

**Report of the**

**FAO WORKSHOP ON BYCATCH MANAGEMENT AND LOW-IMPACT  
FISHING**

**Kuwait City, the State of Kuwait, 9–12 December 2012**



FAO 2013

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

FAO Fisheries and Aquaculture Report No. 1041, Rome, 2013

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## PREPARATION OF THIS DOCUMENT

This document contains the report of the Report of the Workshop on Bycatch Management and Low-impact Fishing held in Kuwait City, the State of Kuwait, on 9–12 December 2012. The Workshop was convened to develop a road map on how bycatch can be more effectively managed and how to reduce impacts of fishing on the environment. The meeting reviewed the current knowledge on bycatch in the Regional Commission for Fisheries (RECOFI) / Gulf Cooperation Council region and considered priority follow-up action. The workshop adopted a draft concept document in the form of a regional action plan for managing the environmental impacts of fishing in the RECOFI region.

The Workshop was hosted by the Public Authority for Agriculture Affairs and Fisheries Resources of the State of Kuwait.

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### ABSTRACT

The Workshop on Bycatch Management and Low-impact Fishing held in Kuwait City, the State of Kuwait, on 9–12 December 2012 was convened to develop the concept of a Regional Action Plan on how bycatch can be more effectively managed and to reduce impacts of fishing on the environment. The meeting reviewed the current knowledge on bycatch in the Regional Commission for Fisheries (RECOFI) / Gulf Cooperation Council region and considered priority follow-up action. The workshop adopted a draft concept document in the form of a Regional Action Plan for managing the environmental impacts of fishing in the RECOFI region.

Workshop participants agreed that the primary objective a regional action plan was to ensure the long-term livelihoods of those involved in the fisheries sector through the adoption of responsible fishing practices and that elements of the plan should inter alia: (i) prioritize responsible fishing through embedding the ecosystem approach to fisheries (EAF) in relevant national policies, (ii) minimize the impact of trawling on the sensitive habitats and reduce the impact on vulnerable species, both target and non-target, (iii) provide a rational approach to fleets for reducing bycatch, discards and gear loss, (iv) adopt a comprehensive approach that recognizes the differing environmental, economic and social conditions of the various fisheries within the region, (v) raise awareness, train and incentivize stakeholders about sustainable fishing. Workshop participants also agreed that the stages of the regional action plan should include as a priority: a regional analysis and diagnosis followed by action implementation.

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## **OPENING OF THE MEETING AND ARRANGEMENTS FOR THE SESSION**

1. A Workshop on Bycatch Management and Low Impact Fishing was held in Kuwait City, from the 9 to 12 December 2012. The prospectus and the agenda of the Workshop are shown in Appendix 1.
2. The main goal of the Workshop was to develop a road map on how bycatch can be more effectively managed and how to reduce impacts of fishing on the environment. The meeting was intended to synthesize the current knowledge on bycatch in the Regional Commission for Fisheries (RECOFI)/Gulf Cooperation Council (GCC) region and consider priority follow-up actions in the form of a regional action plan for managing the environmental impacts of fishing in the RECOFI region.
3. The main objectives of the Workshop were as follows:
  - to raise awareness among RECOFI members of the environmental, technological and economic impacts associated with bycatch and fishing impacts;
  - to bring different stakeholders together to identify financial, policy and technological challenges and actions necessary to manage bycatch and introduce low-impact fishing techniques;
  - to develop a regional action plan aimed at improved management of bycatch and reduction of fishing impacts in selected fisheries for submission to RECOFI through its Working Group on Fisheries Management.
4. The Workshop was attended by the representatives from Bahrain, Iran (Islamic Republic of), Iraq, Kuwait, Oman, Qatar, Saudi Arabia, the United Arab Emirates and FAO. During the last day, representatives of the Kuwait fishing industry attended the meeting. The list of participants in the Workshop is shown in Appendix 2.
5. The Workshop was called to order by Dr Haider Ali Murad, Deputy Director-General Fisheries Sector of the Kuwait Public Authority for Agriculture Affairs and Fisheries Resources (PAAF), who delivered the opening statement. The text of his statement is reproduced in Appendix 3.
6. The Workshop was addressed first by Dr Piero Mannini, Senior Fisheries Officer of FAO's Regional Officer for the Near East and North Africa. Mr Petri Suuronen, Fishery Industry Officer of FAO's Fishing Operations and Technology Service (FIRO) then gave an opening statement on behalf of Mr Arni Mathiesen, Assistant Director-General, Fisheries and Aquaculture Department, FAO, Rome, Italy. The texts of these statements are reproduced in Appendixes 4 and 5.

## **ELECTION OF THE CHAIRPERSON**

7. Dr Haider Ali Murad was elected Chairperson of the Workshop.

## **ADOPTION OF THE AGENDA**

8. The agenda of the Workshop was adopted as it appears in Appendix 1.

## **BACKGROUND, OBJECTIVES AND EXPECTED OUTCOMES OF THE WORKSHOP**

9. The FAO Code of Conduct for Responsible Fisheries (the Code) calls for sustainable use of aquatic ecosystems and requires that fishing be conducted with due regard for the environment. The Code also promotes the maintenance, safeguarding and conservation of biodiversity by minimizing fisheries impacts. However, there is growing concern that the combined effect of failing to manage bycatch effectively and reduce impacts from fishing is threatening the long-term sustainability of

fisheries, the maintenance of biodiversity and contributing to food insecurity, thus affecting the livelihoods on those dependent on fish resources.

10. At its sixty-sixth session, the United Nations General Assembly (UNGA) urged States, subregional and regional fisheries management organizations and arrangements and other relevant international organizations to reduce or eliminate bycatch, catch by lost or abandoned gear, fish discards and post-harvest losses, support studies and research that will reduce or eliminate bycatch of juvenile fish, and consider the development of standards for reducing or eliminating discards. In 2011, at its twenty-ninth session, the Committee on Fisheries (COFI) endorsed the International Guidelines on Bycatch Management and Reduction of Discards and recommended that FAO provide support in capacity building.

11. The extensive tropical coastal areas of the RECOFI/GCC region have supported commercial and artisanal fisheries for many decades. At the same time, some of these fisheries are characterized by high bycatch, much of which is comprised of juveniles of ecologically important and economically valuable species and which is often discarded. Moreover, excessive use of trawling in areas of fragile or vulnerable habitats may also have unwanted impacts.

12. In light of the above concerns and in response to requests from RECOFI members to reduce the impacts of fishing on the marine environment, this Workshop was arranged to develop a road map on how bycatch can be more effectively managed and how to reduce impacts of fishing on the environment. This Workshop was intended to synthesize the current knowledge on bycatch in the RECOFI/GCC region and consider priority follow-up actions.

#### **BYCATCH MANAGEMENT AND OTHER ENVIRONMENTAL ISSUES IN FISHING IN THE RECOFI REGION DISCUSSED BY WORKSHOP PARTICIPANTS**

13. Workshop participants were informed that the shrimp-directed bottom trawl fisheries have a major bycatch of fish, juvenile shrimp and other benthic organisms. Among various types of fishing, shrimp trawling is the biggest contributor with the highest ratio of bycatch to shrimp catch, 5:1 in temperate and subtropical waters and 10:1 in tropical waters (Slavin, 1982; Ye et al, 2000).<sup>1</sup> Shrimp-directed fisheries in the RECOFI region are no exception. Ayoub, Al Hussaini and Ali Al Baz (2005) suggest that up to 97 percent of Kuwait's shrimp trawler bycatch is discarded.<sup>2</sup> Kelleher (2005)<sup>3</sup> states that "the aggregate discards from shrimp fisheries (Saudi Arabia, Kuwait, Iran, Bahrain, Pakistan) total approximately 100,000 tonnes", but this is likely to be a considerable underestimate.

14. Workshop participants were informed of the results of a survey undertaken with the RECOFI Member States, the results of which are provided in Appendix 6.

15. Workshop participants identified a number of key issues, including:

- Bycatch is an important economic part of the catch in many fisheries in the region.
- As fish prices rise, increasing numbers of bycatch species will become target species.
- Regular monitoring of both bycatch and discard levels, as well as economic drivers, is important.
- Good experimental evidence of the potential of bycatch reduction devices (BRDs) in Iran (Islamic Republic of), Kuwait and Oman has been obtained, but adoption by the industry has been limited.
- There is still no clear bycatch policy, or reduction measures, at the national or regional level.

<sup>1</sup> Slavin, J.W. 1982. Utilization of shrimp bycatch. In IDRC, ed. *Fish bycatch – bonus from the sea*, pp. 21–28. Report of a Technical Consultation on Shrimp Bycatch Utilization (IDRC-198e). Ottawa.

Ye, Y., Alsaffar, A.H. & Mohammed, H.M.A. 2000. Bycatch and discards of the Kuwait shrimp fishery. *Fisheries Research*, 45: 9–19.

<sup>2</sup> Al Ayoub, Al Hussaini & Ali Al Baz. 2005. *Application of bycatch reduction devices to Kuwait's shrimp fishery*. KISR Project 2000-1207-03;

<sup>3</sup> Kelleher, K. 2005. *Discards in the world's marine fisheries. An update*. Fisheries Technical Paper 470. Rome, FAO. 152 pp.



- The ecological, commercial and socio-economic costs and benefits of BRD introduction are still largely unknown in the region.
- Most fisheries are governed by licensing and have some spatial and seasonal restrictions.
- There is little logbook or observer use in the region.
- New, non-technological techniques for bycatch management, such as real-time closures and effort control schemes, are of interest.
- There is poor participation by the fishing industry/sector in the planning, testing and implementation of various bycatch management measures.
- There is a lack of enforcement tools and capability region-wide.
- Excepting Iran (Islamic Republic of), bycatch management does not feature in any national policy directives.
- Gillnets and traps are the main contribution to abandoned, lost or otherwise discarded fishing gear (ALDFG) in the region, but longlines and hooks and lines are also lost and discarded.
- The true levels of gear losses are unknown, but likely to be considerable.
- There is little awareness of ALDFG at national management levels, so there is limited policy attention or waste disposal.

16. Discussions with representatives of different parts of the fishing industry in Kuwait indicated considerable resistance to the introduction of bycatch reduction methods on a unilateral basis, and reinforced the need for harmonized regional action across the RECOFI area in order to provide an image of equality to fishers. They also emphasized that the combination of adverse economic conditions and overfishing was leading to decreasing shrimp yields, thus increasing commercial dependence on other elements of the catch.

#### **FORMULATION OF a CONCEPT FOR A REGIONAL ACTION PLAN FOR MANAGING THE ENVIRONMENTAL IMPACTS OF FISHING IN THE RECOFI REGION**

17. Workshop participants drafted a conceptual regional action plan for managing the environmental impacts of fishing in the RECOFI region, followed by a review and acceptance of the completed inputs (Appendix 7).

18. Following discussion, participants agreed that:

- In the northern areas of the Persian Gulf, shrimp trawling is likely to be the most destructive practice; with high bycatch, high discards and potential sea bed impacts.
- In the southern areas, the fishing is mainly conducted by gillnets and traps; most bycatch has a value and is landed, with low discards (mainly undersized fish).
- There are seasonal and spatial restrictions for shrimp trawling in Bahrain, Iran (Islamic Republic of), Kuwait and the United Arab Emirates.
- There is a need to monitor bycatch species to determine which are particularly vulnerable to fishing and overexploitation, and a need to consider total effort limits, with possible limits on time at sea, which will be compensated in the longer term by increased catch per unit of effort of valuable target and bycatch species;
- ALDFG is mainly a gillnet and trap fishery problem everywhere in the RECOFI region – but is relatively short-lived in the case of wire traps (gargoor). However, traps vary in specification, fishing selectivity, etc., so there is a need for a baseline assessment of risk (e.g. loss and impact). There is also a need to focus on gillnets in coral areas and other sensitive areas.
- Gear conflicts (trawl/trap/gillnet) also require examination and possible actions such as the zoning of gear use, etc.
- Fuel consumption is not currently an issue (in terms of costs), but the disposal of oil and other polluting wastes into the Persian Gulf is a concern.

- Environmental awareness needs to be increased both for fishers and decision-makers. There is a need to find mechanisms to build responsibility and stewardship in expatriate fishers in particular.
- Habitat mapping is very important (and potentially expensive). Perhaps the priority action should be to identify key shared areas for priority mapping, and seek data and/or funding from Aramco and other large oil companies operating in the Persian Gulf.
- Government must lead planning (setting goals and objectives), but involve fishers in designing implementation mechanisms;
- Fishers and management partnerships are not a tradition in the region, but this issue is again complicated by the high number of expatriates involved;
- There is a need to develop sustainable incentives to encourage fishers to practice responsible fishing methods.

## **A REGIONAL ACTION PLAN FOR MANAGING THE ENVIRONMENTAL IMPACTS OF FISHING IN THE RECOFI REGION**

19. Participants agreed that the primary objective a regional action plan was to ensure the long-term livelihoods of those involved in the fisheries sector through the adoption of responsible fishing practices and that the plan should:

- prioritize responsible fishing through embedding the ecosystem approach to fisheries (EAF) in relevant national policies;
- minimize the impact of trawling on the sensitive habitats and reduce the impact on vulnerable species, both target and non-target;
- provide a rational approach to fleets for reducing bycatch, discards and gear loss;
- adopt a comprehensive approach that recognizes the differing environmental, economic and social conditions of the various fisheries within the region;
- raise awareness, train and incentivize stakeholders about sustainable fishing.

20. Participants agreed that the stages of the regional action plan should include as a priority: (i) regional analysis and diagnosis; (ii) action implementation; and (iii) plan consolidation phase. Full details of the stages are contained in Appendix 7.

## **ADOPTION OF THE REGIONAL ACTION PLAN CONCEPT**

21. The concept for a regional action plan for managing the environmental impacts of fishing in the RECOFI region was adopted on 12 December 2012.

## **CLOSING OF THE WORKSHOP**

22. Sincere appreciation was expressed to the Government of Kuwait for its hosting and funding of the Workshop.

## APPENDIX 1

### Prospectus and agenda

#### I. BACKGROUND AND RATIONALE

The FAO Code of Conduct for Responsible Fisheries (CCRF) calls for sustainable use of aquatic ecosystems and requires that fishing be conducted with due regard for the environment. The CCRF also promotes the maintenance, safeguarding and conservation of biodiversity by minimizing fisheries impacts. However, there is growing concern that the combined effect of failing to effectively manage bycatch and reduce impacts from fishing is threatening the long-term sustainability of fisheries, the maintenance of bio-diversity and contributing to food insecurity, thus affecting the livelihoods on those dependent on fish resources.

At the sixty-sixth session of the United Nations General Assembly (UNGA) urged States, sub-regional and regional fisheries management organizations and arrangements and other relevant international organizations to reduce or eliminate bycatch, catch by lost or abandoned gear, fish discards and post-harvest losses, support studies and research that will reduce or eliminate bycatch of juvenile fish, and consider the development of standards for reducing or eliminating discards. In 2011 at the twenty-ninth session of the Committee on Fisheries, endorsed the International Guidelines on Bycatch Management and Reduction of Discards and recommended that FAO provides support in capacity building.

The extensive tropical coastal areas of the RECOFI and GCC region have supported commercial and artisanal fisheries for many decades. At the same time, some of these fisheries are characterized by high bycatch, much of which is comprised of juveniles of ecologically important and economically valuable species and which is often discarded. Moreover, excessive use of trawling in areas of fragile or vulnerable habitats may also have unwanted impacts.

In light of the above concerns and in response to requests from RECOFI members to reduce the impacts of fishing on the marine environment, a workshop has been arranged to develop a road map on how bycatch can be more effectively managed and how to reduce impacts of fishing on the environment. This workshop will synthesize the current knowledge on bycatch in the RECOFI / GCC region and consider priority follow up actions.

#### II. OBJECTIVES

- To raise awareness among RECOFI members of the environmental, technological and economic impacts associated with bycatch and fishing impacts;
- To bring different stakeholders together to identify financial, policy and technological challenges and actions necessary to manage bycatch and introduce low impact fishing techniques;
- To develop a regional plan of action aimed at improved management of bycatch and reduction of fishing impacts in selected fisheries for submission to RECOFI through its Working Group on Fisheries Management.

#### III. WHO IS THIS WORKSHOP FOR?

This workshop will be of benefit to:

- fisheries resource managers and policy makers;
- fishing technologists, and fishery resource technicians;
- the private sector esp. artisanal & commercial fishing associations & vessel operators;
- other stakeholders interested to reduce impacts of fishing on the environment.

#### IV. WHAT WILL BE THE OUTPUTS FROM THE WORKSHOP?

As a main output the workshop will provide key recommendations to participants on environmental, technological and economic issues related to bycatch management and Low Impact Fuel Efficient fishing and future regional actions. At the end of the workshop participants will:

- Understand the interdisciplinary nature of bycatch management;
- Recognize the factors that detract from effective management of fisheries;
- Identify and consider actions at the local, national and regional levels to effectively manage bycatch and reduce fishing impacts;
- Develop a draft regional framework plan of action;
- Identify the financial (financing – co financing – in kind support), technical inputs and partnerships necessary for success.

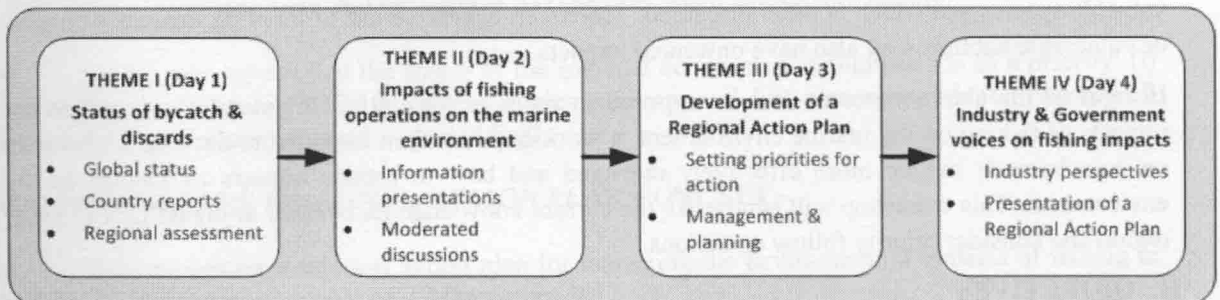
#### V. INPUTS

In collaboration with relevant fisheries institutes in the region, and FAO RECOFI, the workshop will:

- Review global trends with respect to bycatch;
- Present information on the current status of bycatch and discards in the RECOFI/GCC region;
- Receive inputs from commercial fishers, fisheries officers and administrators on managing bycatch and reducing impacts from fishing;
- Identify regional challenges related to managing bycatch and introducing low impact fishing techniques;
- Propose national and regional actions for effective management of bycatch and adoption of low impact fuel efficient fishing.

#### VI. WORKSHOP PROCESS

The workshop will be based on four sequential themes as follows:



#### VII. AGENDA AND TIMETABLE

The provisional agenda and timetable are presented overleaf.

## Provisional agenda and timetable

Time	Activity
<b>Day 1</b>	
08.30 – 09.00	Registration
09.00 – 09.20	Welcome remarks – Eng. Jassim Habib Al Bader, <b>Director-General (PAAF)</b> Address – <b>FAO RECOFI</b> Address - <b>FAO</b> Address – Dr Haider Ali Murad, <b>Deputy Director-General Fisheries Sector (PAAF)</b>
09.20 – 09.50	The global situation of bycatch and the environmental impacts of fishing and a brief introduction to the FAO guidelines on bycatch management ( <b>FAO</b> )
09.50 – 10.10	Video films showing underwater impacts of fishing ( <b>FAO</b> )
10.10 – 10.20	Group photo
10.20 – 10.40	Coffee/Tea
10.40 – 10.55	Introduction to the Workshop – Objectives and Outputs <b>FAO / RECOFI Secretariat?</b>
10.55 – 11.00	Nomination of chair ( <b>Kuwait</b> )
<b>THEME I – Status of bycatch and discards globally and in RECOFI countries</b>	
11:00 - 12:15	Country statements on the status of bycatch and discards <b>4 participating countries (15 minutes each)</b>
12.15 - 13.30	Lunch
<b>THEME I cont. – Status of bycatch and discards in RECOFI countries</b>	
13:30 – 14:50	Country statements on the status of bycatch and discards <b>4 participating countries (15 minutes each)</b>
14.50 – 15.20	Afternoon tea
15.20 – 16.40	Plenary discussion – <b>Facilitated summary of the baseline situation - what do we know about fishing impacts in the region?</b> <b>PLENARY PANEL</b>
16.40 – 17.10	Plenary discussion – <b>What are the common issues and priorities that need to be addressed in the future?</b> <b>PLENARY PANEL</b>
17.15 – 17.30	<b>Wrap-up day 1 – rapporteur</b>
<b>Day 2</b>	
<b>THEME II – The impacts of fishing operations on the environment</b>	
09.00 - 09:45	Impacts of trawling on different near shore habitats – <b>FAO</b>
09.45 - 10.15	Application of BRDs to Kuwait's Shrimp Fishery - <b>KISR</b>
10:15 – 11:00	Impacts of Abandoned, Lost or Discarded Fishing Gear ( <b>FAO+Oman and/or UAE</b> )
11.00 – 11.30	Morning tea
11.30 – 12.00	Low impact fuel efficient capture techniques - <b>FAO</b>
12.00 – 12.30	WWF Sustainable Tropical Shrimp Trawling Blueprint ( <b>Tim Huntington</b> )



Time	Activity
12.30 – 13.30	Lunch
13:30 – 14.30	FAO International Guidelines on Bycatch Management. Introduction to the guidelines and experiences of bycatch management around the world (FAO)
14.30 – 15.30	Moderated plenary discussion – <b>What are the policy signals from RECOFI member countries relating to bycatch and fishing impacts?</b>
15.30 – 16.00	Coffee/Tea
16.00 – 17.00	Moderated plenary discussion: <b>Leadership – who are the national and regional champions and what is the role of industry?</b>
17.00 – 17.15	<b>Wrap-up Day 1 – rapporteur</b>
<b>Day 3</b>	
<b>THEME III – Developing a Regional Action Plan</b>	
09.00 – 09.15	Guidance to <i>Working Groups</i> established to identify priority issues & actions. Nomination of group leaders
09.15 – 10.15	<p><b><i>Working Group 1: Bycatch – Setting priorities for action</i></b></p> <ul style="list-style-type: none"> <li>Options for bycatch management measures (technical, spatial &amp; other)</li> <li>R&amp;D needs and the role of industry</li> <li>Bycatch assessment and data collection</li> <li>Monitoring, Control &amp; Surveillance (MCS)</li> <li>Awareness and capacity development needs</li> </ul> <p><b><i>Working Group 2: Development and testing of Low Impact Fishing</i></b></p> <ul style="list-style-type: none"> <li>Future actions at local, national &amp; regional levels (technical, R&amp;D &amp; management)</li> <li>Time frame and role of industry</li> </ul>
10.15 – 10.30	Coffee/Tea
10.30 - 12.00	<b><i>Working Groups continued as before</i></b>
12.00 – 13.00	Lunch
13.00 - 14.30	<p><b><i>Working Group 1: Bycatch – Management and Planning</i></b></p> <ul style="list-style-type: none"> <li>Development of National Plans of Action for Bycatch Management</li> <li>Regional Action Planning Framework Needs (institutions and governance)</li> <li>Monitoring &amp; Evaluation (inc. risk &amp; impact assessments)</li> <li>Roadmap and time lines</li> </ul> <p><b><i>Working Group 2: Development and testing of Low Impact Fishing</i></b></p> <ul style="list-style-type: none"> <li>Future actions at local, national &amp; regional levels</li> <li>Time frame and role of industry</li> </ul>
14.30 – 15.00	Coffee/Tea
15.00 – 16.00	<b><i>Working Groups continued as before</i></b>
16.00 - 16.30	Presentations of <b>Working Group</b> results (Priorities and actions)
16.30 - 17.30	<b>Development of the elements of a Regional Action Plan on Bycatch Management in the RECOFI Region</b>

Time	Activity
<b>Day 4</b>	
<b>THEME IV – Industry – Government voices on fishing impacts</b>	
09.00 – 09.15	Introduction on the importance of industry – government discussion forums
09.15 - 09.45	An artisanal fishers perspective of bycatch and fishing impacts (in Arabic) – <b>TBA</b>
09.45 – 10.00	A industrial fishers perspective of bycatch and fishing impacts (in Arabic) – <b>TBA</b>
10.00 – 10.30	Video films showing underwater impacts of fishing (FAO)
10.30 – 11:00	Coffee/Tea
11.00 - 12.00	Presentation and discussion of the <b>Regional Action Plan</b>
12.00 – 13.00	Lunch
13.00 – 16.00	Field visit to fishing port and vessels
16.00 – 16.30	Closing ceremony

## APPENDIX 2

### List of participants

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