

**REGIONAL COMMISSION FOR FISHERIES**

**Report of the**

---

**SEVENTH MEETING OF THE RECOFI WORKING GROUP ON FISHERIES  
MANAGEMENT**

**Kuwait City, the State of Kuwait, 5–7 November 2013**



Copies of FAO publications can be requested from:  
Sales and Marketing Group  
Food and Agriculture Organization  
of the United Nations  
E-mail: [publications-sales@fao.org](mailto:publications-sales@fao.org)  
Fax: +39 06 57053360  
Web site: [www.fao.org/icalog/inter-e.htm](http://www.fao.org/icalog/inter-e.htm)

Report of the  
SEVENTH MEETING OF THE RECOFI WORKING GROUP ON FISHERIES MANAGEMENT  
Kuwait City, the State of Kuwait, 5–7 November 2013

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO in preference to others of a similar nature that are not mentioned.

The views expressed in this information product are those of the author(s) and do not necessarily reflect the views or policies of FAO.

ISBN 978-92-5-108273-7 (print)  
E-ISBN 978-92-5-108274-4 (PDF)

© FAO, 2014

FAO encourages the use, reproduction and dissemination of material in this information product. Except where otherwise indicated, material may be copied, downloaded and printed for private study, research and teaching purposes, or for use in non-commercial products or services, provided that appropriate acknowledgement of FAO as the source and copyright holder is given and that FAO's endorsement of users' views, products or services is not implied in any way.

All requests for translation and adaptation rights, and for resale and other commercial use rights should be made via [www.fao.org/contact-us/licence-request](http://www.fao.org/contact-us/licence-request) or addressed to [copyright@fao.org](mailto:copyright@fao.org).

FAO information products are available on the FAO website ([www.fao.org/publications](http://www.fao.org/publications)) and can be purchased through [publications-sales@fao.org](mailto:publications-sales@fao.org).

## PREPARATION OF THIS DOCUMENT

This is the final version of the report as approved by the Seventh Meeting of the Working Group on Fisheries Management (WGFM), held in Kuwait City, the State of Kuwait from 5 to 7 November 2013. The report was prepared by the WGFM Secretariat. Many thanks are due to the Public Authority of Agriculture Affairs and Fish Resources, Kuwait for the support and excellent hosting of the meeting.

The country reports are reproduced as submitted.

**FAO. Regional Office for the Near East and North Africa.** 2014.

*Report of the Seventh Meeting of the RECOFI Working Group on Fisheries Management, Kuwait City, the State of Kuwait, 5–7 November 2013.*

FAO Fisheries and Aquaculture Report No. 1071. Rome. 74 pp.

### ABSTRACT

This document contains the report of the Seventh Meeting of the Regional Commission for Fisheries (RECOFI) Working Group on Fisheries Management (WGFM), which was held in Kuwait City, the State of Kuwait, from 5 to 7 November 2013. The WGFM addressed and made decisions on matters concerning relevant follow-up to the sixth meeting of the RECOFI WGFM and to the Seventh Session of RECOFI that was held in Tehran, Islamic Republic of Iran, during the period from 14 to 16 May 2013. Country reports on the status of national fisheries were presented and discussed. The WGFM formulated further work on the socio-economics of fisheries in the region. The enforcement of the recommendation on minimum data reporting was reviewed and the urgent need to establish a data access policy and protocol was considered. The WGFM identified the objectives, data and skills requirement of the first regional joint assessment of the narrow-barred Spanish mackerel. The importance of the regional approach to fisheries management was recognized, initially with a particular focus on developing management procedures with regards to shrimp trawling and management plan for the narrow-barred Spanish mackerel.

## CONTENTS

	<b>Page</b>
OPENING OF THE MEETING .....	1
ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE MEETING .....	1
MAIN OUTCOMES OF THE SEVENTH SESSION OF RECOFI AND IMPLICATIONS FOR THE WGFM .....	1
COUNTRY REPORTING .....	3
FISHERY SOCIO-ECONOMICS: DESIGN AND IMPLEMENTATION OF A REGIONAL WORKPLAN .....	3
UPDATE ON THE IMPLEMENTATION OF THE RECOFI RECOMMENDATION ON MINIMUM DATA REPORTING .....	4
PREPARATORY WORK TO THE REGIONAL JOINT KINGFISH STOCK ASSESSMENT WORKSHOP .....	5
PROGRESS TOWARDS A REGIONAL FISHERIES MANAGEMENT FRAMEWORK .....	7
ANY OTHER MATTERS .....	8
DATE AND PLACE OF THE EIGHTH MEETING OF THE WORKING GROUP ON FISHERIES MANAGEMENT .....	8
ADOPTION OF THE REPORT .....	8
 <b>APPENDIXES</b>	
A Agenda .....	9
B List of participants .....	10
C List of documents .....	13
D Speech of Mr Faisal Al-Hassawi, Deputy Director-General, Fisheries Sector, Public Authority of Agricultural Affairs and Fish Resources, State of Kuwait .....	15
E Opening statement by Mr Piero Mannini, Senior Fishery Officer on behalf of Mr Abdessalam Ould Ahmed, Regional Representative, FAO Regional Office for the Near East and North Africa .....	16
F Main outcomes of the seventh of RECOFI and implications for the WGFM .....	18
G List of National Focal Points .....	20
H Qatar country report .....	25
I Kuwait country report .....	27
J Oman country report .....	30
K Iraq country report .....	35
L Fisheries status and research developments in Kuwait .....	37
M Fishery socio-economics: design and implementation of a regional workplan .....	49
N Draft social and economic questionnaire for RECOFI .....	51
O Update on the implementation of the RECOFI recommendation on Minimum Data Reporting .....	54
P Preparatory work to the regional joint Kingfish stock assessment workshop .....	71
Q Fisheries Management in the RECOFI Area .....	73

## **OPENING OF THE SESSION**

1. The seventh meeting of the Regional Commission for Fisheries (RECOFI) Working Group on Fisheries Management (WGFM) was held at the Safir Hotel in Kuwait City, the State of Kuwait, from 5 to 7 November 2013. The meeting was convened by the Food and Agriculture Organization of the United Nations (FAO) and RECOFI. The meeting was attended by 19 delegates from four Members of the Commission and three representatives from one observer organization. A list of delegates and observers is attached as Appendix B.
2. On behalf of Mr Faisal Al-Hassawi, Deputy Director-General, Fisheries Sector, Public Authority of Agricultural Affairs and Fish Resources, the State of Kuwait, Mr Mohammed Al-Kharafi, Head of Bio-Aquatic Studies and Research, Public Authority of Agricultural Affairs and Fish Resources, Kuwait, called the meeting to order. He welcomed all meeting attendees to Kuwait and emphasized his support for RECOFI, and in particular for a collaborative regional approach to improve regional fisheries management and to strengthen the combined efforts of Member countries to effectively manage and sustainably utilize marine resources in the RECOFI region. His statement is in Appendix D.
3. Mr Piero Mannini, RECOFI Secretary and Senior Fishery Officer, FAO Regional Office for the Near East and North Africa, Cairo, Egypt, made a statement on behalf of Mr Abdessalam Ould Ahmed, Assistant Director-General and Regional Representative for the Near East and North Africa, FAO Regional Office for the Near East and North Africa, Cairo, Egypt. Mr Mannini emphasized that sound management and the development of the regional fisheries wealth necessarily require the establishment and development of regional and subregional cooperation for fisheries and environmental research, and further called upon all RECOFI Member Countries for their participation and support to the Commission without delay, urgently noting the recent reporting of a dramatic decrease in fish stocks in the region between 1975 and 2010 while a staggering increase in fishing effort has led to excessive exploitation and deterioration of the fishery resources. The statement is in Appendix E.
4. Due to the fact that the current Chairperson of the WGFM Mr Abdul Karim Radhi, was unable to attend, the Member countries agreed that Mr Mohammed Al-Kharafi, Kuwait, would chair the meeting.

## **ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE MEETING**

5. The Agenda, attached as Appendix A, was adopted. The list of documents for the session is attached as Appendix C.
6. The Chairperson invited the Secretary of RECOFI to explain administrative arrangements for the meeting.

## **MAIN OUTCOMES OF THE SEVENTH SESSION OF RECOFI AND IMPLICATIONS FOR THE WGFM**

7. The Secretary of RECOFI presented document RECOFI:WGFM7/2013/2. It is attached in Appendix F.
8. The WGFM noted with appreciation the outcomes of the seventh session of RECOFI, emphasizing that these would be considered throughout the duration of the current meeting.
9. The meeting appreciated the work of the Permanent Fisheries Resources Committee of the Gulf Cooperation Council (GCC) undertaken during the intersessional period and relevant to the work of the WGFM, noting in particular the ongoing work on the narrow-barred Spanish mackerel. The WGFM was informed of the progress on this matter at the last session of the Fisheries Resources

Committee of the GCC, including that the Sultanate of Oman will host a database beginning in 2014 for the collection of data on the narrow-barred Spanish mackerel and that a management plan will be ready in January 2014. The delegate from Oman informed the WGFM that non-GCC RECOFI members, (State of Iraq and the Islamic Republic of Iran) would be invited, pending confirmation from the Permanent Fisheries Resources Committee of the GCC, to use part of this database ([www.kfpgcc.org](http://www.kfpgcc.org)) in order to ensure that the work of the GCC and RECOFI complement each other.

10. The WGFM reviewed the list of priority species, and decided to add the silver pomfret (*Pampus argenteus*) and Indian shad (*Tenualosa ilisha*), two species important for Kuwait, Iraq and the Islamic Republic of Iran.

11. The WGFM noted the decision of the Commission to retain its status as a member of FIRMS through FAO. FAO, on behalf of the FIRMS team, informed the WGFM that the national report and fact sheets of Bahrain, Iran (Islamic Republic of), Oman and Qatar would be disseminated after the completion of this meeting based on the decision taken at the seventh session of RECOFI. The WGFM agreed on the importance for the remaining Member countries to complete national reports and fact sheets without further delay, because of the temporal nature of the information contained in these national reports and fact sheets.

12. The WGFM acknowledged FAO's efforts in delivering a global capacity development programme on the implementation of the 2009 FAO Agreement on Port State Measures and other related instruments which aim to combat illegal, unreported and unregulated (IUU) fishing. It appreciated the approach adopted by FAO in conducting related regional capacity development workshops and noted that the RECOFI area was included in the list of regions identified by FAO which would benefit from the programme, subject to funding which may become available in the future.

13. Recognizing the urgent need for capacity development in port State measures for RECOFI Members, the meeting agreed that a regional workshop could be organized during the intersessional period provided that the meeting costs are covered by a host country and participants' costs are borne by their respective governments. FAO confirmed that, with such an arrangement, it would be in a position to organize a capacity development workshop with the contribution of resource persons, as appropriate. The possibility of inviting other countries from neighbouring regions to participate in the workshop was also considered.

14. The Secretary of RECOFI reaffirmed the importance of addressing the budget of the RECOFI, particularly when considering the workplan of the WGFM for the inter-sessional period (i.e. May 2013–April 2015) and the obvious constraints this creates in implementing any actions beyond the planned workshop on narrow-barred Spanish mackerel, to be held in the Sultanate of Oman. The meeting agreed that Member countries must address these budgetary issues in order to formulate an effective workplan for the WGFM and to ensure that adequate and appropriate regional fisheries management is a viable goal.

15. The WGFM was informed that the possibility exists to move the seat of the Secretariat to a RECOFI Member country, whereby full-time support could be provided by a Secretary, with support from FAO as needed. The Secretary stressed the need to continue developing the support and direct participation of Member countries in the Secretariat as a way to strengthen Member's ownership of the Commission.

16. The Secretary reiterated and emphasized the importance of RECOFI national focal points in facilitating the work of the Commission and ensuring that information is disseminated efficiently and effectively. The WGFM requested that an updated list of national focal points is provided to the Secretariat as soon as possible. The updated list is attached in Appendix G.

## **COUNTRY REPORTING**

17. The country reports of Iraq, Oman, Qatar, and Kuwait were presented, and are attached in Appendixes H, I, J, and K, respectively.

18. The country report of Iraq was presented by the Secretary of RECOFI in the absence of a delegate from Iraq; the meeting noted with appreciation the submission of the country report of Iraq and recognized the importance of the Shatt Al-Arab as an area contained entirely within Iraq, but holding fishery resources of common concern for the RECOFI region. The need to address crucial areas such as this one at the regional level was agreed. In particular, the WGFM recalled the "Tripartite Initiative on Fisheries Management Cooperation in the Northern Area of RECOFI (Kuwait, Islamic Republic of Iran and Iraq)" promoted by RECOFI and supported by FAO, and stressed the merit to have the initiative implemented in the very near future.

19. The WGFM recognized the amount of work that Oman had undertaken in the fisheries sector, including, social and economic research, tuna fisheries management research, red tide and fish mortality, and management measures including the reduction of the Abalone season.

20. Qatar presented a synthesis of the present state of their fisheries, including fleet composition and ongoing research and monitoring programmes. The national presentation included a description of its newly developed internet-driven statistical monitoring programme (Samaq Web) which is sample-based and used on a regular basis to collect, process, analyze and diffuse data on landings, fishing effort and some basic economic variables. During the discussion that followed some of the major features of Samac Web were highlighted such as its compliance to well-defined data collection protocols, instant monitoring functions and capability to cover most if not all of the variables needed for both national and regional statistical needs. Additionally, the meeting appreciated Qatar's recent undertaking of socio-economic assessments.

21. The WGFM considered the assessments that had been undertaken by Kuwait, including on the role of recreational fisheries in Kuwait, which was emphasized as either equally or more important than commercial fisheries. The impact of trawling was highlighted, with particular reference to the high levels of by-catch and the resulting impacts on recruitment and fish stock abundance. The WGFM considered the need to collect data by different categories of fleet targeting different stocks, with an emphasis on the standardization and harmonization of this information. A review of the Kuwait shrimp fishery, including current research work on shrimp resources, was presented by Mr Hussain Al Foudari, to the meeting. In addition a report on the fisheries status and research development in Kuwait was made available by the Kuwait Institute for Scientific Research (KISR) and it is attached in Appendix L.

## **FISHERY SOCIO-ECONOMICS: DESIGN AND IMPLEMENTATION OF A REGIONAL WORK PLAN**

22. Ms Lori Curtis, Fisheries Socio-economist, FAO Regional Office for the Near East and North Africa, Cairo, Egypt, introduced document RECOFI:WGFM7/2013/4. It is attached in Appendix M.

23. The Secretariat urged the participants to nominate or confirm their respective national focal points for the Task Group on socio-economics.

24. The meeting briefly reviewed the draft questionnaire developed by the Task Group and recognized that some of the variables, both at macro and micro level, may be difficult to obtain. The WGFM recognized the need to distinguish between questionnaires to be used for a national overview and for the socio-economic field survey. It was agreed that the former questionnaire should be simplified in order to facilitate the on-line collection of information by the Task Group members of available data at national level.

25. The Task Group member from Oman, Ms Ruqaiya Al-Bulushi, with the support of the Secretariat, developed the revised version of the national questionnaire during the meeting. The meeting endorsed the revised version with the integration of the comments and proposed changes, to be circulated to Task Group members and filled out for each country. The WGFM recommended that some topics that would be omitted at this stage are relevant and important for socio-economic work and should be taken up at a later stage. The revised questionnaire as well as the updated Task Group members are attached in Appendix N. The WGFM requested the Secretariat to circulate the revised questionnaire to the Task Group members. The Task Group will report the results of questionnaire survey to the eighth meeting of the WGFM.

#### **UPDATE ON THE IMPLEMENTATION OF THE RECOFI RECOMMENDATION ON MINIMUM DATA REPORTING**

26. Ms Sachiko Tsuji, Senior Fishery Statistician, FAO, Rome, Italy introduced document RECOFI:WGFM7/2013/5. It is appended as Appendix O.

27. The WGFM was informed that the year 2013 represents the second round of data submission after that the Recommendation RECOFI/6/2011/1, entitled "Recommendation on minimum data reporting in the RECOFI area", entered into force on 1 January 2012. So far, four Members, Islamic Republic of Iran, Iraq, Oman and Qatar, submitted data and the remaining four Members, Bahrain, Kuwait, Saudi Arabia and the United Arab Emirates, were urged to submit information as soon as possible. While there was notable improvement in particular in reporting by Iraq and Qatar, it was noted with concern that countries which possessed the required capacity, such as Bahrain, Kuwait and Saudi Arabia, did not comply with the Recommendation. No Member met the deadline for submission of 31 August 2013 and in this regard, it was considered useful for the Secretariat to send a reminder before the next due date.

28. Specifically for those Members in attendance, Kuwait was urged once again to finalize the internal process to make the data compiled by the KISR available to the RECOFI fishery management process. The WGFM was reminded that sharing research data as well as non-official information useful for regional management is a common practice among various regional fisheries management organizations.

29. Oman submitted monthly catch and effort data for 2011 and 2012. Oman informed the WGFM that historical data since 1984 exists but the frame survey at that time was not classified by the fishing gear for speed boats. Oman is currently working to estimate effort allocation among gears for speedboat segments. This would require further time to process but historical data are expected to be available during 2014.

30. Qatar for the first time submitted catch and effort data by fleet/gear segments based on the new sample-based surveys system at four landing sites, in combination with market surveys. It was noted that the submitted data covers the period between September 2012 and August 2013, unlike other Members who submitted data for a calendar year, and that one of the fleet/gear segments combines two gear categories, i.e. gillnet and hand lines, defined by the Recommendation. Qatar informed the WGFM that the new data format would be available from April 2012 and confirmed that data will be submitted by calendar year in the future. Qatar indicated that, from its experience, complete enumeration methods (such as market surveys) might not always achieve satisfactory results for all basic variables needed and that well-defined sampling techniques would prove to be a more effective and much less costly alternative.

31. The WGFM noted a substantial improvement in catch and effort data collection and monitoring capacity for major fisheries in most Member countries and that historical and updated information accumulated to date was reaching a sizeable amount. The WGFM noted the urgent need to establish an access policy and protocol to those data and information collected through the Recommendation and it was agreed to discuss this at the next WGFM meeting.

32. Noting divergence in terminologies used by individual Members, the WGFM reviewed basic classifications. The WGFM confirmed the existing area and gear classification to be adequately robust. However, it was noted that different names are occasionally utilized for the same gear, which would require further clarification in the future. With regards to fleet segmentation, it was agreed to maintain three categories, i.e. “Steel boats”, “Dhow”, and “Speedboat”. The participants prepared their national definitions corresponding to these three categories as in Appendix P, with a view to develop a comprehensive definition of categories for RECOFI to be reviewed at the next meeting of the WGFM.

33. On the 2013 data submission by Qatar, which aggregated all gears operated by speedboat, the WGFM acknowledged the operational difficulty to separate catch and effort by gear under the dynamic situation where boats change gears quite frequently, but highlighted the impact of this, as this fleet segment comprises a large amount of landings in some countries. While the current practice of aggregating catch and effort data for all gears was considered to be acceptable for interim period, the WGFM encouraged all Members to continue its efforts towards the full implementation of the Recommendation, taking into account the successful experiences of other Members.

34. It was recognized that some Members submitted more detailed information than that requested by the Recommendation. The WGFM considered it important to ensure adequate consistency and comparability of data collected by all Member countries to implement fishery management at the regional level. Some Member countries indicated that the harmonization exercises should not interfere with the autonomy of national data collection schemes. The WGFM was reminded that the Recommendation should serve as a minimum standard and should not constrain efforts to collect information beyond those defined (Article 1-b). The meeting agreed to maintain all detailed information submitted in this framework, including disaggregation of catches taken by recreational fishing.

35. The WGFM considered the need for a standard questionnaire, to replace the existing exercise of data submission set up for individual Member countries and agreed to maintain the current practice. Additionally, the WGFM agreed that in the future, it would be preferable to establish a direct data exchange process between national authorities and the Secretariat, and stressed the critical importance of establishing a reinforced RECOFI Secretariat with dedicated and sufficient resources.

36. The WGFM agreed that it was necessary to urgently develop a protocol for data collection for size frequency data of the narrow-barred Spanish mackerel to support the joint assessment planned in the early 2014. In response to the request to provide recent as well as historical data, Qatar informed the WGFM that it routinely collects the average weight of narrow-barred Spanish mackerel as part of the ongoing catch/effort survey, based on eye-estimated fish weight, separated by boat/gear category. The information is used to study the trend of average fish size over time as well as for identifying eventual significant differences across fishing gears, fishing grounds, seasons, etc.

#### **PREPARATORY WORK TO THE REGIONAL JOINT KINGFISH STOCK ASSESSMENT WORKSHOP**

37. Mr Yimin Ye, Chief, Marine and Inland Fisheries Branch, FAO, Rome, Italy, presented document RECOFI:WGFM7/2013/6. It is attached in Appendix Q.

38. The WGFM acknowledged that the joint assessment bringing together GCC work on narrow-barred Spanish mackerel (*Scomberomorus commerson*) and that of the other RECOFI members such as Iran (Islamic Republic of) and Iraq, and possibly also Pakistan and Yemen would be the first essential step toward establishing effective management for the stock of this species in the RECOFI region and adjacent areas, with a special emphasis on the importance of good communication and information sharing prior to the workshop. Regarding a possible underestimation of juvenile mortality exerted by shrimp trawling, the WGFM was informed about the recent work (2013) by KISR estimating 111 tonnes of narrow-barred Spanish mackerel bycatch of average 67 gram in the period

from September 2010 to January 2011<sup>1</sup>. The WGFm recognized such information could be vital to understand the current situation of this species and all Members were requested to provide any materials to the Secretariat that could have relevance for stock assessment and consideration of management of the fisheries exploiting this RECOFI priority species.

39. The meeting approved the objectives of the workshop, the agenda, and the data and participant skill requirements, as detailed below in Box 1 and Box 2.

### **Box 1: Objectives, data and skills requirement of the Kingfish Workshop**

#### **Objectives of the kingfish (narrow-barred Spanish mackerel) workshop**

- To provide fishery scientists, managers and decision-makers of the RECOFI countries with an opportunity to meet and discuss the common issues related to narrow-barred Spanish mackerel fisheries from data collection, research, management strategy and regulations,
- To provide a platform for scientists to work together on real narrow-barred Spanish mackerel data, conduct stock assessment and develop science-based management strategy for the long term sustainability of the fishery and the social and economic benefits of the region
- To discuss and develop a cost-effective and practical institutional arrangement and a regional plan for cooperation and collaboration in the sustainable management of the shared narrow-barred Spanish mackerel resource

#### **Data requirements of the workshop**

Each country should bring:

1. Length frequency data over a certain time period
2. Full catch statistic time series data
3. Fishing effort data or data on numbers of fishing vessels and fishermen engaged in the fishery
4. Any other data available for example types of gear and vessels, fishing locations, market price

#### **Skill requirements**

1. Knowledge of the narrow-barred Spanish mackerel fishery
2. Knowledge of basic stock assessment theory and models as this is not a training course, but a workshop
3. Numerical skills, using Excel (better competent in R or other programming languages)

---

<sup>1</sup> Chen, W. 2013. Retained and Discarded Bycatch from Kuwait's Shrimp Fishery. *Aquatic Science and Technology*. V 1. N 1. 2013.

## **Box 2: Draft Agenda of the narrow-barred Spanish mackerel stock assessment workshop**

### **1. Presentation from country**

- Landings and trends
- Current state of the narrow-barred Spanish mackerel fishery
- Concerns and issues require management attention
- Research projects and their results if there is any
- Potential challenges to implement a kingfish regional management plan

### **2. Review of the existing published results**

- Growth estimation
- Mortality rate estimation
- Models applied
- Conclusions achieved

### **3. Estimation of growth equation from length frequency data**

- The von Bertalanffy growth equation
- Data requirements for fitting the equation
- Using software to estimate the equation from lengthy frequency data

### **4. Estimation of total mortality from length frequency data**

- The theory behind the estimation of total mortality from time series length frequency data
- Using a software to estimate total mortality from time series length frequency data
- Estimation of natural mortality
- Estimation of exploitation rate based on natural mortality, fishing mortality and total mortality rates

### **5. Catch only methods for stock assessment**

- Yield per recruit model
- Surplus production model
- How to fit these models to data
- Key parameters from the modelling that can be used for determining stock status and for management purposes

### **6. Designing management**

- Management objectives
- Designing regulations to achieve the objectives

## **PROGRESS TOWARDS A REGIONAL FISHERIES MANAGEMENT FRAMEWORK**

40. Mr Matthew Camilleri, Fishery Liaison Officer, FAO, Rome, Italy, presented document RECOFI:WGF7/2013/7. It is attached in Appendix R.

41. The meeting acknowledged the requests for management advice made at the seventh session of RECOFI, in particular for the need to formulate a regional management plan for the narrow-barred Spanish mackerel, the advice to further develop concrete management procedures with regards to shrimp trawling, and to formulating specific management advice in relation to fishing effort control, taking into account the particular nature of fisheries and management plans in different countries.

42. The WGFM recommended that the data collection efforts under the Fisheries Resources Committee of the GCC on the narrow-barred Spanish mackerel could serve as a foundation for the work at the RECOFI level, and the scientists attending the upcoming RECOFI workshop can build on this work, using the data and preliminary work undertaken under the work of the GCC. Standardization and harmonization of management objectives could be considered, while recognizing that the context may be different for different areas of RECOFI. In parallel, a monitoring scheme, in the form of a project for the whole RECOFI region, would serve to add to the formulation and implementation of a management plan.

43. The WGFM agreed that Kuwait should take the lead to formulate management options with regards to shrimp trawling, according to the research currently being undertaken, and can present these for management recommendations to be considered at the eighth meeting of the WGFM, and if appropriate submitted to the eighth plenary session of RECOFI in May 2015.

44. The meeting recognized the importance of a regional approach to fisheries management with regards to effort control, in particular considering the specific nature of different fisheries. The WGFM noted the need to collect long time-series data, and in particular was reminded that the data collected under the minimum data reporting recommendation started accumulating a reasonable length of historical time-series (e.g. in the case shrimp, effort information is available from 1997 for Bahrain and 1994 for the Kingdom of Saudi Arabia).

45. The WGFM agreed that within the framework of RECOFI, there is a need to develop a project for the whole of the RECOFI region to support capacity development in stock assessment, building on the current experience of the FAO sub-regional project "Support to capacity development for fishery stock assessment in GCC countries and Yemen (TCP/SNG/3402)".

#### **ANY OTHER MATTERS**

46. The importance of the role of the RECOFI national focal points and WGFM focal points was reaffirmed by the Secretariat, in order to facilitate the work of the WGFM and RECOFI.

47. The WGFM appreciated the good role played by the outgoing Chairperson of the WGFM, Mr Abdul Karim Radhi, and Mr Mohammed Al-Kharafi from Kuwait was unanimously elected Chairperson of the WGFM.

#### **DATE AND PLACE OF THE EIGHTH MEETING OF THE WORKING GROUP ON FISHERIES MANAGEMENT**

48. The meeting acknowledged with thanks the kind offer of the Kingdom of Bahrain to host the next meeting of the Working Group on Fisheries Management in October 2014.

#### **ADOPTION OF THE REPORT**

49. The report of the meeting was adopted on 7 November at 15.45 hours.

50. The meeting noted with appreciation the kind support of the State of Kuwait for hosting and providing administrative support to the meeting.

**Agenda**

1. Opening of the meeting
2. Adoption of the Agenda and arrangements for the meeting
3. Main outcomes of the seventh session of RECOFI and implications for the WGFM
4. Country reporting
5. Fishery socio-economics: design and implementation of a regional work plan
6. Update on the implementation of the RECOFI recommendation on Minimum Data Reporting
7. Preparatory work to the regional joint Kingfish stock assessment workshop
8. Progress towards a regional fisheries management framework
9. Any other matters
10. Date and place of the eight meeting of the Working Group on Fisheries Management
11. Adoption of the report

## List of participants

**MEMBER COUNTRIES****BAHRAIN (KINGDOM OF)**

Adly Abdel Rahman Al-ANSARY  
Acting Director of Marine Programmes  
Directorate of Fisheries  
Ministry of Municipalities Affairs and Urban  
Planning  
PO Box 20071  
Manama  
Tel: + 973 17843002  
Fax: +973 17840294  
Mobile: +973 39448458  
E-mail: [aalansari@mun.gov.bh](mailto:aalansari@mun.gov.bh)  
[adly10@hotmail.com](mailto:adly10@hotmail.com)

**STATE OF KUWAIT**

Mohammed AL-KHARAFI  
Head of bio-aquatic Studies and Research Section  
Public Authority of Agricultural Affairs  
and Fish Resources  
PO Box 21422 – Safat – 13075 Kuwait  
Tel: +965 22254139  
Mobile: +965 99679736  
Fax: +965 22254103 – +965 22254113  
E-mail: [m\\_al\\_kharafi@hotmail.com](mailto:m_al_kharafi@hotmail.com)

Usama Khalifa Sayed AHMED  
Fisheries Consultant  
Public Authority of Agricultural Affairs  
and Fish Resources  
PO Box 21422 – Safat – 13075 Kuwait  
Tel: +965 22254147  
Mobile: +965 97887592  
Fax: +965 22254103 – +965 22254113  
E-mail: [khalifausa@yahoo.com](mailto:khalifausa@yahoo.com)  
[khalifausa@paaf.gov.kw](mailto:khalifausa@paaf.gov.kw)

Moustafa Mohamed Said FOUDA  
Fish Diseases and Aquaculture Consultant  
Public Authority of Agricultural Affairs  
and Fish Resources  
PO Box 21422 – Safat – 13075 Kuwait  
Tel: +965 22254120  
Mobile: +965 99607132  
Fax: +965 22254103 – +965 22254113  
E-mail: [mfouda65@hotmail.com](mailto:mfouda65@hotmail.com)  
[fouda@paaf.gov.kw](mailto:fouda@paaf.gov.kw)

Farhan Ahmed Mansour ZBAIRAN  
Director of Follow-up and Coordination Division  
Public Authority of Agricultural Affairs and Fish  
Resources  
PO Box 21422 – Safat – 13075 Kuwait  
Tel: +965 22254171  
Mobile: +965 55455534 /+965 66864334  
Fax: +965 22254103 – +965 22254113  
E-mail: [Eng\\_Farhan@windowslive.com](mailto:Eng_Farhan@windowslive.com)

Mohammed AL-KHARAFI  
Head of bio-aquatic Studies & Research Section  
Public Authority of Agricultural Affairs and Fish  
Resources  
PO Box 21422 – Safat – 13075 Kuwait  
Tel: +965 22254139  
Mobile: +965 99679736  
Fax: +965 22254103 – +965 22254113  
E-mail: [m\\_al\\_kharafi@hotmail.com](mailto:m_al_kharafi@hotmail.com)

Hussain ALSAYEGH  
Marine Researcher  
Public Authority of Agricultural Affairs and Fish  
Resources  
PO Box 21422 – Safat – 13075 Kuwait  
Mobile: +965 50737775  
E-mail: [kinghusain@gmail.com](mailto:kinghusain@gmail.com)

Fajr Sami ELKHIRAI BET  
Senior Aquatic Researcher  
Public Authority of Agricultural Affairs and Fish  
Resources  
PO Box 21422 – Safat – 13075 Kuwait  
Tel: +965 22254127  
Mobile: +965 97518244  
Fax: +965 22254103 +965 22254113  
E-mail: [fajer1977@hotmail.com](mailto:fajer1977@hotmail.com)

Abdullah ASEM  
Jr. Bio-Researcher  
Public Authority of Agricultural Affairs and Fish  
Resources  
PO Box 21422 – Safat – 13075 Kuwait  
Mobile: +965 67673699  
E-mail: [a.ase88@gmail.com](mailto:a.ase88@gmail.com)

Maryam ALAKROKA (Ms)  
 Jr. Bio-Researcher  
 Public Authority of Agricultural Affairs and Fish  
 Resources  
 PO Box 21422 – Safat – 13075 Kuwait  
 Mobile: +965 50329989  
 Fax: +965 22254103 +965 22254113  
 E-mail: [makroka@gmail.com](mailto:makroka@gmail.com)

Nashami ALNAJAR (Ms)  
 Jr. Bio-Researcher  
 Public Authority of Agricultural Affairs and Fish  
 Resources  
 PO Box 21422 – Safat – 13075 Kuwait  
 Mobile: +965 99524752  
 Fax: +965 22254103 +965 22254113  
 E-mail: [nashamialnajar@gmail.com](mailto:nashamialnajar@gmail.com)

Modi Sabah ALFADHLI  
 Senior Aquatic Researcher  
 Public Authority of Agricultural Affairs and Fish  
 Resources  
 PO Box 21422 – Safat – 13075 Kuwait  
 Tel: +965 22254161  
 Mobile: +965 99873949  
 Fax: +965 22254103 +965 22254113  
 E-mail: [hesadary@hotmail.com](mailto:hesadary@hotmail.com)

Nadia Mushref ALABDULKARIM (Ms)  
 Accountant  
 Public Authority of Agricultural Affairs and Fish  
 Resources  
 PO Box 21422 – Safat – 13075 Kuwait  
 Mobile: +965 60933435  
 Fax: +965 22254103 +965 22254113

Jawhara Anwar BUQRIES (Ms)  
 Accountant  
 Public Authority of Agricultural Affairs and Fish  
 Resources  
 PO Box 21422 – Safat – 13075 Kuwait  
 Mobile: +965 50106538  
 Fax: +965 22254103 +965 22254113

#### **OMAN (SULTANTE OF)**

Yaqoob Salem AL-JABRI  
 Director of Fisheries Statistics  
 Ministry of Agriculture and Fisheries  
 PO Box 467 PC: 100 Muscat  
 Tel: +968 24952270  
 Mobile: +968 99448078  
 E-mail: [yaqoob96@hotmail.com](mailto:yaqoob96@hotmail.com)

Ruqaiya Emam Mohammed AL-BULUSHI (Ms)  
 Head of Fisheries Management Section  
 Ministry of Agriculture and Fisheries  
 PO Box 467 PC: 100 Muscat, Oman  
 Tel: +968 24953288  
 Mobile: +968 95448778  
 E-mail: [albulushirug085@gmail.com](mailto:albulushirug085@gmail.com)

#### **STATE OF QATAR**

Jassem Saleh AL-MOHAMADY  
 Assistant Director Department of Fisheries  
 Ministry of Environment  
 PO Box 8703, Doha  
 Tel: +974 44207481  
 Fax: +974 44207650  
 Mobile: +974 55551196  
 E-mail: [jalmohamady@moe.gov.qa](mailto:jalmohamady@moe.gov.qa)

Abdul Rahman Siddiq AL BIN ALI  
 Biological Expert  
 Ministry of Environment  
 PO Box 8703, Doha  
 Fax: +974 44207650  
 Mobile: +974 55550620  
 E-mail: [albenali202@hotmail.com](mailto:albenali202@hotmail.com)

Constantine STAMATOPOULOS  
 Senior Advisor- Fisheries Statistics Government  
 Consultant  
 Sustainable Management of Fisheries Resources  
 (SMFS)  
 Qatar Delegation  
 31, Viale Pio XI, Rome 00040  
 Tel: 0039- 06- 9360376  
 E-mail: [cstamat@gmail.com](mailto:cstamat@gmail.com)

#### **OBSERVERS**

#### **KUWAIT INSTITUTE FOR SCIENTIFIC RESEARCH (KISR)**

Mohsen AL-HUSAINI  
 Programme Manager  
 Ecosystem-based Management for Marine  
 Resources  
 Kuwait Institute for Scientific Research  
 PO Box 1638, 22017 Salmyiah,  
 Kuwait  
 Tel: +965 24956372  
 Fax: +965 25711293  
 Mobile: +965 99680209  
 E-mail: [mhusaini466@gmail.com](mailto:mhusaini466@gmail.com)  
[mhusaini@kISR.edu.kw](mailto:mhusaini@kISR.edu.kw)

Ali ALBAZ  
 Associate Researcher  
 Kuwait Institute for Scientific Research  
 PO Box 1638, 22017 Salmyiah,  
 Kuwait  
 Tel: +965 24956376  
 Fax: +965 25711293  
 Mobile: +965 99777911  
 E-mail: [abu.shaheen@gmail.com](mailto:abu.shaheen@gmail.com)

Hussain Mahmood AL-FOUDARI  
 Associate Researcher Scientist  
 Kuwait Institute for Scientific Research  
 PO Box 1638, 22017 Salmyiah,  
 Kuwait  
 Tel: +965 97855360  
 Fax: +965 25711293  
 Mobile: +965 97855360  
 E-mail: [hussainalfoudari@gmail.com](mailto:hussainalfoudari@gmail.com)

### **RECOFI SECRETARIAT**

Piero MANNINI  
 Senior Fishery Officer and RECOFI Secretary  
 FAO Regional Office for the Near East and  
 North Africa  
 11, Al Eslah El Zerai Street  
 PO Box 2223 Dokki, Cairo  
 Egypt  
 Tel.: +202 3331 6141  
 Fax: +202 3749 5981/33373419  
 E-mail: [piero.mannini@fao.org](mailto:piero.mannini@fao.org)

Sachiko TSUJI (Ms)  
 Senior Fishery Statistician  
 Statistics and Information Service  
 Fisheries and Aquaculture Policy and Economics  
 Division  
 Fisheries and Aquaculture Department  
 Rome, Italy  
 Tel.: +3906 570 55318  
 Fax: +39 0657052476  
 E-mail: [sachiko.tsuji@fao.org](mailto:sachiko.tsuji@fao.org)

Matthew CAMILLERI  
 Fishery Liaison Officer, FIPI  
 Fisheries and Aquaculture Department  
 Viale delle Terme di Caracalla  
 00153 Rome, Italy  
 Tel: +390657056435  
 E-mail: [matthew.camilleri@fao.org](mailto:matthew.camilleri@fao.org)

Yimin YE  
 Chief  
 Marine and Inland Fisheries Branch  
 Fisheries and Aquaculture Department  
 FAO of the United Nations  
 Vialle delle Terme di Caracalla – 00153  
 Rome, Italy  
 Tel: +390657054592  
 E-mail: [Yimin.ye@fao.org](mailto:Yimin.ye@fao.org)

Lori CURTIS (Ms)  
 Fisheries Socio-Economist  
 FAO Regional Office for the Near East  
 and North Africa  
 11, Al Eslah El Zerai Street  
 PO Box 2223 Dokki, Cairo  
 Egypt  
 Tel: +202 33316000 ext: 2822  
 Fax: +202 3749 5981/33373419  
 E-mail: [lori.curtis@fao.org](mailto:lori.curtis@fao.org)

**APPENDIX C****List of documents**

RECOFI:WGFM7/2013/1	Annotated Agenda
RECOFI:WGFM7/2013/2	Main outcomes of the seventh session of RECOFI and implications for the WGFM
RECOFI:WGFM7/2013/3	Consolidated country reports
RECOFI:WGFM7/2013/4	Fishery socio-economics: design and implementation of a regional work plan
RECOFI:WGFM7/2013/5	Update on the implementation of the RECOFI recommendation on Minimum Data Reporting
RECOFI:WGFM7/2013/6	Preparatory work to the regional joint Kingfish stock assessment workshop
RECOFI:WGFM7/2013/7	Progress towards a regional fisheries management framework
RECOFI:WGFM7/2013/Inf.1	List of documents
RECOFI:WGFM7/2013/Inf.2	List of participants
RECOFI:WGFM7/2013/Inf.3	Report of the RECOFI Seventh Session, Tehran, Islamic Republic of Iran, May 2013
RECOFI:WGFM7/2013/Inf.4	Report of the Sixth Meeting of the Working Group on Fisheries Management, Doha, Qatar, 5–8 November 2012
RECOFI:WGFM7/2013/Inf.5	Report of the RECOFI Workshop on Spatial Planning Development Programme for Marine Capture Fisheries and Aquaculture. Cairo, Egypt, 25–27 November 2012
RECOFI:WGFM7/2013/Inf.6	Report of the Workshop on Bycatch Management and Low Impact Fishing, Kuwait, 9–12 December 2012
RECOFI:WGFM7/2013/Inf.7	Report of the workshop on social and economic aspects of fisheries in the RECOFI region. Manama, Kingdom of Bahrain, 22–24 April 2012
RECOFI:WGFM7/2013/Dma.1	Field Identification Guide to the Living Marine Resources of the Eastern and Southern Mediterranean. FAO, Rome, 2012
RECOFI/VII/2013/Inf.7	Report of the Sixth Meeting of the Working Group on Fisheries Management (Doha, Qatar, 5–8 November 2012)
RECOFI/VII/2013/Inf.8	Report of the workshop on social and economic aspects of fisheries in the RECOFI region. Manama, Kingdom of Bahrain, 22–24 April 2012
RECOFI/VII/2013/Inf.9	Review of capture fishery statistics in the RECOFI Region: trends and patterns
RECOFI/VII/2013/Inf.10	Report of the RECOFI–FIRMS Workshop on Resources and Fisheries Inventories. Cairo, Egypt, 12–14 July 2011

RECOFI/VII/2013/Inf.11

Report of the Workshop on Bycatch Management and Low Impact Fishing, Kuwait, 9–12 December 2012

RECOFI/VII/2013/Inf.12

Report of the Near-East and North Africa Regional Consultative Meeting on Securing Sustainable Small-Scale Fisheries: Bringing Together Responsible Fishing and Social Development, Muscat, Sultanate of Oman, 26–28 March 2012

**APPENDIX D****Speech of Mr Faisal Al-Hassawi, Deputy Director-General, Fisheries Sector, Public Authority of Agricultural Affairs and Fish Resources, State of Kuwait**

Respected Colleagues from RECOFI Member Countries, Officials from FAO and RECOFI, Distinguished participants, Ladies and Gentlemen

Good morning to all of you.

It gives me an immense pleasure to welcome you all to our country the State of Kuwait for this important event. Dear friends, all we are well aware that fishing is the major source of food and it offers great opportunity for employment and economic benefits for us. Natural resource needs to be managed properly for offering their sustainable contribution to the nutritional, economic and social well-being of the growing population.

As for the RECOFI region is concerned, it is an unique biological unit characterized by rich marine biodiversity and productive ecosystems supporting valuable fish stocks. Even though, the fisheries in this region may appear to be of low importance in economic terms, the marine fish production contributes significantly to food security. Overall, fisheries in this region assure the livelihoods of more than one million people.

In view of the facts mentioned, I hope that the RECOFI Member States can further improve cost-effectiveness in planning and implementing fisheries programs by joint resource mobilization and greater sharing of expertise and institutional resources.

I believe that a collaborative regional approach to improve regional fisheries management is not beyond our reach. It requires commitment, rational planning and practical steps forward.

I understand that in the present meeting, some important decisions will be held including formulation of a regional management plan by the Working Group on Fisheries Management, effective implementation of regulations and management measures, as well as the consideration of socio-economic factors in the decision making processes.

In realization of the above facts, I hope that this meeting strengthen our combined efforts to effectively manage and sustainable utilization of our marine resources in this region. I sincerely hope that the deliberation and discussions to be held in this event for the coming 3 days will definitely strength our collective efforts to ably manage our marine living resources for the well being of our future generation.

Dear Colleagues and Friends, I wish all of you a successful deliberation in this memorable event and for pleasant stay in this beautiful country, the State of Kuwait.

Thank you very much!

**APPENDIX E****Opening statement by Mr Piero Mannini, Senior Fishery Officer and Secretary of RECOFI on behalf of Mr Abdessalam OuldAhmed Regional Representative FAO Regional Office for the Near East and North Africa**

Mr Mohammed Al-Kharafi, Head of Bio-aquatic Studies and Research Section, Representative of the Public Authority of Agriculture Affairs and Fish Resources, Distinguished Delegates, Colleagues, Ladies and Gentlemen,

It is my pleasure to extend a warm welcome to each and all of you on the occasion of the opening of the Seventh meeting of the Working Group on Fisheries Management (WGFM) of the Regional Commission for Fisheries (RECOFI), kindly hosted by the Public Authority of Agriculture Affairs and Fish Resources, the State of Kuwait.

The role and obligations of regional fisheries management organizations, such as RECOFI, in fisheries governance are growing steadily. Simultaneously, strengthening regional fisheries management organizations and their performance still remains the major challenge facing international fisheries governance. Numerous RFMOs are cognizant of the need for greater cooperation between member states and the need to reform their legal and institutional framework. RECOFI is no exception to this situation.

I wish to remind you that regional fisheries management organizations such as RECOFI were established by the Member Countries to facilitate and reinforce regional collaboration. The sound management and development of the regional fisheries wealth necessarily require the establishment and development of regional and sub-regional cooperation for fisheries and environmental research.

RECOFI appears as the only convenient and valid mechanism to promote and enhance the dialogue and cooperation for the sustainable development of the fisheries in the Gulf and Sea of Oman region.

The United Nations Conference on Sustainable Development (Rio+20) took place on 20-22 June 2012. With reference to ocean governance and existing institutional and legal frameworks, the Conference pointed out that at the regional scale, Regional fishery bodies (RFBs) are mechanisms through which States and organizations work together towards the conservation, management and/or development of fisheries and related issues; there are currently more than 50 RFBs worldwide. While some RFBs have an advisory mandate, and provide advice, decisions or coordinating mechanisms that are not binding on their members, approximately half of global RFBs have a management mandate and binding regulatory powers, and this includes RECOFI. Such a task poses unique challenges that the Commission should address responsibly for the benefit of its Members.

In recent years, the RECOFI has initiated the establishment of a regional strategy for fisheries management based on an ecosystem approach to fisheries with the ultimate goal to ensure long-term sustainability of the resources, the communities and the natural environment supporting them. The Commission is aware of the difficulty of such a task. However, the basic work initiated by RECOFI would indicate that the necessary steps have been made.

I regret to note, however, that Members are not providing their Commission, RECOFI, with the needed support to increase the regional capacity for the appraisal and management of common resources. Much more can and should be done. Members should be more actively involved in the work of their Commission to fully benefit from its services. Low participation in the work of the Commission and significant unsettled arrears are not positive indicators of Members' commitment to the wealth and sustainability of regional fisheries and of their fishing communities

I wish to call upon all RECOFI Member Countries as their participation and support to the Commission is imperatively needed and without delay. In fact, it has been reported the fish stocks

in the region decreased by 85 percent between 1975 and 2010 while a staggering increase in fishing effort has led to excessive exploitation and deterioration of the fishery resources. The Commission is the most suitable regional fishery management instrument to react to this gloomy scenario, and Members must learn to make full use of it. The Food and Agriculture Organization stands ready to assist RECOFI; however the ultimate responsibility of state of regional fisheries and their stocks remain with the Member countries.

I noticed that Commission at its last session in May 2013 tasked its WGFM to move forward elaborating sound fisheries management recommendations and actions. I am sure that we all are fully committed to achieve this given task for the well being of the regional fishery resources and national fishing community and industries that depend on their sustainable exploitation.

I wish you a full and very productive meeting for the benefit of all.

Lastly, I wish to extend my thanks to those in Public Authority of Agriculture Affairs and Fish Resources and FAO who have worked together to make possible and organize this meeting. Special thanks are due to the State of Kuwait for hosting this event.

Thank you very much for your attention.

### Main outcomes of the seventh session of RECOFI and implications for the WGFM

The WGFM is invited to:

- consider and comment on the outcomes of the Seventh Session of RECOFI, with particular consideration to the implications for the WGFM work to be implemented during the intersession period

#### BACKGROUND

The Seventh Session of RECOFI, was held in Tehran, Islamic Republic of Iran, from 14 to 16 May 2013. The Session was attended by 20 delegates from five of the eight RECOFI Member countries (Iraq, Iran, Kuwait, Oman and Qatar; Bahrain, Saudi Arabia and United Arab Emirates did not attend). Eleven observers (GCC, KISR, IFRO, COFI Chairperson) attended the Session.

The Commission reviewed the work carried out since the last session in 2011 including the Commission's administrative and financial reports; considered select issues of particular relevance for the region, such as the state of the aquaculture, fish stock status reporting, regional strategy for spatial planning for marine fisheries and aquaculture, and fisheries management advices formulated by the WGFM; review the financial situation and its consequences on the functioning of the Commission, and adopt the work programme for 2013 and 2014.

Mr Ali Mojahedi, Acting Deputy for Fishing and Fishing Harbours, Iran Fisheries Organization (SHILAT), Ministry of Jihad-e-Agriculture, Islamic Republic of Iran, was unanimously elected RECOFI Chairperson.

#### MAIN OUTCOMES AND DECISIONS

The main outcomes of the session and decisions taken by the Commission were the following:

- The Commission **noted** the rich programme implemented over the intersessional period, **appreciated** the support and efforts of the Secretariat for facilitating this, and **reaffirmed** that priority should be given to work on shared stocks, in particular giving due consideration to migratory and species supporting fisheries of common interest.
- The Commission **reiterated** the relevance of aquaculture as a priority, including marine cage culture and **agreed** that a long-term regional strategy for aquaculture development, including the involvement of the private sector, needs to be established.
- The Commission **welcomed** the opportunity to strengthen cooperation with the Fishery Resources Committee of the Gulf Cooperation Council (GCC) and other relevant regional partners including the execution of joint activities of fisheries and aquaculture.
- The Commission **acknowledged** the comprehensive financial report concerning RECOFI's work over the 2011-2012 biennium.
- The Commission **reiterated** the importance of Regional Aquaculture Information System (RAIS) as an information tool supporting the aquaculture sector and **decided** not to expand RAIS to accommodate data and information from marine capture fisheries.
- The Commission **noted** that the Working Group on Fisheries Management (WGFM) called for an urgent need to formulate a regional management plan for the narrow-barred Spanish mackerel,

taking into account results obtained through the work undertaken by the Member countries and relevant regional entities and the joint research project to be designed by all Member countries.

- The Commission **acknowledged** the WGFM advice on a reduction in shrimp trawling effort, effective implementation of regulations and management measures, as well as the consideration of socio-economic factors in the decision making processes and advised the WGFM to further develop the concrete management procedures.
- The Commission **did not endorse** the WGFM advice related to the freeze on new fishing licenses.
- The Commission **noted** with approval the establishment and ongoing work of the RECOFI Task Group for fisheries socio-economics, in particular that this is the first instance in RECOFI where the initiative to develop and implement a Task Group has come from Member countries themselves.
- The Commission **commended and further encouraged** the general and genuine commitment by Members to implement the Recommendation on Minimum Data Reporting, that entered into effect 1 January 2012, and recognized the need to establish a RECOFI regional database and information system maintained by the Commission in order to support regional fisheries management in the long term.
- The Commission **expressed its preference** to maintain the status quo in terms of its participation in FIRMS in that it will participate through FAO membership for the present time.
- The Commission **expressed its support** for actions taken to minimize the impacts of fishing to the environment, including the utilization of Bycatch Reduction Devices (BRD) at national and regional level, and encouraged knowledge and experience sharing in the RECOFI region that would lead to develop a regional management measure to reduce bycatch in the future.
- The Commission **commended** the RECOFI Secretariat for its role in finalizing the northern area tripartite initiative project document which was endorsed by the three countries (the Islamic Republic of Iran, the Republic of Iraq, and the State of Kuwait) and for its efforts in seeking financial support from regional institutions.
- The Commission **reiterated** Member countries would have to ensure adequate funding for the Secretariat in order to preserve the work of the Commission, as this is becoming increasingly essential for the sustainability of shared fishery resources and aquaculture development in the region.
- The Commission **approved** a workplan for the next intersessional period and agreed to support activities focusing on: joint assessment of the narrow-barred Spanish mackerel; establishment of a regional fisheries management framework; development of a regional programme to address UU fishing; formulation of national/regional strategy on aquatic animal health; aquaculture recirculation technologies; risk analysis in aquaculture.
- The **eighth session** of RECOFI will be hosted by the Republic of Iraq in May 2015.

## APPENDIX G

## List of National Focal Points

Country	National Focal Points	RECOFI WGFM	RECOFI WGA
<b>1. BAHRAIN (KINGDOM OF)</b>	<p>Adalla ABDEUL LATIF Assistant Undersecretary of Marine Affairs Directorate of Fisheries Ministry of Municipalities Affairs and Urban Planning PO Box 20071 Manama Tel.: +973-1785881 Mob: +973- Fax: +973- E-mail: <a href="mailto:aalatif@mun.gov.bh">aalatif@mun.gov.bh</a></p>	<p>Abdul Karim H. AL-RADHI Head of Fisheries Assessment Section Directorate of Fisheries Ministry of Municipalities Affairs and Urban Planning PO Box 20071 Manama Tel. : +973 17815870 Fax:: +973 17728459 Mob: +973 39621226 E-mail: <a href="mailto:radhi58@hotmail.com">radhi58@hotmail.com</a> <a href="mailto:aradhi@pmew.gov.bh">aradhi@pmew.gov.bh</a></p>	<p>Adly ALANSARI Acting Director, Fish Seed Production Section Directorate of Fisheries Ministry of Municipalities Affairs and Urban Planning PO Box 20071 Manama Tel.: +973-17843020 Mob: +973-39448458 Fax: +973-17840294 E-mail: <a href="mailto:adly10@hotmail.com">adly10@hotmail.com</a></p>
<b>2. IRAN (ISLAMIC REPUBLIC OF)</b>	<p>Mehdi SHIRAZI Deputy Director General, Public International Relations. Iran Fisheries Organization, Ministry of Jihad -e- Agriculture No.236, West Fatemi Avenue., PO Box 14155-6353 PC 1413636331, Tehran, Iran Tel.: +9821-66941676 Fax: +9821-66943870 Mob:+989127701401 E-mail: <a href="mailto:mnshirazi@gmail.com">mnshirazi@gmail.com</a> <a href="mailto:mn_shirazi@yahoo.com">mn_shirazi@yahoo.com</a></p> <p>Abbas AMINI (Alternate Focal Point) Senior Aquaculture Expert Aquaculture Department Iran Fisheries Organization 250, West Dr. Fatemi Avenue PO Box 14155-6353 PC 1418636331, Tehran Tel.: +9821-66941363 Fax: +9821-66941673 E-mail: <a href="mailto:abb_amin@yahoo.com">abb_amin@yahoo.com</a></p>	<p>Ali Asghar MOJAHEDI Director General for Fisheries and Fisheries Affairs Iran Fisheries Organization Ministry of Jihad -e- Agriculture No 236, West Fatemi Avenue. PO Box 14155-6353 PC 1418636331 Tehran, Iran Tel: +9821-66941373 Mob:+989121591261 E-mail: <a href="mailto:a_mojahedi@hotmail.com">a_mojahedi@hotmail.com</a></p>	<p>Shakouri MEHDI Deputy for Aquaculture Iran Fisheries Organization Ministry of Jihad -e- Agriculture No.236, West Fatemi Avenue., PO Box 14155-6353 PC 1418636331, Tehran, Iran Tel.: +9821-66943860 Fax:+9821 66943870 Mob:+989128151783 E-mail: <a href="mailto:mehdishakouri@yahoo.com">mehdishakouri@yahoo.com</a></p> <p>Abbas AMINI (Alternate Focal Point) Senior Aquaculture Expert Aquaculture Department Iran Fisheries Organization 250, West Dr. Fatemi Avenue PO Box 14155-6353 PC 1418636331, Tehran Tel.: +9821-66941363 Fax: +9821-66941673 E-mail: <a href="mailto:abb_amin@yahoo.com">abb_amin@yahoo.com</a></p>

<p><b>3. IRAQ</b></p>	<p>Ali MUSADAQ (<b>National Focal Point</b>) Director General Ministry of Agriculture Directorate of Animal Resources Baaghdad Tel.: +964 7901616053 E-mail: <a href="mailto:mmdmda@yahoo.com">mmdmda@yahoo.com</a> <a href="mailto:fisheries_iraq2005@yahoo.com">fisheries_iraq2005@yahoo.com</a></p>	<p>Talal .A. Rashed (<b>First Focal Point</b>) Assistant Director-General Ministry of Agriculture Directorate of Animal Resources Baghdad Mob.:+964-7901759607 E-mail: <a href="mailto:talal_ahmed252000@yahoo.com">talal_ahmed252000@yahoo.com</a> <a href="mailto:fisheries_iraq2005@yahoo.com">fisheries_iraq2005@yahoo.com</a></p> <p>Wartan Azzad SERKESS (<b>Second Focal Point</b>) Senior Fish Biologist Director of the Fisheries Department Ministry of Agriculture Directorate of Animal Resources Baghdad Mob.: +9647901497521 E-mail: <a href="mailto:vart_fish@yahoo.com">vart_fish@yahoo.com</a></p>	<p>Ali MUSADAQ (<b>National Focal Point</b>) Director General Ministry of Agriculture Directorate of Animal Resources Baghdad Tel.: +964 7901616053 E-mail: <a href="mailto:mmdmda@yahoo.com">mmdmda@yahoo.com</a> <a href="mailto:fisheries_iraq2005@yahoo.com">fisheries_iraq2005@yahoo.com</a></p> <p>Wartan Azzad SERKESS (<b>Second Focal Point</b>) Senior Fish Biologist Director of the Fisheries Department Ministry of Agriculture Directorate of Animal Resources Baghdad Mob.: +9647901497521 E-mail: <a href="mailto:vart_fish@yahoo.com">vart_fish@yahoo.com</a></p>
<p><b>4. KUWAIT</b></p>	<p>Faisal AL-HASSAWI  Assistant Under Secretary Deputy General Manager for Fisheries Sector Public Authority of Agriculture Affairs and Fish Resources PO Box 21422, Safat 13075 Kuwait Tel: +965 22254100/22254111 Fax:+965 22254103 Mob: +965-99222212 E-mail: <a href="mailto:faysal_4q8@yahoo.com">faysal_4q8@yahoo.com</a></p>	<p>Mohammed AL-KHARAFI  Head of bio-aquatic Studies &amp; Research Section Public Authority of Agricultural Affairs and Fish Resources P. O. Box 21422 – Safat – 13075 Kuwait Tel: +965 22254139 Mob: +965 99679736 Fax: +965 22254103 – +965 22254113 E-mail: <a href="mailto:m_al_kharafi@hotmail.com">m_al_kharafi@hotmail.com</a></p> <p>Usama Khalifa Sayed AHMED Fisheries Consultant Public Authority of Agricultural Affairs and Fish Resources P. O. Box 21422 – Safat – 13075 Kuwait Tel: +965 22254147 Mob: +965 97887592 Fax: +965 22254103 – +965 22254113 E-mail: <a href="mailto:khalifausa@yahoo.com">khalifausa@yahoo.com</a></p>	<p>Salim AL HAY  Head of Aquaculture Section Public Authority of Agriculture and Fish Resources PO Box 21422, Safat 13075 Kuwait Tel: +96522254132/ 66005575 Mob: +96599049327 Fax:+965 4725789 E-mail: <a href="mailto:eng_salem.alhai@yahoo.com">eng_salem.alhai@yahoo.com</a></p>

<p><b>5. OMAN (SULTANATE OF)</b></p>	<p>Ahmed AL-MAZROUAI Acting DG of Fisheries Development Ministry of Agriculture and Fisheries Wealth PO Box 427, Muscat 100 Tel: +968 24688282 (Off) Mob:+968-99333483 E-mail: <a href="mailto:ahmed.mazroui@mofw.gov.om">ahmed.mazroui@mofw.gov.om</a></p> <p>Fahad Saleh IBRAHIM (Alternate Focal Point) Acting Director Aquaculture Centre Directorate General of Fisheries Research Ministry of Fisheries Wealth PO Box 427, Muscat 100 Tel.: +968-24736618 Mob.: +968-99876617 Fax: +968-24737782 E-mail: <a href="mailto:fahadajmi@gmail.com">fahadajmi@gmail.com</a></p>	<p>Abdullah AL-BALUSHI Director of Fisheries Management Ministry of Agriculture and Fisheries PO Box 427, Muscat 100 Tel: +968-24-953281 Fax:+968 24601142 Mob:+968-99333325 E-mail: <a href="mailto:Almazim2000@hotmail.com">Almazim2000@hotmail.com</a></p> <p>Yaqoob Salem AL-JABRI Director, Fisheries Statistics Department Ministry of Agriculture and Fisheries PO Box 427, Muscat 100 Oman Tel.: +968-24-952270 Fax:+968 24601142 Mobile: +96899448078. E-mail: <a href="mailto:yaqoob96@hotmail.com">yaqoob96@hotmail.com</a></p>	<p>Fahad Saleh IBRAHIM Acting Director Aquaculture Centre Directorate General of Fisheries Research Ministry of Fisheries Wealth PO Box 427, Muscat 100 Tel: +968-24736618 Mob: +968-99876617 Fax: +968-24737782 E- mail:<a href="mailto:fahadajmi@gmail.com">fahadajmi@gmail.com</a></p> <p>Khalfan M. AL-RASHDI (Alternate Focal Point) Head of Hatcheries Technology, Aquaculture Center. Ministry of Agriculture and Fisheries PO Box 427, Muscat 100 Tel.:+968-24736618 Mob.:+968-92190833 Fax:+968-24737782 Mob.:+968-92190833 E-mail: <a href="mailto:krashdi@mofw.gov.om">krashdi@mofw.gov.om</a></p>
<p><b>6. QATAR</b></p>	<p>Mohammad AL- MOHANNADI Director of Fisheries Wealth Department Ministry of Environment PO Box 8703 Doha, Qatar Tel.:+974 44368125-44463336 Fax:+974 -4420 7650 Mob:+974 -55525580 E-mail: <a href="mailto:alshoqeri@moe.gov.qa">alshoqeri@moe.gov.qa</a> <a href="mailto:alshoqeri@hotmail.com">alshoqeri@hotmail.com</a></p> <p>Khalid Jassim Al-Khalaf (Alternate Focal Point) Fisheries Development Section Department of Fisheries Ministry of Environment PO Box 5513, Doha Tel.: +974 -44366234 Mob: +974 -558571229</p>	<p>Jassem AL-MOHAMADY Assistant Director Department of Fisheries Ministry of Environment PO Box 8703 Doha, QATAR Tel.: +974 44207481 Fax: +974- 4420 7650 Mob: +974-55551196 E-mail: <a href="mailto:jalmohamady@moe.gov.qa">jalmohamady@moe.gov.qa</a></p>	<p>Mohammad M.`AL- ABDULLAH Head of Environment Development Section Ministry of Environment PO Box 9100 Qatar, Doha Tel.:+974 -44366234 Fax:+974-4420 7650 Mob:+974-55842324 E-mail: <a href="mailto:mflamarzi@moe.gov.qo">mflamarzi@moe.gov.qo</a> <a href="mailto:aquaculturest2@hotmail.com">aquaculturest2@hotmail.com</a></p> <p>Khalid Jassim Al-Khalaf (Alternate Focal Point) Fisheries Development Sec. Department of Fisheries Ministry of Environment PO Box 5513, Doha Tel.: +974 -44366234</p>

	<p>Fax: +974 -4420 7650 E-mail: <a href="mailto:khd004@hotmail.com">khd004@hotmail.com</a></p>		<p>Mob: +974 -558571229 Fax: +974 -4420 7650 E-mail: <a href="mailto:khd004@hotmail.com">khd004@hotmail.com</a></p>
<p><b>7. SAUDI ARABIA (KINGDOM OF)</b></p>	<p>Nabil I. A FITA Technical Affairs Manager Ministry of Agriculture PO Box 134 Saihat 31972 Damam SAUDI ARABIA Tel.: +9663 8361307 Fax:+96638361307 Mobile:+966 0505856208 E-mail: <a href="mailto:nabil_fit@hotmail.com">nabil_fit@hotmail.com</a></p> <p>Abdullah Aziz Al-Muteri <b>(Alternate Focal Point)</b> Fisheries Researcher Aquaculture Department Ministry of Agriculture PO Box 360900 Riyadh 11195 Tel.: +966-1-4016666 ext.2234 Mob: +966-553043035 Fax: +966-1-4031635 E-mail: <a href="mailto:aaziz20@gmail.com">aaziz20@gmail.com</a></p>	<p>Anwar Essa Al-Sunaiher General Director Aquaculture Department Ministry of Agriculture PO Box 360900 Riyadh 11195 Tel.: +966-1-4031635 Mob: +966-506252947 Fax: +966-1-4031635 Email:<a href="mailto:sunaiher@yahoo.com">sunaiher@yahoo.com</a></p>	<p>Anwar Essa Al-Sunaiher General Director Aquaculture Department Ministry of Agriculture PO Box 360900 Riyadh 11195 Tel.: +966-1-4031635 Mob: +966-506252947 Fax: +966-1-4031635 E-mail: <a href="mailto:sunaiher@yahoo.com">sunaiher@yahoo.com</a></p> <p>Abdullah Aziz Al-Muteri <b>(Alternate Focal Point)</b> Fisheries Researcher Aquaculture Department Ministry of Agriculture PO Box 360900 Riyadh 11195 Tel.: +966-1-4016666 ext.2234 Mob: +966-553043035 Fax: +966-1-4031635 E-mail: <a href="mailto:aaziz20@gmail.com">aaziz20@gmail.com</a></p>
<p><b>8. UNITED ARAB EMIRATES (UAE)</b></p>	<p>Ebrahim Abdulla ALJAMALI Director Marine Environment Research Centre Ministry of Environment and Water P.O. Box 21 Umm Al-Quuain Tel: +9716655881 Fax: +97167655581 Mobile: +971506362293 E-mail: <a href="mailto:eaaljamali@moew.gov.ae">eaaljamali@moew.gov.ae</a></p> <p>Mohamed AL ZAROUNI <b>(Alternate Focal Point)</b> Senior Expert Fisheries Department</p>	<p>Ebrahim Abdulla ALJAMALI Director Marine Environment Research Centre Ministry of Environment and Water P.O. Box 21 Umm Al-Quuain Tel: +9716655881 Fax: +97167655581 Mobile: +971506362293 E-mail: <a href="mailto:eaaljamali@moew.gov.ae">eaaljamali@moew.gov.ae</a></p> <p>Mohamed AL ZAROUNI <b>(Alternate Focal Point)</b> Senior Expert Fisheries Department</p>	<p>Ebrahim Abdulla ALJAMALI Director Marine Environment Research Centre Ministry of Environment and Water P.O. Box 21 Umm Al-Quuain Tel: +9716655881 Fax: +97167655581 Mobile: +971506362293 E-mail: <a href="mailto:eaaljamali@moew.gov.ae">eaaljamali@moew.gov.ae</a></p> <p>Mohamed AL ZAROUNI <b>(Alternate Focal Point)</b> Senior Expert Fisheries Department</p>

	<p>Ministry of Environment and Water P.O. Box 1509, Dubai Tel: +9714 2418480 / +97142148444 Fax: +97142148432 Mobile: +9715-6460377 E-mail: <a href="mailto:maalzarouni@moew.gov.ae">maalzarouni@moew.gov.ae</a></p>	<p>Ministry of Environment and Water P.O. Box 1509, Dubai Tel: +9714 2418480 / +97142148444 Fax: +97142148432 Mobile: +9715-6460377 E-mail: <a href="mailto:maalzarouni@moew.gov.ae">maalzarouni@moew.gov.ae</a></p>	<p>Ministry of Environment and Water P.O. Box 1509, Dubai Tel: +9714 2418480 / +97142148444 Fax: +97142148432 Mobile: +9715-6460377 E-mail: <a href="mailto:maalzarouni@moew.gov.ae">maalzarouni@moew.gov.ae</a></p>
--	--	--	--

**Qatar Country Report  
Fisheries Department  
Ministry of Environment  
State of Qatar**

**Qatar Progress Report**

***Fishery description***

**Fishing fleet**

Fisheries resources are exploited by artisanal fishing fleet comprising two principal fishing vessel types, the launches and tarads. The Launch is a decked vessel usually constructed of wood or fiberglass and powered by an in-board engine; the average trip length is between 3 and 5 days. In 2012, a total of 499 fishing vessels were licensed to operate (131 of them wooden and 368 fiberglass). A total of 3 573 fishers were registered in 2012.

The recreational fisheries sector involves about 1000 licensed tarad. The tarad is an open dory usually of fiberglass construction powered by an outboard motor/s. Due to its small size, trip duration does not usually exceed 1 day.

**Table (2): Boat gear types**

Boat/gear	No. of vessels which use gear	Vessel length (m)	Vessel power (hp)	Distance from coast		
				0 – 3 nm	3-12 nm	12-200 nm
Large Boats /King fish nets	209	12-18	200-600			x
Large Boats /Traps – gargour	277	12-18	200-600			x
Large Boats /Others (multi gear)	13	12-18	200-600		x	
Speed Boats /Others (multi gear)	947	5-12	40-750	x	x	

1. Large Boats- Traps

- Dhows wire fish trap groupers, emperors and seabreams fishery

2. Large Boats- King fish

- Dhows driftnet pelagic fishery
- Dhows driftnet spanish mackerel fishery

3. Large Boats-other gears

- Dhows gillnet emperors and seabreams fishery
- Dhows handlines emperors and seabreams fishery

4. Speed Boats- Multigears

- Skiffs wire fish trap crab fishery
- Skiffs wire fish trap groupers, emperors and seabreams fishery
- Skiffs gillnet emperors and seabreams fishery

- Skiffs gillnet crab fishery
- Skiffs handlines emperors and seabreams fishery
- Skiffs driftnet spanish mackerel fishery

**Table (2): Manpower in involved in relevant services.**

Service	Transportation	Marketing	Vessel maintenance	Ice industry	Total
<b>Total Number</b>	165	930	20	35	1150

#### *Fishing ground*

The EEZ area is characterized by shallow waters, 78 percent of it being of less than 36 m depth. Fish catches from waters of less than 10 m depth make a substantial contribution to total landings. In the waters to the west of the Qatar peninsular, fishing mainly occurs in the more northerly portion above Latitude N 24°, where waters are 5-10 m deep and tidal exchange with the Gulf is greater. In the shallower southerly areas to the west of the peninsular, exchange is limited and biologically adverse conditions occur in summer, with water temperatures exceeding 40°C and salinities recorded as high as 70 psu. In consequence, this zone makes only a small contribution to fisheries landings.

#### *Minimum data reporting*

Detailed statistical data on catch, fishing effort and catch per unit of fishing effort for the period September 2012 – August 2013 has been submitted to RECOFI Secretariat.

#### *Current research projects*

Stock assessment and Management of commercial fish resources.

#### *Results*

Reproductive biology (Spawning season & size at first sexual maturity) has studied for 15 fish species (Table, 2).

Current status of 16 commercial fish stocks has been determined (Table, 3).

#### *Sustainable Management of Fisheries Resources' Project*

The project aims to implement an ecosystem approach to fisheries and marine by establishing an infrastructure for effective ecosystem based fishery management. The project consists of four main and complementary activities:

1. Development of a web-based Integrated National Fisheries Information System (NFIS).
  - NFIS SAMAQ (database) established and accessible through the intranet.
  - National capacity building for NFIS program, developed
  - Data collection, analysis & reporting, running
2. Establishment of a Marine Spatial Planning System (MSP).
  - Transponders were installed on-board of large fishing vessels for vessel monitoring system (VMS).
  - Environmental digital map including all available fisheries data is developed
3. Development and implementation of a fishery management plan based on Maximum Sustainable Yield (MSY).
  - An agreement is being signed with FAO to implement the project “Fisheries Surveys in Qatari Waters: Planning, Implementation, Data Analysis and Capacity Development”. This directly supports the aims of this parent “Sustainable Management of Fisheries Resources” project. In addition, the geo-referenced data generated will be supplied as an input to the parent project’s Marine Spatial Planning System (MSP) component.
  - TOR for socio-economic study and the detailed national work plan were developed (attached).

## Country Report on Fisheries - State of Kuwait

Table (1) Fishing grounds of important fin fishes in Kuwait waters

Species Name	Main Fishing Ground in Kuwait
Zobaidy ( <i>Pampus argenteus</i> )	Northern waters of Kuwait Bay around Failaka and Bubiyan Islands, and areas south and southeast of Bubyian Island
Suboor ( <i>Tenualosa ilisha</i> )	Distribution of Suboor in Kuwait waters extends from Kuwait Bay, around Bubiyan and Warbah Island (including Khor Al-Sabbyiah and Khor Abdullah) to areas south and southeast to Bybyian Island
Newaiby ( <i>Otolithes rubber</i> )	Newaiby is the local stocks. Being the demersal species, it distributes throughout Kuwait's territorial waters.
Shaem ( <i>Acanthopagrus latus</i> )	Stocks of Shaem are considered to be local and distributed throughout Kuwait's territorial waters.
Hamoor ( <i>Epinephelus coioides</i> )	Distributes in deep waters of Kuwait Bay and rest of Kuwait waters
Nagroor ( <i>Pomadasy kakaan</i> )	Fishing areas for nagroor are restricted only to the eastern sea area from Awhah Island to Kubbar Island.
Hamrah ( <i>Lutjanus malabaricus</i> )	Commonly distributed in Kuwait's southern most waters from Kubbar Island to Saudi Arabia
Fersh ( <i>Plectorhinchus pictus</i> )	Commonly distributed in Kuwait's southern most waters from Kubbar Island to Saudi Arabia
Sheiry ( <i>Lethrinus nebulosus</i> )	Sheiry distribution is confined to the southernmost waters of Kuwait, especially around Qaruh and Umm Al-Maradim Islands
Bassi ( <i>Nemipterus peronii</i> )	Bassi fishing ground is restricted to the southernmost waters of Kuwait, especially around Qaruh and Umm Al-Maradim Islands
Maid ( <i>Liza klunzingeri</i> )	Maid's distribution is restricted to Kuwait's northern waters including Kuwait Bay. Commonly found in the areas around Failaka Island and Bubyian Island.
Beyah ( <i>Liza suvididis</i> )	Commonly occurring in Kuwait northern waters including Kuwait Bay and the areas around Failaka Island and Bubiyan Island.
Chim ( <i>Arius</i> sp)- Sea catfish	Ariidae family represented by four species namely <i>Arius bilineatus</i> , <i>A. dussumieri</i> , <i>A. tenuispnis</i> and <i>A. thalassinus</i> . These species are commonly distributed in Kuwait waters.
Green tiger prawn ( <i>Penaeus semisulcatus</i> )	Extends from Kuwait Bay to Kubber Island and southwards towards the coastal waters borders of Saudi Arabia.
Jinga shrimp( <i>Metapenaeus affinis</i> )	Extends from Kuwait Bay to Failakah Island and north-eastwards around Bubiyan Island and the mouth of the Shatt-Al-Arab.
Kiddy shrimp ( <i>Parapenaeopsis stylifera</i> )	Fishing ground of this species restricted to area around Failakah Island to areas north of Kubbar Island

**Kuwait Fishing Fleet Status and license 2012 (size and composition)**

Type	Length Class (LOA)	Engine Capacity	Gross Tonnage
Wooden dhow boats	14-23 mts	132-365 hp	13-95 t
Speed boats	8.5 mts	200 hp	-
Merged speed boats	12.8 mts	200-250 hp	-
Industrial trawlers	20-30 mts.	270 – 565 hp	79-159 t

Type	No. of Vessels	Trawlers	Gill nets	Gargoor
Wooden dhow boats	151	64	68	19
Speed boats	698	-	545	152
Industrial trawlers	13	13	-	-
Recreational fishing	~30000 boats			

**Stock assessment of main species:**

Stock assessed	Stock Status	Methods Used
<i>Pampus arguntus</i> (Zobaiddy)	Overexploited	CPUE / Biological sampling
Shrimp Fishery (3 target species)*	Overexploited	CPUE / Biological sampling

Stock assessment projects	Institutes	Brief description
Demersal study (2012)	KISR	Sea survey scanning the water bodies belonging to GCC countries located in the Arabian Gulf. The methodology used was biological sampling using gill nets and determining biomass estimates. The study indicates a decline in biomass of commercial and bycatch species
Stock Assessment of Zobaiddy, <i>Pampus arguntus</i> in the Northern Gulf (2007)	KISR / Iranian Fisheries Research Organization	Data of landings and CPUE were utilized to determine biomass and MSY. Results indicated a heavy overexploitation in zobaiddy biomass due to high fishing effort and recommended a 50% reduction in effort to maintain the stock and enhance the biomass.

**Statistic & information System:**

- The national system of fishery statistics is consistent, provided by MOP by the use of receipts of landing data.
- Portal data base system is currently under development, relies on our data which is more accurate and up to date.
- Fishery statistics for the Gulf Cooperation Council for the Arab Gulf states

### **Current Research Work:**

- Stock enhancement project (on going)
- A comprehensive management strategy for long term sustainability of Kuwait's shrimp stocks.
- Establishing and monitoring Mubarek Alkabeer MPA

### **Fishery regulation**

- Decree promulgating law No. 46 of 1980 on protecting of fisheries resources. This is the basic fisheries law and includes regulations relating to (a) The right of fishing and exploitation of marine resources shall be determined by a decree. (b) no foreign vessels shall fish without a license by the competent minister. (c) the fishing vessels shall be owned by a citizen of Kuwait. (d) license should be issued to fishermen operating licensed fishing boats. and (e) gears used in fishing, and with cooperation of other departments to enforce regulations and law;
- Decree No. 20 of 1980 on licenses for intertidal stake nets (hadrahs);
- Decree No. 21 of 1980 on new fishing techniques and the farming of fish and living aquatic organisms;
- Decree No. 22 of 1980 on prohibition of specific materials in Kuwaiti territorial waters;
- Decree No. 23 of 1980 on minimum mesh sizes of shrimp fishing nets;
- Decree No. 24 of 1980 to authorize certain officials of the ministry of Public Works to enforce law No. 46 of 1980;
- Decree No.8 of 1983 on the minimum fish sizes to be caught in the territorial waters of Kuwait and to be marketed in Kuwait;
- Decree No.11 of 1983 of prohibition on fishing within 3 miles from the coasts of Kuwait;
- Decree No.13 of 1983 on prohibition of fishing in certain areas in territorial waters of Kuwait;
- Decree No.26 of 1985 Halting the issue of fishing licenses.
- Decree No.33 of 1992 minimum mesh size for fish and shrimp nets.
- Agreement between the Kingdom of Saudi Arabia and the State of Kuwait concerning the submerged area adjacent to the divided zone, 2 July 2000.
- Decree No.40 of 2001 the banning the use of long-lines.
- Decree No.8 of 2004 the banning of use of certain fishing gear.
- Decree No.462 of 2004 limiting the number of gillnets used on a boat.
- Decree No.522 of 2008 Labeling the fishing gear.
- Decree No.1455 of 2012 adjusting boat length.
- Decree No.1634 of 2012 adjusting merged license boat length

### Country Report – Sultanate of Oman

#### Description of the fisheries

The coast of Oman is surrounded by the Arabian Sea to the south and by Sea of Oman to the north. Oman coastline is divided into two geographic regions which are distinguished by their hydrodynamic and hydrological characteristics. There are different types of fishing grounds along the coastline; some of the grounds are soft with clean sands (mostly in Al Batinah). There is also hard rocky bottoms and soft bottom with muddy sand.

#### 1- Structure of the Landings:

The artisanal fishing activities take place in fishing grounds which are 6 miles far from the coast all along Omani coast line. This sub- sector presents the highest contribution in the total landing, while the coastal fishing activities start after 12 miles from the coast.

According to the 2012 data, the total fish landing was about 198,000 tons with an increase of 21% from 2011. This increase is due to the growth of artisanal fisheries landing. The following tables show the landings (tons) of the main target species in 2012.

**Table1: Total landing of main pelagic species in 2012**

Main Pelagic Species / Total Landing (mt)			
Large Pelagics	Landing (mt)	Small Pelagic	Landing (mt)
Yellow fin tuna	5,582	Sardine	43,549
Long tail tuna	14,287	Indian mackrel	8,595
kawakawa	4,608	Anchovy	3,590
Frigate tuna	944	Small Jacks	7,644
kingfish	5,620	Mullets	3,151
Queen fish	4,244	Needlefish	396
Barracuda	4,002	-	-
Sailfish	3,521	-	-
Large jacks	9,328	-	-

**Table2: Total landing of main demersal, Sharks/Rays and Crustaceans in 2012**

Demersal Species	Total Landing (mt)	Sharks/Rays and Crustaceans	Total Landing (mt)
Emperor	8962	Sharks	5483
Seabream	3352	Rays	1127
Grouper	3946	Lobster	243
Crocker	6863	Shrimp	742
Sweetlips	2677	Cuttlefish	6530
Snapper	1070	Abalone	54
Jobfish	2337	-	-
Catfish	5153	-	-
Ribbonfish	10878	-	-

## 2- Characteristic of the fishing fleet

Fishing fleet in the Sultanate of Oman comprises three different types: Artisanal fishery, Coastal fishery, and Commercial fishery. Artisanal fishery in Oman is an important part of the country's fisheries sector due to its high contribution in the total landings. Artisanal fishing boats and vessels are its way to achieve the target. Because of this it is very important to know the situation of the artisanal fishing boats and vessels in term of number, characteristics, distribution, gears used, and ability to work. The Ministry has implemented a comprehensive inventory of artisanal fishing boats and vessels in 2011. The following are the results of the artisanal fleet inventory.

**Table3: Number of active boats & vessels according to length**

**\*The recorded number of vessels in 2011 was 704, and the decrease in this number is due to being the vessels in fishing trips or Maintenance.**

According to the 2012 data the fleet composition was as follow:

Length (m)	Type and number of boat / vessel						Total
	Fiberglass	*dhows (wood)	*dhows (fiber)	Aluminum	Shasha	Huri	
Less than 5	294	0	0	5	53	2	354
5-9	13,651	4	17	1	0	3	13,676
10-14	23	17	52	0	0	0	92
15-19	0	42	186	0	0	0	228
20-24	0	2	59	0	0	0	61
25-29	0	2	9	0	0	0	11
30-34	0	0	16	0	0	0	16
<b>Total</b>	<b>13968</b>	<b>67</b>	<b>339</b>	<b>6</b>	<b>53</b>	<b>5</b>	<b>14438</b>

**Table4: Fleet composition in 2012**

Type of fleet	Total number 2012	Length (m)	GT	KW
Artisanal fishing boats	19245	5 - 9	-	-
Artisanal fishing vessels	698	12 - 32	-	-
Costal vessels	94 registered / 56 active	13 - 32	200	492
Commercial vessels	8 long liner	29 - 52	200 - 600	-

### Stock assessment of the main species

No stock assessment of any species has been done during the intersessional period except for lobster and abalone. The indirect methods of stock assessment were used for both fisheries. The results were that the both fisheries are overexploited.

**At the time being, two projects are monitored by the Ministry including the assessment of two fisheries and the development of their specific management plan, namely:**

- Tuna Fisheries Management
- Shrimp Fisheries Management in Al Wusta Governorate

## **Statistics and information system**

The data collection system developed for the Fisheries Statistics Dept. (FSD) of the Directorate General of Planning & Improvement was implemented in 1985. It was designed to collect biological data such as fishing effort, and economic information such as employment data and value of the fishery landings by species. Data collection system in the fishery sector is applicable on the different types of fishery and it is even applied on the export and import of fish.

From 2011 there are two data collection schemes one for the CPUE and the other for Probability of Boat Activity (PBA) and running in two different survey. The data for the CPUE is collected from the fish landing sites, and includes; landing time, vessel type, license number, and number of crew they usually sample every third to fifth fishing boats and record fishing hours/days, fish species and number of fish, average weight and total weight, fishing gear used and unit price by species. The effort data are collected from the homeport. The objective behind collecting all these information is to establish a policy for maintaining sustainable development and rational management of the fishery. There are several data summary programs implemented on fisheries data including:

- **Catch, effort, and value for single species by boat type, gear type, and area-** Effort is a measure of the pressure on fishing. For examples; number of fishermen/days during a month, number of boat/days during a month, number of gear unit (for example the number of pieces of drift gill nets)/days during a month, or the number of boat/hours during a month. This summary is important for stock assessment, especially for estimating fish abundance.
- **Catch, effort, and value across species by boat type, gear type, and area-** In this summary the total catch of all species by each boat is used because it is known that some gears catch several different types of species of fish. This summary allows evaluating the overall success (catch and value) of fishermen using the various gear types, no matter what species they are being catching. In addition, this summary provides information about which gear types are used in different areas of the Sultanate and whether the catch and income of fisherman is increasing or decreasing.

For the industrial fishery Log sheets submitted by captains of fishing vessels are the main source of data. There is a process of checking on board will take place by surveillance in order to check if there is difference between reported catches and actual catches. It has been known that in most cases reported catches are less than actual catches.

The Fisheries Statistics Section is responsible to design the log sheet and data input, while the sheets collecting responsibility is on Observance and Fishing Permit Department.

### **Projects related to the collection and compilation of fishery statistics**

- 1- Enhancing Fisheries Statistical System Project (07/02/2009 – 02/06/2012)
- 2- Improve the quality of fishery statistics (1/1/2011 - 31/12/2015).

### **Current research work**

#### **1- Tuna Fisheries Management, 10/9/2011 – 31/8/2014**

It is a research program implemented along the coastline of the Sultanate of Oman by the General Directorate of Research in the Ministry. It aims to set a management plan of Tuna Fisheries, Studying the socio- economic aspects of this fishery, assist in the development of appropriate management plan for coastal tuna fishery.

**Below are some of the expected outcomes of this project:**

- Establishing and implementing the appropriate policy for the development of tuna fisheries management,
- Valorization and assessment of tuna fisheries in Oman,
- Identify Tuna fish stock in Omani waters,
- Get some of the socio- economic parameters of Tuna Fisheries.

### **Social and economic research and initiative applied to fisheries during the intersessional period**

There are two socio- economic studies done during the intersessional period:

- **Socio economic study for lobster fishers**- this study is a part of a main project regarding the Development of monitoring and control program for the lobster fishery in the Sultanate of Oman.
- **Socio economic study for coastal women**- it is part of a main project of Development of coastal women in Al Wusta Governorate.

#### **Legislations related to the fishing communities and national fishing sector:**

- By law of coastal and commercial fishing vessels
- By law of fisheries subsidies
- New legislation for fishing ground segmentation
- New legislation for Sunat Al Bahar Committee

### **Marine ecosystem and environmental studies**

- 1- Study of physical and biological changes and their relation to the red tide and fish mortality – 2012

#### **Main results:**

- The harmful algae are mostly concentrating in the Sea of Oman; however the marine organism's mortality is higher in Arabian Sea because of combination of more than one type of harmful algae.
  - Phytoplankton mortality is mostly appearing during winter (Nov-Dec) because of shortage of oxygen depth of 40-60m.
  - Mortalities of marine organisms depend on the ratio of oxygen and phytoplankton quality, toxicity, its impact and its concentration in the water as the death of marine organisms affected by seasonal changes such as the fall and the winter season.
- 2- Survey of the marine environment program- this program started in 2011 and it will be continued till 2016. Some of the objectives of the program are:
    - Promote environmental database with new data on the various environmental changes in the Omani waters.
    - Linking environmental changes (physical, chemical and biological) with each other and determine their relationship to fisheries and fish stocks.
    - To get a more comprehensive understanding of natural phenomena in the marine water of Oman.
  - 3- Project of controlling and minimizing the impact of red tide on the marine environment, fisheries and public health- this project started in 2011 and will be finished in 2015 and the following are some aims of the project:
    - To develop a surveillance and management program for the Omani coastline in the long term with a focus on red tide phenomenon.

- Provide the data necessary for red tide and harmful algal blooms and fish kills, which in turn will contribute to the management of fishery resources and effective management as well as contribute to the protection of human health and the marine environment.
- Continuous monitoring of phytoplankton and environmental changes and to study the biological and geographical diversity of Omani waters.

### **Fisheries Management**

- Reduction of Abalone season- taking in to consideration the situation of this fishery, it is proposed to reduce the season to only 10 days.
- The fishing activities are banned in Khour Al Najed and Hablain In Musandam Governorate except with long lines.

### Iraq Country Report

#### Description of fishing ground

Fishing ground\ Iraq can be considered one of the marine countries, Situated at the head of the Arabian Gulf. The area of national territorial waters about 900 km<sup>2</sup>, from FAW port . This area is characterized by lack of depths where the maximum depth is about 15 m and this water is under the effects of tidal currents, where the water levels rises and lowers about 2.40m. Regional coastal waters are directly continued with gulf waters and exchanging with marine waters by tidal movement, as the water flows from the Gulf and Karun river to the Shatt al-Arab and back, Therefore this area is characterized with high fertility water which attracts fish for feeding or breeding purposes, a few species of these fishes may continue to migrate to internal waters through Shatt al-Arab and marshes.

The geographical location allows Iraq to exercise fishing and to build a national fishing fleet in nearby waters (Arabian Gulf, Arabian Sea) and to extend to international waters (high seas) under international conventions.

Although Iraq has this area but this source have not been optimally used to boost marine fish production . The distance and bathymetric rang are depending on the length and gross tonnage of the boats:

- Small boats up to 12 meters 2-4 nm from Iraqi coast (nm= nautical miles).
- Middle boats up to 24 meters Up to 6-7 nm from Iraqi coast.
- Boats up to 24- 35 meter Up to 10 nm from Iraqi coast

#### Total landing by main target species (t)

Year	River shad	Otolithus rubber	Grouper	Flat fish	Grooved tiger brown	Wolf herring	Mullet	Sea bream	Silvery pomfret	Chorinemus Lysan	Others
2010	1126	66	17	40	5	30	2689	1378	25		1742
2011	156	33	22.5	18	34	5	934	146	22		273
2012	1918	98	422	25	984	530	634	465	339		3205
Total	3200	197	461	83	1023	565	4157	1739	386		5220

#### FLEET (size and composition)

Year	Length meters	No	Gross Tonnage	Horse power	Fishing gear	Type of boats		
						wooden	Fiber	steel
2012	Up t012	46	0.75-3	75-240	Gillnet\trap	2	31	13
	12-18	21	1-4	75-240	Gillnet\traps	X	12	21
	18-24	174	3-7	65-825	Trap\trawler	X	24	150
	24-30	36-	3-10	150-940	Trawler	X	6	30
	30-35	11	8-12	950	Trawler	X	X	11
TOTAL	12-35	278	0.75-12	75-950	Gillnet\traps\ trawler	2	73	278

Stock assessment

- A- There have been not any assessed during the intercessional period on underexploited, moderately exploited, fully exploited...
- B- There are no international\regional projects or activities related to the appraisal fishery resources.

Statistics and information system

- A- There are no official studies or reports from any institutional sources. The only data and information which are available is the number of the fishermen, boats, and species.
- B- There are no projects or activities related to the collection and compilation of fisheries statistics

Current research work

- A- No researches are available

Social and economical researches and initiatives applied to fisheries during the intersessional period.

- A- No researches or initiatives were applied to the fisheries during the period.

Marine ecosystem and environmental studies

- A- No activities or results were noticed

Fisheries Management

- A- None

**Fisheries Status and Research Developments  
in Kuwait**  
**Ali Al-Baz, Mohsen Al-Husaini and Hussain Al-Foudari**  
**Ecosystem-based Management of Marine Resources Program**  
**Environment and Life Sciences Research Center**  
**Submitted To**

## **Introduction**

Kuwait is located at the north-western end of Arabian Gulf within latitudes of 28 °N and 30 °N, and longitudes of 47 °E and 49 °E. The State of Kuwait has a total land area of 17,820 km<sup>2</sup> and a coastline of 195 km. Kuwait's marine area occupies the western edge of the Mesopotamian shallow shelf of the northern part of the Arabian Gulf. It has a submerged estuarine flat covering a very shallow area of not exceeding 10 m in depth of the Shatt Al-Arab estuary. The shelf slope extends along the coastal area to 20 m depth. In general, Kuwait's waters are shallow with a maximum depth of about 30 m. It comes under arid climatic conditions with extremely harsh temperature and high salinity. The highest mean temperature of seawater during July-August is 30.5 °C and the lowest mean temperatures of 14 °C occur during January-February. The water salinity fluctuates between 37 to 50 ppt due to the inflow of fresh water from the Shatt Al-Arab River caused by heavy rainfall during the winter, and melting of snow in Turkey, Syria, Iraq and Iran during the spring period. The high salinity is due to the intensive evaporation of seawater during the hot summer months from May to October. The flow from Shatt Al-Arab River and the type of topography with mud-flats and coral reef supports a wide variety of fauna and flora in Kuwait's waters.

In spite of the fishing industry of Kuwait small by world standards, but it's compose of distinct types of vessels along with a variety of gears being used to catch a large number of species, of which 15 - 20 contribute significantly to the landings. The development of this industry started in early 1960's and expanded by incorporates a mixture of industrial and artisanal vessels that comprise the fishing fleet today. The fishing fleet at present consists of 694 fiberglass speedboats- equipped with drift, gill net and hemispherical fish wire trap (*gargoor*)- 68 dhows (traditional wooden-hulled boats) using *gargoor* and 19 dhows using drift net. In addition of 64 dhows and 13 steel boats trawl for shrimp. The target species for artisanal fishery principally depend on the type of fishing gear used.

Towards supporting the fisheries industry in Kuwait, the Ecosystem-based Management of Marine Resources Program (EMMRP) of Kuwait Institute for Scientific Research (KISR) is dealing with intensive research and development projects relevant to fisheries and oceanography and advised the Public Authority for Agricultural Affairs and Fish Resources (PAAFR) in formulation of fisheries regulations. This report updates the current status of fisheries in Kuwait and presents the outcomes of major research project carried out by KISR for the last 10 years.

**Shrimp Fishery.** Shrimp fishery is the most important fishery in Kuwait. It accounts for more than 36% of the total fishery catch and more than 35% of the total value from the total catch. In 2009 the two shrimp fishery companies (United Fishing Company (UFK) & National Fishing Company (NFK)) fishing operations were carried out using a total of 29 steel-hulled Gulf-of-Mexico industrial boats (20-32 m length). The artisanal fishery sector, operates with 39 dhows (with fitted engines, average 19 m in length) licensed to trawl, but during the shrimp fishing season there are more than 70 dhows are actually operating in the International waters. Due to the high cost of operating expenses, the industrial sector start in 2009 to exchange 27 double rigged industrial trawlers with 25 Fiberglass dhow boats (22.6 - 22.9 m length) use a single rigged net and kept eight industrial trawlers that owned by UFK in service (Al-

Foudari et al, in press). After the restructuring of the industrial fishing fleet, number of dhow boats-shape (wooden & fiberglass) increased to 63 boats compared to 38 boats in 2009 (Table 1).

**Table 1. Number of fishing boat operating in Kuwait in 2009 and 2011.**

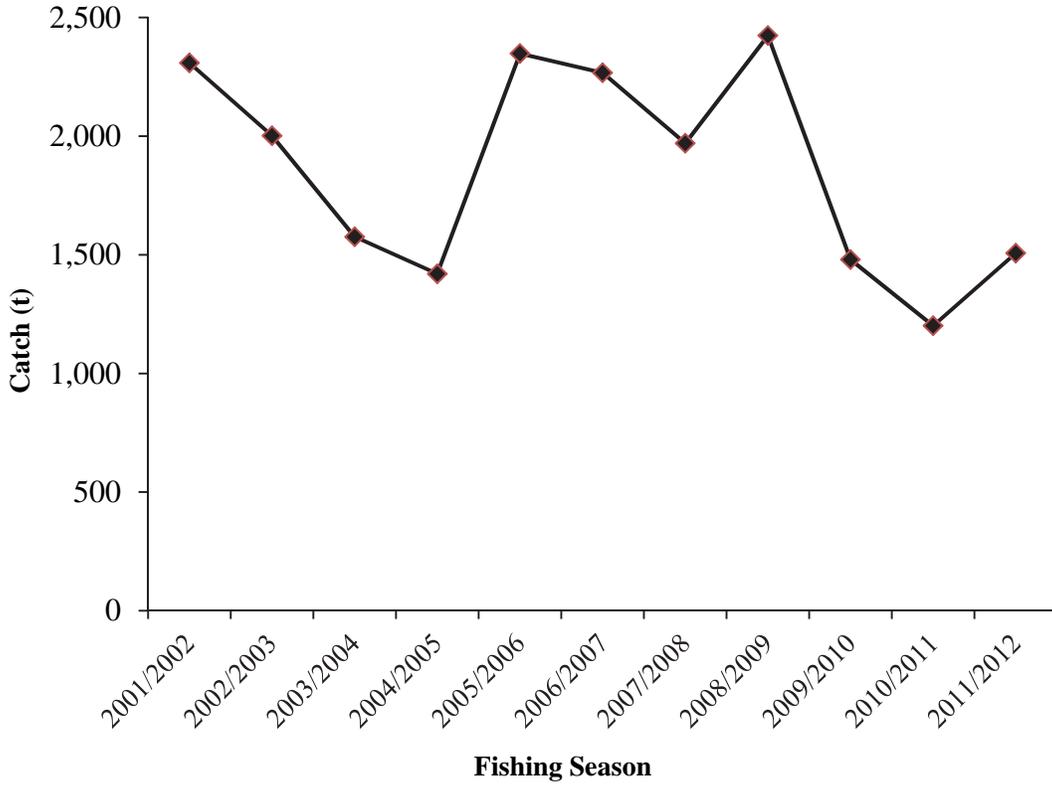
Year	Industrial Shrimp Trawlers	Dhow boats				Speed boats		
		Shrimp Trawlers	Gill net	<i>Gargoor</i>	Total	Gill net	<i>Gargoor</i>	Total
2009*	30	39	68	19	126	565	152	717
2011*	13	64	68	19	151	540	154	694

\* source: The Annual Bulletin of Fisheries Statistics- Central Statistical Bureau (CSB).

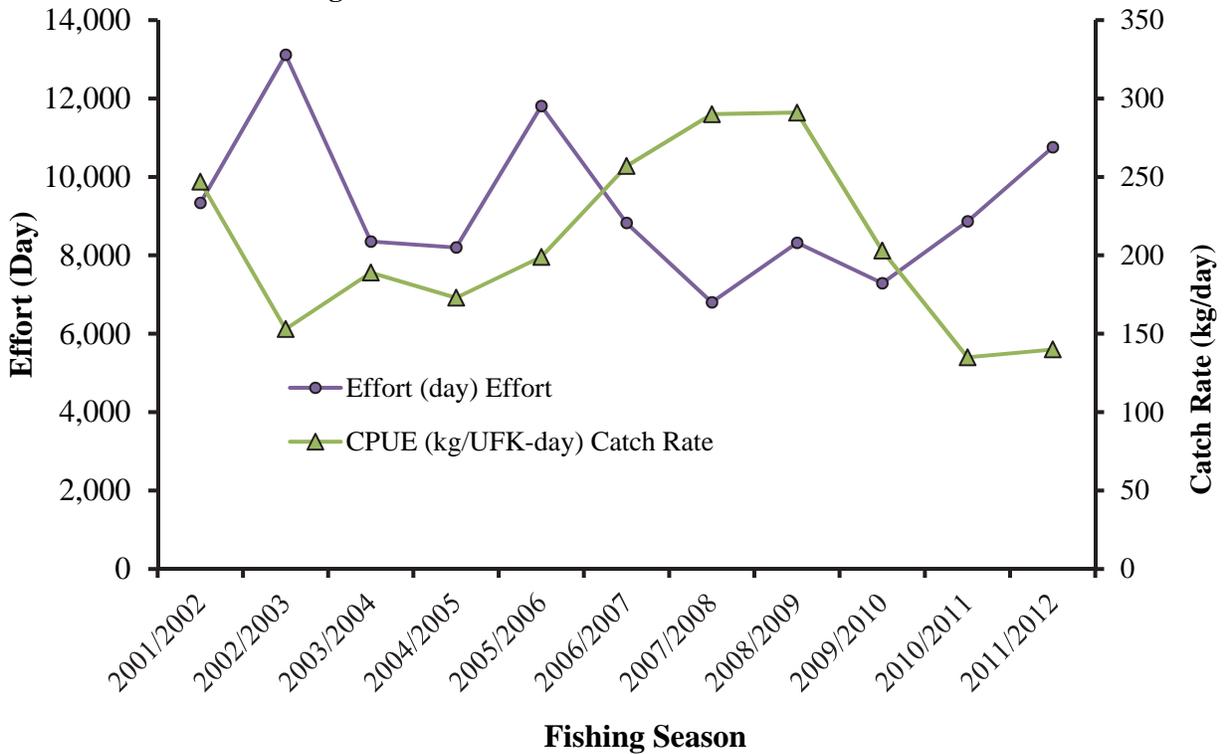
There are 14 shrimp species distributed in Kuwait's waters. Of these only three species are commercially exploited. They are generally categorized into two groups, the white shrimp *Penaeus semisulcatus* and the hard shrimp *Metapenaeus affinis* and *Parapenaeopsis stylifera*. Usually, *P. semisulcatus* constitute about 58% of the total shrimp landings. The remaining constituted by *M affinis* 30% and *P. stylifera* 9% (Al-Foudari et al, In press). The shrimp landings are able to meet 73% of the local demand and the remaining are imported as fresh shrimp from Iran, Saudi Arabia and India (CSB, 2011).

The fishery management regulations imposed in the 1980's includes closed, season, protected areas (Kuwait Bay and three mile coastal zone) to protect juveniles, 50mm mesh size and effort limitation in order to optimize shrimp productivity. Recommendations are made in the early January of every year by KISR to PAAFR on determination of end date of the season based on the information relevant to recruitment, stock size and catch rate. The shrimp season usually starts 1<sup>st</sup> of September when the shrimp size is optimal for economic returns. Season closure can vary from 15<sup>th</sup> January to 15<sup>th</sup> March or later, depending on spawning biomass, which is estimated from catch rates.

The annual shrimp landings have fluctuated considerably between fishing season 2011/2002 to 2011/2012. The landings were decreased from 2,309 t during 2001/2002 period to 1,420 t during 2004/2005 period and then increased to 2,348 t during 2005/2006 (Fig.1). Moreover, the shrimp catch rates (kg/ industrial boat-days) effort (industrial boat-days) also showed the same pattern were the catch rate decreased from 247 kg/day in 2001/2002 season to 140 kg/day in 2011/2012 season while the effort reached to the highest level in the last 10 fishing season of 13,115 industrial boat-days (Fig. 2). The fishing effort increasing over the past decade have led to increasing pressure on fish stocks, which reduced the shrimp total landings as well as the catch rates. In addition to that, Hussain et al. (1998) reported that the primary factor for this decreasing appear to be increasing fishing pressure during the shrimp season as well as illegal trawling during closed season and altered discharge of Shatt Al-Arab.



**Fig. 1. Kuwait total shrimp landings (t) from industrial and artisanal fishing sector from 2001/2002 to 2011/2012 fishing season.**



**Fig. 2. Shrimp catch rates (kg/day) and effort (days) from 2001/2002 to 2011/2012 fishing season.**

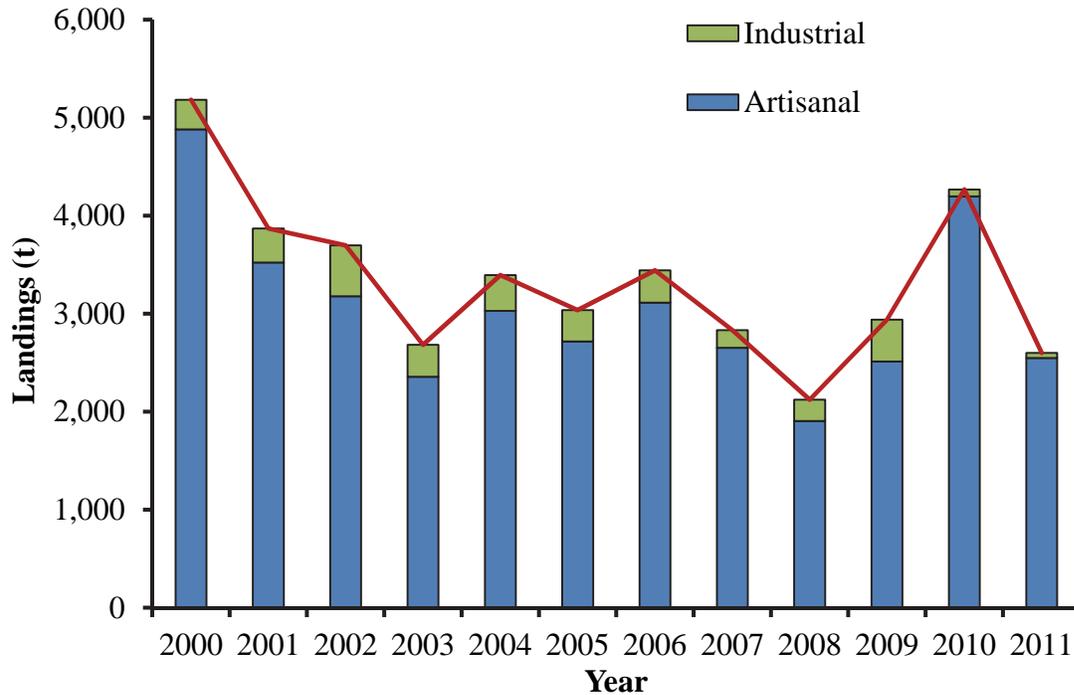
**Fin-fish Fishery.** Kuwait's sub-tropical fisheries are multi species and multi gear. Fishing fleet is composed of three types of fishing vessels, namely, wooden dhows, fiberglass dhows and fiberglass speed boats. These vessels are licensed to use only one type of gear which can be either hemispherical 'gargoor' wire traps or drift gill nets or fixed gill nets of various mesh sizes. The registered finfish fleet consists of 87 dhows, of which 19 boats are equipped with 'gargoor' traps and 68 boats with gillnets (CSB, 2011). There are 694 fiberglass speed boats of which 154 boats use 'gargoor' traps and 540 boats use gillnets, although not all of these may be active and this varies seasonally. The number of inter-tidal stake nets, 'hadrah', was reduced from 522 in the 2003 to about 30 after the **Kuwaiti cabinet issued a decree in September 2003** to remove all hadrahs from Kuwait Bay and Khor AlSabiyah, which is considered to be Kuwait's most important nursery ground, based on recommendation of a study carried by KISR (Al-Baz et al., 2004). The fish by-catch taken as part of shrimp trawling by both industrial and artisanal fleets is an important component of the fish catch and revenue from shrimp fishing, with the fish catch rate being significantly higher than the shrimp catch rate (Al-Ayoub et al., 2005). Despite the importance of this fish by-catch, trials are being undertaken on by-catch reduction devices (BRDs) for possible introduction in to the shrimp fishery.

The main commercial fish species belong to 14 families, with some being regionally distributed while others are considered to be local. The prime species caught by gillnets are the zobaidy *Pampus argenteus*, suboor *Tenualosa ilisha*, nagroor *Pomadasys kaakan*, and maid *Liza* spp. The 'gargoor' catches include the hamoor *Epinephelus coioides*, sobaity *Sparidentex hasta*, shaem *Acanthopagrus latus*, hamra *Lutjanus malabaricus* and newaiby *Otolithes rubber*. Species such as zobaidy (*Pampus argenteus*), suboor (*Tenualosa ilisha*), and nagroor (*Pomadasys kaakan*) are shared with Iran and Iraq and migrate to Kuwait seasonally (Al-Husaini, 2003). Stocks of hamoor (*Epinephelus coioides*) and hamrah (*Lutjanus malabaricus*) are thought to be of a single unit throughout the northern Gulf, whereas stocks of newaiby (*Otolithes rubber*), shaem (*Acanthopagrus latus*) and maid (*Liza klunzingeri*) are considered to be local. The average annual fish landings for Kuwait from 2000 to 2011 were 3,339 t.

Since 1980, fishery operations have been restricted to Kuwait's territorial waters due to restricted access for fishing in the other Gulf countries. The fishery management regulations imposed in the 1980s includes closed season for zobaidy, protected areas (Kuwait Bay and three-mile coastal zone), mesh size, effort limitation, and hadrah removal from the northern area in order to optimize productivity.

The artisanal sector contribute significantly to the finfish annual total landings were landed about 91 percent of the landings of approximately 3,052 t, while the industrial contribute between 2–15%. The annual finfish catch start to declined significantly from 5,183 t in 2000 reaching the lowest catch of 2,124 t in 2008 (Fig 3). The main contributor to this decline is one of the important commercial species such as the newaiby (*Otolithes rubber*) that has declined from an 1,068 t in 2000 t to only 450 t in 2011 (Fig.3). The other species was suboor (*Tenualosa ilisha*) were declined from 643 t in 2000 to 75 t in 2011 which linked to the spawning and nursery areas in Tigris, Euphrates and Karun river systems have impacted by the drainage of the marshes and reduced fresh water inflow to the Gulf.

**Development of Kuwait's Fisheries Research.** In cooperation with the Food and Agriculture Organization of the United Nations (FAO) and KISR, fisheries research began in Kuwait in 1977 to assess and introduce management measures for its fisheries. As results, many management measures were applied including closed areas, minimum mesh sizes and fishing capacity limitation through limited entry mostly for shrimp fishery management. During the last decade KISR executed seven important research projects aims to update the management policy of the fin-fish and shrimp fisheries, and to study the impact of the fishing gears on Kuwait fishery stocks. These projects were list as follows:



**Fig. 3. Total finfish landing; artisanal and industrial sectors landings in Kuwait from 2000 to 2011.**

### 1. Stock Assessment of Finfish Resources (1997-1999, 3 yrs)

The main objectives were to improve the current sampling scheme on catch and effort data collection, to estimate growth parameters for Kuwait's important fish species by the annual mark technique, to estimate mortality rates using growth parameters and age compositions, and to recommend regulation measures for the important fin-fish species of Kuwait (Al-Husaini et al., 2000).

#### Conclusions:

- The catch rates of hamrah, hamoor and zobaidy decreased, and the catch trend of zobaidy is declining drastically and those for hamoor and hamrah decreasing steadily.
- The total mortality (Z) for the major species found to be relatively high and thus high exploitation rates were observed for species investigated, except for nagroor.
- The yield-per-recruit analysis showed that hamrah is exploited beyond its maximum sustainable yield (MSY) while hamoor, newaiby, and shaem are exploited at their MSY.
- Closed fishing seasons and minimum marketable sizes were recommended based on the maturity compositions for four species and mean length-at-first maturity for the six commercial species.
- Long-term higher yields could be established by increasing the minimum marketable sizes for heavily exploited species.
- For all species, increase in fishing effort in the fishery is not recommended since low percentages in yield would be obtained in comparison with high increase in fishing effort. It would be preferable to change size-at-capture to increase in yields to not impact mean length-at-first maturity.

## 2. Shrimp Stock Assessment in the Western Arabian Gulf by Countries of the Gulf Cooperation Council (1999- 2001, 22 m).

Monthly trawl surveys in Kuwait, Saudi Arabia, and Bahrain, started in March 1999 and continued through December 2000. In Qatar, monthly surveys began in May. Stations on each of six shrimping grounds, including three in Saudi Arabia, were randomly sampled using similar trawls and trawling techniques. Catch results from all countries were standardized to kilograms per net-hour at 3.3 knots to allow spatial and temporal comparisons (Bishop et al., 2001).

### Conclusions:

- Throughout the study area, the green tiger prawn, *P. semisulcatus*, dominated species composition. Secondary species of commercial importance included *Metapenaeus affinis*, *M. kutchensis*, *Parapenaeopsis stylifera*, *P. latisulcatus*, and *P. merguensis*. *P. semisulcatus* initially recruited to coastal waters in May and June at sizes ranging from 17 to 22 mm carapace length (CL), and continued through August in most countries.
- Spawning activity, based on presence of stage-IV females, occurred throughout the year, but the highest percentages of gravid females occurred in winter and early spring. Percentages of gravid females were relatively high in Kuwait, Saudi Arabia, and Bahrain, and relatively low Qatar. These results are interpreted to indicate that the spawning grounds are near the fishing grounds for most countries.
- A very marked north to south gradient was found for a number of parameters related to *P. semisulcatus*. Average water temperatures were coolest in Kuwait, 23.9 °C, and warmest in Qatar, 26.8 °C. *P. semisulcatus* grew to larger sizes in Kuwait than elsewhere with  $L_{\infty}$  for males and female CLs reaching 36.6 and 51.3 mm, respectively. The smallest  $L_{\infty}$  was recorded in Dareen (Saudi Arabia), Bahrain and Qatar, where males grew to a maximum of 26 to 28 mm CL, and females reached 38 to 39 mm CL. Generally, shrimp grew faster in warmer waters, and the highest growth rates occurred in Bahrain where the growth constant,  $k$ , was 3.3 and 3.5 for males and females, respectively.
- The slowest growth occurred in Kuwait where respective  $k$  values for males and females was 1.6 and 1.9. Natural mortality was inversely related to shrimp size. Consequently, in Kuwait, where shrimp grow to the largest sizes, annual natural mortality ranged from 2.2 to 2.3 for males and females, respectively, whereas in Bahrain, comparative values were 3.8 and 3.7.
- Taking all the information into consideration, there appears to be three separate stocks of *P. semisulcatus* in the western Gulf: one in Kuwait, a second on the Kufji and Manifah shrimping grounds, and a third stock on the shrimping grounds of Dareen, Bahrain, and Qatar.
- Fish by-catch was highly variable among fishing areas. By-catch ranged from a maximum average of 350 kg per net-hour@3.3 knots in Kuwait to a minimum average of only 21 kg per net-hour@3.3 knots in Bahrain. At an average of 181 kg per net-hour@3.3 knots, Qatar's by-catch was second highest. Ratios of by-catch to shrimp catch ranged from a high of 75 in Kuwait to a low of 5 in Bahrain.

### 3. An Assessment of the Hadrah Fishery and its Impact on Commercial Fish Species (2001- 2003, 2 yrs).

The main objectives of the project were to describe and assess the current status of the hadrah fishery and to investigate the distribution of the established hadrahs along Kuwait's coastline, investigate the species composition of hadrah catches, total catch, and effort, estimate species selectivity and fishing efficiency in selected locations, study the economic returns on hadrah investment and finally recommend practical management policies for hadrah (Al-Baz et al., 2003).

#### Conclusions:

- An aerial survey of Kuwait's coast was conducted in July 2002 and revealed that a total of 153 hadrahs were active in Kuwait.
- A total of 271 hadrah catches were sampled from October 2001 to January 2003: 153 from Kuwait Bay, 38 from Failakah Island, and 80 from the Middle Region. The average catch rate (kg/day) of commercial catch found for Kuwait Bay, Failakah Island and Middle area was 26 kg, 59 kg and 10 kg, respectively.
- A 92 species belongs to 50 families were identified and recorded from the hadrah catches during the study period. More than 63% of the hadrah catches was comprised of the following fish families: Carangidae, Clupeidae, Sparidae, Ariidae, Haemulidae, Mugilidae, Scombridae, and Sphyraenidae. Ten fish species; chim, suboor, chanaaed, muchawah, yemyam, duwailmy, delah, maid, Sawaya and bedha rayasha dominated catches and contributed over 58% of total catch.
- A total of 37,372 specimens belonging to 83 fish species were measured from the catches during the study period. Ten fish species (muchawah, gurgufan, shaem, yemyam, sawaya, maid, delah, tallah, bufchache and seeny) accounted for more than 56% numerically of the captured fish were discussed thoroughly there abundance and length distribution.
- To evaluate the effect of net mesh size on the catch composition and species length distributions, six hadrahs with larger mesh sizes (1 and 2 inch) than the currently used in the hadrah pocket (0.75 inch) were established near the presently operational hadrahs in three different sites along the Kuwaiti coastline. There was no difference in the fishing selectivity of the two mesh sizes nets in all areas for most of the caught species. The main factor affecting hadrah selectivity, besides mesh sizes, was mesh clogging by sea weed.
- Kuwait's shallow coastal waters, particularly those in Kuwait Bay, serve as prime nursery habitat for many commercial and non-commercial species. Hadrah catches analyzed during this study consisted of more than 40 percent juveniles. Therefore, it recommended that all hadrah be removed from Kuwait Bay, Kuwait's most important nursery ground. Because of their location in shallow coastal waters, all hadrah are believed to cause heavy mortalities on populations whose juveniles utilize the intertidal waters, and their removal should be considered.

### 4. Stock assessment of Zobaidy, *Pampus argenteus*, in the Northern Gulf (2003- 2006, 3 yrs)

This project was executed jointly between KISR and the South Iran Aquaculture Research Center (in Ahwaz, Khuzestan province) of the Iranian Fisheries Research Organization (IFRO). This cooperative research project aimed to assess the valuable stock of zobaidy shared between Kuwait and Iran in the Northern Gulf. The main objectives were to investigate and determine the basic biological parameters necessary for the management, the standing biomass, seasonal abundance, and the impact of regional fishery activities (Al-Husaini et al., 2003).

#### Conclusions:

- The sampling of fisheries data (catch, effort, fish length distributions, and biological data) was started in May 2003 and ended December 2005. Monthly length frequencies data were collected from both the drift gill net and shrimp trawl fisheries. Age determination was based on otolith sectioning, polishing, etching, and staining method. The age groups ranged from 0 to 10 yrs but the dominant age groups were 1-3 years and the estimated parameters for both sexes were  $L_{\infty} = 32.0-36.0$  cm FL and  $K = 0.26-0.30$  yr<sup>-1</sup>, females grow faster than males.
- Sea survey on board of two dhow boats was carried out using swept area method. Higher abundance was always obtained in Kuwait Bay rather than the other areas surveyed in Kuwait and Khuzestan waters. The total estimated stock biomass in the surveyed areas varied from 42 t in January 2004 to 2,633 t in November 2004, while the Iranian biomass varied from as low as 19 t in October 2005 to 295 t in November 2003. The data indicated that Ras Al-Gaid, Bubiyan Island is the main nursery area in Kuwait waters, while Lifah, Busaif, and Bahraikan are important nursery areas in the Khuzestan waters. Kuwait Bay and Khor Musa are considered important spawning grounds and should be protected.
- Yield per recruit analysis showed that higher yield could be gained with increasing fish effort, which is not recommended under the present status of high exploitation rate. In contrast, virtual population analysis indicated that future catches will reduce if the fishery continues with present level fishing effort.
- The project recommend to reduce 50% of the present level fishing effort would be required to maintain the present level of catches as well as to enhance the stock biomass.
- Formulation of a joint advisory management committee would be advisable approach to manage and monitor the zobaidy stock in the region. This will need commitment from the three countries in the region for data collection on regular basis on length frequency, statistics, and biological data.

##### **5. Application of By-catch Reduction Devices to Kuwait's Shrimp Fishery (2004-2006, 2 yrs)**

The main objectives of the project were to select suitable by-catch reduction devices (BRDs) and turtle excluded device (TED) for shrimp trawlers, to conduct experimental comparisons between the trawl nets with BRDs and the traditional shrimp nets in Kuwait, to quantify the difference in by-catch and shrimp catch rates between test and control nets to identify the most efficient BRDs for the Kuwait shrimp fishery, to provide management advice to the Public Authority for Agriculture and Fisheries Resources about how to effectively reduce the by-catch of the shrimp fishery and to provide on-the-job training to personnel in the government and private fisheries sectors (Al-Ayoub et al., 2005).

##### **Conclusions:**

- Two types of By-catch Reduction Devices, BRD, (Fish Eye, FE, and Square Mesh Cod-end, SMC), and a Turtle Excluder Device, TED, were tested in Kuwait waters. Sea trials were performed during three periods in shrimp fishing season. The TED modified net showed a marginal success. Though the TED equipped net caught more shrimps and less by-catch, the catch weight analysis showed no significant differences between the catches of the TED modified net and a standard net for all the total of shrimps, total by-catch, and their individual species.
- The length-frequency analysis results showed no significant difference for individual shrimp species, the primary commercial fish species, and secondary commercial species and between the TED modified net and a standard net. The TED showed a positive performance in retaining shrimps and commercial by-catch and an uncertain performance in excluding turtles and other large animals possibly because there were not many turtles and large animals encountered by both nets during the test period for the limited covering area and period.

- The SMC in general can be viewed as a successful device in retaining the shrimp catch and by-catch of the primary and secondary commercial fish species, while significantly reduced the catch of the discarded species. The length-frequency analysis showed that the SMC modified net caught significantly larger size of shrimp than a standard net for all three major species, a positive performance to the shrimp fishery by reducing the catch of the smaller size shrimps. The FE modified net significantly reduced both the shrimp catch and by-catch.
- Serious considerations should be given to introducing TEDs and BRDs to Kuwait's fishery.
- The TED performed exceptionally well; the overall performance of the TED-fitted net did not reduce the larger shrimp or major species of fin-fish. The SMC also performed well by reducing by-catch, while at the same time maintaining catch of shrimp and valuable fish. The FE device, as it was tested, cannot be recommended to the fishery.
- Additional information about the performance of these devices in all areas of the fishery, and on both industrial and dhows trawlers, and during entire fishing season will be required to overcome embargo on the Kuwaiti fisheries. A greater level of participation by fishermen will be required, as well as proven adoption and uptake of TED on all boats, and proven success in reducing the capture and mortality of turtles.

## 6. An Investigation to Improve Kuwait's Demersal Trap Fishery (2005 - 2007).

This project was initiated to describe 1) the present status of the fisheries; 2) estimate the impact of ghost fishing by lost *gargoor* on the demersal fish resource; 3) identify suitable materials for incorporating sacrificial hinges on escape hatches or corrosion "ports" during *gargoor* construction; and 4) recommend to the Public Authority for Agriculture and Fisheries Resources (PAFFR) restoration of the *gargoor* fishery to its former importance and reduce mortalities by ghost fishing (Al-Baz et al., 2007 and Karam et al., 2007)

### Conclusions:

- The primary commercial fish contributed on average greater than 50% of the catch landed each month, with the exceptions of March 2004, June 2004 and January 2005. Higher mean catch rates were recorded in 2004 (3.15 kg/trap pull) than 2005 (2.09 kg/trap pull).
- Bait type affected catch rates. Of the seven baits tested, the best catch rates, >5 kg/trap pull, occurred with cuttlefish (*Sepia pharaonis*), but hiff (*Chirocentrus dorab*) and mullet (*Liza klunzingeri*) also produced good results (4-5 kg/trap pull). Overall catch rates were lowest (2.2 kg/trap pull) for *gargoor* baited with hamer (*Mulloidichthys flavolineatus*) and hiff together. *Gargoor*s baited with cuttlefish not only had the highest catch rate, but also the highest percentage of primary commercial fishes (77.6%) and lowest secondary commercial fishes (16.6%) and discarded fish (1.5%).
- The rate of lost *gargoor* was variable over the survey period ranging from none to a high of 42.9% lost in a single month. The average rate of *gargoor* lost per month over the duration of the survey period was 15.1% (12.5% in 2004 and 17.3% in 2005). By fitting a linear relationship between *gargoor* soak time (days) the percentage of lost *gargoor*s showed that the percentage of lost *gargoor* increased rapidly as soak time increased.
- To evaluate the efficiency of different types of *gargoor* traps used in Kuwait fisheries, five different size *gargoor* traps (1.65, 1.90, 2.05, 2.15 and 2.25 m in diameter) were used. In general, the larger *gargoor* sizes had consistently higher catch per unit of effort (CPUE) values than the smaller sizes, but all *gargoor* sizes exhibited somewhat similar selectivity profiles in relation to the retention of smaller primary commercial fish species. The retention of larger primary commercial fish species, however, increased with increasing size of *gargoor*.
- To design a cost-effective auto-release device for the *gargoor* to overcome the problem of ghost fishing, several designs of the escape hatch based on anodic sacrificial action of metals in connection

with the galvanized gargoor web were proposed. Chemical composition of three types of material that might be used for lock pins was determined. A newly design of automatic escape hatch has been developed for galvanized gargoor web that can be mounted on all types of gargoor regardless of differences in size. The auto-release device (automatic opening of the gargoor escape hatch) was tested with successful results in a laboratory circulating seawater tank indicating that the targeted time of two weeks to one month for fish to escape was achieved. The same device was investigated in actual Kuwait Gulf seawater and good agreement between laboratory and marine seawater exposure testing was found.

- The study furnished data on the state of the gargoor fishery and determined that cuttlefish (*Sepia pharaonis*) was the best bait.
- Changes in gargoor dimensions will not increase the size and age at first capture. Consequently, it is unlikely that changes in gargoor size will result in greater economic returns and/or rebuilding of the most threatened stocks.
- It is recommended that a limit to the number of gargoor fished in Kuwaiti waters should be identified, and that several no-fishing zones be established to ensure minimum spawning stock biomass and preserve biodiversity for all fisheries. To reduce the impact of ghost fishing it is recommended that gargoor soak time to be reduced less than 20 days.

#### 7. Survey of demersal fish stocks of the Gulf and Sea of Oman (2007 -2012).

The project was implemented by the Kuwait Institute for Scientific Research under the supervision of the General Secretariat of the Gulf Cooperation Council, and in cooperation with the fisheries management departments of the GCC countries. Five cruises from November 2008 through July 2011 collected biological and biomass density data of demersal fishes using trawl nets, fish traps (gargoor), and acoustic techniques along 18 strata in coastal waters off Kuwait, Saudi Arabia, Bahrain, Qatar, the United Arab Emirates, and Oman. Accompanying temperature, salinity, and dissolved oxygen data were also collected (Al-Husaini et al., 2012).

#### Conclusions:

- The swept area method from the trawl surveys showed demersal fish biomass ranged from 420 to 2,300 kg/km<sup>2</sup>. The northern Gulf generally had higher and more stable levels of biomass density than the southern Gulf, but seasonal differences were evident. During early summer, catch rates off Qatar and the UAE were low, but high off Kuwait and Saudi Arabia. During fall and winter, however, catch rates were higher in the southern Gulf, an indication of extensive seasonal migrations for demersal species. The Sea of Oman also experienced seasonal changes, with biomass increasing in early summer and decreasing in fall and winter. These data may show emigration of demersal fishes from the Gulf in early summer into the Sea of Oman and immigration into the Gulf in fall and winter.
- Two *gargoor* surveys complemented the trawl and acoustic surveys in areas where trawling was not possible. *Gargoor* catch-rate results showed biomass ranged from 700 to 5,400 kg/km<sup>2</sup>, and depending on the country, were highly seasonal particularly in the southern Gulf. Fish trap results showed that biomass density was consistently higher in non-trawlable areas (e.g., coral reef or rocky substrata) than in trawlable areas.
- Results from the 3,500 km of acoustic surveys found consistently higher biomass estimates of demersal species than that measured by trawl surveys, and confirmed higher biomass density in non-trawlable areas. A highly significant relationship ( $P < 0.01$ ) was found between changes in biomass estimated from acoustic data and from the trawl data. Biomass estimates from the *gargoor* surveys in non-trawlable areas combined with those of the trawl surveys resulted in overall biomass densities similar to estimates using the acoustic survey results.

- Compared with previous survey results in the Gulf and Sea of Oman, the current results show significant reductions since the 1968 in demersal biomass. Acoustic surveys in the UAE in 2001/2002, however, show that there has probably been no further decrease in biomass density.
- Using biological data for six key species to develop dynamic models for forecasting biomass over a 10-year period under different management scenarios showed that under current fishing practices and management, biomass will continue to decline. These results can be reversed significantly by increasing the size-at-first capture (= size-at-first maturity) and reducing fishing effort by as much as 50 to 90% of its current level.

## Reference

- Al-Ayoub, S., M. Al-Husaini, A. Al-Baz, W. Chen, A. H. Alsaffar, J. M. Bishop, T. Dashti, S. Al-Jazzaf, A. Taqi, F. Al-Saad, S. Almatar, S. Eayrs, S. Bose, G. Day, and H. Murad. 2005. Application of By-catch Reduction Devices to Kuwait's Shrimp Fishery- Final Report. Kuwait Institute for Scientific Research, Report No. KISR 7762, Safat, Kuwait.
- Al-Baz, A. F., M. Al-Husaini, J. Bishop, S. Al-Ayoub, W. Chen, S. Al-Jazzaf, T. Dashti and H. Murad. 2003. An Assessment of the Hadrah Fishery and it's Impact on Commercial Fish Species (FM031C) - Final Report. Kuwait Institute for Scientific Research. Report No. KISR 7032, Kuwait
- Al-Baz, A.F., J.M. Bishop, W. Chen, M. Al-Husaini, S. Al-Jazzaf, T. Dashti and A. Taqi. 2007. An Investigation to Improve Kuwait's Demersal Trap Fishery (FM022C)- Final Report, Vol. I: The Present Status and Management of *Gargoor* Fishery. Kuwait Institute for Scientific Research. Report No. KISR 8856, Kuwait.
- Al-Foudari, H.M., J.M. Bishop and W. Chen. In press. The Status of Kuwait's 2011/12 Shrimp Fisheries. Kuwait Institute for Scientific Research, Kuwait.
- Al-Husaini, M, A. Al-Baz, Y. Ye, S. Al-Ayoub, J. Dashti, S. Safar, Z. Al-Wazan, A. A. Al-Baghli and S. Al-Jazzaf. 2000. Stock Assessment of Finfish Resources (FM014C) - Final Report. Kuwait Institute for Scientific Research. Report No. KISR 5935, Kuwait.
- Al-Husaini, M.. 2003. Fishery of shared stock of the silver pomfret, *Pampus argenteus*, in the Northern Gulf; a case study. *In: FAO expert Consultation on the Management of shared Fish Stocks. FAO Fish. Rep.*, No. 695 (Suppl.): 44-56. Rome: FAO.
- Al-Husaini, M., J. Marammazi, A. Al-Baz, S. Al-Ayoub, W. Chen, G. Eskandari, H. Safikhani, H. Ansari, S. Dehghani, S. Al-Jazzaf, T. Dashti, I. Al-Sabah, A. Taqi, S. Rezwani, M.T. Kashi, T. Valinasab, Y. Maiiahi and H. Murad. 2007. Stock assessment of *Zobaidy*, *Pampus argenteus*, in the Northern Gulf (FM-039C)- Final Report. Kuwait Institute for Scientific Research. Report No. KISR 8695, Kuwait.
- Al-Husaini M., A. Al-Baz, S. Rajab, A. Al-Alawi, W. Chen, T. Dashti, S. Al-Jazzaf, H. Husain, S. Almatar, A. Al-Ramadhan, A.K. Al-Radhi, A.R. Al-Binali, E. Al-Yafee, J. Al-Maamari .2012. Survey of demersal fish stocks of the Arabian Gulf and Sea of Oman (FM045C)- Final Report, Vol. I: Main Text . Kuwait Institute for Scientific Research. Report No. KISR 11170, Kuwait.
- Al-Husaini M., A. Al-Baz, S. Rajab, A. Al-Alawi, W. Chen, T. Dashti, S. Al-Jazzaf, H. Husain, S. Almatar, A. Al-Ramadhan, A.K. Al-Radhi, A.R. Al-Binali, E. Al-Yafee, J. Al-Maamari .2012. Survey of demersal fish stocks of the Arabian Gulf and Sea of Oman (FM045C)- Final Report, Vol. II: Appendices . Kuwait Institute for Scientific Research. Report No. KISR 11170, Kuwait.
- Bishop, J.M., Y. Ye, A.H. Alsaffar, N. Fetta, E. Abdulqader, Q. Liu, J. Al-Mohammadi, J. Al-Qasserer, A.A. Al-Mulla, A.R. Sudiqe, A.R.M. El-Abdul Had, S.T. Al-Jazzaf, A.H. Al-Dhubaib, K.H. Al-Juwaied, H. Al-Foudary, S. Almatar, A.H.M. El-Ramadan, A.A. El-Salah, A.A. El-Rabeigh, S.A. El-Askary, E.H. Al-Ibrahim. 2001. Shrimp Stock Assessment in the Western Arabian Gulf by Countries of the Gulf Cooperation Council (FM021C). Final Report. Kuwait Institute for Scientific Research. Report No. KISR6291. Kuwait.

- Chen, W.; J.M. Bishop; H.M. Al-Foudari; S. Almatar; F.Y. Al-Yamani; and H. Murad. 2011. A comprehensive management strategy for long-term sustainability of Kuwait Shrimp Stocks. Kuwait Institute for Scientific Research, Report No. KISR8401R, Kuwait.
- Central Statistical Bureau. 2011. Fisheries Statistics 2011 Annual Bulletin. Kuwait Central Statistical Bureau, Kuwait.
- Karam, H., A. Husain, O. Al-Shamali and A.F. Al-Baz. 2007. An Investigation to Improve Kuwait's Demersal Trap Fishery (FM022C) - Final Report, Vol. II: Development of Fish Escape Hatch Device for Fish Trap (*Gargoor*). Kuwait Institute for Scientific Research. Report No. KISR 8856, Kuwait.

### **Fishery socio-economics: design and implementation of a regional workplan**

#### **The WGFM is invited to:**

- take note of the Commission's recommendations of the socio-economic work in the RECOFI region.
- discuss the undertaking of follow up actions as requested by the Commission and the sixth meeting of the WGFM.
- consider progress and role of the Task Group and suggest further action.

#### **BACKGROUND**

1. The RECOFI Workshop on the Social and Economic Aspects of Fisheries in the RECOFI region was held in Manama, Kingdom of Bahrain from 22 to 24 April 2012, following the agreement at the sixth session of the Regional Commission for Fisheries, held in Rome from 10 to 12 May 2011. The meeting was convened by the RECOFI Secretary. The meeting was attended by 18 delegates from four Member countries and two observers, as well as the RECOFI Secretariat.
2. The outcomes of this workshop were discussed at the sixth meeting of the Working Group on Fisheries Management, held on Doha, State of Qatar, recognized that there is a need and purpose for this socio-economic work and agreed on the merit for including the consideration of the social and economic aspects related to management decisions based on considerations of the state of the fishery resources. The WGFM noted the need to integrate socio-economic information and data collection within fisheries data collection frameworks to better inform management approaches and decisions.

#### **Main outcomes of the workshop on the Social and Economic aspects of fisheries in the RECOFI region**

3. A regional workplan was outlined at the RECOFI Workshop on the Social and Economic Aspects of Fisheries in the RECOFI region in Manama, Bahrain in April 2012, and is detailed in RECOFI:WGFM7/2013/Inf.7. The main points for the regional workplan included:
  - Identification of priority goals and issues for social and economic aspects of fisheries in the region, whereby social and economic issues were considered for fisheries in general, and then considered for relevance to the regional context;
  - A survey questionnaire was introduced and elements to be considered to ensure the success of the questionnaire were highlighted;
  - Social and economic indicators were identified to be used at the national and regional level;
  - The RECOFI recommendation on minimum data reporting and its role in collecting social and economic data was presented and discussed;
  - The establishment of a socio-economist network and formulation of a regional work plan was emphasized;
  - The workshop made the following recommendations:
    - The regional work plan on socio-economic work should be formulated to support technical capacity development to advance knowledge on the socio-economics in the region.
    - Such work plan must be applicable, practical and useful, including the recommended socio economic survey questionnaires in manner that can be easily understood by the target questionnaire respondents and with clear definitions of terminologies used.

- Social and economic aspects must be integrated and incorporated into the RECOFI fisheries management framework to ensure a more holistic approach in line with the ecosystem approach.
  - The Task Group would be established to address the above mentioned issues.
4. A Task Group was established, with a Terms of Reference which included the following elements:
- Keep informed the relevant national authorities and counterparts on the RECOFI socio-economic workplan and activities;
  - Identify and liaise with the existing social and economic expertise in each country;
  - Promote and coordinate the implementation of the fishery socio-economic activities in the member countries including basic information gathering, collation and compilation;
  - Contribute to the implementation of the RECOFI socio-economic work including the revision and pilot execution a survey questionnaire;
  - To ensure the effective flow of communications regarding the RECOFI activities to and from national scientific and institutional counterparts, and from relevant stakeholders.

#### **Main outcomes of the seventh session of RECOFI**

5. The Commission unanimously agreed that social and economic considerations are critical, noting that the success and effectiveness of management measures relies on how these factors are taken into account. The relevance of socio-economic work to implement an ecosystem approach to fisheries/aquaculture (EAF/A) was stressed.
6. The Commission noted with approval the establishment and ongoing work of the RECOFI Task Group for fisheries socio-economics, in particular that this is the first instance in RECOFI where the initiative to develop and implement a Task Group has come from Member countries themselves. Member countries were requested to complete and update the Task Group membership. Member countries requested to have training courses to analyse the research data on social and economic aspects. The Commission affirmed its support for the Task Group and encouraged its ongoing work in the upcoming intersessional period.
7. The Commission suggested developing guidelines for the social and economic aspects of fisheries for the RECOFI region, in terms of data collection and monitoring so that Member countries can adapt to their own contexts, while ensuring that tools are developed to facilitate comparability. The Commission also agreed that the inclusion of mariculture in future socio-economic work should be considered.
8. The dearth of technical capacity, knowledge and expertise in the area of fisheries and aquaculture socio-economics was acknowledged by the Commission and the urgent need to identify this expertise and build this capacity within the RECOFI region was called for.



Gear type restriction				
Min catch size				
Providing statistics regularly				
Other (specify)				

3: **Conflicts/Problems:** What are the most common conflicts that have appeared in the fisheries sector from 2010-2013 (check all that apply, and indicate any solutions or measures taken to address problem)

Conflict/problem	Fishing Fleet			Attempted/ proposed solution (if any)
	Small-scale/Artisanal	Commercial/Industrial	Recreational	
Tourism development				
Oil industry				
Transportation				
Urbanization				
Other fishing fleets				
IUU fishing				
Habitat loss				
Pollution				
Biomass/catch reduction				
Other: Specify				

4: **Fisher and fleet composition:** Indicate composition of fishers on vessel and method of income, by vessel size

Size of vessel	Crew composition				
	Average # of crew	% national	% international	Income	
				Method (share, wage)	Share % (eg.crew, owner, boat)
Less than 12m					
12-24m					
Above 24m					

5: How do fishers address the problems they face? (Check all that apply)

- Community leaders
- Fisheries associations
- Local Ministry representatives
- Ministry
- Other (specify)

6: Describe the process of designing, implementing or communicating any management policy to fishers.  
(check all that apply)

7: The contribution of the artisanal/small-scale fishery sector to:

Total production: \_\_\_\_\_ % quantity \_\_\_\_\_ % value

Employment: \_\_\_\_\_ % workforce

Local food supply: \_\_\_\_\_ % domestic food supply

## **Update on the implementation of the RECOFI recommendation on Minimum Data Reporting**

### **The WGFM is invited to:**

- confirm continued commitment to implement the RECOFI Recommendation on minimum data reporting and Regional collaborative management
- review and advise on a need to standardize data submission format and fleet/gear classifications as well as level of details to be maintained in a common database; and
- agree on the logistics, functionalities and responsibility of the Regional database and information network to support the fishery and aquaculture management of the RECOFI Region, especially through the implementation of RECOFI Recommendation on minimum data reporting.

### **BACKGROUND**

The 2nd meeting of the RECOFI Working Group on Fisheries Management (WGFM) (Cairo, Egypt, 27-30 October 2008) reviewed the major fisheries in the RECOFI region and identified a set of species of primary concern. The meeting further recommended a pragmatic management scheme based on an Ecosystem Approach to Fisheries Management with adaptive management procedures. The fifth Session of the RECOFI (Dubai, United Arab Emirates, 12-14 May 2009) adopted this recommendation and decided to hold a workshop specifically focusing on a review of data and statistics available in the region and stock status reporting.

Facing the lack of information commonly accessible through the Region, the FAO/RECOFI Regional Workshop on Stock Indicators and Stock Status Reporting (Tehran, Islamic Republic of Iran, 26–29 July 2009) focused its attention on identifying key issues in the region and determining the minimum data requirement to address those key issues from the perspective of monitoring stocks and fisheries status. The concept of minimum data requirement was further developed through the 3<sup>rd</sup> meeting of WGFM (Doha, Qatar, 20-22 October 2009) and the 4<sup>th</sup> meeting of WGFM (Muscat, Sultanate of Oman, 3-5 October 2010) and the 6<sup>th</sup> session of RECOFI (Rome, Italy, 10-12 May 2011) endorsed the Recommendation RECOFI/6/2011/1, entitled “Recommendation on minimum data reporting in the RECOFI area” together with its commitment to implement on January 2012.

In order to ensure that all Members would be capable to cope with minimum data requirement, a series of consultations and survey on national data collection system were held, utilizing the opportunity of other meetings, including ad-hoc discussion with the 6<sup>th</sup> session of RECOFI, the 5<sup>th</sup> session of WGFM, the Workshop on Minimum Data Collection and Reporting (Cairo, Egypt, 10-11 July 2011) and the Workshop on Social and Economic Aspects of Fisheries in the RECOFI Region (Manama, Bahrain 22-24 April 2012). Through this process, the individual Member agreed its own format of reporting according to the Recommendation and work plans to improve the national data collection system to completely fulfil the requirement defined by the Recommendation in near future.

### **DATA SUBMISSION IN 2003 ACCORDING TO THE RECOFI RECOMMENDATION ON MINIMUM DATA REPORTING**

The Recommendation RECOFI/6/2011/1, entitled “Recommendation on minimum data reporting in the RECOFI area” as adopted by RECOFI at its Sixth Session (Rome, Italy, 10-12 May 2011) and that, in accordance with Article V of the Agreement for the Establishment of the Regional Commission for Fisheries, was formally taken effect on 1 January 2012. The 2013 was the second round of data

submission after the Recommendation entered into force. Like the case of 2012, no Members succeeded in submitting the 2012 data before the end of August 2013 as indicated in the Recommendation.

The status of data submission at 1 November 2012 is summarized as below with the more detailed information by countries available in Appendix 1.

- This round of data submission, again focused on catch and effort data of shrimp trawls, wire-traps, gillnets and hook-and-lines. No information was specifically requested on those identified for stock assessment of narrow-barred Spanish mackerel, including monthly catch and effort data and size frequency data of Spanish mackerel.
- Iran, Qatar and Oman submitted the 2012 data using the format previously agreed.
- Iraq for the first time provided fleet and operational information that could be utilized to estimate efforts for 2004-2012, while catch data was aggregated for all vessel classes and gears.
- Qatar for the first time submitted data based on sample-based surveys at four landing sites, which reflects substantial improvement in its national fishery monitoring system. Fleet/ gear categorizations were modified in a way to separate drift net operations targeted Spanish mackerel by Dhows but to combine gillnet and hand-lines targeting on emperors and seabreams. At the same time all gears operated with speed-boats (skiffs) were aggregated together. Data submitted was for the period from September 2012 to August 2013, not in a calendar year.
- Oman submitted the monthly catch and effort data for the years 2011 and 2012, which would also cover the requirement of monthly catch data for Spanish mackerels (4-a.i). It indicated that retrieval of historical catch and effort data would require further analysis and preparation before submission in order to ensure reasonable consistency with the data of 2009 and after.
- No responses from Bahrain, Kuwait, Saudi Arabia and UAE. However, Kuwait indicated the availability of catch and effort data, both for current and historical period, and asked for coordination by the Secretariat to seek for a way to make them available to the RECOFI WGF.

## **REMAINING ISSUES AND NEXT STEPS**

Submitted data indicated that Bahrain, Oman, Qatar and Saudi Arabia have now capacity to collect catch and effort information of their major fisheries, in the other words, capacity to monitor them reasonably satisfactory level. Iraq, Kuwait and UAE have not yet proved their capacity to comply with the RECOFI Recommendation on minimum data reporting. While Kuwait consistently indicated the existence of historical and current catch and effort data, including several publications, it would not be possible to evaluate its capacity without having such data with RECOFI.

The initial implementation of the Recommendation placed more emphasis for Member countries to establish their capacity to comply with the Recommendation and initiated in a way to accept any data format, gear/vessel classifications, and definition of efforts that would be acceptable for each Member as long as consistent with the overall framework of the Recommendation. Therefore, the data submitted contains different level of details especially in fleet/gear classifications. Appendix 2 showed the extent of classifications currently utilized by Members.

The need to establish the Regional Database and Information Network has been recognized from the beginning of this exercise. In order to develop proper design of a common database, it is necessary to understand whether different national fleet/gear classifications can be combined together, how much details should be maintained, as well as general IT platform to be utilized. This also related with intended utilization of data in supporting decision making and monitoring of implementation of the Regional management plan.

At the same time, it would be a good time to consider whether standard questionnaire would be needed. Standard questionnaire would be useful to ensure minimum level of quality control of submitted

information and to facilitate compilation process. On the other hand, it may increase country burden to prepare for reporting and lose some flexibility in adapting emerging new requirement swiftly.

Data submission of size frequency data of Spanish mackerel catch, defined in Article 4-a of the Recommendation, has been suspended due to lack of clear guidance on format of data reporting and data collection criteria. The 7<sup>th</sup> session of RECOFI agreed to hold the first joint assessment of Spanish mackerel in the first priority of 2013-2014 activities that would require all information to be collected under Article 4 of the Recommendation. Making inventories of existing information as well as possible way to collect size information at individual Member would be the first step to enhance a capacity to comply with Article 4.

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

The WGFM is invited to review the current status of the implementation of the RECOFI Recommendation on minimum data reporting in the RECOFI area and to comment on it, as appropriate. In particular, the WGFM is requested to provide feedbacks / guidance to the Secretariat on:

- Confirmation of commitment to implement the RECOFI Recommendation on minimum data reporting and Regional collaborative management
- Need to standardize data submission format and fleet/gear classifications as well as level of details to be maintained in a common database; and
- Logistics, functionalities and responsibility of the Regional database and information network to support the fishery and aquaculture management of the RECOFI Region, especially through the implementation of RECOFI Recommendation on minimum data reporting.

## Status of data submission by countries

### i) Kingdom of Bahrain

	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003>
<b>Shrimp Trawl</b>										
2-a-i	Opening/closing dates									
2-a-ii		Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	~1990
2-a-iii	Average tow duration by vessel type/ category			Y**	Y**	Y**	Y**	Y**		
	Average number of tows per day by vessel type/ category									
	Total number of days at sea by vessel type/ category									
2-a-iv		Y	Y	Y	Y	Y	Y	Y	Y*	~1990
	Catch of narrow-barred Spanish mackerel									
		Y	Y	Y	Y	Y	Y	Y		
	Catch of swimming crab, cuttlefish, emperors, groupers, sharks, and rays									
		Y	Y	Y	Y	Y	Y	Y		
	Catch of other finfishes									
		Y	Y	Y	Y	Y	Y	Y		
5-a	<i>Shrimp species composition</i>									
2-a-v	Amount of discards									
2-a-vi	Species composition of bycatch and discard									
2-b	BRD related information									
<b>Gillnets</b>										
3-a		Y	Y							
	Alternative annual efforts			Y	Y	Y	Y	Y		
3-b		Y	Y	Y	Y	Y	Y	Y		
	Catch of narrow-barred Spanish mackerel									
		Y	Y	Y	Y	Y	Y	Y		
	Catch of emperors, groupers, sharks, and rays									
		Y	Y	Y	Y	Y	Y	Y		
	Amount of discards									
5-b	<i>Species composition of discards</i>									
<b>Wire-traps</b>										
3-a		Y	Y							
	Alternative annual efforts			Y	Y	Y	Y	Y		
3-b		Y	Y	Y	Y	Y	Y	Y		
	Catch of narrow-barred Spanish mackerel									
		Y	Y	Y	Y	Y	Y	Y		
	Catch of emperors, groupers, sharks, and rays									
		Y	Y	Y	Y	Y	Y	Y		
	Amount of discards									
5-b	<i>Species composition of discards</i>									
<b>Hook-and-line</b>										
3-a		Y	Y							
	Alternative annual efforts			Y	Y	Y	Y	Y		

3-b	Total catch		Y	Y	Y	Y	Y	Y	Y
	Catch of narrow-barred Spanish mackerel		Y	Y	Y	Y	Y	Y	Y
	Catch of emperors, groupers, sharks, and rays		Y	Y	Y	Y	Y	Y	Y
	Amount of discards								
5-b	<i>Species composition of discards</i>								

#### **Narrow-barred Spanish mackerel**

4-a-i	<i>Annual catch</i>
	Monthly catch
4-a-ii	Fork length composition
4-a-iii	<i>Catch, effort and fork length composition of targeted gears</i>
4-b	Relevant information on narrow-barred Spanish mackerel

Coloured cells and letter 'Y' indicated the type of data that the Member committed to submit and actual submission, respectively. Yellow indicating those expected submission of data in 2013.

## ii) Islamic Republic of Iran

	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003>
<b>Shrimp Trawl</b>										
2-a-i	Opening/closing dates	Y	Y	Y						
2-a-ii	Number of vessels by types and size categories	Y	Y	Y						
2-a-iii	Average tow duration by vessel type/ category	Y*	Y*	Y*						
	Average number of tows per day by vessel type/ category									
	Total number of days at sea by vessel type/ category									
2-a-iv	Catch of shrimp	Y	Y	Y						
	Catch of narrow-barred Spanish mackerel	Y	Y	Y						
	Catch of swimming crab, cuttlefish, emperors, groupers, sharks, and rays	Y	Y	Y						
	Catch of other finfishes	Y	Y	Y						
5-a	<i>Shrimp species composition</i>									
2-a-v	Amount of discards	Y	Y	Y						
2-a-vi	Species composition of bycatch and discard									
2-b	BRD related information	Y**	Y**	Y**						
		* Total tow duration reported; ** General configuration								
<b>Gillnets</b>										
3-a	Number of days at sea	Y	Y	Y						
	Alternative annual efforts									
3-b	Total catch	Y	Y	Y						
	Catch of narrow-barred Spanish mackerel	Y	Y	Y						
	Catch of emperors, groupers, sharks, and rays	Y	Y	Y						
	Amount of discards									
5-b	<i>Species composition of discards</i>									
<b>Wire-traps</b>										
3-a	Number of days at sea	Y	Y	Y						
	Alternative annual efforts									
3-b	Total catch	Y	Y	Y						
	Catch of narrow-barred Spanish mackerel	Y	Y	Y						
	Catch of emperors, groupers, sharks, and rays	Y	Y	Y						
	Amount of discards									
5-b	<i>Species composition of discards</i>									
<b>Hook-and-line</b>										
3-a	Number of days at sea	Y	Y	Y						
	Alternative annual efforts									
3-b	Total catch	Y	Y	Y						
	Catch of narrow-barred Spanish mackerel	Y	Y	Y						
	Catch of emperors, groupers, sharks, and rays	Y	Y	Y						

Amount of discards

5-b *Species composition of discards*

**Narrow-barred Spanish mackerel**

4-a-i *Annual catch*

Monthly catch

4-a-ii Fork length composition

4-a-iii *Catch, effort and fork length composition of targeted gears*

4-b Relevant information on narrow-barred Spanish mackerel

Coloured cells and letter 'Y' indicated the type of data that the Member committed to submit and actual submission, respectively. Yellow indicating those expected submission of data in 2013.

## iii) State of Kuwait

	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003>
<b>Shrimp Trawl</b>										
2-a-i	Opening/closing dates									
2-a-ii						Y	Y	Y	Y	~2001
2-a-iii	Average tow duration by vessel type/ category									
	Average number of tows per day by vessel type/ category									
						Y*	Y*	Y*	Y*	~2001
2-a-iv						Y*	Y*	Y*	Y*	~2001
	Catch of shrimp									
	Catch of narrow-barred Spanish mackerel									
	Catch of swimming crab, cuttlefish, emperors, groupers, sharks, and rays									
	Catch of other finfishes									
5-a	<i>Shrimp species composition</i>									
2-a-v	Amount of discards									
2-a-vi	Species composition of bycatch and discard									
2-b	BRD related information									

\* No separation in vessel type/ category

<b>Gillnets</b>										
3-a	Number of days at sea									
						Y*	Y*	Y*	Y*	~2001
3-b	Total catch									
	Catch of narrow-barred Spanish mackerel									
	Catch of emperors, groupers, sharks, and rays									
	Amount of discards									
5-b	<i>Species composition of discards</i>									

<b>Wire-traps</b>										
3-a	Number of days at sea									
						Y*	Y*	Y*	Y*	~2001
3-b	Total catch									
	Catch of narrow-barred Spanish mackerel									
	Catch of emperors, groupers, sharks, and rays									
	Amount of discards									
5-b	<i>Species composition of discards</i>									

<b>Hook-and-line</b>										
3-a	Number of days at sea									
	Alternative annual efforts									
3-b	Total catch									
	Catch of narrow-barred Spanish mackerel									
	Catch of emperors, groupers, sharks, and rays									

Amount of discards

5-b *Species composition of discards*

**Narrow-barred Spanish mackerel**

4-a-i *Annual catch*

Monthly catch

4-a-ii Fork length composition

4-a-iii *Catch, effort and fork length composition of targeted gears*

4-b Relevant information on narrow-barred Spanish mackerel

Coloured cells and letter 'Y' indicated the type of data that the Member committed to submit and actual submission, respectively. Yellow indicating those expected submission of data in 2013.

## iv) Sultanate of Oman

	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003>
<b>Shrimp Trawl</b>										
2-a-i	Opening/closing dates									
2-a-ii	Number of vessels by types and size categories									
2-a-iii	Average tow duration by vessel type/ category									
	Average number of tows per day by vessel type/ category									
	Total number of days at sea by vessel type/ category									
2-a-iv	Catch of shrimp									
	Catch of narrow-barred Spanish mackerel									
	Catch of swimming crab, cuttlefish, emperors, groupers, sharks, and rays									
	Catch of other finfishes									
5-a	<i>Shrimp species composition</i>									
2-a-v	Amount of discards									
2-a-vi	Species composition of bycatch and discard									
2-b	BRD related information									
<b>Gillnets</b>										
3-a	Number of days at sea									
	Y	Y	Y	Y						~1984
	Alternative annual efforts									
3-b	Total catch									
	Y	Y	Y	Y						~1984
	Catch of narrow-barred Spanish mackerel									
	Y	Y	Y	Y						~1984
	Catch of emperors, groupers, sharks, and rays									
	Y	Y	Y	Y						~1984
	Amount of discards									
5-b	<i>Species composition of discards</i>									
<b>Wire-traps</b>										
3-a	Number of days at sea									
	Y	Y	Y	Y						~1984
	Alternative annual efforts									
3-b	Total catch									
	Y	Y	Y	Y						~1984
	Catch of narrow-barred Spanish mackerel									
	Y	Y	Y	Y						~1984
	Catch of emperors, groupers, sharks, and rays									
	Y	Y	Y	Y						~1984
	Amount of discards									
5-b	<i>Species composition of discards</i>									
<b>Hook-and-line</b>										
3-a	Number of days at sea									
	Y	Y	Y	Y						~1984
	Alternative annual efforts									
3-b	Total catch									
	Y	Y	Y	Y						~1984
	Catch of narrow-barred Spanish mackerel									
	Y	Y	Y	Y						~1984
	Catch of emperors, groupers, sharks, and rays									
	Y	Y	Y	Y						~1984
	Amount of discards									

5-b *Species composition of discards***Narrow-barred Spanish mackerel**

4-a-i	<i>Annual catch</i>	Y	Y
	Monthly catch	Y	Y
4-a-ii	Fork length composition		
4-a-iii	<i>Catch, effort and fork length composition of targeted gears</i>		
4-b	Relevant information on narrow-barred Spanish mackerel		

Coloured cells and letter 'Y' indicated the type of data that the Member committed to submit and actual submission, respectively. Yellow indicating those expected submission of data in 2013.



Catch of narrow-barred Spanish mackerel	Y
Catch of emperors, groupers, sharks, and rays	Y
Amount of discards	

5-b *Species composition of discards*

Dhows - combined with gillnet; Skiffs - all gears combined

**Narrow-barred Spanish mackerel**

4-a-i	<i>Annual catch</i>
	Monthly catch
4-a-ii	Fork length composition
4-a-iii	<i>Catch, effort and fork length composition of targeted gears</i>
4-b	Relevant information on narrow-barred Spanish mackerel

Coloured cells and letter 'Y' indicated the type of data that the Member committed to submit and actual submission, respectively. Yellow indicating those expected submission of data in 2013. Data for 2012 corresponds the period from September 2012 to August 2013

## vi) Kingdom of Saudi Arabia

	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003>
<b>Shrimp Trawl</b>										
2-a-i	Opening/closing dates		Y	Y	Y	Y	Y	Y	Y	~1991
2-a-ii	Number of vessels by types and size categories		Y	Y*	Y*	Y*	Y*	Y*	Y*	~1991
2-a-iii	Average tow duration by vessel type/ category									
	Average number of tows per day by vessel type/ category		Y	Y**	Y**	Y**	Y**	Y**	Y**	~1991
	Total number of days at sea by vessel type/ category		Y	Y	Y	Y	Y	Y	Y	~1991
2-a-iv	Catch of shrimp		Y	Y	Y	Y	Y	Y	Y	~1991
	Catch of narrow-barred Spanish mackerel		Y	Y	Y	Y	Y	Y	Y	~1991
	Catch of swimming crab, cuttlefish, emperors, groupers, sharks, and rays		Y	Y	Y	Y	Y	Y	Y	~1991
	Catch of other finfishes		Y	Y	Y	Y	Y	Y	Y	~1991
5-a	<i>Shrimp species composition</i>		Y	Y	Y	Y	Y	Y	Y	~1991
2-a-v	Amount of discards									
2-a-vi	Species composition of bycatch and discard									
2-b	BRD related information									
<b>Gillnets</b>										
3-a	Number of days at sea		Y	Y	Y	Y	Y			
	Alternative annual efforts		Y	Y	Y					
3-b	Total catch		Y	Y	Y	Y	Y			
	Catch of narrow-barred Spanish mackerel		Y	Y	Y	Y	Y			
	Catch of emperors, groupers, sharks, and rays		Y	Y	Y	Y*	Y*			
	Amount of discards									
5-b	<i>Species composition of discards</i>									
<b>Wire-traps</b>										
3-a	Number of days at sea		Y	Y	Y	Y	Y	Y	Y	~1994
	Alternative annual efforts		Y	Y	Y	Y	Y	Y	Y	~1994
3-b	Total catch		Y	Y	Y	Y	Y	Y	Y	~1994
	Catch of narrow-barred Spanish mackerel		Y	Y	Y	Y	Y	Y	Y	~1994
	Catch of emperors, groupers, sharks, and rays		Y	Y	Y	Y	Y	Y	Y	~1994
	Amount of discards									
5-b	<i>Species composition of discards</i>									
<b>Hook-and-line</b>										
3-a	Number of days at sea		Y	Y	Y	Y	Y			
	Alternative annual efforts		Y	Y	Y					
3-b	Total catch		Y	Y	Y	Y	Y			
	Catch of narrow-barred Spanish mackerel		Y	Y	Y	Y	Y			
	Catch of emperors, groupers, sharks, and rays		Y	Y	Y	Y*	Y*			

Amount of discards

5-b *Species composition of discards*

**Narrow-barred Spanish mackerel**

4-a-i	<i>Annual catch</i>	Y	Y
	Monthly catch	Y	Y
4-a-ii	Fork length composition		
4-a-iii	<i>Catch, effort and fork length composition of targeted gears</i>		
4-b	Relevant information on narrow-barred Spanish mackerel		

Coloured cells and letter 'Y' indicated the type of data that the Member committed to submit and actual submission, respectively. Yellow indicating those expected submission of data in 2013.

## Categories currently used in data submission by Members

**Area:**

<b>Bahrain</b>	Gulf		
<b>Iran</b>	Gulf	Oman Sea	
<b>Iraq</b>	Gulf		
<b>Kuwait</b>	Gulf		
<b>Oman</b>	Gulf	Sea of Oman	Arabian Sea
<b>Qatar</b>	Gulf		
<b>Saudi Arabia</b>	Gulf (2 subareas – Northern & Southern)		
<b>UAE</b>			

**Vessels:**

<b>Bahrain</b>		Dhow	speedboat
<b>Iran</b>	Vessel	Dhow	Boat
<b>Iraq</b>	Steel	Fiber	Wooden
<b>Kuwait</b>	Steel boats	Wooden Dhow	Speed boats
<b>Oman</b>		Launch	Fiberglass
<b>Qatar</b>		Large boats/ Dhow	Speed boats/ skiffs
<b>Saudi Arabia</b>		Large	Small
<b>UAE</b>			

**Shrimp trawl:**

<b>Bahrain</b>	Shrimp trawl		
<b>Iran</b>	Shrimp trawl		
<b>Iraq</b>	Trawler	Trap\trawler	Gillnet\traps\trawler
<b>Kuwait</b>	Trawlers		
<b>Oman</b>			
<b>Qatar</b>			
<b>Saudi Arabia</b>	Trawl		
<b>UAE</b>			

**Gillnets:**

<b>Bahrain</b>	Gillnet		
<b>Iran</b>	Gillnet		
<b>Iraq</b>	Gillnet	Gillnet\traps	Gillnet\traps\trawler
<b>Kuwait</b>	Gill netters		
<b>Oman</b>	NET		
<b>Qatar</b>	King fish (driftnet pelagic/ driftnet Spanish mackerel)		
<b>Saudi Arabia</b>	Gill net	Small gill net	
<b>UAE</b>			

**Wire-traps:**

<b>Bahrain</b>	Large wire trap	Small wire trap	Crabs wire trap
<b>Iran</b>	Wire-traps		

<b>Iraq</b>	Gillnet\traps	Traps\trawler	Gillnet\traps\trawler
<b>Kuwait</b>	Trap setters		
<b>Oman</b>	Trap		
<b>Qatar</b>	Trap		
<b>Saudi Arabia</b>	Trap		
<b>UAE</b>			

**Hook-and-Line:**

<b>Bahrain</b>	Hooks & line	Longline	Troll line
<b>Iran</b>	Hooks and Lines		
<b>Iraq</b>			
<b>Kuwait</b>			
<b>Oman</b>	Troll/hand line		
<b>Qatar</b>			
<b>Saudi Arabia</b>	Hand line	Long line	
<b>UAE</b>			

**Other gears:**

<b>Bahrain</b>	Lader - Jellyfish			
<b>Iran</b>	Pari-boats purse seine	Beach seine	Fish trawl	Mid-water trawl
<b>Iraq</b>				
<b>Kuwait</b>				
<b>Oman</b>	Lobster		Beach seine	
<b>Qatar</b>	other gears (gillnet emperors and seabreams/ handlines emperors and seabreams)		Multigears (all gear combined for skiffs)	
<b>Saudi Arabia</b>				
<b>UAE</b>				

## Preparatory work to the regional joint Kingfish stock assessment workshop

### The WGFMM is invited to:

- review and comment the objectives and the draft agenda of the workshop with particular attention to the necessary preparatory work to be carried out by each RECOFI member country.

### Background information

The narrow-barred Spanish mackerel, *Scomberomorus commerson* (Lacepede, 1800) is one of the most commercially important species in the RECOFI region that covers seven countries, Bahrain, Iran, Kuwait, Oman, Pakistan, Qatar, Saudi Arabia, and United Arab Emirates. Its total landings from the RECOFI countries reached 44.5K tonnes in 1988, but has since dropped dramatically to 24.5K tonnes in 2008, only about half of its peak level.

Kingfish provides the largest single-species landings in the RECOFI region, with a value of 310 million US dollars. The kingfish fisheries are income sources and support to the livelihoods of thousands of local fishermen. Kingfish is a daily delicacy and provides food security to the local communities. The social and economic importance of the kingfish fisheries in these countries and the alarming decline in landings have attracted a great attention of government authorities and resulted in scientific interest and research in recent years (Dudley et al., 1992; Bertignac and Yesaki, 1993; Abdessalaam et al., 1995; Siddeek and Al-Hosni, 1998; Al-Hosni and Siddeek, 1999; De Rodellec et al., 2001; Al-Oufi et al., 2002; Claereboudt et al., 2004, 2005; McIlwain et al., 2005).

Kingfish is a highly migratory species. Direct sequencing analysis of mtDNA (Hoolihan et al. 2006) also suggests a single genetic stock in the Arabian Gulf, Gulf of Oman and the Arabian Sea. Although detailed distribution and seasonal migratory route of kingfish in the region are unclear, there is little doubt that the countries share a single stock. Therefore, joint effort is needed in scientific research, data collection, and the design of management regulatory measures. Unfortunately, little cooperation has been seen and all studies are country-based and locally focused. The kingfish resources in these countries remain virtually open access. It is important to review biological and ecological characteristics of kingfish and the state of the kingfish fisheries in the region, then analyze the potential gains in production in which some simple regulations can result, and finally discuss the legitimate demand for joint effort and cooperation in maintaining the long-term sustainability of shared fish stocks like kingfish based on international instruments.

### Objectives of the kingfish workshop

- To provide fishery scientists, managers and decision-makers of the RECOFI countries with an opportunity to meet and discuss the common issues related to kingfish fisheries from data collection, research, management strategy and regulations,
- To provide a platform for scientists to work together on real kingfish data, conduct stock assessment and develop science-based management strategy for the long term sustainability of the fishery and the social and economic benefits of the region
- To discuss and develop a cost-effective and practical institutional arrangement and a regional plan for cooperation and collaboration in the sustainable management of the shared kingfish resource

## **Draft Agenda of the kingfish stock assessment workshop**

1. Presentation from country:
  - Landings and trends
  - Current state of the kingfish fishery
  - Concerns and issues require management attention
  - Research projects and their results if there is any
2. Review of the existing published results
  - Growth estimation
  - Mortality rate estimation
  - Models applied
  - Conclusions achieved
3. Estimation of growth equation from length frequency data
  - The von Bertalanffy growth equation
  - Data requirements for fitting the equation
  - Using software to estimate the equation from length frequency data
4. Estimation of total mortality from length frequency data
  - The theory behind the estimation of total mortality from time series length frequency data
  - Using a software to estimate total mortality from time series length frequency data
  - Estimation of natural mortality
  - Estimation of exploitation rate based on natural mortality, fishing mortality and total mortality rates
5. Catch only methods for stock assessment
  - Yield per recruit model
  - Surplus production model
  - How to fit these models to data
  - Key parameters from the modelling that can be used for determining stock status and for management purposes
6. Designing management
  - Management objectives
  - Designing regulations to achieve the objectives

## **Data requirements of the workshop**

Each country should bring

1. Length frequency data over a certain time period
2. Full catch statistic time series data
3. Fishing effort data or data on numbers of fishing vessels and fishermen engaged in the fishery
4. Any other data available for example types of gear and vessels, fishing locations, market price

## **Skill requirements**

1. Knowledge of the kingfish fishery
2. Knowledge of basic stock assessment theory and models as this is not a training course, but a workshop
3. Numerical skills, using Excel ( better competent in R or other programming languages)

## Fisheries Management in the RECOFI Area

### The WGFM is invited to:

- take note of the Commission's decisions on fisheries management.
  - discuss the undertaking of follow up actions as requested by the Commission.
  - consider new information on the status of stocks in the region and draw up management advice, as appropriate.
1. At its 7th Session, the Commission took note of the activities undertaken by the Working Group on Fisheries Management (WGFM) during the intersessional period, the results obtained and the emanating advice for fisheries management. After extensive deliberations, the Commission, in particular:
- noted the call of the WGFM for an urgent need to formulate **a regional management plan** for the narrow-barred Spanish mackerel, taking into account results obtained through the work undertaken by the Member countries and relevant regional entities and the joint research project to be designed by all Member countries.
  - acknowledged the WGFM advice on a reduction in shrimp trawling effort, effective implementation of regulations and management measures, as well as the consideration of socio-economic factors in the decision making processes and **advised the WGFM to further develop the concrete management procedures.**
  - did not endorse the WGFM advice related to the freeze on new fishing licenses.
  - endorsed the proposed revision of the list of species of common interest and **requested that the list be reviewed further and updated at the seventh meeting of the WGFM.**
  - agreed that assessments should be carried out using a longer time series of fishery dependent data which was not yet available and stressed on the importance of using survey data collected by the Fisheries Resources Committee of the GCC and national research programmes.
  - urged RECOFI Members to share the relevant data to facilitate the undertaking of scientifically sound joint complete assessments, the results of which would allow the Commission to take management decisions.
  - **urged the WGFM to formulate specific management advice in relation to fishing effort control**, taking into account the particular nature of fisheries and management plans in different countries.
  - proposed that **Members report to the WGFM at every session on the implementation of fisheries regulations and management measures** through a template prepared by the Secretariat.
  - recognized the need to establish a RECOFI regional database and information system maintained by the Commission in order to support regional fisheries management in the long term.

- commended the outcomes of the workshop on bycatch management and low impact fishing and encouraged knowledge and experience sharing in the RECOFI region that would lead to develop a regional management measure to reduce bycatch in the future.
  - recognized that it is necessary to consider management measures which will safeguard the livelihoods of small-scale fishers and to develop a regional framework to address issues specific to small scale fisheries.
  - highlighted the need for consideration of the impacts of sport fishing on small-scale fisheries and **called upon the WGFM to consider the role of recreational fisheries in the context of national and regional fisheries management.**
  - **called for full commitment by Members in submitting relevant data and information** in support of the pilot joint assessment of narrow-barred Spanish Mackerel and workshop on the utilization of fishery dependent data.
  - encouraged the development of a project for the whole RECOFI region to support capacity development in stock assessment, building on the experience of the FAO subregional project covering GCC countries and Yemen.
  - encouraged the process of drawing up a regional plan of action to combat IUU fishing.
2. On the basis of the above, the WGFM is invited to note the Commission's decisions on fisheries management and to discuss and identify strategies to address the requests by the Commission to deliver further management advice, including the development of a regional management plan for the narrow-barred Spanish mackerel and other shared fishery resources, as appropriate. In doing so, the WGFM may wish to consider any new information on the status of stocks in the region, as well as the preparatory work for the regional joint stock assessment workshop on Spanish mackerel described in document RECOFI:WGFM7/2013/6.

This document contains the report of the Seventh Meeting of the Regional Commission for Fisheries (RECOFI) Working Group on Fisheries Management (WGFM), which was held in Kuwait City, the State of Kuwait, from 5 to 7 November 2013. The WGFM addressed and made decisions on matters concerning relevant follow-up to the sixth meeting of the RECOFI WGFM and to the Seventh Session of RECOFI that was held in Tehran, Islamic Republic of Iran during the period from 14 to 16 May 2013. Country reports on the status of national fisheries were presented and discussed. The WGFM formulated further work on the socio-economics of fisheries in the region. The enforcement of the recommendation on minimum data reporting was reviewed and the urgent need to establish a data access policy and protocol was considered. The WGFM identified the objectives, data and skills requirement of the first regional joint assessment of the narrow-barred Spanish mackerel. The importance of the regional approach to fisheries management was recognized, initially with a particular focus on developing management procedures with regards to shrimp trawling and management plan for the narrow-barred Spanish mackerel.

ISBN 978-92-5-108273-7 ISSN 2070-6987



9 7 8 9 2 5 1 0 8 2 7 3 7

I3711E/1/03.14