supported by standard methodologies

¹ Subject to ongoing review, updating and change as circumstances require.

Activity	Indicative dates	Location	Outputs
Workshop on GIS	To be confirmed: 2010	Location to be determined	<ul style="list-style-type: none"> ▪ Increased knowledge of GIS ▪ Steps to be taken to implement progressively GIS in support of fisheries management
Workshop on fishery economic performance, dynamics and trade	To be confirmed: 2010	Location to be determined	<ul style="list-style-type: none"> ▪ Enhanced understanding of the economic dimensions of the fishing industry in the region with a view to the development of economic indicators
Regional training workshop on fisheries resources appraisal	To be confirmed: 2010 or 2011	Location to be determined	<ul style="list-style-type: none"> ▪ Improved output of fisheries statistics ▪ Better trained personnel ▪ Increased capacity to manage fisheries ▪ Report of the Workshop
Fourth session of Working Group on Fisheries Management	January 2011	Location to be determined	<ul style="list-style-type: none"> ▪ Report of the Working Group ▪ A paper for RECOFI (reporting on the third and fourth session of the Working Group on Fisheries Management)
Pilot joint assessment of shared stocks	To be confirmed: 2011	Location to be determined	<ul style="list-style-type: none"> ▪ Procedure for cooperative scientific work for key stocks ▪ Report of the activity
Sixth session of RECOFI	May 2011	State of Bahrain	<ul style="list-style-type: none"> ▪ Report of the session including guidance and direction for the Working Group on Fisheries Management

Terms of reference for fisheries management focal points to support the activities of the Working Group on Fisheries Management

Purpose

The purpose of this paper is to highlight the important role played by RECOFI focal points, to invite the Working Group on Fisheries Management to approve terms of reference for the focal points on fisheries management and to invite and encourage Members to nominate focal points and alternative focal points at the second session of the Working Group on Fisheries Management, and if not, by 1 December 2008.

Role of focal points

RECOFI Members have nominated already national focal points (NFPs) and national focal points for aquaculture. They facilitate the work of the Commission, especially in inter-sessional periods. The national focal points carry out advisory and liaison functions with respect to the Commission's programme of work and its relevance to national fisheries policy. In addition, the NFPs maintain contact with the Commission's Secretariat, focusing on a range of activities fundamental to the Commission's smooth and sound operation. The national focal points for aquaculture perform similar functions to their NFP counterparts although with a tighter and more direct focus on aquaculture and related issues.

To ensure the effective operation of the Working Group on Fisheries Management RECOFI Members are invited to nominate national focal points on fisheries management.

Nomination of national focal points on fisheries management

Taking account of the responsibilities identified for the focal points on fisheries management, RECOFI Members are invited to nominate a focal point and an alternate focal point. For fast and effective communication with the Secretariat and with focal points in other countries, it is essential that the nominees have access to electronic communication.

Members are invited to advise the names and full contact details (address, phone numbers, fax numbers and e-mail addresses) of their nominees to the Secretary of RECOFI (piero.mannini@fao.org) with a copy to the Technical Secretary of the Working Group on Fisheries Management (david.doulman@fao.org) by the date of the second session of the Working Group on Fisheries Management and in any event not later than 1 December 2008.

Action to finalize the national focal points on fisheries management will taken in advance of the fifth session of RECOFI in 2009 so as to ensure that the momentum on refocusing and revitalizing the Working Group is not lost and that planning for activities in 2009 can proceed without interruption. However, the Commission's fifth session will be informed of the action taken to appoint the focal points.

Draft terms of reference

Draft terms of reference for the national focal points on fisheries management have been prepared and are in Annex 1. The Working Group is reminded that fisheries conditions change, often in a relatively short period of time, and it is for this reason that the terms of reference for the focal points should be revised from time-to-time to ensure that they remain relevant and current.

Suggested action by the Working Group

The Working Group is invited to consider the draft terms of reference for the national focal points on fisheries management and to comment on them, as appropriate. Moreover, Members are invited to nominate national focal points and alternative national focal points at the second session of the Working Group, and if not by that date, by 1 December 2008.

Regional Commission for Fisheries

Draft terms of reference for the national focal points on fisheries management

The national focal points on fisheries management will:

- promote the activities of the Working Group, especially in the intersessional periods;
- disseminate information concerning fisheries management nationally and in the region;
- facilitate the exchange of information relating to conservation and management;
- promote and enhance regional cooperation among Members and the harmonization of conservation and management measures;
- bring national conservation and management issues to the attention of the Working Group;
- advise on, and assist in the formulation of, *inter alia*, work programmes, projects and other activities;
- act to support the implementation of activities consistent with the above responsibilities; and
- liaise with the Technical Secretary, as required, to promote and facilitate the good governance of the Working Group.

Furthermore, the focal points on fisheries management will ensure that the RECOFI national focal points are briefed fully on the activities of the Working Group on Fisheries Management and, as appropriate, provide advice on the Commission's programme of work and budget and other activities, including on their relevance to national policy.

To ensure that the national focal points on fisheries management are in a position to undertake these responsibilities, they should be experienced fisheries managers with ready and regular access to RECOFI national focal points and other national policy makers.

The Working Group on Fisheries Management may review these terms of reference from time- to-time and make recommendations for their amendment.

Stock status reporting

Purpose

The purpose of this paper is to seek the technical views and input from the Working Group on Fisheries Management concerning stocks status reporting. In considering document RECOFI/IV/2007/5 entitled “Guidelines for reporting stocks status”¹, the Regional Commission for Fisheries (RECOFI) at its fourth session (Jeddah, Kingdom of Saudi Arabia, 7–9 May 2007) addressed the matter but referred the issue to the Working Group for further analysis. Document RECOFI/IV/2007/5 is attached in Annex 1.

Background

The Working Group will recall that the Agreement for the Establishment of the Regional Commission for Fisheries (the Agreement)² in Article III paragraph 1 (a) in referring to living marine resources within the Commission area shall “... keep under review the state of these resources, including their abundance and the level of their exploitation, as well as the status of the fisheries based thereon. ...”. In addition, the Agreement in Article III paragraph 2 requires that the Commission “... take into account also the best scientific evidence available and the need to promote the development and proper utilization of the marine living resources.”³ The draft terms of reference for the Working Group on Fisheries Management mirror these requirements.⁴

The issue of stock status reporting is fundamental to the RECOFI mandate. The Commission’s ongoing review of stock status will be based primarily on assessments undertaken at the national and regional levels. It is therefore important that Members are in a position to provide standardized national data to support regional stock assessments for fisheries management.

In discussing document RECOFI/IV/2007/5 some Members expressed concern about their capacity to implement fully the proposed formats and to cope with the level of detail required.⁵ The Commission agreed generally that though the reporting format was simple and well conceived, reporting procedures would involve lengthy, and at times difficult, studies at species level, an undertaking that not all Members would be able to achieve. It was suggested that it would be more realistic for such reporting to be undertaken at a more general level, at least during the initial stage. Moreover, the Commission agreed that the proposed reporting formats contained technical issues that would be analyzed more appropriately by the Working Group on Fisheries Management.

Comprehensive and standard stock status reporting

The Agreement requires accurate and timely data for stock status reporting and RECOFI has confirmed that data should be comprehensive and standardized across the region. Accurate, timely, comprehensive and standard data are critical for stock assessment, especially where stocks are shared between and among countries such as in the RECOFI region.

Document RECOFI/IV/2007/5 addressed guidelines for reporting stock status. It provided an explanation of data to be collected for describing the status of exploited fish stocks by RECOFI Members. Table 1 was intended to be used by Members to collect data from as many sources as

¹ FAO/RNE. 2007. Guidelines for Reporting Stocks Status. RECOFI/IV/2007/5. FAO/RNE. Cairo. 5p.

² See the Agreement at: <http://www.fao.org/legal/treaties/028t-e.htm>

³ See paragraph 2 of Article III of the Agreement.

⁴ See Appendix 1 to document RECOFI:WGFM2/2008/3

⁵ See paragraphs 44-47. FAO. 2008. Report of the Fourth Session of the Regional Commission for Fisheries. FAO Fisheries Report No. 847. FAO. Rome. p. 7.

possible, while also collaborating with competent regional organizations and non-government organizations. The purpose of Table 2 was to facilitate the calculations of stock assessment indicators. These data would be reported by Members to the Commission in standard formats. This information would enable RECOFI to be informed about the about the likely effects of further fishing and the impacts of different fishing patterns and intensities on stocks, as well as to monitor the effect of applied fisheries management measures. It would also form the basis for conservation and management measures to be adopted by the Commission.

Given the fundamental role of stock status reporting to RECOFI's mandate, stock assessment and fisheries management, it is proposed that a workshop extending over three days at a location to be determined will be held in July 2009 prior to the third session of the Working Group on Fisheries Management (tentatively scheduled for October 2009). Draft terms of reference for the workshop are in Annex 2.

Suggested action by the Working Group

In accordance with RECOFI's request that the Working Group on Fisheries Management consider the technical aspects of document RECOFI/IV/2007/5, the Working Group is invited to comment generally on reporting formats for stock status reporting.

Furthermore and specifically, the Working Group is invited, taking account of national fisheries situations, to (i) review and comment on Table 1 and 2, (ii) address issues or concerns relating to the status of fisheries resources and (iii) formulate recommendations to RECOFI for follow-up action with respect to stock status reporting.

In order to proceed coherently and in a consistent way throughout the RECOFI region, the Working Group is invited to identify and agree on a set of priority species whose stocks are of common interest to RECOFI members. It is suggested that a basic list of priority species is compiled on the basis of their bioecological and economic relevance. Moreover, the listed species should possibly be representative/target of specific fisheries.

In the event that the Working Group is of the opinion that the proposed approach to stock status reporting is too difficult for all Members to implement, a more general approach, for the initial period, should be proposed for implementation at the proposed RECOFI workshop on stock assessment in 2009.

Furthermore, the Working Group is invited to consider the proposal for a workshop on stock status reporting to be held in mid 2009 prior to the third session of the Working Group on Fisheries Management. If it is agreed to proceed with the workshop, funding will have to be secured.

Guidelines for reporting stock status

Paper RECOFI/IV/2007/5 presented at the fourth session of the Regional Commission for Fisheries, held in Jeddah, Kingdom of Saudi Arabia, 7–9 May 2007

SUMMARY

This paper provides a description of data to be collected that can be used to describe the status of the respective fish stocks exploited in the RECOFI area.

1. National reports should preferably have the following structure:
 - Introduction
 - Status of fisheries resources (Use attached Tables 1 and 2 and provide comments as necessary)
 - Issues or concerns related to the status of fishery resources
 - Recommendations for consideration by the Regional Commission for Fisheries (RECOFI)

Notes relating to completion of Table 1

Background

The purpose of this table is to enable the Commission to examine and report on the current status of fisheries resources in the Commission area using information from as many sources as possible obtained from member countries as well as collaboration with relevant competent regional organisations and regional NGOs. This will allow an assessment and report to the Commission on the status of stocks of relevance to the Commission and the likely effects of further fishing and of different fishing patterns and intensities”.

The term “stocks of relevance to the Commission” is broad and includes transboundary/straddling stocks, as well as stocks of species that are found in more than one country.

Table fields

The following notes provide guidance for completing Table 1.

Species: Provide the scientific name – genus and trivial name, e.g. *Penaeus semisulcatus*.

Stock: If there are more than one stocks of the species for which assessments are done, provide the name of the stock unit.

Transboundary and/or straddling stock: Indicate with a “T” if the stock extends to the waters of an adjacent country; indicate with an “S” if the range of the stock extends beyond the EEZ to the high seas; use EEZ if the stock is entirely within national territory or jurisdiction.

Abundance: If an absolute estimate of stock abundance exists, i.e. x tonnes, indicate with a “√”; if not use an “x”. If a relative index of abundance exists, e.g. a catch-per-unit-effort measure, or trend, likewise use a “√”; or “x” otherwise.

Current biomass: If there is a current estimate of stock biomass (i.e. estimated within the last 12 months) provide the biomass value in tonnes. It will be useful to indicate how the biomass was estimated.

Unfished biomass: The ‘unfished’ biomass is the biomass of the stock before fishing started. If this is known, indicate. Again, be able to provide supporting comments if appropriate.

Stock status

- U:** Underexploited, undeveloped or a new fishery. Believed to have a significant potential for expansion.
- M:** Moderately exploited, exploited with a low level of fishing effort. Believed to have some limited potential for expansion in total production.
- F:** Fully exploited. The fishery is operating at, or close to, an optimum yield, with no expected room for expansion.
- O:** Overexploited. The fishery is being exploited at above a level that is believed to be sustainable in the long term, with no potential room for further expansion and a higher risk of stock depletion/collapse.
- D:** Depleted. Catches are well below historical levels, irrespective of the amount of fishing effort exerted.
- R:** Recovering. Catches are again increasing from after having been depleted or collapsing from a previous high.

Fishing mortality: If the current fishing mortality is estimated, please indicate, otherwise mark with a “x”. Likewise for fishing the estimated mortality at “MSY”.

Detailed stock assessment information

Table 2 provides an opportunity to provide more detailed information.

Table 2
Detailed Stock Assessment Indicator

Fishery Management Unit:

		Estimate	Comment
Biomass	Unfished stock biomass (B_0)		Exists? How estimated?
	Current stock biomass (B_{SB})		Note how estimated, e.g. trawl, acoustic survey? Stock Structure models – VPAs and derivatives
	Spawning stock biomass (B_{SSB})		Biomass of mature individuals
	Biomass giving MSY (B_{MSY})		
	Biomass at minimum SSB		Minimum SSB is a limit reference point at which lower stock biomasses levels are considered highly undesirable
	Target biomass		What level of biomass provides a target reference point
Mortality	Natural mortality (M)		
	Fishing mortality (F) at MSY (F_{MSY})		
	$F_{0.1}$		Or some other fishing effort reference unit
	Current F		
Fishing effort	Fishing Effort		Indicate units of fishing effort ; provide time series
	Technological creep		Analysis of changes in fishing power over time
	Fishing effort at MSY (F_{MSY})		
	Fishing effort at reference level of fishing mortality (F_{Ref})		
	Recruitment measure/index		Implies some means of determining recruitment exists
Yield	Maximum sustainable yield (MSY)		Indicate model(s) used to provide the estimate
	Optimum Yield		May involved economic (and/or social) considerations
	Total allowable catch (TAC) or effort (TCE)		This should be the most recent value.
	Year when current MSY was determined		
	Year when current TAC/TCE was determined		

**Draft terms of reference
Workshop on Stock Status Reporting**

BACKGROUND

Sustainable fisheries require productive fish stocks. Controlled exploitation of any resources species by fishing necessitates knowledge of its biological characteristics, effective methods for the quantitative assessment of the population size, composition and distribution, and an understanding of the likely effects of exploitation. Key features of the target species, such as growth rate, lifespan and the timing of reproduction and recruitment, are clearly important to the numbers and biomass of the stock. The aim of fisheries assessment is to establish the status of a resource and to determine the levels at which it may be sustainably exploited. Stock estimates, in addition to environmental, economic, sociological and policy considerations, are then used to formulate and suggest management strategies for the fishery.

The issue of stock status reporting is fundamental to the RECOFI mandate. Little progress, however, has been made towards standardized national and regional assessments of RECOFI fishery resources. The Commission at its fourth session (Jeddah, Kingdom of Saudi Arabia, 7-9 May 2007) addressed the matter of stock status reporting but referred this issue to the Working Group on Fisheries Management for further analysis. In fact, the Commission agreed that the proposed reporting formats contained technical issues that would be analyzed more appropriately by its relevant technical subsidiary bodies.

OBJECTIVES

The objectives of the workshop are to:

- Analyze and appraise the status of RECOFI fishery stocks identifying and highlighting trends in stock abundance, structure and occurrence, and in fishery exploitation pattern;
- Review the current knowledge on the bio-ecology and fishery exploitation of the main/priority species;
- Consider the on-going national and sub-regional stock assessment activities identifying priority areas and regional cooperation needs and potential joint activities;
- Formulate the RECOFI work programme for regional cooperative stock assessment and fishery appraisal in the short and medium term.

OUTCOMES AND IMPACTS

The expected outcomes and impacts of the workshop are to:

- Stock status of priority species assessed at the national and regional level and management actions to be undertaken formulated as necessary;
- Regional priorities identified and a common plan of action to improve the monitoring and appraisal of fishery resources outlined;
- The RECOFI regional network of fishery scientists established and a regional coordinator/ reference person elected. Such a network is expected to be highly instrumental in supporting the RECOFI, in particular its Working Group on Fisheries Management;
- Essential knowledge base and assessment of stock status compiled and available to the RECOFI and its subsidiary bodies (i.e. Working Group on Fisheries Management).

STRUCTURE OF THE WORKSHOP

The workshop is structured in two parts. The first section will consist in the presentation and discussion of scientific papers on the stock assessment and fishery appraisal of key/priority vertebrate and invertebrate species. Papers will be compiled according to a standard format proposed by the Secretariat. This will make the basis for the second part of the workshop during which assessments and results presented will be discussed in the light of the workshop objectives and expected outcomes.

The FAO Fisheries Management and Conservation Service will be part of the workshop Secretariat and will provide technical backstopping in coordination with the RECOFI Secretary. The elected Chairperson/Coordinator will ensure the workshop follow-up in cooperation with the RECOFI Secretary. An editorial team will be established to finalize the workshop proceedings which will be published in the FAO Fishery Report Series.

FUNDING

The workshop will be hosted by Members will be responsible for their own costs for the workshop.

INVITATIONS AND PARTICIPATION

Invitations for the workshop will be issued by the Secretary of RECOFI. Each Member can nominate three participants. They should be involved actively in work relating to stock assessment.

LOCATION AND DATES

Pending confirmation, it is anticipated that the workshop be held at from to July 2009.

LANGUAGES

The workshop will be conducted in English.

ADMINISTRATIVE ARRANGEMENTS

Administrative arrangements will be handled by

REPORT OF THE WORKSHOP

The report of the workshop will be published in the FAO Fisheries Department report series.

WORKSHOP INFORMATION

Additional information about the workshop can be obtained from:

OFFICERS OF THE WORKSHOP

Officers of the workshop will include:

Workshop coordinator:
 Technical Secretary:
 Secretary:
 Workshop assistant:

List of key species supporting main reference fisheries in the RECOFI area

FAO name	ASFIS code	Common name	Scientific name
Penaeid shrimps nei	PEZ	Shrimps	Penaeidae
Blue swimming crabs	SCD	Blue swimming crab	<i>Portunus pelagicus</i>
Pharaoh cuttlefish	IAH	Cuttlefish	<i>Sepia pharaonis</i>
Stolephorus anchovies	STO	Anchovies	<i>Stolephorus</i> spp.
Indian oil sardine	IOS	Indian oil sardine	<i>Sardinella longiceps</i>
Bludger	NGY	Jacks	<i>Carangoide gymnostethus</i>
Golden trevally	GLT	Golden trevally	<i>Gnathanodon speciosus</i>
Indian mackerel	RAG	Indian mackerel	<i>Rastrelliger kanagurta</i>
Snubnose emperor	LBW	Orangefinned emperor	<i>Lethrinus borbonicus</i>
Pink ear emperor	LTS	Redspot emperor	<i>Lethrinus lentjan</i>
Spangled emperor	LHN	Spangled emperor	<i>Lethrinus nebulosus</i>
Coral hind	CFI	Coral grouper/Bluespotted grouper	<i>Cephalopholis miniata</i>
Orange-spotted grouper	ENI	Orange-spotted grouper	<i>Epinephelus coioides</i>
White-spotted spinefoot	SCN	Rabbitfish	<i>Siganus canaliculatus</i>
Narrow-barred Spanish mackerel	COM	King mackerel/Narrow-barred Spanish mackerel	<i>Scomberomorus commerson</i>
Longtail tuna	LOT	Longtail tuna	<i>Thunnus tonggol</i>
Requiem sharks nei	RSK	Sharks	Carcharhinidae

APPENDIX O

Standardized boat-gear classifications

Fisheries		Number of boats (licensed)	Number of boats (operating)	Number of fishers (licensed)	Number of fishers (opearing)	Total efforts (with definition): can be multiple	Average number of gears used	Catch by species
Shrimp trawls	Semi-industrial	X	X	X	X	X		X
	Dhows	X	X	X	X	X		X
	Speed boats	X	X	X	X	X		X
Trawls	boats >24m	X	X	X	X	X		X
	Semi-industrial	X	X	X	X	X		X
	Dhows	X	X	X	X	X		X
	Speed boats	X	X	X	X	X		X
Beach seines	# of seines	# of seines	X	X	X		X	
Gillnets	Semi-industrial	X	X	X	X	X		X
	Dhows	X	X	X	X	X		X
	Speed boats	X	X	X	X	X		X
Driftnets	Semi-industrial	X	X	X	X	X		X
	Dhows	X	X	X	X	X		X
	Speed boats	X	X	X	X	X		X
Fixnet	Semi-industrial	X	X	X	X	X		X
	Dhows	X	X	X	X	X		X
	Speed boats	X	X	X	X	X		X
Spanish mackerel fixnet	Semi-industrial	X	X	X	X	X		X
	Dhows	X	X	X	X	X		X
	Speed boats	X	X	X	X	X		X
Small wire traps	Semi-industrial	X	X	X	X	X	X	X
	Dhows	X	X	X	X	X	X	X
	Speed boats	X	X	X	X	X	X	X
Medium wire traps	Semi-industrial	X	X	X	X	X	X	X
	Dhows	X	X	X	X	X	X	X
	Speed boats	X	X	X	X	X	X	X
Large wire traps	Semi-industrial	X	X	X	X	X	X	X
	Dhows	X	X	X	X	X	X	X
	Speed boats	X	X	X	X	X	X	X
Crab traps	Semi-industrial	X	X	X	X	X	X	X
	Dhows	X	X	X	X	X	X	X

Fisheries	Number of boats (licensed)	Number of boats (operating)	Number of fishers (licensed)	Number of fishers (opearing)	Total efforts (with definition): can be multiple	Average number of gears used	Catch by species
Speed boats	X	X	X	X	X	X	X
Barriers	# of barriers	# of barriers	X	X	X		X
Longlines	boats >24m	X	X	X	X		X
	Semi-industrial	X	X	X	X		X
	Dhows	X	X	X	X		X
	Speed boats	X	X	X	X		X
Hooks and lines	Semi-industrial	X	X	X	X		X
	Dhows	X	X	X	X		X
	Speed boats	X	X	X	X		X
Handlines	Semi-industrial	X	X	X	X		X
	Dhows	X	X	X	X		X
	Speed boats	X	X	X	X		X
Ladle, scooping	X	X	X	X	X		X
Diving	X	X	X	X	X		X
Cast nets		X	X	X	X		X

This document contains the report of the second session of the RECOFI Working Group on Fisheries Management, which was held in Cairo, Egypt, from 27 to 30 October 2008. The Working Group addressed important issues including the election of the Chairperson and Vice-Chairperson; the adoption of the agenda and arrangements for the session; the improvement of the utility and diffusion of fisheries statistical data among RECOFI Members; the transition of the Working Group on Statistics to the Working Group on Fisheries Management, including the adoption of terms of reference for the Working Group; the identification and establishment of priorities for a future plan of work for the Working Group; the consideration and adoption of terms of reference for fisheries management focal points to support the activities of the Working Group; the need for enhanced stock status reporting; the demonstration and review of several statistical applications; the consideration of other matters, the date and place of the third session of the Working Group and the adoption of the report. It will be forwarded to the fifth session of RECOFI for deliberation at its next meeting in May 2009 in the United Arab Emirates.

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