

September 2008



منظمة الأغذية  
والزراعة  
للأمم المتحدة

联合国  
粮食及  
农业组织

Food  
and  
Agriculture  
Organization  
of  
the  
United  
Nations

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

Продовольственная и  
сельскохозяйственная  
организация  
Объединенных  
Наций

Organización  
de las  
Naciones  
Unidas  
para la  
Agricultura  
y la  
Alimentación

## REGIONAL COMMISSION FOR FISHERIES

### Second Session of the Working Group on Fisheries Management (formerly Working Group on Fishery Statistics)

Cairo, Egypt, 27-30 October 2008

### STOCK STATUS REPORTING

#### PURPOSE

1. 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"<sup>1</sup>, 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 Appendix 1.

#### BACKGROUND

2. The Working Group will recall that the Agreement for the Establishment of the Regional Commission for Fisheries (the Agreement)<sup>2</sup> 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."<sup>3</sup> The draft terms of reference for the Working Group on Fisheries Management mirror these requirements.<sup>4</sup>

3. 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.

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

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

<sup>3</sup> See paragraph 2 of Article III of the Agreement.

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

4. 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.<sup>5</sup> 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**

5. 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.

6. 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 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.

7. 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 Appendix 2.

### **SUGGESTED ACTION BY THE WORKING GROUP**

8. 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.

9. 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.

10. 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

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<sup>5</sup> 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.

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compiled on the basis of their bio-ecological and economic relevance. Moreover, the listed species should possibly be representative/target of specific fisheries.

11. 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.

12. 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.

May 2007



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## REGIONAL COMMISSION FOR FISHERIES (RECOFI)

### Fourth Session

Jeddah, Kingdom of Saudi Arabia, 7 - 9 May 2007

## GUIDELINES FOR REPORTING STOCK STATUS

### 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

2. **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

3. 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**

4. Table 2 provides an opportunity to provide more detailed information.

**Table 2**  
Detailed Stock Assessment Indicator

**Fishery Management Unit:** .....

		<b>Estimate</b>	<b>Comment</b>
<b>Biomass</b>	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.
<b>Mortality</b>	Natural mortality (M)		
	Fishing mortality (F) at MSY ( $F_{MSY}$ )		
	$F_{0.1}$		Or some other fishing effort reference unit
	Current F		
<b>Fishing effort</b>	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.
<b>Yield</b>	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: