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<b>REGIONAL COMMISSION FOR FISHERIES</b>
<b>Eleventh Meeting of the Working Group on Fisheries Management</b>
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<b>UPDATE ON THE IMPLEMENTATION OF THE RECOFI RECOMMENDATION ON MINIMUM DATA REPORTING</b>

## INTRODUCTION

1. This document aims to provide an update on the progress made on data submission according to minimum data requirements and highlights areas for action by Members taking into gaps in submissions. This document also briefly recalls the background and objectives of the Recommendation RECOFI/6/2011/1 in contrast with the current situation and urges the Members to consider how to move forward.

2. At the WGFM-X held in Doha, State of Qatar, 6 to 8 December 2016, the Secretariat informed that the data reported under the RECOFI Recommendation RECOFI/6/2011/1, entitled “Recommendation on minimum data reporting in the RECOFI area” (Appendix 1), although slightly improved, is still not at standards required for a standardized and harmonized regional database. The meeting discussed the possible causes of the limited progress for the current year on the data submission according to the minimum data requirements. The WGFM emphasized the key role of good communication with and between the focal points when handling calls for minimum data requirements.

3. The Ninth Session of the Commission requested the WGFM work towards better alignment and consistency between the data submitted under the two mechanisms (RECOFI Recommendation RECOFI/6/2011/1 and FAO/ RECOFI Capture regional database).

## HISTORY AND OBJECTIVES OF THE RECOFI RECOMMENDATION ON MINIMUM DATA REPORTING

4. It should be noted that the RECOFI Recommendation on Minimum Data Reporting was established as an initial part of process establishing a pragmatic management scheme based on an Ecosystem Approach to Fisheries Management with adaptive management procedures, the decision taken by the 2nd meeting of the WGFM (Cairo, Egypt, 27-30 October 2008), endorsed by the fifth Session of the RECOFI (Dubai, United Arab Emirates, 12-14 May 2009).

5. Following this decision, the FAO/RECOFI Regional Workshop on Stock Indicators and Stock Status Reporting (Tehran, Islamic Republic of Iran, 26–29 July 2009) reviewed the data and statistics

availability in the region and stock status reporting and recognized the lack of information commonly accessible through the region. The meeting identified the three key issues in the region, i) the impact of shrimp trawls, ii) status of general finfish resources, signified with emperors and groupers, biologically vulnerable component, and iii) status of priority species, initiated with shared assessment of Spanish mackerel, and determined the minimum data requirement to address these key issues from the perspective of monitoring stocks and fisheries status. The concept was further developed through the 3rd meeting of WGFM (Doha, Qatar, 20-22 October 2009) and the 4th meeting of WGFM (Muscat, Sultanate of Oman, 3-5 October 2010) and the 6th 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”.

6. Following, the 3<sup>rd</sup> meeting of the WGFM, it was agreed to establish the regional database to maintain the information that directly supported fishery management in the region as a public asset of the Commission. In addition, considering the outcomes of the Workshop, the WGFM-3 elaborated operational objectives (i.e. what goals should be achieved through the implementation of EAF), as follows and anticipated further discussion at the 4<sup>th</sup> meeting of WGFM on specific actions, reference points, status monitoring indicators and indicators to monitor achievements:

Income and fish supply:

- maintain fishers’ income above the reference level;
- ensure the quality of fish for food; and
- ensure maximize incomes generated per quantity of catch through improving quality.

Status of key species:

- maintain the stock of Spanish mackerels above the reference level; and
- maintain healthy conditions for coastal finfish communities, in keeping groupers and emperors stocks above the reference level.

Vulnerable components:

- maintain bycatch of shrimp trawls under the reference level;
- maintain a healthy ecosystem to support fish production of key species (including both physical and biological [e.g. feed] environments);
- minimize impacts of fishing gears on natural environments (i.e. the proportion of use of bycatch reducing devices); and
- marine protected areas (e.g. maintenance of biodiversity and the protection of marine habitats).

Other components:

- update regularly legislation and regulations on fisheries management;
- enhance MCS to enforce regulations;
- promote education and awareness raising among fishers for effective management and environmental-friendly operations;
- cooperate with other bodies/sectors on how to protect marine ecosystems;
- rehabilitate the ecosystems through enhanced collaboration with other sectors, as much as possible;
- enhance monitoring effects of river-flow, especially in the northern area of the Gulf, and land-based activities on marine ecosystems; and
- implement appropriate regulation and controls on recreational fishing activities.

7. The Recommendation on the Minimum Data Reporting entered into force on 1 January 2012 after two years preparatory phase. In 2015, RECOFI-VII was informed that the data submitted under the Recommendation would provide an adequate basis for monitoring the status of fishing operations and resources and taking management decision. On the other hand, the other mechanisms implementing the ecosystem management approach of effective fisheries management, including an establishment of regional database, development operational objectives and corresponding monitoring indicators, and joint stock assessment of Spanish mackerel, have not yet been achieved, though all of them are at their quite mature state with substantive preparatory works already done and wait for the final decisions/commitment. Data and information would have value only when utilized in proper effective manner.

8. The WGFM, and its ninth meeting, discussed the convenience and feasibility of taking further steps towards actively utilizing these data, possibly beginning with the joint assessment of the kingfish and the development of operational management objectives and corresponding indicators. In particular, it was noted that the Commission had not yet been able to identify fisheries management objectives of regional relevance, including the associated multidisciplinary indicators and related reference points and reference limits. It was noted that this was a significant constraint that could affect progress towards the formulation of regional fisheries management plans such as those for shrimp and kingfish fisheries.

9. During WGFM-X the possible causes of the limited progress for the current year on the data submission according to the minimum data requirements were discussed. The WGFM emphasized the key role of good communication with and between the focal points when handling calls for minimum data requirements: poor communication or not updating focal points who are no longer in these roles could explain this limited progress. It was agreed that no further needs were identified in data support. It was noted that the standard terminologies and classifications for RECOFI could be more detailed when dealing with stock assessment needs, but more advanced classifications should only be considered once the minimum data requirements are being fulfilled.

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

10. Compared to WGFM-X, only Iran and Oman submitted additional data (2017). Regarding the 2016 round of data submission, Iraq and Qatar are the only two countries which submitted data. Qatar submitted the 2015 year as expected; for Iraq, this is the first submission using the Excel format and the first and only year reported is 2014. It is a concern that the other countries including those which submitted data previously did not report in 2016.

11. The general situation regarding countries capacity in principle to report the catch and effort information defined in the Recommendations, although slightly improved, is still not at standards required for a standardized and harmonized regional database. Bahrain, Iran (I.R.), Iraq, Oman, Qatar, and Saudi Arabia have fully proven their capacity of reporting the catch and effort information defined in the Recommendation. Kuwait and UAE are still the two outstanding countries which have never submitted the information under the Recommendation. The format and extent of content details differs among the Members. Saudi Arabia submitted all detailed data collected (disaggregated in month, gear-vessel size classifications, species, operating areas, and landing sites). Bahrain, Iraq, Oman and Qatar provided annual catch and effort table (Oman with monthly for 2012 and 2013 data) with gear-vessel size classifications and species. Iran previously provided tables of aggregated indicators, however the last submission included further subdivisions. The majority of data were submitted in Excel, while Iran utilizes pdf, and Oman with text format readily to be integrated into any database format.

12. All the Members who submitted data provided catch and effort for whole national fisheries, not limited to those three gears defined in the Recommendation. Total amount of catch reported under the Recommendation indicated a good correspondence with the total catch reported for the RECOFI

Capture Database. Appendix 2 and 3 show the situation of country reporting by species, vessel types and gear types.

13. Comparable data is generally available for the year 2009 and after. In addition, historical data is available for Bahrain (1986 onward) and Saudi Arabia (2006 onward). Oman informed the 7th meeting of the WGFM its intention to make the historical data since 1984 available to the Commission after reprocessing data in accordance with the current fishing gears and boats classifications.

14. Total lack of information on the catch of the second largest fishing country in the Region (the United Arab Emirates), accounting for 20 % of finfish catch in the Gulf, raises a serious concern. On the other side, Kuwait repeatedly informed the existence of relevant data that are not yet made available to the Commission. While the 7th meeting of the WGFM urged once again Kuwait to finalize the internal process to make the data compiled by the KISR available to the RECOFI fishery management process, the situation has not yet changed.

15. Compiling the status of the past two submissions from RECOFI Member Countries (Appendix 4), it is clear that there is significant difference in coverage between the Minimum Data Requirement variables. Although the coverage of a significant number of variables can be considered satisfying, others require further consideration as to why little or no data has been submitted. This discussion is needed to address potential issues in data collection, country needs for capacity building to support particular elements of statistical data collection, and potentially revisiting the MDR variables agreed by RECOFI to better fit needs and capacities of Member Countries. In particular, ‘Average number of tows per day by vessel type/ category’ in shrimp trawls, bycatch and discard data, ‘Alternative annual efforts’ across gear types, and all variables except ‘Annual catch’ for narrow-barred Spanish mackerel. Reasons for lack of reporting may include: data collected/hosted by other body; variable not included in questionnaires; lack of enumerators at landing sites/on board; data not shared.

#### **UPDATE ON THE DISSEMINATION OF DATA AND INFORMATION COLLECTED UNDER THE RECOMMENDATION**

16. WGFM-X discussed the possible causes of the limited progress for the current year on the data submission according to the minimum data requirements. The WGFM emphasized the key role of good communication with and between the focal points when handling calls for minimum data requirements: poor communication or not regularly updating focal points, or updating those who are no longer in the focal point role, could explain the limited progress. It was noted that the standard terminologies and classifications for RECOFI could be more detailed when dealing with stock assessment needs, but more advanced classifications should only be considered once the minimum data requirements had been fulfilled.

17. To address issue of regional data standardization and harmonization, the WGFM is invited to consider best practices and lessons learnt from the creation of a Data Collection Reference Framework (DCRF) in GFCM1 and in WECAFC2, with an aim to increase accuracy of data and statistics through agreed practices in data collection, and develop and implement agreed practices for data sharing. In the context of RECOFI, the Minimum Data Requirements materialized by Annex 1 and Appendix 5 of this document will constitute the backbone of the DCRF, and be usefully complemented by what is missing: essentially definition of concepts, better specification of data structures, references to CWP standards, formalization of regional classifications and their mapping with international ones (e.g. on vessel types and/or gear types), support to mappings between national and regional\international classifications; and some associated data sharing policy aspects. Such a DCRF as standalone document would bring more visibility, better traceability of modifications and will facilitate harmonization and

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<sup>1</sup> See: GFCM/DCRF/2018/1 <https://gfcem.sharepoint.com/sites/DCRF/SiteAssets/Manual/GFCM-DCRF-manual-2018.1.pdf?slrid=4a7bb99e-5005-0000-5b87-09db4e5d2f6b>

<sup>2</sup> See: WECAFC/SAG/IX/2018/Inf.14 <http://www.fao.org/fi/static-edia/MeetingDocuments/WECAFC/SAG2018/Inf.14.pdf>

streamlined reporting between countries and RECOFI, as well as other organizations such as IOTC or FAO. As well as some data sharing policy aspects. These aspects are the ones missing to harmonize.

18. The Ninth Session of the Commission agreed that the catch and effort data submitted by Members be harmonized and integrated in an Excel format by the Secretariat, and then shared with the Members. At the date of drafting this document, this has not been finalized but steps are being taken by the Secretariat to discuss and put in place a chain of responsibility with Kuwait. The dissemination to the public of this database through the RAIS website will await the release of the full-fledged regional data and information system facility under the responsibility of State of Kuwait.

19. Regarding the proposed geographic sub-divisions to be endorsed as a RECOFI standard (i.e. split FAO subarea 51.3 into divisions 51.3.1 - Oman Sea - and 51.3.2 - Arabian Sea (South Western) (Appendix 6), the Commission was of the opinion that it did not have enough background information and requested the WGFM to re-consider the issue during its next meeting. According to the Coordinating Working Party on Fisheries Statistics (CWP), the proposed statistical boundary would allow for consistent reporting of fishery statistics according to newly created divisions, and this subdivision has already been adopted for Minimum Data Reporting by Oman, Iran and United Arab Emirates (see Appendix 5).

20. Regarding the data access policies, the Secretariat has maintained all data submitted in its original format. Since the 7th meeting of WGFM, it has been agreed to maintain all detailed information submitted in this framework, including disaggregation of catches taken by recreational fishing, considering that the Recommendation should serve as a minimum standard and should not constrain efforts to collect information beyond those defined (Article 1-b). At the ninth meeting of the WGFM, it was agreed that the data component corresponding to Recommendation RECOFI/6/2011/1 would be disseminated to the public, while any additional information, either supplementary or providing new details, would be kept for use within the Commission only.

21. Considering the data available at the Secretariat, it is proposed to format it and demonstrate how a pilot regional database can be implemented in a short time using the iMarine infrastructure (introduced in the RAIS action plan at WGFM-IX<sup>3</sup>), and how the data can be disseminated through the RAIS website. The regional database is to be seen as the tool to implement the proposed Data Collection Reference Framework and associated data sharing policy. As suggested during WGFM-X, the pilot was not presented at the last RECOFI Commission meeting, so should therefore be discussed during WGFM-XI. **The Committee is requested to decide whether the Secretariat should develop this pilot.**

22. The development of a Data Collection Reference Framework for RECOFI, the associated Data sharing policy and a practical training on the pilot regional database could be the matter of a specific workshop.

#### SUGGESTED ACTION FOR THE WGFM

23. Against the background outlined above, the WGFM is invited to
- Review the progress made on data submission according to minimum data requirements, consider areas for action by Members, considering highlighted gaps in submissions
  - Consider issues in harmonization and standardization of regional data, and the proposed way forward to wrap RECOFI statistical standards as part of a standalone Data Collection Reference Framework
  - Confirm that the proposal to split FAO subarea 51.3 into divisions 51.3.1 and 51.3.2 as requested by the last Commission meeting for final endorsement

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<sup>3</sup> WGFM9/2015/7, at [ftp://ftp.fao.org/FI/DOCUMENT/RNE/RECOFI\\_2015\\_WG-FM/7e.pdf](ftp://ftp.fao.org/FI/DOCUMENT/RNE/RECOFI_2015_WG-FM/7e.pdf)

- Make a decision on developing a pilot regional database building on the iMarine infrastructure, by compiling the data already submitted and disseminating it through RAIS
- Formulate recommendations for activities required to implement the above, and consider issue of funding support.
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**RECOMMENDATION RECOFI/6/2011/1  
ON MINIMUM DATA REPORTING IN THE RECOFI AREA**

The Regional Commission for Fisheries (RECOFI),

*RECALLING* that the purpose of RECOFI is, *inter alia*, to promote the development, conservation, rational management and best utilization of living marine resources, as well as the sustainable development of aquaculture;

*RECALLING* that the third meeting of RECOFI's Working Group on Fisheries Management (WGFM) (Doha, Qatar, 20-22 October 2009) agreed that a recommendation on minimum data reporting in the RECOFI Area should be drafted for review by the fourth meeting of the WGFM (Muscat, Oman, 3-5 October 2010) for submission to the Sixth Session of RECOFI (Manama, Bahrain, 10-12 May 2011);

*REAFFIRMING* the strong desire of RECOFI Members to promote closer international cooperation and harmonization in fisheries of mutual interest;

*AWARE* that minimum data reporting requirements for the RECOFI Area are fundamental to promoting long-term sustainable fisheries, especially for species of common interest in the region (see Annex 1);

*ADOPTS* in conformity with the provision of paragraph 1 (b) and (h) of Article III and Article V of RECOFI Agreement that:

1. (a) Each Member shall take such measures as may be necessary to ensure the collection and submission of information required under the paragraph 2, 3 and 4 of this recommendation.  
(b) Nothing in this recommendation shall constrain a Member pursuing data collection and sharing them with the Commission for the purpose of improving management of fisheries and fishery resources in the RECOFI area beyond the requirements of this recommendation.
2. (a) Each Member operating with shrimp trawl fishery shall make available to the Commission the following information with respect to that fishery:
  - (i) opening and closing dates of the fishery;
  - (ii) number of vessels engaged in the fishery according to its own vessel type/ size categories (e.g. steel-hulled/speed boats/dhows);
  - (iii) annual average tow duration, annual average number of tows per day, and total number of days at sea, according to vessel type/size categories;
  - (iv) live-weight equivalent of annual catch of shrimp, swimming crab, cuttlefish, narrow-barred Spanish mackerel, emperors, groupers, sharks, rays, and other finfishes, taken by the fishery;
  - (v) annual amount of discards, and
  - (vi) Species composition of by-catch and discards, if available.  
(b) If any by-catch reduction device (BRD) is used or other mitigation measure taken, each Member should advise the Commission of details of such BRD/mitigation measure used and submit the catch and effort for those vessels with mitigation measures separated from those vessels operating normally.

3. Each Member shall make available to the Commission the following information with respect to gillnets, wire-traps, and hooks-and-line fisheries, respectively:
  - (a) annual effort in individual fisheries, in terms of “number of days at sea”, and if this is not possible, alternative effort with its brief description, and
  - (b) live-weight equivalents of annual total catch, and of annual catches of narrow-barred Spanish mackerels, emperors, groupers, sharks and rays taken by individual gears with species identification of emperors and groupers to the extent possible, and amount of discards if available.
4. (a) Each Member shall make available to the Commission the following information with respect to narrow-barred Spanish mackerel *Scomberomorus commerson* taken in any fishery in the country:
  - (i) catch in live-weight equivalent on a monthly basis to the extent possible, if not on an annual basis;
  - (ii) fork length composition of catch on a monthly basis to the extent possible, if not on an annual basis, either based on fishery monitoring or obtained from other sources, and
  - (iii) for operations targeting narrow-barred Spanish mackerel (e.g. kingfish fixed net, gillnet and hooks and line), monthly catch with fork length composition and effort by gear type, together with clear description of kinds of effort used, to the extent possible.

(b) Each Member shall make available to the Commission any results obtained through surveys and research works relevant to narrow-barred Spanish mackerel, including fishery-dependent and fishery-independent stock indicators, biological parameters (e.g. growth rate, length frequency data obtained by projects, age-length relationship, reproductive information, natural mortality) and ecological information (e.g. distribution, feeding habitat, habitat preferences).
5. Each Member shall, to the extent practicable, make available to the Commission the following additional information:
  - (a) shrimp species composition within the shrimp trawl catch, and
  - (b) species composition of discards.
6. Each Member shall submit to the Commission the information required under paragraphs 2, 3, 4 and 5 of this recommendation, and any modification to information reported previously, before the end of August of the following year. Each Member shall cooperate in exchanging historical information relevant to those described in this recommendation.
7. Each Member shall cooperate in sharing survey plans and protocols prior to their implementation, as well as results of such surveys upon their conclusion, to the relevant Members through the Commission.
8. The Commission shall collate, maintain and promptly disseminate to Members the information provided under paragraphs 2, 3, 4 and 5 of this recommendation. The Commission may, subject to the request from a Member who provided information, impose restrictions on access to the information by the public.
9. The Commission shall monitor and evaluate regularly the status of implementation of this recommendation.

\* \* \*

**List of key species supporting main reference fisheries in the RECOFI Area  
(revised)**

FAO name	ASFIS code	Common name	Scientific name
Green Tiger Prawn	TIP	Green Tiger Prawn	<i>Penaeus semisulcatus</i>
Blue swimming crabs	SCD	Blue swimming crab	<i>Portunus pelagicus</i>
Pharaoh cuttlefish	IAH	Cuttlefish	<i>Sepia pharaonis</i>
Stolephorus anchovies	STO	Anchovies	<i>Stolephorus</i> spp.
Indian oil sardine	IOS	Indian oil sardine	<i>Sardinella longiceps</i>
Bludger	NGY	Jacks	<i>Carangoide gymnostethus</i>
Golden trevally	GLT	Golden trevally	<i>Gnathanodon speciosus</i>
Indian mackerel	RAG	Indian mackerel	<i>Rastrelliger Kanagurta</i>
Snubnose emperor	LBW	Orange finned emperor	<i>Lethrinus borbonicus</i>
Pink ear emperor	LTS	Redspot emperor	<i>Lethrinus lentjan</i>
Spangled emperor	LHN	Spangled emperor	<i>Lethrinus nebulosus</i>
Coral hind	CFI	Coral grouper/Bluespotted grouper	<i>Cephalopholis miniata</i>
Orange-spotted grouper	ENI	Orange-spotted grouper	<i>Epinephelus coioides</i>
White-spotted spinefoot	SCN	Rabbitfish	<i>Siganus canaliculatus</i>
Narrow-barred Spanish mackerel	COM	King mackerel/Narrow-barred Spanish mackerel	<i>Scomberomorus commerson</i>
Longtail tuna	LOT	Longtail tuna	<i>Thunnus tonggol</i>
Kawakawa	KAW	Kawakawa	<i>Euthymus affinis</i>
Requiem sharks nei	RSK	Sharks	Carcharhinidae
Silver pomfret	SIP	Silver pomfret	<i>Pampus argenteus</i>
Hilsa shad	HIL	Indian shad	<i>Tenualosa ilisha</i>
King soldier bream	KBR	King soldier bream	<i>Argyrops spinifer</i>
Painted sweetlips	DGP	Painted sweetlips	<i>Diagramma pictum</i>
Smalltooth emperor	LEN	Smalltooth emperor	<i>Lethrinus microdon</i>
Indian white prawn	PNI	Indian white prawn	<i>Penaeus indicus</i>
Klunzinger's mullet	LZK	Klunzinger's mullet	<i>Liza klunzingeri</i>
Greenback mullet		Greenback mullet	<i>Liza subviridis</i>

The current work on RECOFI priority species is available in the reference document RECOFI/WGFM11/2019/6.

## Appendix 2

## Summary of data submitted under the Recommendation

Updated from RECOFI-WGFM-10 with taking into account Iran's submission.

The 2012 and 2013 catch and effort data disaggregated by fishing gears and vessel categories was submitted by Bahrain, Iran, Oman, Qatar and Saudi Arabia. During this round of submissions, Iraq provided fleet and operational information that was utilised to estimate efforts for 2004-2013, while catch data was aggregated for all vessel classes and gears. Only Bahrain and Qatar had submitted their 2014 catch and effort data in the 2015 round. Iraq submitted 2014 data (first and only year reported) during the 2016 round of data submission. For Iraq this was the first submission using the Excel format. Only Iraq and Qatar have submitted data in 2016, while for the 2017 data submission Oman, Qatar and Saudi Arabia have made submissions to date. Saudi Arabia submitted data for both 2014 and 2015. However, Oman has not provided data for previous years (2014-2015). Iran is the only country so far to have submitted data in 2018. No data has been submitted by Kuwait and the UAE.

A review of the coverage in catch amount data is suggested to further clarify data gaps within country submissions. In addition, a row 'Other' was added in below tables 'Catch composition by fleet segments' and 'Catch composition by fishing gear' to balance the total catch composition reported for each country.

	Bahrain	Iraq	Iran	Oman	Qatar	Saudi Arabia
<b>Coverage in catch amount [Min Data reporting]/[Catch DB]</b>						
Total catch	100%	38%	54%	99%	132%	92%
Shrimp	100%	100%	89%	97%	n.a.	85%
Kingfishes	100%	-	93%	105%	126%	67%
Groupers	100%	-	82%	84%	121%	119%
Emperors	100%	-	76%	327%	366%	122%
<b>Catch composition reported by fleet segments</b>						
Steel boat		90%	0.05%			
Dhow	35%	10%	41%	65%	84%	64%
Speedboat	62%		34%	35%	16%	36%
<b>Catch composition reported by gears</b>						
Shrimp trawl	29%	17%	6%	0%		28%
Gillnet	14%	83%	62%	36%	9%	22%
Wire trap	40%		3%	7%	35%	35%
Hook-and-Line	4%		4%	22%		14%
Others	13%			34%	56%	
<b>Species breakdown: Number of species reported (catch report at species level)</b>						
Groupers	2 (19%)*	0%	0%	4 (100%)	4 (100%)	10 (86%)
Emperors	4(100%)	0%	0%	4 (32%)	3 (100 %)	4 (78%)

Kingfishes, Groupers, and Emperors were defined as *Scomberomorus* spp., *Epinephelus* spp., and *Lethrinus* spp., respectively.

\* Bahrain informed that 98 % of catch reported under *Epinephelus* spp. is Orange-spotted grouper (*Epinephelus coioides*).

## Appendix 3

## Status of data submission by countries under Recommendation RECOFI/6/2011/1

## i) Kingdom of Bahrain

	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004>
<b>Shrimp Trawl</b>											
2-a-i	Opening/closing dates										
2-a-ii	Y	Y	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						
	Catch of shrimp										
	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	~1990
	Catch of narrow-barred Spanish mackerel										
	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	Catch of swimming crab, cuttlefish, emperors, groupers, sharks, and rays										
	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	Catch of other finfishes										
	Y	Y	Y	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										

\* No separation in type/ category; \*\* Total tow duration;

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

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

\* average fork length

## ii) Islamic Republic of Iran

2017 2015 2014 2013 2012 2011 2010 2009 2008 2007 2006 2005 2004&gt;

**Shrimp Trawl**

2-a-i	Opening/closing dates		Y	Y	Y	Y							
2-a-ii	Number of vessels by types and size categories	Y	Y	Y	Y	Y							
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	Y											
	Total number of days at sea by vessel type/ category	Y											
2-a-iv	Catch of shrimp	Y	Y	Y	Y	Y							
	Catch of narrow-barred Spanish mackerel	Y	Y	Y	Y	Y							
	Catch of swimming crab, cuttlefish, emperors, groupers, sharks, and rays	Y	Y	Y	Y	Y							
	Catch of other finfishes	Y	Y	Y	Y	Y							
5-a	<i>Shrimp species composition</i>												
2-a-v	Amount of discards	Y	Y	Y	Y	Y							
2-a-vi	Species composition of bycatch and discard												
2-b	BRD related information	Y	Y**	Y**	Y**	Y**							

\* Total tow duration reported; \*\* General configuration

**Gillnets**

3-a	Number of days at sea	Y	Y	Y	Y	Y							
	Alternative annual efforts												
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>												

**Wire-traps**

3-a	Number of days at sea	Y	Y	Y	Y	Y							
	Alternative annual efforts												
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>												

**Hook-and-line**

3-a	Number of days at sea	Y	Y	Y	Y	Y							
	Alternative annual efforts												
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	Annual catch	Y	Y	Y	Y
	Monthly catch		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				

iii) Iraq

2015 2014 2013 2012 2011 2010 2009 2008 2007 2006 2005 2004>

**Shrimp Trawl**

2-a-i	Opening/closing dates	
2-a-ii	Number of vessels by types and size categories	Y
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	Y
2-a-iv	Catch of shrimp	Y
	Catch of narrow-barred Spanish mackerel	
	Catch of swimming crab, cuttlefish, emperors, groupers, sharks, and rays	
	Catch of other finfishes	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	

**Gillnets**

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

**Wire-traps**

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	<i>Species composition of discards</i>	

**Hook-and-line**

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

iv) State of Kuwait

	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004>
<b>Shrimp Trawl</b>												
2-a-i	Opening/closing dates											
2-a-ii	Number of vessels by types and size categories								Y	Y	Y	~2001
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								Y*	Y*	Y*	~2001
2-a-iv	Catch of shrimp								Y*	Y*	Y*	~2001
	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											
	Alternative annual efforts								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												
	Alternative annual efforts								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

v) Sultanate of Oman

2017 2016 2015 2014 2013 2012 2011 2010 2009 2008 2007 2006>

<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	Y	Y				
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	Y	Y			Y	Y	Y				
2-a-iv	Catch of shrimp	Y	Y			Y	Y	Y				
	Catch of narrow-barred Spanish mackerel	Y	Y			Y	Y	Y				
	Catch of swimming crab, cuttlefish, emperors, groupers, sharks, and rays	Y	Y**			Y**	Y**	Y**				
	Catch of other finfishes	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											

\* No date available; \*\* partially

<b>Gillnets</b>												
3-a	Number of days at sea	Y	Y			Y	Y	Y	Y	Y		~1984
	Alternative annual efforts											
3-b	Total catch	Y	Y			Y	Y	Y	Y	Y		~1984
	Catch of narrow-barred Spanish mackerel	Y	Y			Y	Y	Y	Y	Y		~1984
	Catch of emperors, groupers, sharks, and rays	Y	Y			Y	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	Y	Y	Y		~1984
	Alternative annual efforts											
3-b	Total catch	Y	Y			Y	Y	Y	Y	Y		~1984
	Catch of narrow-barred Spanish mackerel	Y	Y			Y	Y	Y	Y	Y		~1984
	Catch of emperors, groupers, sharks, and rays	Y	Y			Y	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	Y	Y	Y		~1984
	Alternative annual efforts											
3-b	Total catch	Y	Y			Y	Y	Y	Y	Y		~1984
	Catch of narrow-barred Spanish mackerel	Y	Y			Y	Y	Y	Y	Y		~1984

	Catch of emperors, groupers, sharks, and rays	Y	Y	Y	Y	Y	Y	Y	~198
	Amount of discards								4
5-b	<i>Species composition of discards</i>								
<b>Narrow-barred Spanish mackerel</b>									
4-a-i	<i>Annual catch</i>	Y	Y	Y	Y	Y			
	Monthly catch	Y	Y	Y	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								



vii) Kingdom of Saudi Arabia

		2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004>
<b>Shrimp Trawl</b>													
2-a-i	Opening/closing dates	Y	Y	Y	Y	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*	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**	Y**	Y**	Y**	Y**	~1991
	Total number of days at sea by vessel type/ category	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	~1991
2-a-iv	Catch of shrimp	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	~1991
	Catch of narrow-barred Spanish mackerel	Y	Y	Y	Y	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	Y	Y	Y	Y	~1991
	Catch of other finfishes	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	~1991
5-a	<i>Shrimp species composition</i>	Y	Y	Y	Y	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	Y	Y	Y	Y			
	Alternative annual efforts	Y	Y	Y	Y	Y	Y	Y					
3-b	Total catch	Y	Y	Y	Y	Y	Y	Y	Y	Y			
	Catch of narrow-barred Spanish mackerel	Y	Y	Y	Y	Y	Y	Y	Y	Y			
	Catch of emperors, groupers, sharks, and rays	Y	Y	Y	Y	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	Y	Y	Y	Y	~1994
	Alternative annual efforts	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	~1994
3-b	Total catch	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	~1994
	Catch of narrow-barred Spanish mackerel	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	~1994
	Catch of emperors, groupers, sharks, and rays	Y	Y	Y	Y	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	Y	Y	Y	Y			
	Alternative annual efforts	Y	Y	Y	Y	Y	Y	Y					
3-b	Total catch	Y	Y	Y	Y	Y	Y	Y	Y	Y			
	Catch of narrow-barred Spanish mackerel	Y	Y	Y	Y	Y	Y	Y	Y	Y			
	Catch of emperors, groupers, sharks, and rays	Y	Y	Y	Y	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	Y	Y	Y	Y
	<i>Monthly catch</i>	Y	Y	Y	Y	Y	Y
4-a-ii	<i>Fork length composition</i>						
4-a-iii	<i>Catch, effort and fork length composition of targeted gears</i>						
4-b	<i>Relevant information on narrow-barred Spanish mackerel</i>						

Appendix 4

Number of RECOFI member Countries reporting for each Minimum Data Requirement variable, subdivided by fishing method. The assessment only considered the last two submissions for each country, irrespective of year. Highlighted are those variables for which little or no data has been submitted.

<b>Shrimp Trawl (No data from Qatar)</b>		<b>Number of countries reporting variable (out of 8)</b>
2-a-i	Opening/closing dates	2 (Saudi Arabia, Iran)
2-a-ii	Number of vessels by types and size categories	6
2-a-iii	Average tow duration by vessel type/ category	1 (Iran)
	Average number of tows per day by vessel type/ category	2 (Saudi Arabia, Iran)
	Total number of days at sea by vessel type/ category	5
2-a-iv	Catch of shrimp	6
	Catch of narrow-barred Spanish mackerel	4
	Catch of swimming crab, cuttlefish, emperors, groupers, sharks, and rays	4
	Catch of other finfishes	5
5-a	Shrimp species composition	1 (Saudi Arabia)
2-a-v	Amount of discards	1 (Iran)
2-a-vi	Species composition of bycatch and discard	
2-b	BRD related information	
<b>Gillnets</b>		
3-a	Number of days at sea	6
	Alternative annual efforts	3
3-b	Total catch	6
	Catch of narrow-barred Spanish mackerel	5
	Catch of emperors, groupers, sharks, and rays	5
	Amount of discards	
5-b	Species composition of discards	
<b>Wire-traps (no data for Iraq)</b>		
3-a	Number of days at sea	5
	Alternative annual efforts	3
3-b	Total catch	5
	Catch of narrow-barred Spanish mackerel	5
	Catch of emperors, groupers, sharks, and rays	5
	Amount of discards	
5-b	Species composition of discards	
<b>Hook-and-line (no data for Iraq and Kuwait)</b>		
3-a	Number of days at sea	5
	Alternative annual efforts	2 (Qatar, Saudi Arabia)
3-b	Total catch	5
	Catch of narrow-barred Spanish mackerel	5

Catch of emperors, groupers, sharks, and rays 5

Amount of discards

5-b Species composition of discards

**Narrow-barred Spanish mackerel (no data for Iraq and Kuwait)**

4-a-i Annual catch 5

Monthly catch 3

4-a-ii Fork length composition 1 (Bahrain)

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

4-b Relevant information on narrow-barred Spanish mackerel

## Appendix 5

## RECOFI STANDARD CLASSIFICATIONS FOR MINIMUM DATA REPORTING AND MAPPING FROM NATIONAL DATASETS

**Year:** Calendar year (1 January to 31 December)

**Area:**

RECOFI	Gulf	Oman Sea
Bahrain	Gulf	
Iran (Islamic Republic of)	Gulf	Oman Sea
Iraq	Gulf	
Kuwait	Gulf	
Oman	Gulf	Sea of Oman Arabian Sea
Qatar	Gulf	
Saudi Arabia	Northern Area	
	Southern Area	
United Arab Emirates	Gulf	Oman Sea

**Vessels:**

RECOFI	Steel boat	Dhow	Speedboat
Bahrain		Dhow	Speedboat
Iran (Islamic Republic of)	Vessel	Dhow	Boat
Iraq	Steel	Fibre	Wooden
Kuwait	Steel boats	Wooden dhow	Speed boats
Oman		Dhow	Skiff
Qatar		Dhow	Speed boats/ skiffs
Saudi Arabia		Large	Small
United Arab Emirates		Dhow	Fibreglass

**Gear Type**

RECOFI	Shrimp trawl	Gillnet	Wire trap	Hook-and-Line
Bahrain	Shrimp trawl	Gillnet	Large wire trap	Hooks and line
			Small wire trap	Longline
			Crab wire trap	
Iran (Islamic Republic of)	Shrimp trawl	Gillnet	Wire-traps	Hooks and Lines
Iraq	Trawler	Gillnet	Gillnet/traps	
Kuwait	Trawler	Gill netters	Trap setters	
Oman	Shrimp/ shrimp trawler	Net	Trap	Troll/hand line
Qatar		King fish (driftnet pelagic/ driftnet Spanish mackerel)	Trap	
Saudi Arabia	Trawl	Gill net	Trap	Hand line
		Small gill net		Long line
				Troll line
United Arab Emirates	?	?	?	?

## Appendix 6

**Historical record regarding “Request from RECOFI Secretariat to CWP<sup>4</sup> for formal endorsement of proposed splitting of FAO subarea 51.3 into divisions 51.3.1 and 51.3.2”**

At WGFM6 (Doha, 2012), the Annex 3 of meeting document RECOFI:WGFM6/2012/8 (FIRMS) read as follows:

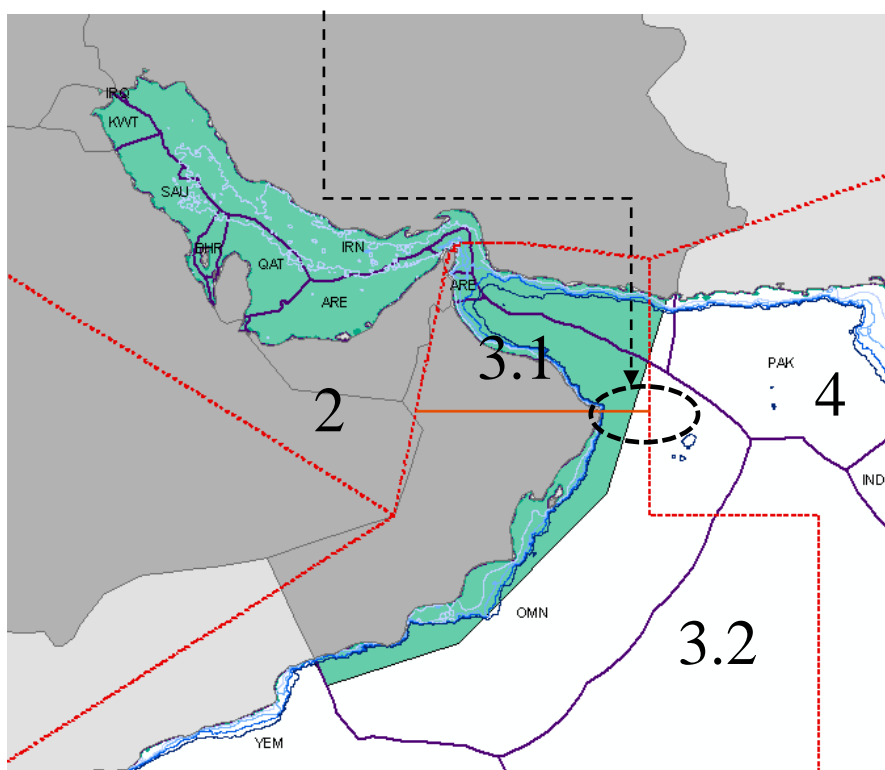
<< In order to properly geo-reference marine resources and fisheries in the RECOFI area, and in particular for distinguishing the fisheries operating in the Oman Sea, and those operating in the south Western part of the Arabian Sea, RECOFI fifth WGFM (Tehran, Iran (Islamic Republic of) 9-12 October 2011) agreed that FAO statistical subarea 51.3 “Western Arabian Sea” should be divided into two divisions:

- 51.3.1 - Oman Sea, and
- 51.3.2 - Arabian Sea (South Western).

WGFM6 validated the specification of the limit between the two new divisions. The dividing line is set as follows (See figure 1):

“a horizontal line passing through the point Latitude 22 26N and Longitude 59 50E which determines in the Rasol - Had region the coastal border between the Oman Sea and the Arabian Sea, and extending eastward up to the vertical limit of FAO sub-areas 51.3 and 51.4”

Figure 1: proposed boundary between new divisions 51.3.1 and 51.3.2



<sup>4</sup> <http://www.fao.org/fishery/area/Area51/en>

**WGFM6 reviewed the matter with the following report:**

**47. Review of the proposed statistical boundary between new candidate divisions 51.3.1 (Oman Sea) and 51.3.2 (Arabian Sea (South Western))** – the WGFM6 acknowledged that this proposal was made in close consultation between Iran (Islamic Republic of) and Oman to address the FIRMS requirement to distinctly geo-reference fisheries taking place in the Oman Sea and in the Arabian sea. The Coordinating Working Party on Fisheries Statistics (CWP) Secretary advised RECOFI delegates that RECOFI has the capacity to make such modifications, and that the proposed statistical boundary should also allow for consistent reporting of fishery statistics according to newly created divisions. The proposed names have also to be carefully reviewed before endorsement. The WGFM advised that Iran (Islamic Republic of) and Oman will consult each other on this matter and confirm to RECOFI. The WGFM6 proposed that the formal decision would then have to be made by the Commission at its next meeting.

No follow-up action could be identified in the following RECOFI Commission or WGFM meetings.