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Strategic Ecosystem Management of the Red Sea and Gulf of Aden Project

Draft Final Report

REVIEW OF LEGISLATION, STRATEGIES, POLICIES AND MANAGEMENT PLANS FOR FISHERIES SECTORS IN PERSGA COUNTRIES

-
Yemen

-
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March 2015



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Cover illustration: Fisherman with catch near Hodeida on the Red

Photograph taken by: FAOW. Gartung

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Please do not print unnecessarily and use paper and ink responsibly.

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Abbreviations/Acronyms

Acronym	Title
CBA	Culture-Based Aquaculture
CBD	Convention on Biological Diversity
CEF	Global Environment Facility
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)
CZM	Coastal Zone Management
EEZ	Exclusive economic zone
EPA	Environmental Protection Authority
EPL	Environmental Protection Law
FAO	Food and Agricultural Organisation of the United Nations
GEF	Global Environment Facility
HPZ	High Potential Zones
IUCN	International Union for Conservation of Nature
IUU	Illegal, unreported and unregulated Fishing
MAA	Maritime Affairs Authority
MCS	Monitoring, control and surveillance
MFW	Ministry of Fish Wealth
MMA	Marine Management Area
MPA	Marine Protected Area
MRC	Marine Research Center
MSA	Ministry of Social Affairs
NBSAP	National Biodiversity Strategy and Action Plan
NFS	National Fisheries Strategy
PA	Protected Area
PCU	Project Coordination Unit
PERSGA	Programme for the Environment of the Red Sea and Gulf of Aden
PFP	Public Funds Prosecution
SEAFDEC	The Southeast Asian Fisheries Development Center
SEM	Strategic Ecosystem Management
ToR	Terms of Reference
TURF	Territorial Use Rights in Fishing
UN	United Nations
UNDP	United Nations Development Programme
VMS	Vessel monitoring system
WB	World Bank
WEM	Ministry of Water and the Environment

Glossary

Biological diversity "means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems." Article 2 UN (1992) Convention on Biological Biodiversity with Annexes. Concluded at Rio de Janeiro on 5th June 1992. <http://www.cbd.int/doc/legal/cbd-un-en.pdf>. PERSGA MPAs protocol has the same definition.

Biological resources": includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential value for humanity". Article 2.12: PERSGA (2005). The Protocol Concerning the Conservation of Biological diversity and the Establishment of a Network of Protected Areas the Red Sea and Gulf of Aden. PERSGA.

Catch shares (Quota and TURFs): "Under quota-base catch shares, managers establish a fishery-wide catch limit and assign portions of the allowed catch or shares, to participants. Area-based catch shares, often called Territorial Use Rights for Fishing (TURFs), allocate secure and exclusive privileges to fish in specified areas¹". See definition of TURFs below.

Co-management: "a situation in which two or more social actors negotiate, define and guarantee amongst themselves a fair sharing of the management functions, entitlements and responsibilities for a given territory, area or set of natural re-source". Borrini-Feyerabend, G., Farvar, M. T., Nguingiri, J. C. & Ndangang, V. A., (2000). Co-management of Natural Resources: Organising, Negotiating and Learning-by-Doing. GTZ and IUCN, Kasperek Verlag, Heidelberg (Germany). <http://learningforsustainability.net/pubs/cmnr.htm>.

Mariculture: Cultivation, management and harvesting of marine organisms in the sea, in specially constructed rearing facilities e.g. cages, pens and long-lines. For the purpose of FAO statistics, mariculture refers to cultivation of the end product in seawater even though earlier stages in the life cycle of the concerned aquatic organisms may be cultured in brackish water or freshwater or captured from the wild. FAO (2014). FAO Fisheries Glossary. [Http://www.fao.org/fi/glossary/default.asp](http://www.fao.org/fi/glossary/default.asp)

Protected area: "A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values". Dudley, N. (Editor) (2008). Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86pp. <http://data.iucn.org/dbtw-wpd/edocs/PAPS-016.pdf>. PERSGA MPAs protocol defines "Protected area": means a geographically defined coastal and marine areas that are designated or regulated and managed to achieve specific conservation objectives".

Refugia: "Spatially and geographically defined, marine or coastal areas in which specific management measures are applied to sustain important species [fisheries resources] during critical stages of their lifecycle, for their sustainable use." SEAFDEC. 2006. Supplementary Guidelines on Co-management using Group User Rights, Fishery Statistics, Indicators and

¹ http://catchshares.edf.org/sites/catchshares.edf.org/files/What_is_a_Catch_Share.pdf

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Fisheries Refugia, Southeast Asian Fisheries Development Center, Bangkok, Thailand. 84 pp.
www.unepscs.org/SCS_Documents/startdown/484.html

Territorial Use Rights for Fisheries (TURFs): programs that allocate the right to harvest a secure area to an individual, group, or community².

DRAFT

²MEAM (2014). Marine Ecosystems and Management. International news and analysis on marine ecosystem-based management. Vol. 7, No. 3. Pp. 8. December 2013-January 2014. <http://depts.washington.edu/meam/MEAM34.pdf>

Contents

Author’s Acknowledgements.....	3
Revisions.....	3
Abbreviations/Acronyms	4
Glossary	5
EXECUTIVE SUMMARY	8
1. BACKGROUND	14
2. METHOD	14
3. RESULTS	15
3.1 Legal framework.....	15
3.2 Policy framework.....	18
3.3 Co-management schemes.....	20
3.4 Stakeholder registration	21
3.4.1 Stakeholder example.....	24
3.4.2 Stakeholder example.....	25
4. DISCUSSION AND RECOMMENDATIONS.....	26
APPENDIX I: CONSULTANT TERMS OF REFERENCE.....	30
APPENDIX II: CONSULTANT ITINERARY.....	36
APPENDIX III: TEMPLATES.....	39
III.1 National level Acts.....	39
III.2 National level Policies	42
III.3 Operational co-management practices.....	45
III.4 Potential co-management practices.....	49
III.5 Stakeholder registration	53
APPENDIX IV: BIBLIOGRAPHY/REFERENCES.....	58
APPENDIX V: PROTECTED COASTAL AND MARINE SPECIES	60
APPENDIX VI: PROPOSED PROTECTED COASTAL AND MARINE SPECIES	61
APPENDIX VII: STAKEHOLDER PRINCIPAL LIVELIHOODS	62
APPENDIX VIII: STAKEHOLDER QUALITY OF LIFE.....	64

EXECUTIVE SUMMARY

This report, analyses legislation, policies, strategies and plans for fisheries that exist and are in force in Yemen. The report then uses this analysis to propose revisions to strengthen the use of the “code of conduct” and “ecosystem approach” to fisheries to deliver socially, economically and environmentally sustainable fisheries. A key possible tool in delivering the “code of conduct” and “the “ecosystem approach” is co-management³.

There is little evidence of, or legal and policy support for, co-management of fisheries in Yemen. This is unfortunate since both the “code of conduct” and “ecosystem approach” recommend its use. The need for, and the opportunities and constraints to, delivering fisheries co-management in Yemen are presented below.

BACKGROUND AND METHOD

The following provides a review of legislative, strategy, policy and management opportunities and constraints to fisheries related **co-management** of coastal and marine **biological resources**⁴ in Yemen in coastal and marine **biodiversity**⁵ **protected areas**⁶, **fisheries refugia**⁷, outside these areas and in an international context. The review is in the context of the Strategic Ecosystem Management of the Red Sea (SEM) Project which has a focus on coastal and marine protected areas.

Laws, policies, and management practices, in respect of the co-management of coastal and marine biological resources with a focus on fisheries, were reviewed. The review uses data

³“a situation in which two or more social actors negotiate, define and guarantee amongst themselves a fair sharing of the management functions, entitlements and responsibilities for a given territory, area or set of natural re-source”. Borrini-Feyerabend, G., Farvar, M. T., Nguingui, J. C. &Ndangang, V. A., (2000). Co-management of Natural Resources: Organising, Negotiating and Learning-by-Doing. GTZ and IUCN, KasperekVerlag, Heidelberg (Germany). <http://learningforsustainability.net/pubs/cmnr.html>

⁴**Biological resources**: includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential value for humanity”. Article 2.12: PERSGA (2005). The Protocol Concerning the Conservation of Biological diversity and the Establishment of a Network of Protected Areas the Red Sea and Gulf of Aden. PERSGA.

⁵“Biological diversity “means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.” Article 2 UN (1992) Convention on Biological Biodiversity with Annexes. Concluded at Rio de Janeiro on 5th June 1992.

<http://www.cbd.int/doc/legal/cbd-un-en.pdf>. PERSGA MPAs protocol has the same definition.

⁶“A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values”. Dudley, N. (Editor) (2008). Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86pp. <http://data.iucn.org/dbtw-wpd/edocs/PAPS-016.pdf>. PERSGA MPAs protocol defines “Protected area”: a geographically defined coastal and marine areas that are designated or regulated and managed to achieve specific conservation objectives”.

⁷“Spatially and geographically defined, marine or coastal areas in which specific management measures are applied to sustain important species [fisheries resources] during critical stages of their lifecycle, for their sustainable use.”SEAFDEC. 2006. Supplementary Guidelines on Co-management using Group User Rights, Fishery Statistics, Indicators and Fisheries Refugia, Southeast Asian Fisheries Development Center, Bangkok, Thailand. 84 pp. www.unepscs.org/SCS_Documents/startdown/484.html

collected using methods presented and agreed at a workshop held at the PERSGA headquarters in Jeddah held from 10th to 12th November 2014.

LEGAL REVIEW

The legal review indicates that there are 3 coastal and marine protected areas **primarily** declared for **biodiversity** protection within Yemen.

The legal review indicates that there are no coastal and marine protected areas **primarily** declared as fisheries refugia and no legal basis for the designation of areas as fisheries refugia.

Fishing is not allowed in coastal and marine protected areas primarily designated for biodiversity conservation. There is no legal basis for designation of fisheries refugia. Fishing is allowed for licensed Yemeni fishers outside protected areas. Any Yemeni national is eligible for a license and there is no quota for the number of licenses that are issued⁸.

Fishing by foreign nationals is allowed in the exclusive economic zone of Yemen. There is a fishing quota system for foreign nationals⁹. There is no clear legal basis for allowing Yemeni nationals to fish outside the exclusive economic zone of Yemen.

There is no legal basis for allowing **Mariculture** in coastal and marine protected areas primarily designated for biodiversity conservation. Mariculture is allowed outside coastal and marine biodiversity protection areas in Yemen.

Mangrove use is not allowed in coastal and marine protected areas primarily designated for biodiversity conservation. In general, mangrove use is not allowed throughout the coastal areas of Yemen.

Key marine species: Key coastal and marine species protected throughout the coastal and marine areas of Yemen include dugong (sea-cows), whales and dolphin (all), marine turtles, marine turtle eggs, corals and mangrove. Sharks are **not** protected.

The agency primarily responsible for managing coastal and marine biodiversity protected areas is the Environmental Protection Authority (EPA) on behalf of Water & Environmental Ministry (WEM). The agency primarily responsible for fisheries is the Ministry of Fish wealth (MFW), for mangrove it is Environmental Protection Authority (EPA) and for social welfare and development it is the Ministry of Social Affairs (MSA). The agency responsible for international fisheries matters (foreign nationals fishing in EEZ and nationals fishing outside the EEZ of Yemen is the Ministry of Fish wealth (MFW).

POLICY REVIEW

If there is no legal basis then policy documents may signal the intention, or propose to change, the law. The following provides a summary of any relevant policies proposing to change the current law.

⁸Prime Minister's decree No. 124 of 2009 on the Regulation of Artisanal Fishing

⁹Law No. 2 of 2006 Article 11 and its Executive Regulations

The policy review indicates that there are policies relating to the recognition of coastal and marine protected areas **primarily** declared for **biodiversity** protection within Yemen.

Part of the Kamaran area was legally designated in 2009. There has been no progress in designating the other protected areas proposed in 2005 because of the absence of proper management mechanisms and the lack of human and financial resources in Yemen. It is understood that there have been no further policy recommendations following those made in 2005 for any additional coastal and marine protected areas.

The policy review indicates that there are no plans to develop legislation to designate **fisheries refugia**, or to designate coastal and marine areas as fisheries refugia, in Yemen.

There are no policies proposed to change the current legal arrangements for fishing in coastal and marine protected areas. There is no evidence of a change in current policy so as to restrict the number of fishing licenses issued to Yemeni nationals through a quota system. There is no evidence of a change in policy to change the arrangements allowing fishing by foreign nationals in the exclusive economic zone of Yemen. There are no policies proposed to introduce legislation specifying the rights of Yemeni fishers to fish outside the exclusive economic zone of Yemen.

There are no policies proposed to allow **mariculture** in coastal and marine protected areas primarily designated for biodiversity conservation. The legal and policy status regarding fisheries refugia is unclear generally let alone with respect to mariculture. The policy, in the 2012-2025 National Fisheries Strategy towards mariculture, outside of protected areas, is to identify High Potential Zones (HPZs) in spatial planning as well the strengthening the aquaculture initiatives in the sector. The policy is also to issue an effective regulatory framework for aquaculture and to solicit regional and international collaboration to deliver environmentally-friendly aquaculture. However, there is no evidence for significant implementation of these policies.

The existing legislation does not allow the use of **mangrove** in Yemen. There is no evidence, from the policy documents reviewed, that there is any intention to change this legislation.

A number of species are already legally protected throughout the coastal and marine area of Yemen. There are no plans to revise the list.

There is no evidence for any policy to change the agency mandates for managing coastal and marine biodiversity protected areas, fisheries, mangrove, or social welfare and development. There is no evidence for any policy to change the agency responsible for international fisheries matters.

CO-MANAGEMENT

There is no legal basis for co-management and only limited legal policy guidance supporting co-management in Yemen

This review was unable to identify any example of **operational**, or **potential** co-management schemes involving coastal and marine biological resources anywhere in Yemen.

The reasons for this are that the existing legal framework does not support co-management and there are no policies to facilitate co-management. In fact it will probably be very difficult to implement co-management, other than voluntary co-management, unless legislation is introduced to restrict fishing licences to Yemeni nationals, in addition to foreign nationals, through a system of license quotas.

STAKEHOLDER REGISTRATION

Identification (registration) and objective participation of stakeholders in the management and use of coastal and marine biological resources is central to effective co-management and compliance with the FAO “*Code of Conduct for responsible fisheries*” and the CBD “*Ecosystem Approach*”. This review, therefore, included interviews with a number of key stakeholders concerning livelihoods and quality of life.

Of the 25 stakeholders interviewed all were male. Females were not interviewed because the participation of women in fisheries sector operations in Yemen is very limited. Rural women are excluded from participation in community-level natural resource management initiatives, so it is very difficult to make an interviewee with women in the public areas. The current custom in Yemeni villages is that women are not allowed to meet males who are not relatives.

Of the 25 stakeholders interviewed, none were involved in any **operational** co-management schemes or **potential** co-management schemes using coastal and marine biological resources.

All 25 interviewees (83 % of livelihoods) identified national fishing as a significant livelihood. 3 interviewees (10 %) identified international fishing as a significant additional livelihood. 2 interviewees (7%) identified other livelihoods as significant. These two other livelihoods were teacher and boat driver respectively.

Significant livelihood concerns relating to fishing are:

- Availability of stock,
- Difficulty of fishing during windy season and lack of alternative livelihood
- Illegal fishing, the absence of effective monitoring, control, and surveillance activities
- Increased fishing costs (e.g. high Diesel prices) and the conflicts among Industrial vs. Artisanal fishing; has affect the quality of life and community development
- Lack of limited services and facilities at landing centers and many places even does not have landing platform

The results from the interviews concerning quality of life indicators are that 9 stakeholders have a refrigerator whilst 16 do not. In respect of drinking water 5 have a secure drinking water supply whilst 20 do not.

All stakeholders have primary health care within 4km of their residence. One is at 4km, one at 30 m and the others are between these distances (mean distance 1km). All stakeholders

have primary education within 2km of their residence. Two are 2km away, one is 60m away and the others are between these distances (mean distance 650m).

All the stakeholders use gas as their main source of cooking fuel. 6 stakeholders rarely use mangrove and 5 stakeholders rarely use other wood when the gas is not available.

19 stakeholders had eaten marine animals within the last day. 1 stakeholder had last eaten marine animals 22 days before and the others were between these days with 2 eating marine animals before 7 days, 1 before 3 days and 2 before 2 days.

What is not evident from these interviews is that, whilst primary health care and primary education are close by, these services lack the most basic requirements. The table also does not show the large number of stakeholder dependents and the very low income of the stakeholders. The survey needs to be made more comprehensive in respect of evaluating poverty indicators.

Key conclusions concerning quality of life are:

- The poverty level in Fisher communities is high
- Fisher's communities lack most of the basic services. The main deficiency is the availability of drinking water. There is no public system of water supply connection to the houses of most fishers Villages including Kamaran Island. Because of this deficiency the people spend most of their savings to get drinking water.
- The Fisher communities also lack electrical power and this is a particular problem in the summer when the temperature is very high.
- Limited awareness among fishing communities (e.g. marine conservation, protection, alternative livelihoods, etc.)
- Lack of security and safety services for fishermen (e.g. on-board health, safety and insurance, disaster preparedness and management)
- The fisher communities suffer a lot during the windy season because fishing is difficult and the fishers have no alternative livelihoods.

DISCUSSION AND RECOMMENDATIONS

A significant finding of the research supporting this review is the extreme poverty faced by fisher communities. It is important that government and donors are made aware of this situation to support advocacy to mobilise resources to alleviate this poverty.

A key constraint to the introduction of co-management in the fisheries sector is the lack of a legal mechanism to restrict fishing licences using a quota system.

It is therefore **recommended** that a proposal be considered to change legislation to enable a quota system for licenses and, where relevant, to make co-management a condition of the use of those licenses that are issued.

The review also raises a number of other issues and recommendations relating to the management of coastal and marine resources that are listed in the main report. These include the need to request that PERSGA take a lead role in facilitating the coordination between the

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countries of the region to deliver sustainable use of shared and transboundary biological resources, to minimise illegal, unreported and unregulated (IUU) fishing and to alleviate poverty where this can be achieved through the sustainable use of these biological resources.

DRAFT

1. BACKGROUND

The following provides a review of legislative, strategy, policy and management opportunities and constraints to fisheries related **co-management** of coastal and marine **biological resources**¹⁰ in Yemen in coastal and marine **biodiversity**¹¹ **protected areas**¹², **fisheries refugia**¹³ and in an international context. The review is in the context of the Strategic Ecosystem Management of the Red Sea (SEM) Project which has a focus on coastal and marine protected areas.

2. METHOD

Laws, policies, and management practices, in respect of the co-management of coastal and marine biological resources with a focus on fisheries, were reviewed. The review uses data collected using methods presented and agreed at a workshop held at the PERSGA headquarters in Jeddah held from 10th to 12th November 2014. The methodology comprised interviews, site visits and the completion of a number of templates. The Terms of Reference (ToR) for this assignment are presented is provided as Appendix I. The consultants' itinerary is provided as Appendix II. The templates used are tabled as follows and are provided in Appendix III:

No	Template	Reason
1	National level Acts supporting co-management	Is there a legal chain of custody for co-management from National level Acts?
2	National level policies supporting co-management	Are there clear national level policies designed to support co-management practices particularly in recognition of the Ecosystem Approach and the Code of Conduct for Responsible Fisheries?
3	Register of co-management/other practices	Examples of operational co-management practices relating to use of coastal and marine biological resources.

¹⁰**Biological resources**: includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential value for humanity". Article 2.12: PERSGA (2005). The Protocol Concerning the Conservation of Biological diversity and the Establishment of a Network of Protected Areas the Red Sea and Gulf of Aden. PERSGA.

¹¹"Biological diversity "means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems." Article 2 UN (1992) Convention on Biological Biodiversity with Annexes. Concluded at Rio de Janeiro on 5th June 1992 <http://www.cbd.int/doc/legal/cbd-un-en.pdf>. PERSGA MPAs protocol has the same definition.

¹²"A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values". Dudley, N. (Editor) (2008). Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86pp. <http://data.iucn.org/dbtw-wpd/edocs/PAPS-016.pdf>. PERSGA MPAs protocol defines "Protected area": means a geographically defined coastal and marine areas that are designated or regulated and managed to achieve specific conservation objectives".

¹³"Spatially and geographically defined, marine or coastal areas in which specific management measures are applied to sustain important species [fisheries resources] during critical stages of their lifecycle, for their sustainable use."SEAFDEC. 2006. Supplementary Guidelines on Co-management using Group User Rights, Fishery Statistics, Indicators and Fisheries Refugia, Southeast Asian Fisheries Development Center, Bangkok, Thailand. 84 pp. www.unepscs.org/SCS_Documents/startdown/484.html

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4	Proposed co-management agreements	Examples of possible co-management agreements relating to use of coastal and marine biological resources.
5	Stakeholder registration	Registration of actual and possible co-management stakeholders relating to use of coastal and marine biological resources.

The list of documents consulted is provided at appendix IV.

Electronic copies of templates completed and referenced documents are provided, where available, on a CD-Rom available from the consultant and PERSGA.

3. RESULTS

3.1 Legal framework

Documents supporting the legal review are listed in Appendix IV and are provided digitally.

The legal review indicates that there are three coastal and marine protected areas **primarily** declared for **biodiversity** protection within Yemen.

Protected area name	Yes/No/?	Law/regulation
Socotra	Yes	Presidential Decree no. 275 of year 2000 – Conservation Zoning Plan of Socotra Islands, Yemen
Aden Wetland	Yes	Prime Minister's decree No. 249 of 2008 concerning the declaration the establishment and management of nature reserves of Wetlands in Aden
North Kamaran Island	Yes	Prime Minister Decree No (310) of 2009 Concerning the Declaration of Establishing and Managing a Natural Protected Area North Kamaran Island, Hodeida Governorate

The legal review indicates that there are no coastal and marine protected areas **primarily** declared as fisheries refugia and no legal basis for the designation of areas as fisheries refugia.

Refugia name*	Yes/No/?	Law/regulation
None	No	None

*Certain biodiversity protection areas could also have a role as refugia if their management is compatible with both designations.

Fishing is not allowed in coastal and marine protected areas primarily designated for biodiversity conservation. There is no legal basis for designation of fisheries refugia. Fishing is allowed for licensed Yemeni fishers outside protected areas. Any Yemeni national is eligible for a license and there is no quota for the number of licenses that are issued¹⁴.

¹⁴Prime Minister's decree No. 124 of 2009 on the Regulation of Artisanal Fishing

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Fishing by foreign nationals is allowed in the exclusive economic zone of Yemen. There is a fishing quota system for foreign nationals¹⁵. There is no clear legal basis for allowing Yemeni nationals to fish outside the exclusive economic zone of Yemen.

Fishing allowed?	Yes/No/?	Law/regulation
Coastal and marine PAs	No	<ul style="list-style-type: none"> Environmental Protection Law No. 26 of 1995 Prime Minister Decree No (310) of 2009 Concerning the Declaration of Establishing and Managing a Natural Protected Area North Kamaran Island, Hodeida Governorate (Article 12.4)
Outside coastal and marine PAs	Yes	<ul style="list-style-type: none"> Law No 2 of 2006 Concerning organization of catching, exploiting and protecting marine creature
Coastal and marine refugia	?	<ul style="list-style-type: none"> There is no clear definition of coastal and marine refugia in the legislation
Foreign nationals	Yes	<ul style="list-style-type: none"> Law No. 147 of 1995 re-regulating the Ministry of Fish Wealth Law No 2 of 2006 Concerning organization of catching, exploiting and protecting marine creature
Nationals outside EEZ	?	<ul style="list-style-type: none"> Law No. 147 of 1995 re-regulating the Ministry of Fish Wealth

Mariculture is not allowed in coastal and marine protected areas primarily designated for biodiversity conservation. Mariculture is allowed outside coastal and marine biodiversity protection areas in Yemen.

Mariculture allowed?	Yes/No/?	Law/regulation
Coastal and marine PAs	No	<ul style="list-style-type: none"> There is no clear legal framework that allows Mariculture in coastal and marine protected areas
Coastal and marine refugia	No	<ul style="list-style-type: none"> There is no legal basis for declaring fisheries refugia in Yemen and so no indication as to whether mariculture would be allowed in such areas if they were to be declared
Outside coastal and marine PAs within the EEZ	Yes	<ul style="list-style-type: none"> Law No 2 of 2006 Concerning organization of catching, exploiting and protecting marine creature

Mangrove use is **not** allowed in coastal and marine protected areas primarily designated for biodiversity conservation. In general, mangrove use is not allowed throughout the coastal areas of Yemen¹⁶.

Mangrove use allowed?	Yes/No/?	Law/regulation
Coastal and marine PAs	No	<ul style="list-style-type: none"> Prime Minister Decree No (310) of 2009 Concerning the Declaration of Establishing and Managing a Natural Protected Area North Kamaran Island, Hodeida Governorate Law No. 72 of 2010 concerning the National Plan for the Integrated Coastal Zone Management in the Republic of Yemen
Other areas?	No	<ul style="list-style-type: none"> Law No. 72 of 2010 concerning the National Plan for the

¹⁵ Law No. 2 of 2006 Article 11 and its Executive Regulations

¹⁶ Law No. 72 of 2010 concerning the National Plan for the Integrated Coastal Zone Management in the Republic of Yemen banning mangrove use throughout the Yemen

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		Integrated Coastal Zone Management in the Republic of Yemen
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The coastal and marine species that are currently protected against exploitation **throughout** the coastal and marine areas of Yemen are listed in Appendix V. The table below indicates which of the following species/groups are (yes), or, are not (no) protected or if their protection status is unknown (?):

Species/group	Yes/No/?	Law/regulation reference including year
Dugong ¹⁷	Yes	<ul style="list-style-type: none"> Law No 2 of 2006 Concerning organization of catching, exploiting and protecting marine creature
Whales and dolphin (all) ¹⁸	Yes	<ul style="list-style-type: none"> Law No 2 of 2006 Concerning organization of catching, exploiting and protecting marine creature
Marine turtle ¹⁹	Yes	<ul style="list-style-type: none"> Law No 2 of 2006 Concerning organization of catching, exploiting and protecting marine creature
Marine turtle eggs ²⁰	Yes	<ul style="list-style-type: none"> Law No 2 of 2006 Concerning organization of catching, exploiting and protecting marine creature
Humphead wrasse	No	<ul style="list-style-type: none"> Humphead wrasse (<i>Cheilinus undulatus</i>) is not mentioned in any of the laws that were reviewed.
Shark (all) ²¹	No	<ul style="list-style-type: none"> Law No. 35 of 1998 on the Regulation for the exportation of fish and marine products
Whale shark	No	Whale shark are not mentioned in any of the laws that were reviewed. It needs to be determined whether whale shark are viewed as shark for the purpose of the regulations.
Manta ray	No	Manta ray are not mentioned in any of the laws that were reviewed. It needs to be determined whether manta ray are viewed as shark for the purpose of the regulations.
Coral ²²	Yes	<ul style="list-style-type: none"> Law No 2 of 2006 Concerning organization of catching, exploiting and protecting marine creature Law No. 72 of 2010 concerning the National Plan for the Integrated Coastal Zone Management in the Republic of Yemen
Mangrove ²³	Yes	<ul style="list-style-type: none"> Law No (310) of 2009 Concerning the Declaration of

¹⁷Article (52)“It is not permissible for any natural or corporate body to catch whales, sea mammals or turtles or to use their ovules, except those meant for scientific research by permission of the Ministry”. The article did not mention directly the Dugong but contained all sea mammals and Dugong part of this group.

¹⁸ Article (52) It is not permissible for any natural or corporate body to catch whales, sea mammals or turtles or to use their ovules, except those meant for scientific research by permission of the Ministry

¹⁹See Article (52) of Law No 2 of 2006

²⁰See Article (52) of Law No 2 of 2006

²¹Article 19 of Law No. 35 of 1998, indicated that the export of shark fins can be done only through the General Organization for services and fish marketing which is the only authorized to collect and pick it up and market it locally and abroad.

²² Article (52) It is not permissible for any natural or corporate body to uproot, cut or destroy sea weeds or coral reef of different types and species

²³Article (12) of Law No (310) of 2009:It is prohibited to exercise any activity or works in the Protected Area that may lead to damage or harm the natural environment or cause harm to the marine or land life or value, specially, the oppressive grazing, in the Core Zone and the Buffer Zone, which is in conflict with the specific instructions in the management plan of the Protected Area or the plan which issued by the administrative body. And oppressive gathering of firewood or harming the trees or any plants in conflict with the instructions in the administration plan of the Protected Area or that issued by the administrative body

Also, article (27) of Law No. 72 of 2010, Paragraph 22 contains a lot of details about mangrove conservation, including the imposition of a fine on any person who causes damage to mangroves in any area

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		Establishing and Managing a Natural Protected Area North Kamaran Island, Hodeida Governorate. <ul style="list-style-type: none"> • Law No. 72 of 2010 concerning the National Plan for the Integrated Coastal Zone Management in the Republic of Yemen
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The agency primarily responsible for managing coastal and marine biodiversity protected areas is the Environmental Protection Authority (EPA) on behalf of Water & Environmental Ministry (WEM). The agency primarily responsible for fisheries is the Ministry of Fish wealth (MFW), for mangrove it is Environmental Protection Authority (EPA) and for social welfare and development it is the Ministry of Social Affairs (MSA). The agency responsible for international fisheries matters (foreign nationals fishing in EEZ and nationals fishing outside the EEZ of Yemen) is the Ministry of Fish wealth (MFW).

3.2 Policy framework

If there is no legal basis then policy documents may signal the intention, or propose to change, the law. The following provides a summary of any relevant policies proposing to change the current law.

Documents supporting the policy review are listed in Appendix VI and are provided digitally.

The policy review indicates that there are policies relating to the recognition of coastal and marine protected areas **primarily** declared for **biodiversity** protection within Yemen. The following areas were proposed for protection in the NBSAP of 2005.

Proposed protected area policy change?	Yes/No/?	Policy document name and year
Sikha Island	Yes	National Biodiversity Strategy and Action Plan, 2005
Jethmun-Sharma	Yes	National Biodiversity Strategy and Action Plan, 2005
Al-Lohayah	Yes	National Biodiversity Strategy and Action Plan, 2005
Kamaran*	Yes	National Biodiversity Strategy and Action Plan, 2005

*Declared in 2009

Part of the Kamaran area was legally designated in 2009. There has been no progress in designating the other protected areas proposed in 2005 because of the absence of proper management mechanisms and the lack of human and financial resources in Yemen. It is understood that there have been no further policy recommendations following those made in 2005 for any additional coastal and marine protected areas.

The policy review indicates that there are no plans to develop legislation to designate **fisheries refugia** or to designate coastal and marine areas as fisheries refugia in Yemen.

Proposed refugia policy change*	Yes/No/?	Policy document name and year
None	No	There is no policy framework proposing areas primarily as fisheries refugia in Yemen.

There are no policies proposed to change the current legal arrangements for fishing in coastal and marine protected areas including a change to support fishing licence restrictions using a quota system. There is no evidence of a change in current policy that allows fishing by foreign nationals in the exclusive economic zone of Yemen. There are no policies proposed to introduce legislation specifying the rights of Yemeni fishers to fish outside the exclusive economic zone of Yemen.

Fishing allowed policy change?	Yes/No/?	Policy document name and year
Coastal and marine PAs	No	There is no proposal to change the policy to allow fishing in Coastal and Marine PAs.
Coastal and marine refugia	No	There is no specification of coastal and marine refugia in the policies
Outside PAs	No	No policy to limit licenses is proposed.
Foreign nationals	No	No change proposed National Fisheries Strategy (2012-2025), 2012
Nationals outside EEZ	No	National Fisheries Strategy (2012-2025), 2012

There are no policies proposed to allow **mariculture** in coastal and marine protected areas primarily designated for biodiversity conservation. The legal and policy status regarding fisheries refugia is unclear generally let alone with respect to mariculture. The policy, in the 2012-2025 National Fisheries Strategy towards mariculture, outside of protected areas, is to identify High Potential Zones (HPZs) in spatial planning as well the strengthening the aquaculture initiatives in the sector. The policy is also to issue an effective regulatory framework for aquaculture and to solicit regional and international collaboration to deliver environmentally-friendly aquaculture. However, there is no evidence for significant implementation of these policies.

Mariculture allowed policy change?	Yes/No/?	Policy document name and year
Coastal and marine PAs	No	National Fisheries Strategy (2012-2025), 2012
Coastal and marine refugia	No	There is no policy framework proposing areas primarily as fisheries refugia in Yemen and so no indication as to whether mariculture would be allowed in such areas if they were to be declared
Other areas	Yes	National Fisheries Strategy (2012-2025), 2012

The existing legislation does not allow the use of **mangrove** in Yemen. There is no evidence, from the policy documents reviewed, that there is any intention to change this legislation.

Mangrove use policy change?	Yes/No/?	Policy document name and year
Coastal and marine PAs	No	National Biodiversity Strategy and Action Plan, 2005
Outside coastal and marine PAs	No	National Biodiversity Strategy and Action Plan, 2005

The coastal and marine species that are currently legally protected against exploitation **throughout** the coastal and marine areas of Yemen are listed above. The table below indicates which of the following species/groups are (yes), or, are not (no) proposed to be protected or if the status of any proposals is unknown (?).

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Species/group protection policy change?	Yes/No/?	Policy document, name and year
Dugong	No	Already legally protected as a “mammal”. No change in policy regarding status proposed.
Whales and dolphin (all)	No	Already legally protected. No change in policy regarding status proposed
Marine turtle	No	Already legally protected. No change in policy regarding status proposed
Marine turtle eggs	No	Already legally protected. No change in policy regarding status proposed.
Humphead wrasse ²⁴	No	No policy evident
Shark (all/some)	Yes	National Biodiversity Strategy and Action Plan, 2005 states “ <i>Enforce fishery legislation to halt catching sharks.... by nets</i> ”. In fact there is no existing legislation banning net fishing by sharks so enforcement will require legislation to be put in place
Whale shark	No	Needs to be determined whether whale shark are viewed as shark in respect of policy.
Manta ray	No	Needs to be determined whether manta ray are viewed as shark in respect of policy.
Coral	No	Already legally protected. No change in policy regarding status proposed
Mangrove	No	Already legally protected. No change in policy regarding status proposed.

There is no evidence for any policy to change the agency mandates for managing coastal and marine biodiversity protected areas, fisheries, mangrove, or social welfare and development. There is no evidence for any policy to change the agency responsible for international fisheries matters.

3.3 Co-management schemes

There is no legal basis for co-management and only limited legal policy guidance supporting co-management in Yemen. There is only brief reference to co-management in the National Fisheries Strategy (NSF). Programme-8 of this strategy states that “*this component will scale up community-based fisheries management initiatives by restoring habitats and productivity through pilot co-management programs based on stronger resource access rights for communities*”.

This review was unable to identify any example of **operational**, or **potential** co-management schemes involving coastal and marine biological resources anywhere in Yemen.

The reasons for this are that the existing legal framework does not support co-management and there are no policies to facilitate co-management. In fact it will probably be very difficult to implement co-management, other than voluntary co-management, unless legislation is introduced to restrict fishing licences to Yemeni nationals, in addition to foreign nationals, through a system of license quotas.

²⁴*Cheilinus undulatus*

3.4 Stakeholder registration

Identification (registration) and objective participation of stakeholders in the management and use of coastal and marine biological resources is central to effective co-management and compliance with the FAO “Code of Conduct for responsible fisheries” and the CBD “Ecosystem Approach”. This review, therefore, included interviews with a number of key stakeholders concerning livelihoods and quality of life.

Of the 25 stakeholders interviewed all were male. Females were not interviewed because the participation of women in fisheries sector operations in Yemen is very limited. Rural women are excluded from participation in community-level natural resource management initiatives, so it is very difficult to make an interviewee with women in the public areas. The current custom in Yemeni villages is that women are not allowed to meet males who are not relatives.

Of the 25 stakeholders interviewed, none were involved in any **operational** co-management schemes or **potential** co-management schemes using coastal and marine biological resources.

The following table summarizes the results from interviews of 25 stakeholders concerning significant livelihoods (see Appendix VII).

Significant livelihoods	Number *	Percent
Fishing – National	25	83%
Fishing – International	3	10%
Mariculture	0	00
Mangrove	0	00
Marine tourism	0	00
Government Employee (teacher)	1	3.5%
Boat Driver	1	3.5%
Total	30	100%

* Of the 25 stakeholders interviewed all were male. Number of significant livelihoods can exceed number of interviewees when interviewees have more than one significant livelihood.

All 25 interviewees (83 % of livelihoods) identified national fishing as a significant livelihood. 3 interviewees (10 %) identified international fishing as a significant additional livelihood. 2 interviewees (7%) identified other livelihoods as significant. These two other livelihoods were teacher and boat driver respectively.

Significant livelihood concerns relating to fishing are:

- Availability of stock,
- Difficulty of fishing during windy season and lack of alternative livelihood
- Illegal fishing, the absence of effective monitoring, control, and surveillance activities
- Increased fishing costs (e.g. high Diesel prices) and the conflicts among Industrial vs. Artisanal fishing; has affect the quality of life and community development

- Lack of limited services and facilities at landing centers. Many places do not even have landing platform

The following table summarises the results from interviews of 25 stakeholders concerning quality of life indicators (see Appendix VIII).

Quality of life indicator	Indicator in (brackets)–Stakeholder number*		Median
	Maximum	Minimum	
Refrigerators (number)	(1) - 9 stakeholders	(0) - 16 stakeholders	0.36
Drinking water (days' supply)	(>1) - 5 stakeholders	(<1) - 20 stakeholders	6
Primary health (km to)	(<4km) - 25 stakeholders	(>4km) - 0 stakeholders	1
Primary education (km to)	(<2km) - 25 stakeholders	(>2km) - 0 stakeholders	0.65
Main cooking fuel (oil – yes/no/?)	(No) - 25 stakeholders	(Yes) - 0 stakeholders	All no
Main cooking fuel (gas – yes/no/?)	(Yes) - 25 stakeholders	(No) - 0 stakeholders	All yes
Main cooking fuel (wood – yes/no/?)	(Yes) - 5 rarely used	(No) - 20 stakeholders	-
Main cooking fuel (charcoal – yes/no/?)	(No) - 25 stakeholders	(Yes) - 0 stakeholders	All no
Cooking fuel (mangrove - yes/no/?)	(Yes) - 6 rarely used	(No) – 19 stakeholders	-
Since ate marine animals (days)	(<1)- 19 stakeholders	(>2) 6 stakeholders	2.5

* Sample size of 25 stakeholders

The results from the interviews are that 9 stakeholders have a refrigerator whilst 16 do not. In respect of drinking water 5 have a secure drinking water supply whilst 20 do not.

All stakeholders have primary health care within 4km of their residence. One is at 4km, one at 30 m and the others are between these distances (mean distance 1km). All stakeholders have primary education within 2km of their residence. Two are 2km away, one is 60m away and the others are between these distances (mean distance 650m).

All the stakeholders use gas as their main source of cooking fuel. 6 stakeholders rarely use mangrove and 5 stakeholders rarely use other wood when the gas is not available.

19 stakeholders had eaten marine animals within the last day. 1 stakeholder had last eaten marine animals 22 days before and the others were between these days with 2 eating marine animals before 7 days, 1 before 3 days and 2 before 2 days.

What is not evident from these interviews is that whilst primary health care and primary education are close by, these services lack the most basic requirements. The table also does not show the large number of stakeholder dependents and the very low income of the stakeholders. The survey needs to be made more comprehensive in respect of evaluating poverty indicators.

Key conclusions concerning quality of life are:

- The poverty level in Fisher communities is high
- Fisher's communities lack most of the basic services. The main deficiency is the availability of drinking water. There is no public system of water supply connection to the houses of most fishers Villages including Kamaran Island. Because of this deficiency the people spend most of saving to get drinking water.

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- The Fisher communities also lack electrical power and this is a particular problem in the summer when the temperature is very high.
- Limited awareness among fishing communities (e.g. marine conservation, protection, alternative livelihoods, etc.)
- Lack of security and safety services for fishermen (e.g. on-board health, safety and insurance, disaster preparedness and management)
- The fisher communities suffer a lot during the windy season because fishing is difficult and the fishers have no alternative livelihoods.

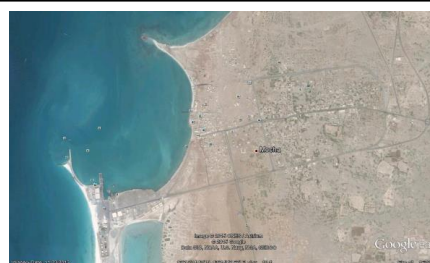
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3.4.1 Stakeholder example

Fahmi Hassan Mohammed Omar

Fisher, he is not part of any association

- Male, his age 35, depend on him 7 persons 4 are female and 3 are male
- He lives in Mocha City, Taiz Governorate, Republic of Yemen, (35 Year in his residence)
- He uses different type of fishes but mostly goes for emperor fish, king mackerel, trevally, lemon sweetlips and barracuda
- Key concerns about his livelihood
 - Illegal fishing by big boats,
 - He does not have any alternative livelihood, accordingly he suffers during the windy season,
 - Competition of Eritrean fishermen who come to sell their fish in the city market, which reduce the prices of local fishermen products,
 - Using illegal fishing gear (net) in a wide area without any control by the competent authorities which prevent the fishermen from fishing.
- He is very pessimistic about the future specially because his economic situation and political situation of the country



The people are very poor and need urgent help since they depend only on fishing as a primary livelihood and fishing is a risky livelihood. Government should support them and provide them with suitable alternative livelihoods.

3.4.2 Stakeholder example

Yahia Shabor

Fisher, he is not part of any association

- Male, his age is 31, depend on him 3 members; 2 are male and 1 female
- He lives in Makram Village, Kamaran Island, Hodeida Governorate, Yemen. He spend most of his time in the sea outside the island for fishing except during the windy season he stay only in the Island
- He uses different type of fishes but mostly goes for barracuda, emperor fish and king mackerel
- Key concerns about his livelihood:
 - Availability of stock,
 - He does not have any alternative livelihood, accordingly he suffers during the windy season

He is afraid from the future because as he said there is no any hope in the horizon



He did not go to the sea because of the bad weather.



In addition to the difficulty to get enough money to the normal life from the principle livelihood, there are many other problems in the Island. The people here do not have any of the basic services including the drinking water. Accordingly the people spend most of their savings to buy drinking water. So the government and the related organizations should help the people of the island and provide them at least with the basic services.

4. DISCUSSION AND RECOMMENDATIONS

A significant finding of the research supporting this review is the extreme poverty faced by fisher communities. It is important that government and donors are made aware of this situation to support advocacy to mobilise resources to alleviate this poverty.

A key constraint to the introduction of co-management in the fisheries sector is the lack of a legal mechanism to restrict fishing licences using a quota system.

Taking note of the above this review proposes the following opportunities, constraints to, and recommendations for, enhancing the legal, policy and management framework for co-management for national fisheries and international fisheries.

Issue: The legal review indicates that there is no legal framework in place to support co-management of coastal and marine biological resources in Yemen and no evidence of any co-management practices currently in place in Yemen.

Recommendation: The Fisheries Law No. 2 of 2006 should be amended to support fishing license quotas so as to enable co-management including TURFs to manage fishing grounds. The legal framework should be explicit, inclusive and clear about the tasks to be performed by each of the stakeholders that play a role in implementing the system. The legal framework should also include strict sanctions for illegal fishing. Finally, the legal framework should remain flexible enough to address local needs or conflicts efficiently, while allowing for experimentation as a means to explore and develop strategies that may address local realities.

Issue: There is confusion over the mandates of government agencies responsible for the conservation and sustainable use of coastal and marine biological resources in Yemen. The Fisheries Law No. 2 of 2006, which is the principal fisheries legislation in Yemen, identifies the Ministry of Fish Wealth (MFW) as the responsible agency for managing fisheries in Yemen. The Ministry is therefore responsible for management, research and development and enforcement activities **outside** of biodiversity protection areas. EPA under the MEW is responsible for biodiversity conservation **within** biodiversity protection areas.

Recommendation: The mandates of MFW and EPA in respect of fisheries development and biodiversity protection need to be made clear to the stakeholders.

Issue: The legal review indicates that the Fisheries Law contains various management measures which include:

- Open and Closed seasons for the most important commercial species (shrimp, lobster, and cuttlefish)
- Management measures related to the valuable rock lobster include minimum size of 19cm, gear type is restricted to traps only, quantity of gear is restricted to 60 traps per boat, and a prohibition on the taking of egg-bearing lobsters.

But this law still lacks many other management measures including:

- Measures targeting pelagic and highly migratory species;
- Conservation of spawning aggregations;
- With exception of rock lobster, no specifications have been made regarding net sizes, mesh sizes, the minimum sizes of different species allowed to catch,
- No specifications have been made regarding the specific areas for different fishing gear,
- Also fisheries legislation does not provide for fisheries refugia or mention any sensitive areas where trawling is prohibited.

Recommendation: The Fisheries Law should be amended to enable the specification of missing management measures through regulations.

Issue: There are no distinctions between different types of shark such as whale sharks and rays such as manta rays that are protected under international legislation to which Yemen is a party.

Recommendation: The relevant laws should be amended to indicate that shark include all species of shark or to distinguish species of shark and to distinguish different kinds of ray.

Issue: There is currently no mechanism under Yemeni law to legally endorse the protection of species listed under CITES, to which Yemen is a party, including shark, manta ray and the humphead wrasse (*Cheilinus undulatus*).

Recommendation: The relevant laws should be amended to provide for legal protection for species that are not listed in national legislation but that are listed under CITES such as whale shark, manta rays and the humphead wrasse (*Cheilinus undulatus*).

Issue: There is currently no mechanism in Yemeni law to protect species on the basis that they are highly migratory and/or that they migrate to spawn.

Recommendation: The relevant laws should be amended to provide for legal protection for species on the basis that they are highly migratory and/or that they migrate to spawn (such as certain species of grouper) and to list species that are not currently listed in national legislation but that are listed in appendices I and II of the CMS/Bonn Convention to which Yemen is a party.

Issue: Fisheries refugia can play a significant role in sustaining fisheries. However, the legal review indicates that there is no legal basis for designating areas as fisheries refugia in Yemen.

Recommendation: Regulations should be proposed and implemented to recognise the use of fisheries refugia as a fisheries management tool and to designate specific areas of the Yemen EEZ as fisheries refugia with a focus on spawning and nursery areas.

Recommendation: Consideration should be given, where relevant, to designating biodiversity protection areas as fisheries refugia and vice-versa so long as the primary purpose of designation is biodiversity protection.

Yemen should anticipate a number of challenges in the establishment of fisheries refugia, and ensure that these challenges are addressed in the context of national scientific, legal, political and administrative contexts. The government of Yemen still lacks the scientific information and experience in the use of spatial approaches to fisheries management. In addition the status of most fish stocks is unknown. Yemen also has a lot of difficulties and costs associated with research, specifically the need for specialised vessels/sampling equipment in collecting information regarding the life cycle of commercially important species.

Issue: The lack of a legislative framework to support mariculture has been one of the major obstacles to mariculture development in Yemen.

Recommendation: Regulations should be proposed and implemented to support mariculture development in Yemen, in particular mariculture that complies with TURFs.

Issue: There are only limited provisions in the Environmental Protection Law (EPL) No. (26) of 1995 dealing with conservation of biological resources and biological diversity. The existing provisions in EPL are inadequate to comply with Yemen's obligations under the Convention on Biological Diversity (CBD). Coastal Zone Management CZM and Marine Protected Areas MPAs must operate within a Legal Framework, having either specific laws relating to a particular MPA or being covered by general national legislation that covers biodiversity conservation and resource usage.

Recommendation: Government should issue a specific law for the conservation of biological resources and biological diversity to support implementation of obligations under the CBD.

Issue: Weak coordination mechanisms at the national, regional and international levels have resulted in unsustainable use of biological resources, including fisheries resources, shared between the countries that are party to the Jeddah Convention.

Recommendation: PERSGA should take a lead role in facilitating coordination between the countries of the region to deliver sustainable use of shared and transboundary biological resources, to minimise the illegal, unreported and unregulated (IUU) fishing and to alleviate poverty where this can be achieved through the sustainable use of these biological resources.

Actions should include:

- i. agreement to and support for delivery of the Draft Memorandum of understanding concerning regional cooperation in management of fisheries and aquaculture in the Red Sea and Gulf of Aden taking note of the points below.

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- ii. generating the lists of species to be included in Annexes 1 and 2 of the 2005 Jeddah Convention Protocol Concerning the Conservation of Biological diversity and the Establishment of a Network of Protected Areas the Red Sea and Gulf of Aden.
- iii. mobilising resources to provide training workshops on stock assessments of major PERSGA region fish stocks, with a particular emphasis on pelagic species and species that migrate to spawn, and developing and delivering Regional Plans of Action for these stocks.
- iv. supporting the development of Jeddah Convention standards for fishing laws and regulations, a poverty index for coastal fisher communities, co-management systems, IUU, Vessel Monitoring Systems (VMS) and other monitoring, control and surveillance (MCS) systems.

DRAFT

APPENDIX I: CONSULTANT TERMS OF REFERENCE

NATIONAL CONSULTANTS FOR REVIEWING LEGISLATIONS, STRATEGIES, POLICIES AND MANAGEMENT PLANS FOR FISHERIES SECTOR IN DJIBOUTI, JORDAN, SUDAN, AND YEMEN

Under the Project

Strategic Ecosystem Management of the Red Sea and Gulf of Aden

1- Background:

The announced consultancy services are needed for execution of the Project Strategic Ecosystem Management of the Red Sea and Gulf of Aden referred to hereafter as the Project or “SEM”. The Project is GEF financed, implemented by the World Bank and executed by PERSGA. The Project development objective is to improve management of marine resources in the Red Sea and Gulf of Aden in selected MPAs building on resource protection, incentive systems for communities and the harmonization of the knowledge base of marine resources between PERSGA member countries. This will be achieved through institutional Technical Assistance with onground activities through application of Ecosystem Based Management principles. The SEM Project contains four components, which are tailored to the most urgent country needs and preparedness at the local level. Two of these SEM components are localized in execution but open in knowledge sharing to all PERSGA countries. The two other components are an overarching harmonizing regional component and a management component. The four components are briefly described below.

Component 1: Strengthening the principles of marine managed areas through stakeholder driven MPA implementation

This component will select Marine Protected Areas as pilots to serve as Marine Managed Areas to include zonation and multiple uses consistent with local community needs and benefits using a participatory, community-based process. Activities within this component include the provision of training and demonstrations necessary to implement, use and update marine areas management plans in cooperation with national implementing agencies in the PERSGA network. This component also focuses on improving the capacity of member countries to share information and select the most appropriate marine protected/managed area models (MPAs/MMAs) based on current capacity and area(s) of comparative advantage and environmental features. It will also train community members in rights-based MPA co-management to be able to effectively review, update and implement marine protection and management plans, and transition to multiple use MMAs. Through this Component, PERSGA will strengthen its regional MPA network and also support member countries in bringing awareness of more holistic ecosystem based approaches whereby local communities could participate in balance resourcing exploitation with sustainability and help provide stronger stewardship of marine resources adjacent to them. PERSGA member countries will be invited to participate in training at pilot sites.

Component 2: Strengthening coastal communities using incentives approach to improve fisheries management and achieve other marine resource benefits

This component will provide institutional and technical capacity needed for communities to use and protect living marine resources to increase net benefits derived from the resources in a sustainable manner. The capacity of community and user group will be built to understand trade-offs associated with development and the costs and benefits to the community, and to organize as user groups around these uses and their roles in rights-based co-management of fishery resource, in connection to their correlated roles identified under component 1. They will also be trained in the monitoring of the uses and their impacts on the resources, particularly on fisheries to support informed decisions by communities in co-management. Through a community-driven process, the selected coastal communities will receive support to identify and develop sub-projects for alternative livelihood initiatives to reduce pressure on the resources and improve benefits to the community members. Ongoing activities will be developed by local communities and congruent with national priorities. Consultants or NGOs experienced in community driven fisheries and marine resource management will help facilitate community capacity building for LMR management engagement and development of sub projects. Potential subprojects could include, but are not limited to some mentioned during consultations: fish processing activities which involves the preparation of fish for direct consumption or for preservation; small scale aquaculture activities for production of pearl shells in Sudan; designation of hiking trails/ camping sites for eco-tourism within the National Parks- this is relevant to site selection in critical habitats; activity supporting recreational fishing/ snorkeling etc. for tourism purposes: through tent for gathering, jetty and boats; structure for visitor center built from natural materials; workshop for women group for producing and selling artisanal products - establish structure from natural materials; enabling tour guiding through licensing and training, potentially providing boats; training and certifying community members as rangers.

Component 3: Regional Environmental and Socioeconomic Monitoring Supporting Ecosystem Based Management (EBM) and Community Benefits

This component will build on ongoing monitoring activities and help in standardizing monitoring variables and approach between the participating countries, making data comparable and sharable through the strengthening of a regional network and database. It will support the expansion of monitoring to include socio-economic data, especially for fishery and MPA communities. Capacity building will also be strengthened through workshops and knowledge exchanges.

Specific sites selected by the countries will be monitored during the project, which will include MPAs and MMAs within the regional network and will be geared to enhance the capacity of PERSGA and member countries in concert with their communities. This presents an opportunity to leverage the latest knowledge and monitoring indicators in fisheries management to engage in supra-regional knowledge sharing on fisheries and marine resources monitoring. Monitoring of baseline data and other variables between MPAs and the pilot MMAs under components 1&2 will allow for comparison between the outcomes of the project intervention in the selected sites versus no intervention. This will provide a blue print for lessons learned from applying the EBM

and co-management approach in the Red Sea and Gulf of Aden which can be scaled up to the entire regional MPA network. It will also provide an insight on environmental and socioeconomic impacts of neighbouring coastal activities

Component 4: Project Management

This component will support the GEF project with technical, administration, procurement, financial management, project monitoring and evaluation and environmental and social impact monitoring. This includes cost of training of PERSGA and at the local project management level in the administrative, environmental and social aspects mentioned. The project will be executed by PERSGA, and will comply with GEF IW and World Bank reporting requirements (e.g. providing a GEF-IW webpage consistent with IW LEARN), provide IW Experience Notes, submit a GEF IW tracking tool at project start, provide for routine M&E processes, external Mid-Term and Terminal Evaluations, and project closure, provide lessons learned and other project information to IW-LEARN, and attend GEF IW Biennial Conferences.

2. Consultancy

The present ToR is for a consultancy that will be carried out under component 2. This component will be implemented through the following activities:

- Build capacity in communities to understand the current uses and resource benefits, and how these are distributed within the community, including establishing baseline of status of the marine environment;
- Build capacity of user groups including fisheries cooperatives in monitoring their resource uses and impacts; establish a community monitoring manual and follow up
- Support identification and planning of sustainable economic activities of marine resources and demonstrate small scale, low impact alternative livelihood sub-projects that are compliant with all environmental and social safeguards and upon which the community has reached consensus.
- Strengthen regional community participation through education and knowledge sharing through study tours, to share pilots on rights and responsibilities to improve community compliance and build ownership for resource protection and sustainability, as well as the implementation of monitoring, control and surveillance systems for fisheries co-management.

3. Tasks and Responsibilities of the Consultant

In this context the national consultant will work with the SEM Project Coordination Unit “PCU” and in close collaboration with the relevant Component Coordinator, the National Coordinator, the International Consultant, the Regional Consultant, the National Fishery Management Authority and the Local Community in his / her respective country. The consultant will collaborate with the team to undertake an assessment study to “review legislations, strategies, policies and management plans for the fisheries sector to introduce and facilitate reforms required to adopt ecosystem based and co-management approaches to fishery management and aquaculture

development” in his respective country, as part of the region-wide review undertaken by the SEM Project in PERSGA member states.

PERSGA has hired an international consultant to lead the review process in the region and provide technical assistance to the national consultant and team undertaking the review in each member state and is in the process of hiring regional consultant to support the International Consultant through cosupervision of the assessment studies, and providing technical advice on regional issues and harmonization. The National Consultant will, therefore, jointly work with the International Consultant and the Regional Consultant to conduct the review study in his / her respective country through achieving the following specific tasks:

- Compile information and data required for the review assessment of national/provincial legislations, strategies, policies and management for fisheries and aquaculture sector in order to identify gaps / barriers to implement ecosystem based approaches for fisheries management and development of aquaculture. This will be based on guidelines and questionnaires prepared by the international consultants. The review process should involve wide consultation with the stakeholders to identify gaps / barriers and suggest detailed and specific amendments addressing them including policies, articles, regulations, and management practices enabling multiple objectives, participatory and adaptive co-management approach; user group responsibilities, interaction with other sectors, adaptive systems, extended knowledge, incentives, mutual transparency, EAF EAA based fisheries monitoring, control and surveillance, etc.
- Develop a detailed National report on the assessment / review undertaken, based on the results of the questionnaires and the information collected.
- Communicate with the international and the regional consultants to provide expert advice on recommended amendments in national fishery laws, policies and management, together with options for mainstream them in the national/local marine fisheries and aquaculture sectors.
- Assist with provide technical backstopping for national/ local team to plan for including amendments and take on concrete proposals for revised laws/ policies/ management procedures, and provision of technical assistance and advice during consultation meetings for planners, managers, user groups and other relevant stakeholders.
- The assessment/ review should include a maximum level of stakeholder participation and consultations to identify relevant existing information as well as the interests, priorities and responsibilities of different stakeholder groups or institutions. The national review process shall also be harmonized with other PERSGA member states. Therefore, the National Consultant is expected to participate in regional meetings to be held at PERSGA HQ or other member states, whereby assessment outcomes will be discussed with the International Consultants, the Regional Consultant and participants from other member states.

4. Key Outputs and Tentative Timing

Output 1: Inception report: Detailed work plan, methodology, timeline	2 weeks from contract
Output 2: Based on the questionnaires and guidelines provided by the International consultants, collect country data and information from the line ministries and departments; stakeholder consultation workshops; reviews of relevant documents, reports and other information sources.	2 months from contract
Output 3: Progress Reports	Every three months
Output 4: Draft national assessment report based on the results collected through the questionnaires and the guidelines mentioned above; including expert advice on gaps/shortcomings and recommended amendments regarding legislations, policies and management plans/ practices of marine fishery and aquaculture sectors	6 months from contract
Output 5: Assist with developing proposals of revised/ amended laws, strategies, policies and management practices and action plan for their realization in the country	8 months from contract
Output 6: Assist with developing the final National Consultancy Report compiling the assessment outputs and including recommendations for suggested legislative and policy amendments action plan in the country, which will be integrated in the final Regional Report	10 months from contract
Output 7: Follow up report on implementation of the country action plan and recommendation for future work	12 months from contract

5. Duty station and duration

Duty station: Home based with in-situ field visits to the project site/ relevant national line ministries for information collection, stakeholder consultation and providing technical assistance in national meetings/workshops. The national consultant will also participate in regional consultation and coordination meetings. The consultancy will be completed over 12 months. Actual working days will be different in different countries. The consultant shall utilize adequate actual working days depending on the size and complexity of fishery regulations in his / her respective country.

6. Qualification, Skills and Experience

The following qualifications and experience requirements must be met by the consultant:

- University degree in fisheries management, environmental science or any other relevant discipline. A post graduate qualification (MSc/ PhD) is preferable.
- Background knowledge on approaches and tools for fisheries management; national evaluation of performance, progress and impacts; ecosystem approach to fisheries

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management; international and national legislations, framework policies, agreements and initiatives addressing living marine resources, and conservation/ management measures

- Experience in assessment/ evaluation of fisheries management and aquaculture development, including laws, strategies, policies and management measures and practices for fisheries and aquaculture sectors
- Experience in similar consultancy works at the national level, and ability to produce outputs at international standards
- Familiarity/ knowledge with the status of fishery, issues and concerns in Red Sea and Gulf of Aden region;
- Fluency in English and Arabic; in the case of Djibouti and in French
- Highly self-motivated and able to work independently, as well as good interaction with regional/ national teams and counterparts.

7. Type of contract and payment

This contract falls under short-term consultant category system of PERGSA. Payment will be on a lump sum and instalment basis as specified in the contract. Consultancy fees will be calculated on the basis of actual working days utilized by the consultant during the contract period.

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APPENDIX II: CONSULTANT ITINERARY

Date	Location	Activity and key persons met
17-10-2014	Home	Reading
18-10-2014	Home	Reading
19-10-2014	MFW/ Hodeida	Meeting with Mohammed Al-Selwi the General Director of the Ministry of Fish Wealth office, Hodeida
20-10-2014	PFP/ Hodeida	Meeting with Mr Wathah Al Kershi the Director of Public Funds Prosecution, Hodeida
21-10-2014	Home	Reading
22-10-2014	Home	Reading
23-10-2014	Home	Reading, Preparation for workshop
24-10-2014	Home	Reading, Preparation for workshop
25-10-2014	Home	Reading, Preparation for workshop
26-10-2014	EPA /Hodeida	Meeting with Yasser Al- Ghobair the General Director of EPA office, Hodeida and Samir Kibsi the General Director of Kamaran Protected Area
27-10-2014	Home	Preparation for workshop
28-10-2014	Home	Preparation for workshop
29-10-2014	Home	Preparation for workshop
30-10-2014	Home	Preparation for workshop
01-11-2014	MAA/ Hodeida	Meeting with Abdullah Mothana the General Director of MAA office, Hodeida
02-11-2014		Travel to Sana'a
03-11-2014	EPA /Sana'a	Meeting with Anwar Alhemiarry the Undersecretary of the EPA, Sana'a
04-11-2014	MFW / Sana'a	Meeting with Mrs Mariam Taher
05-11-2014		Travel to Hodeida
06-11-2014	Home	Preparation for workshop
07-11-2014	Home	Preparation for workshop
08-11-2014	Home	Preparation for workshop
09-11-2014		Travel to Jeddah
10-11-2014	PERSGA/Jeddah	Workshop
11-11-2014	PERSGA/Jeddah	Workshop
12-11-2014	PERSGA/Jeddah	Workshop
14-11-2014		Travel to Hodeida
15-11-2014	Home	Reporting (inception report)
16-11-2014	Home	Reporting (inception report)
19-11-2014	MFW/ Hodeida	Meeting with Mohammed Al-Selwi the General Director of the Ministry of Fish Wealth office, Hodeida
25-11-2014	Home	Reading the questionnaires
26-11-2014	Home	Reading the questionnaires
27-11-2014	MRC	Meeting with Mrs. Fatima Shamssan General Director of the Marine Research Center, Hodeida
28-11-2014	Home	Translate the stakeholder questionnaires to Arabic
29-11-2014	Home	Translate the stakeholder questionnaires to Arabic
30-11-2014	Home	Translate the stakeholder questionnaires to Arabic
02-12-2014	Home	Review the existing national acts
03-12-2014	Home	Review the existing national acts
04-12-2014	Home	Review the existing national acts
05-12-2014	Home	Review the existing national acts
06-12-2014	Home	Review the existing national acts
07-12-2014	Home	Review the existing national acts

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Date	Location	Activity and key persons met
08-12-2014	Home	Review the existing national acts
09-12-2014	Home	Review the existing national acts
10-12-2014	Home	Review the existing national acts
11-12-2014	Home	Review the existing national acts
12-12-2014	Home	Review the existing national acts
13-12-2014	Home	Review the existing national acts
14-12-2014	Home	Review the existing national acts
15-12-2014	Home	Review the existing national acts
16-12-2014	Home	Review the existing national acts
17-12-2014	Home	Review the existing national acts
18-12-2014	Home	Review the existing national acts
19-12-2014	Home	Review the existing national acts
20-12-2014	Home	Review the existing national acts
21-12-2014	Home	Review the existing national acts
22-12-2014	Home	Review the existing national policies
23-12-2014	Home	Review the existing national policies
24-12-2014	Home	Review the existing national policies
25-12-2014	Home	Review the existing national policies
26-11-2014	Home	Review the existing national policies
27-12-2014	Home	Review the existing national policies
28-12-2014	Home	Research /Reading /Writing
29-12-2014	Home	Research /Reading /Writing
30-12-2014	Home	Research /Reading /Writing
31-12-2014	Home	Research /Reading /Writing
01-01-2015	Home	Research /Reading /Writing
02-01-2015	Home	Research /Reading /Writing
03-01-2015	Home	Reading/ Reporting
09-01-2015	Home	Review the existing national acts
10-01-2015	Home	Review the existing national acts
11-01-2015	Home	Review the existing national acts
12-01-2015	Home	Review the existing national acts
13-01-2015	Home	Review the existing national acts
14-01-2015	Home	Review the existing national acts
15-01-2015	Home	Reading/Research/Writing
16-01-2015	Field work	Field work (Hodeida city)
17-01-2015	Home	Data Analysis
22-01-2015	Home	Review the existing national policies
23-01-2015	Home	Review the existing national policies
24-01-2015	Home	Review the existing national policies
25-01-2015	Home	Review the existing national policies
26-01-2015	Home	Review the existing national policies
27-01-2015	Home	Reading/ Reporting
28-01-2015	Home	Review of Dr. Alec comments on the national acts
29-01-2015	Home	Reporting
30-01-2015	Home	Reporting
31-01-2015	Al- Khokha	Travel to Field (Al-Kokah city)
01-02-2015	Mocha	Travel to Field (Mocha city)
02-02-2015	Dhubab	Travel to Field (Thubab area)
03-02-2015	Hotel	Data Analysis
04-02-2015	Hotel	Data Analysis
05-02-2015	Home	Reading/Reporting
06-02-2015	Home	Reading/Reporting

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07-02-2015	Kamaran	Travel to Field (Kamaran Island)
08-02-2015	Home	Data Analysis
09-02-2015	Home	Reading/ Reporting

Date	Location	Activity and key persons met
10-02-2015	Home	Reporting
11-02-2015	Home	Reporting
12-02-2015	Home	Reporting
13-02-2015	Home	Reporting
14-02-2015	Home	Reporting
14-02-2015	Home	Reporting

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APPENDIX III: TEMPLATES

III.1 National level Acts

PERSGA AND SEM PARTNERS LOGOS								
NATIONAL LEVEL ACTS QUESTIONNAIRE								
No	Question	Yes(Y), No(N), Unclear (?)						Details: Please provide an extract of any text justifying your selection of yes/no/unclear.
		NAT	INT	PRO	LOC	PVT	CUS	
1. GENERAL								
1.1	Name, age, sex and contact details of researcher							
1.2	Date completed							
1.3	Country of survey							
1.4	Name/details of legal document.							
2. OWNERSHIP OF BIOLOGICAL RESOURCES								
2.1	Is (marine) wildlife (as opposed to domesticated/cultivated marine species) defined in the legal instrument?							
2.2	Is ownership of marine wildlife by the state specified in the legal instrument?							
2.3	Is ownership of the sea by the state specified in the legal instrument?							
2.4	Is ownership of the seabed by the state specified in the legal instrument?							
2.5	Is ownership of minerals at/below the seabed by the state specified in the legal instrument?							
2.6	Is opportunity for co-management of biological resources for any non-state party specified in the legal instrument?							
3. MANAGEMENT (authorisation includes designation of a regulatory body)								
3.1	Is there an agency given responsibility for managing marine wildlife in the legal instrument?							

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3.2	Is there an agency given responsibility for issuing fishing permits in the legal instrument?							
3.3	Is there an agency given responsibility for issuing fishing vessel licenses in the legal instrument?							
3.4	Is there an agency given responsibility for coastal zone management in the legal instrument?							
3.5	Is there an agency given responsibility for only managing marine protected areas in the legal instrument?							
3.6	Is there an agency given responsibility for only managing coastal protected areas in the legal instrument?							
3.7	Is there an agency given responsibility for managing both coastal and marine together protected areas in the legal instrument?							
3.8	Is there an agency given responsibility for marine pollution control in the legal instrument?							
3.9	Is there an agency given responsibility for maritime safety/security in the legal instrument?							
3.10	Is there an agency given responsibility for international fisheries (foreign nationals fishing in country)?							
3.11	Is there an agency given responsibility for international fisheries (nationals fishing internationally)?							
3.12	Is there any Regional Fisheries Management Organisation (RFMO) arrangement, or equivalent, specified in the legal instrument?							
4. PERMITS/LICENSES								
4.1	Is authorisation to fish marine wildlife required under the legal instrument?							
4.2	Is authorisation to fish marine wildlife in certain							

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	areas required under the legal instrument?							
4.3	Is authorisation to fish marine wildlife at certain times required under the legal instrument?							
4.4	Is authorisation to fish certain species of marine wildlife required under the legal instrument?							
4.5	Is authorisation to harvest/use mangrove required under the legal instrument?							
4.6	Is any marine wildlife explicitly protected under the legal instrument?							
4.7	Are any marine areas legally assigned for mariculture under the legal instrument?							
4.8	Are any marine areas legally assigned for mining under the legal instrument?							
4.9	Are any coastal areas assigned for traditional/community use under the legal instrument?							
4.10	Are any marine areas assigned for traditional/community use under the legal instrument?							
4.11	Can foreign nationals be authorized to fish in the EEZ by the authorising authority?							
4.12	Can nationals be authorised to fish internationally by the authorising authority?							
5. Other relevant laws								
5.1	Is there an Act for Strategic Environmental Assessment referred to?							
5.2	Is there an Act for Environmental Impact Assessment referred to?							
5.3	Is there a coastal zone management Act referred to?							
5.4	Is there an Act for registering/regulating/supervising fishery associations/cooperatives referred to?							

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5.5	Are there any marine species action plans referred to ²⁵ ?						
5.6	Are there any references to certified sustainable marine fisheries?						
5.7	Is there any law concerning international fishing?						

III.2 National level Policies

PERSGA AND SEM PARTNERS LOGOS

NATIONAL LEVEL POLICIES SUPPORTING CO-MANAGEMENT

Please use this template to describe regional, national, provincial or local policies relating to fisheries co-management. Please provide a score, in the column provided, on a scale of 0-5, or 99 (where 0 suggests no support for a policy and 5 suggests significant support for a policy and 99 means don't know). Please provide and reference evidence, preferably digital, of the policy.

01	Name, age, sex and contact details of person completing the form	
02	Name, designation and contact details of any interviewee.	
03	Date form completed	
04	Country (ies)/province(s)/district(s) covered (please fill a new form for each policy document/area.	
05	Key document(s) being reviewed	

06ECOSYSTEM APPROACH (see Annex A)

No	Policy	Score (0-5)	Comment
01/12	Public participation		
02	Delegation of management		
03	Transboundary effects		
04	Economic context		
05/	Conservation/sustainable		

²⁵ For example is there a Shark Action Plan?

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10	use/ sustainable development		
06	Carrying capacity		
07	Spatial and temporal factors		
08	Long-term management		
09	Adaptive management		
10	See above		
11	Evidence based (scientific, indigenous, local knowledge)		
12	See above		
07CODE OF CONDUCT (See Annex B)			
01	User rights and responsibilities		
02	Ecosystem based management/intergenerational equity		
03	Conservation (sustainable use of fisheries)		
04	Knowledge based including traditional knowledge		
05	Precautionary approach		
06	Environmentally safe fishing gear		
07	Environmentally safe fish processing and distribution		
08	Habitat protection and rehabilitation		
09	Coastal zone management		
10	Monitoring Control and surveillance - VMS		
11	Monitoring Control and surveillance – fishing data		
12	Transboundary cooperation		
13	Participation in laws and policies		
14	Trade		
15	Grievance redress mechanisms		
16	Public participation		

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17	Working and living conditions		
18	Artisanal and small-scale fisheries rights		
19	Aquaculture and EIA		

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III.3 Operational co-management practices

PERSGA AND SEM PARTNERS LOGOS										
REGISTER OF CO-MANAGEMENT/OTHER PRACTICES QUESTIONNAIRE										
Please use this template to describe regional, national, provincial or local registered co-management/other fisher related operational agreements. Please complete one questionnaire for each agreement.										
01	Name, age, sex and contact details of person completing the form									
02	Date form completed									
03	Country(ies)/province(s)/district(s) of agreement. If possible provide a map of the area covered (international/national)									
04	Title of the agreement									
05	Start and finish date of the agreement									
06	If possible please provide a copy of any agreement.									
07	General description of the agreement									
08	If there are any public communications materials/pictures available please provide.									
<p>09. Parties to agreement: Enter number(s) from list and estimated % and provide relevant comment – (1) National Government; (2) Provincial government; (3) Local Government; (4) Commercial; (5) NGO; (6) Community; (7) Informal; (8) Other; (9) None; (10) Don't know. Provide relevant comment.</p> <p>For example if national Government and an NGO are the parties and they are equal parties enter: (1) 50% in the first row below and (5) 50% in the second row etc. (number in brackets in the first column).</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 5%; height: 20px;"></td><td style="width: 95%;"></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> </table>										
<p>10. Assets : Enter number(s) from list and estimated % and provide relevant comment – (1) Coral reef; (2) Mangrove, (3) Seagrass; (4) Algae; (5) Bony Reef fish (Pisces); (6) Bony Pelagic fish (Pisces); (7) Sharks and rays; (8) Crustaceans; (9) Echinoderms; (10) Molluscs; (11) Marine mammals;(12)Physical asset such as mooring; (13) Access to an area; (14) Other; (15) Don't know.</p>										

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For example if the target asset is just bony reef fish then enter the number (5) in the first column and the number 100% in the second column.

11. Nature of activity in respect of assets: Specify asset from question 10 in Column 1. Enter number(s) from following list and estimated % and provide relevant comment – (1) Wild caught small scale/subsistence/artisanal fishery; (2) Wild caught large scale/industrial fishery; (3) Hatchery based aquaculture; (4) Culture based aquaculture; (5) Post-harvest processing; (6) Tourism; (7) Licensing; (8) Patrolling; (9) Other; (10) Don't know.
For the example given for question 10 enter (5) in the first column in the first row. If the whole of the activity relating to bony reef fish is artisanal fishing then enter the number (1) “*Wild caught small scale/subsistence/artisanal fishery*” in the second column and 100% in the third column in the first row below.

12. Market for assets: Specify asset details from the results in the first, second and third column from the first row from question 11 in the first row in the first, second and third column. Enter number(s) from market list and estimated % and provide relevant comment: (1) Local household; (2) Local area; (3) Province; (3) National; (4) International; (5) Other; (6) Don't know. Proceed with the other rows from question 11

From the example for question 11 enter (5) in the first column, (1) in the second column and (100%) in the third column.

If 50% of the artisanal fishery is consumed by local households and 50% is sold in the local area then enter (1) for local household in the fourth column and 50% in the fifth column of the first row. For the other 50% complete the first three columns as for the first row. Enter the number (2) in the fourth column of the second row and 50% in the fifth column. Add comments as necessary.

13. Governance of decision making: Enter number(s) from list and estimated % and provide relevant comment – (1) National Government; (2) Provincial government; (3) Local Government; (4) Commercial; (5) NGO; (6) Community; (7) Informal; (8) Other; (9) None; (10) Don't know. Provide relevant comment.

For example if national Government and an NGO are the parties but national government makes all the decisions then enter : (1) in the first column and 100% in the second column in the first row below.

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14	The party to the agreement equivalent to the “lessor” and contact name and details?	
15	The nature of the “lessor” - government, private, NGO, community, other	
16	Any responsibilities to the “lessee” by the “lessor”?	
17	The party to the agreement equivalent to the “lessee” and contact name and details?	
18	Nature of the “lessee” – government, private, NGO, community, other	
19	Any arrangement between sub-lessees as regards representation in the agreement?	
20	Is there a quota in respect of time? If so please specify.	
21	Is there a quota in respect of location? If so please specify.	
22	Is there a quota in respect of species? If so please specify.	
23	Is there a quota in respect of size?	
24	Is there a quota in respect of number? If so please specify.	
25	Is there a quote in respect of sexual condition?	
26	Are there any charges in kind or in cash to be paid by the “lessee”? Please specify.	
27	Does the lessee have any management responsibilities? If so please specify.	
28	Any other conditions to the agreement?	

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29	Number of permanent male employees benefitting from the agreement	
30	Number of temporary male employees benefitting from the agreement	
31	Number of permanent female employees benefitting from the agreement	
32	Number of temporary female employees benefitting from the agreement	
33	Estimated value of the agreement to the lessor/landlord in the last year (if any)	
34	Estimated value of the agreement to the lessee/tenants in the last year. (if any)	
35	Other opportunities to the agreement	
36	Possible threats to the agreement	

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III.4 Potential co-management practices

PERSGA AND SEM PARTNERS LOGOS		
REGISTER OF CO-MANAGEMENT/OTHER PRACTICES QUESTIONNAIRE		
Please use this template to describe possible regional, national, provincial or local registered co-management/other fisher related operational agreements. Please complete one questionnaire for each possible agreement.		
01	Name, age, sex and contact details of person completing the form	
02	Date form completed	
03	Country(ies)/province(s)/district(s) of possible agreement. If possible provide a map of the area covered(international/national).	
04	Title of the proposed agreement	
05	Start and finish date of the proposed agreement	
06	If possible please provide a copy of any proposed agreement.	
07	General description of the proposed agreement	
08	If there are any public communications materials/pictures available please provide.	
09. Parties to possible agreement: Enter number(s) from list and estimated % and provide relevant comment – (1) National Government; (2) Provincial government; (3) Local Government; (4) Commercial; (5) NGO; (6) Community; (7) Informal; (8) Other; (9) None; (10) Don't know. Provide relevant comment. For example if national Government and an NGO are the possible parties and they are equal parties enter: (1) 50% in the first row below and (5) 50% in the second row etc. (number in brackets in the first column).		
10. Assets : Enter number(s) from list and estimated % and provide relevant comment – (1) Coral reef; (2) Mangrove, (3) Seagrass; (4) Algae; (5) Bony Reef fish (Pisces); (6) Bony Pelagic fish (Pisces); (7) Sharks and rays; (8) Crustaceans; (9) Echinoderms; (10) Molluscs; (11) Marine mammals; (12) Physical asset such as mooring; (13) Access to an area; (14) Other; (15) Don't know.		

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For example if the target asset is just bony reef fish then enter the number (5) in the first column and the number 100% in the second column.

11. Nature of activity in respect of assets: Specify asset from question 10 in Column 1. Enter number(s) from following list and estimated % and provide relevant comment – (1) Wild caught small scale/subsistence/artisanal fishery; (2) Wild caught large scale/industrial fishery; (3) Hatchery based aquaculture; (4) Culture based aquaculture; (5) Post-harvest processing; (6) Tourism; (7) Licensing; (8) Patrolling; (9) Other; (10) Don't know.

For the example given for question 10 enter (5) in the first column in the first row. If the whole of the activity relating to bony reef fish is artisanal fishing then enter the number (1) “Wild caught small scale/subsistence/artisanal fishery” in the second column and 100% in the third column in the first row below.

12. Market for assets: Specify asset details from the results in the first, second and third column from the first row from question 11 in the first row in the first, second and third column. Enter number(s) from market list and estimated % and provide relevant comment: (1) Local household; (2) Local area; (3) Province; (3) National; (4) International; (5) Other; (6) Don't know. Proceed with the other rows from question 11

From the example for question 11 enter (5) in the first column, (1) in the second column and (100%) in the third column.
If 50% of the artisanal fishery is consumed by local households and 50% is sold in the local area then enter (1) for local household in the fourth column and 50% in the fifth column of the first row. For the other 50% complete the first three columns as for the first row. Enter the number (2) in the fourth column of the second row and 50% in the fifth column. Add comments as necessary.

13. Governance of decision making: Enter number(s) from list and estimated % and provide relevant comment – (1) National Government; (2) Provincial government; (3) Local Government; (4) Commercial; (5) NGO; (6) Community; (7) Informal; (8) Other; (9) None; (10) Don't know. Provide relevant comment.

For example if national Government and an NGO are the possible parties but national government makes all the decisions then enter : (1) in the first column and 100% in the second column in the first row below.

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14	The possible party to the agreement equivalent to the “lessor” and contact name and details?	
15	The nature of the “lessor” - government, private, NGO, community, other	
16	Any responsibilities to the “lessee” by the “lessor”?	
17	The possible party to the agreement equivalent to the “lessee” and contact name and details?	
18	Nature of the possible “lessee” – government, private, NGO, community, other	
19	Any arrangement between possible sub-lessees as regards representation in the agreement?	
20	Is there a quota in respect of time? If so please specify.	
21	Is there a quota in respect of location? If so please specify.	
22	Is there a quota in respect of species? If so please specify.	
23	Is there a quota in respect of size?	
24	Is there a quota in respect of number? If so please specify.	
25	Is there a quote in respect of sexual condition?	
26	Are there any possible charges in kind or in cash to be paid by the “lessee”? Please specify.	
27	Will the lessee have any management responsibilities? If so please specify.	
28	Any other conditions to the possible agreement?	
29	Number of permanent male employees benefitting from	

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	the agreement	
30	Possible number of temporary male employees benefitting from the agreement	
31	Possible number of permanent female employees benefitting from the agreement	
32	Possible number of temporary female employees benefitting from the agreement	
33	Estimated value of the possible agreement to the lessor/landlord in the last year (if any)	
34	Estimated value of the possible agreement to the lessee/tenants in the last year. (if any)	
35	Other possible opportunities to the agreement	
36	Possible threats to the agreement	

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III.5 Stakeholder registration

PERSGA AND SEM PARTNERS LOGOS		
STAKEHOLDER REGISTRATION QUESTIONNAIRE		
To be completed by the interviewer for individual stakeholders. If the stakeholder interviewee is being interviewed in a group the response must be that of the specified stake holding interviewee. If possible interview the person at his/her place of residence or work.		
1.0 INTERVIEWER DETAILS		
1.1	Name, age, sex and contact details of the interviewer	
1.2	Date form completed	
1.3	Any comments	
2.0 INTERVIEWEE DETAILS		
2.1	Location/address of interview (google map or gps).	
2.2	Name	
2.3	Age/date of birth	
2.4	Sex	
2.5	Picture of interviewee	
2.6	Number and nature of dependents	
2.7	Place of birth and nationality	
2.8	Address of residence and contact details. Provide GPS co-ordinates for re-visit.	
2.9	Period of residence at this residence (years) and % of time in the last year.	
2.10	Identification card number and period of validity	
2.11	Affiliations (tribal etc)	
2.12	Please indicate, in order of significance, for a specified key livelihood the interviewees principal livelihood concerns – up to 6	Livelihood
		1. <input type="text"/> 2. <input type="text"/>

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(do not prompt!). Note: This will act as a baseline for determining project impact.	3.	4.
	5.	6.

2.13. Livelihood employment: Please list, in order of importance the principal livelihoods over the last year (agriculturalist, carer, fisher, pastoralist, office-worker.....), an estimate of the percent of working time spent in this employment over the last year and then the number of years in this employment.

A			
B			
C			
D			

2.14. Livelihood employment: For each livelihood employment over the last year enter the letter from the first column in the answer to question 2.13 in the first column, the number for the type of employment from the list below in the second column and the estimated % of that employment in the third column: (1) Self-employed; (2) Government; (3) Commercial; (4) Unemployed; (5) Retired; (6) Other; (7) Do not know.

For example if the livelihood under 2.13 is (A) in the first row in the first column enter (A) in the first row in the first column in answer to question 2.14. If the employment of (A) in row 1 is self-employed then enter the number (1) in the second column of row 1. If the self-employment is 50% then enter 50% in the third column of row 1. Proceed to describe the same, or additional, employments from 2.13 in additional rows. The total for column 3 for each livelihood should be no more than 100%. Add rows as necessary.

A			

2.15 **Coastal and marine** biological resources assets used in specified livelihood: Enter number(s) from list and estimated % and provide relevant comment – (1) Coral reef; (2) Mangrove, (3) Seagrass; (4) Algae; (5) Bony Reef fish (Pisces); (6) Bony Pelagic fish (Pisces); (7) Sharks and rays; (8) Crustaceans; (9) Echinoderms; (10) Molluscs; (11) Marine mammals; (12) Physical asset such as mooring; (13) Access to an area; (14) Other; (15) Don't know. If the livelihood is not coastal/marine related then leave the second column blank and describe in the fourth column.

For example if the livelihood under 2.13 is (A) in the first row in the first column enter (A) in the first row in the first column in answer to question 2.15. If one of the target assets is bony reef fish then enter the number 5 in the second column in the first row and if 50% of the catch is bony reef fish then enter 50% in the third column of row 1. Proceed to add rows for the same livelihood for different assets and then for different livelihoods for column 1 of each row entered in response to question 2.13. If possible provide a map of the principle area(s) of the respective livelihood/asset. Expand comments area and/or add rows as necessary.

A			

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2. 16	Evidence of livelihoods: Please try to provide objective evidence of any significant livelihood (earlier licenses, witness statements etc.

3.0 CO-MANAGEMENT:

3.1. Is the person part of any co-management framework? If YES specify the name and nature of the framework(s) in the second column after entering the relevant livelihood letter A,B,C,D from Question 2.13 in the first column and go to question 3.3. If NO go to question 3.2.

3.2	If NO ask whether they see any need in respect of their livelihoods. Enter the response and GO TO QUESTION 4.
-----	---

3.3. Is the person in the position of representing the lessor in respect of the co-management agreement for the livelihood A,B,C,D (as listed above)? Enter each relevant livelihood letter (A, B, C, D) and the comment in column 2. Add additional rows if required.

3.4. Is the person in the position of representing the lessee in respect of the co-management agreement for the livelihood A, B, C, D (as listed above)? Enter each relevant livelihood letter (A, B, C, D) in column 1 and the comment in column 2. Add additional rows if required.

3.5. Estimate how many parties there are to the co-management agreement. Enter each relevant livelihood letter A, B, C, D (as listed above) and the comment in column 2. Add additional rows if required.

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3.6 Identify any opportunities to the co-management agreement. Enter each relevant livelihood letter A, B, C, D (as listed above) and the comment in column 2. Add additional rows if required.

3.7. Identify any constraints to the co-management agreement. Enter each relevant livelihood letter A, B, C, D (as listed above) and the comment in column 2. Add additional rows if required.

4.0: QUALITY OF LIFE AT RESIDENCE

4.1	Hours of electricity per day?	
4.2	Refrigerator (number)?	
4.3	Days secure supply of drinking water at residence.	
4.4	Distance to primary health care facility(km)?	
4.5	Distance to midwife(km)?	
4.6	Distance to primary education(km)?	
4.7	Principal type of cooking fuel (oil, gas, wood, charcoal, other)	If wood/charcoal is mangrove note
4.8	Distance to secure source of principal cooking fuel(km)?	
4.9	Distance to phone(km)?	
4.10	Days since last ate marine animals and type.(marine fish etc)	

5.0: SIGNATURES

5.1	Date, name and signature of interviewer	
5.2	Date, name and signature/mark of	

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	stakeholder	
5.3	Date, name, contact details and signature of witness if requested.	

DRAFT

APPENDIX IV: BIBLIOGRAPHY/REFERENCES

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APPENDIX V: PROTECTED COASTAL AND MARINE SPECIES

Species/group	Yes/No/?	Law/regulation reference including year
Aquarium fish	Yes	<ul style="list-style-type: none"> • Prime Minister's decree No. 124 of 2009 on the Regulation of Artisanal Fishing
Coral Reef	Yes	<ul style="list-style-type: none"> • Law No 2 of 2006 Concerning organization of catching, exploiting and protecting marine creature • Law No. 72 of 2010 concerning the National Plan for the Integrated Coastal Zone Management in the Republic of Yemen
Mangrove	Yes	<ul style="list-style-type: none"> • Law No (310) of 2009 Concerning the Declaration of Establishing and Managing a Natural Protected Area North Kamaran Island, Hodeida Governorate • Law No. 72 of 2010 concerning the National Plan for the Integrated Coastal Zone Management in the Republic of Yemen
Marine birds	Yes	<ul style="list-style-type: none"> • Environmental protection law No. 26 of 1995 • Law No. 249 of 2008 concerning the declaration the establishment and management of nature reserves of Wetlands in Aden
Sea mammals	Yes	<ul style="list-style-type: none"> • Law No 2 of 2006 Concerning organization of catching, exploiting and protecting marine creature
Sea turtles	Yes	<ul style="list-style-type: none"> • Law No 2 of 2006 Concerning organization of catching, exploiting and protecting marine creature
Seaweeds	Yes	<ul style="list-style-type: none"> • Law No 2 of 2006 Concerning organization of catching, exploiting and protecting marine creature
Sponges	Yes	<ul style="list-style-type: none"> • Law No 2 of 2006 Concerning organization of catching, exploiting and protecting marine creature
Whales	Yes	<ul style="list-style-type: none"> • Law No 2 of 2006 Concerning organization of catching, exploiting and protecting marine creature

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APPENDIX VI: PROPOSED PROTECTED COASTAL AND MARINE SPECIES

Species/group	Yes/No/?	Policy document name and year
Aquarium fish	Yes	National Biodiversity Strategy and Action Plan, 2005
Coral reefs	Yes	Already legally protected. No change in policy regarding status proposed
Cuttlefish	?	National Biodiversity Strategy and Action Plan, 2005
Mangrove	Yes	Already legally protected. No change in policy regarding status proposed.
Marine Turtles	Yes	Already legally protected. No change in policy regarding status proposed
Sea cucumber	Yes	National Biodiversity Strategy and Action Plan, 2005
Shark	Yes	National Biodiversity Strategy and Action Plan, 2005
Rock lobster	?	National Biodiversity Strategy and Action Plan, 2005

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APPENDIX VII: STAKEHOLDER PRINCIPAL LIVELIHOODS

No	Name of person interviewed	SEX	COM	FIS	MAR	MAN	MAR TOU	OTH
1	Abdo Ali Salem Gobshi	M	N	Y*	N	N	N	N
	Notes: * Low sale price for, 2. Lack of landing platform, 3- Availability of stock, 4- Difficulty of fishing during windy season 5. high Diesel prices							
2	Yahia Mohammed Ali	M	N	Y*	N	N	N	N
	Notes: 1. Lack of landing platform, 2- Lack of alternative livelihood 3-Availability of stock							
3	Ali Abdullah Salem	M	N	Y*	N	N	N	N
	Notes:*1. Low sale price for, 2. Lack of landing platform, 3- Availability of stock, 4- Difficulty of fishing during windy season							
4	Zaid Ahmed Tolaihi	M	N	Y*	N	N	N	N
	Notes: :*1. Lack of landing platform, 3- Availability of stock, 4- Difficulty of fishing during windy season, 5. High Diesel prices							
5	Khalid Abdullah Sagir Zarnook	M	N	Y*	N	N	N	N
	Notes:* 1- Availability of stock, 2- Difficulty of fishing during windy season, 3- Lack of landing platform, 4.Low sale price							
6	Abdo Salem Eisa	M	N	Y*	N	N	N	N
	Notes: * 1- Availability of stock, 2. Lack of landing platform, 3- Difficulty of fishing during windy season, 4.Cash of Eritrean patrols to the Yemeni fishermen and prevent them from fishing even within the Yemeni territorial waters, 6. Lack of electricity in the landing center							
7	Mohammed Hassan Ali Mogni	M	N	Y*	N	N	N	N
	Notes: * 1- Lack of landing platform, 2. lack of fishing gears, 3.Cash of Eritrean patrols to the Yemeni fishermen and prevent them from fishing even within the Yemeni territorial waters, 4. Lack of electricity in the landing center							
8	Saeed Ali Ahmed	M	N	Y*	N	N	N	N
	Notes:* 1- Availability of stock, 2-. Low sale price for, 3. high Diesel prices							
9	Salah Ahmed Abdulrahman	M	N	Y*	N	N	N	Y**
	Notes:* 1. Low sale price for , 2. Difficulty of fishing during the windy season **Work as government employee							
10	Eissa Mohammed Othman Eissa	M	N	Y*	N	N	N	N
	Notes:* 1- Difficulty of fishing during windy season, 2. Monument of fishing nets in a wide area without any control by the competent authorities which prevent the fishermen to fishing in this area, 3- Competition of Eritrean fishermen who come to sell their fishes in the local market, which reduce the prices of local fishermen products							
11	Hassan Bokari	M	N	Y*	N	N	N	N
	Notes:* 1- High Diesel prices, 2- Availability of stock, 3-Difficulty of fishing during windy season							
12	Ahmed Qasim Maqbol	M	N	Y*	N	N	N	N
	Notes:* 1. Availability of stock, 2. Difficulty of fishing during windy season							
13	Yahia Shabrur	M	N	Y*	N	N	N	N

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	Notes: * 1. Availability of stock, 2. Difficulty of fishing during windy season							
14	Ebrahim Abdullah Ebrahim Shora	M	N	Y*	N	N	N	N
	Notes: * 1. Availability of stock, 2. Difficulty of fishing during windy season, 3- High Diesel prices							
15	Hassan Mohammed Makin	M	N	Y	N	N	N	N
	Notes:							
16	Thamer Ahmed Hassan	M	N	Y*	N	N	N	N
	Notes: :* 1- High Diesel prices, 2-Difficulty of fishing during windy season							
17	Wahib Hassan Garamani	M	N	Y*	N	N	N	Y**
	Notes: * Difficulty of fishing during windy season **Boat driver (to transport the Passenger from Kamaran to Al Salif and vice versa							
18	Makin Bajali	M	N	Y*	N	N	N	N
	Notes: * 1.Lack of ice factory in the island, 2. lack of work during the windy season, 3. Lack of market for products							
19	Ali Ebrahim Jomruk	M	N	Y*	N	N	N	N
	Notes: * 1- High Diesel prices, 2-Difficulty of fishing during windy season , 3- Availability of stock							
20	Naeem Ahmed Abkar Daum	M	N	Y*	N	N	N	N
	Notes: * 1. Availability of stock, 2. Difficulty of fishing during windy season							
21	Hisham Saeed Hadi	M	N	Y*	N	N	N	N
	Notes: * 1. Availability of stock, 2.Deficalty of fishing during windy season, 3.Competition of Eritrean fishermen who come to sell their fish in the city market, which reduce the prices of local fishermen products, 4.Cash of Eritrean patrols to the Yemeni fishermen and prevent them from fishing even within the Yemeni territorial waters							
22	Fahmi Hassan Mohammed Omar	M	N	Y*	N	N	N	N
	Notes: * 1- Competition of big boats, 2.Deficalty of fishing during windy season, 3.Competition of Eritrean fishermen who come to sell their fish in the city market, which reduce the prices of local fishermen products, 4.Monument of fishing nets in a wide area without any control by the competent authorities which prevent the fishermen from fishing.							
23	Salem Hassan Omar	M	N	Y*	N	N	N	N
	Notes:* 1. High loans to fishers, 2- Low sale price for, 3. Lack of market for products							
24	Moktar Mohammed Ali	M	N	Y*	N	N	N	N
	Notes:* 1. Using of illegal net by some fishers without any control from the government, 2. Availability of stock, 3. Difficulty of fishing during windy season, 4. High Diesel prices							
25	Ahmed Abdullah Qaten	M	N	Y*	N	N	N	N
	Notes:* 1- Availability of stock, 2.High Diesel prices							

SEX: Male = M, Female = F. COM=co-management. FIS = Fishing. MAR = mariculture. MAN = mangrove. TOU = Tourism. OTH = Other. Mark (Y) if yes, (N) if no, (?) if don't know.

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APPENDIX VIII: STAKEHOLDER QUALITY OF LIFE

No	Name of person interviewed	SEX	RFR	WTR	PRI	PRE	FUE	MAN
1	Abdo Ali Salem Gobshi	M	0	0	4	1	Gas	1**
	Notes:** the type of last marine animals was small emperor fish							
2	Yahia Mohammed Ali	M	0	0	3	2	Gas	1**
	Notes:** the type of last marine animals was small emperor fish							
3	Ali Abdullah Salem	M	0	0	3	2	Gas	1**
	Notes: ** the type of last marine animals was small trevally							
4	Zaid Ahmed Tolaihi	M	1	0	2	1	Gas*	1**
	Notes: *He use gas as cooking fuel but rarely he uses woods for cooking ** the type of last marine animals was sweetlips							
5	Khalid Abdullah Sagir Zarnook	M	1	0	3	1	Gas	1**
	Notes: * He uses gas as cooking fuel and sometimes he uses the wood but not mangrove wood ** the type of last marine animals was small emperor fish							
6	Abdo Salem Eisa	M	0	0	0.5	0.5	Gas	1**
	Notes: ** the type of last marine animals barracuda							
7	Mohammed Hassan Ali Mogni	M	0	0	0.7	0.7	Gas	1**
	Notes: ** the type of last marine animals was longtail tuna							
8	Saeed Ali Ahmed	M	0	0	0.5	0.5	Gas	7**
	Notes: ** the type of last marine animals was longtail tuna							
9	Salah Ahmed Abdulrahman	M	0	0	0.5	0.5	Gas	1**
	Notes: ** the type of last marine animals was longtail tuna							
10	Eissa Mohammed Othman Eissa	M	0	0	1	0.5	Gas*	2**
	Notes: * He uses the gas as cooking fuel but sometimes if there is no gas he use the mangrove wood (he use only the dry wood) ** the type of last marine animals was Indian mackerel							
11	Hassan Bokari	M	0	0	0.05	0.07	Gas*	1**
	Notes: * He uses the gas as cooking fuel and rarely if there is no gas, he use the wood of the mangrove (dry wood only) ** the type of last marine animals was emperor fish							
12	Ahmed Qasim Maqbol	M	1	0	0.05	0.07	Gas*	1**
	Notes: * He uses the gas as cooking fuel and rarely, if there is no gas, he use the dry mangrove wood ** the type of last marine animals was emperor fish							

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13	Yahia Shabror	M	0	0	0.07	0.08	Gas*	1**
Notes: * He uses the gas as cooking fuel but rarely he the wood of the small shrub which found in the Island ** the type of last marine animals was barracuda								
14	Ebrahim Abdullah Ebrahim Shoraa	M	0	0	0.1	0.1	Gas*	3**
Notes: * He uses the gas as cooking fuel but rarely he use the wood of the small shrub which found in the Island ** the type of last marine animals was emperor fish								
15	Hassan Mohammed Hassan Makin	M	0	0	0.12	0.15	Gas	2**
Notes: ** the type of last marine animals was Indian mackerel								
16	Thamer Ahmed Hassan	M	0	0	0.1	0.1	Gas*	1**
Notes: * He uses the gas as cooking fuel but rarely he use the wood of the small shrub which found in the Island ** the type of last marine animals was Grunter								
17	Wahib Hassan Garamani	M	0	0	1	1	Gas*	1**
Notes: * He uses the gas as cooking fuel and rarely, if there is no gas, he use the dry mangrove wood ** the type of last marine animals was trevally								
18	Makin Bajali	M	1	0	0.3	0.3	Gas*	1**
Notes: * He uses the gas as cooking fuel and rarely, if there is no gas, he use the dry mangrove wood ** the type of last marine animals was emperor fish								
19	Ali Ebrahim Jomruk	M	0	0	0.4	0.5	Gas*	1**
Notes: * He uses the gas as cooking fuel but rarely, if there is no gas, he use the dry mangrove wood ** the type of last marine animals was emperor fish								
20	Naeem Ahmed Abkar Daum	M	1	0	0.2	0.5	Gas	1**
Notes: ** the type of last marine animals was emperor fish								
21	Hisham Saeed Hadi	M	1	30	2	1	Gas	1**
Notes: ** the type of last marine animals was emperor fish								
22	Fahmi Hassan Mohammed Omar	M	1	30	0.5	0.7	Gas	1**
Notes: ** the type of last marine animals was weetlips fish								
23	Salem Hassan Omar	M	1	30	0.7	1	Gas	1**
Notes: ** the type of last marine animals was emperor fish								
24	Moktar Mohammed Ali Mohammed	M	1	30	0.03	0.06	Gas	7**
Notes: ** the type of last marine animals was kawakawa								
25	Ahmed Abdullah Qaten	M	0	30	0.6	0.8	Gas	22**
Notes: ** the type of last marine animals was Indian mackerel								

SEX: Male = M, Female = F. RFR = enter number of refrigerators at residence. WTR = days secure supply of drinking water at residence. PRU = Enter distance to primary health care facility in kilometres. PRE = Enter

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distance to primary education facility in kilometres. FUE = list main type of cooking fuel (Oil, gas, wood, charcoal – mention if fuel is from mangrove in notes). MAN = indicate when the stakeholder last ate marine animals in days and specify type and details in comments.

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