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

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

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**DRAFT FINAL REPORT**

**April 2015**

-  
**Djibouti**

-  
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Cover illustration: *Avicennia marina* mangrove saplings being planting by the local community at Khor Angar funded under the Implementing NAPA priority interventions to build resilience in the most vulnerable coastal zones in Djibouti Project. Community management and use of the mangrove could be the potential basis for a co-management scheme.

Photograph taken by: Mohamed Ahmed Djibril, January 6 2015

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

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## Abbreviations/Acronyms

Acronym	Title
ADDS	Agence Djiboutienne du Développement Sociale
CBA	Culture-Based Aquaculture
CBD	International Convention on Biological Diversity
DATE	Direction de l'Aménagement du Territoire et de l'Environnement
DP	Direction de la Pêche
EEZ	Exclusive economic zone
FAO	UN Food and Agricultural Organisation
IUU	Illegal, unreported and unregulated fishing

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MHUEAT	Ministre de l'habitat, de l'urbanisme, de l'environnement et de l'aménagement du territoire.
MSY	Maximum Sustainable Yield
NBSAP	National Biodiversity Strategy and Action Plan
PERSGA	Programme for the Environment of the Red Sea and Gulf of Aden
TURFs	Territorial Use Rights for Fisheries
UN	United Nations
CBD	Convention on Biological Biodiversity

## 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-based 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 areas<sup>1</sup>*". 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>

**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*

<sup>1</sup> [http://catchshares.edf.org/sites/catchshares.edf.org/files/What\\_is\\_a\\_Catch\\_Share.pdf](http://catchshares.edf.org/sites/catchshares.edf.org/files/What_is_a_Catch_Share.pdf)

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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 Fisheries Refugia, Southeast Asian Fisheries Development Center, Bangkok, Thailand. 84 pp. [www.unepscs.org/SCS\\_Documents/startdown/484.html](http://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 community<sup>2</sup>.

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<sup>2</sup>MEAM (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>



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## EXECUTIVE SUMMARY

Marine fisheries currently provide a fundamental contribution to food, employment, recreation, trade and economic well-being for the people of Djibouti. Fish is not, currently, exported. Estimates made in different projects have highlighted a potential annual maximum sustained production, in Djibouti, of 15,000 tonnes for species from coastal fisheries and 32,600 tonnes for species from pelagic fisheries (Darar, 2004). There is also good potential from aquaculture (both freshwater and marine) although this potential still has to be delivered. Despite this potential and investment domestic production of 250 tons in 1982 only rose to 450 tons in 1985 and then to 900 tons in 1990. Darar (2004) noted that, with these measures, the average monthly net income per fisher rose from \$US68 to \$US113 by 2004. Whilst this is an improvement it does not match the increases in income for workers in other comparable sectors. More recent figures are lacking but it is evident that fisheries in Djibouti still involve relatively few artisanal fishers confined to very limited areas of the continental shelf and close to the capital. The importance of up-to-date information to support evidence based management cannot be overemphasised.

It should also be cautioned that even if the maximum sustainable yield (MSY) for the whole fishery may not have been achieved this may not be the case for particular elements of that fishery such as grouper, that have high value, that migrate to spawn, and that are highly vulnerable to overfishing when they aggregate for spawning.

The challenge, therefore, is to increase fish production for the benefit of the present generation of Djiboutian citizens without compromising future generations using an evidence based approach. This, it is proposed, requires a new approach to investment in fisheries and fisheries management using principles of co-management<sup>3</sup>.

Unfortunately a framework that can support co-management of coastal and marine biological resources in Djibouti is not currently in place probably because there is no quota system for licenses and there are no examples of actual co-management. One potential scheme involving local communities and mangrove in Khor Angaris presented.

The draft law on fisheries and regulations enable co-management. They have been validated, and are ready to be submitted to the higher authorities for approval, hopefully in 2015.

The need for, and the opportunities and constraints to, delivering co-management of coastal and marine biological resources, including fisheries, in Djibouti, are discussed below.

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<sup>3</sup>“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.html>

## **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**<sup>4</sup> in **Djibouti** in coastal and marine **biodiversity**<sup>5</sup>**protected areas**<sup>6</sup>, **fisheries refugia**<sup>7</sup>, 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 collected using methods presented and agreed at a workshop held at the PERSGA headquarters in Jeddah held from 10<sup>th</sup> to 12<sup>th</sup> November 2014.

The review then uses this analysis to propose revisions to strengthen the use of co-management in support of the United Nations Food and Agricultural Organisation (FAO) “*code of conduct for responsible fisheries*” and the International Convention on Biological Diversity (CBD) “*ecosystem approach*” to fisheries to deliver socially, economically and environmentally equitable and sustainable fisheries.

## **LEGAL REVIEW**

The legal review indicates that there are three coastal and marine protected areas **primarily** declared for **biodiversity** protection within Djibouti. These are: (1) Iles MoucheetMaskali; (2) Haramous and; (3) Iles des Sept Frères and RasSyau, KhorAngar and forest Godoria. The boundaries of these protected areas still have to be specified in a regulation. However, proposed boundaries (A.B.D., & Associés, 2013) do not meet the 10% CBD Aichi target for 2020.

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

<sup>5</sup>“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.

<sup>6</sup>“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”.

<sup>7</sup>“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](http://www.unepscs.org/SCS_Documents/startdown/484.html)

The legal review indicates that the term “*refugia*”, or its equivalent, is not specified in Djiboutian law. The legal review indicates that there is no legislation currently in place to support the declaration of coastal and marine protected areas **primarily** as **fisheries refugia** or equivalent in Djibouti although coastal and marine protected areas obviously can have a role as fisheries refugia.

All Djibouti nationals have the right to fish<sup>8</sup> on obtaining a fishing license. Foreign nationals on Djiboutian registered fishing vessels can also fish. The license, once obtained, does not allow for fishing of species that are protected. Other restrictions can also be a condition of the license including the type, amount and method of use of fishing gear and equipment, the periods and areas within which the vessel is authorised to fish, the species and quantities of fish including, if necessary, restrictions on catches and the requirement for scientific observers. Fishing by nationals of Djibouti is allowed outside the exclusive economic zone of Djibouti.

Fishing is allowed, under certain conditions<sup>9</sup>, in coastal and marine protected areas primarily designated for biodiversity conservation. No particular conditions such as type of user, gear, target species (other than those that are generally protected) or closed areas and seasons are currently specified.

**Mariculture** is not allowed in areas primarily designated for biodiversity conservation. Mariculture is allowed outside coastal and marine protected areas primarily designated for biodiversity conservation<sup>10</sup>. The term “*refugia*” is not specified in Djibouti law.

**Mangrove** use is allowed throughout Djibouti, including in biodiversity protected areas, but only during the dry season when it can be cut for animal fodder<sup>11</sup>. Iles Moucheet Maskali, Haramous and Godoria are designated partly because of their mangrove.

Key coastal and marine species protected throughout the coastal and marine areas of Djibouti include dugong (sea-cows), whales and dolphin (some<sup>12</sup>), marine turtles<sup>13</sup>, marine turtle eggs, Humphead wrasse (*Cheilinus undulatus*), shark (some – grey shark and whale shark), manta ray, corals, and mangrove.

The agency primarily responsible for managing coastal and marine biodiversity protected areas is Direction de l'Aménagement du Territoire et de l'Environnement (DATE) under Ministre de l'habitat, de l'urbanisme, de l'environnement et de l'aménagement du territoire (MHUEAT). For fisheries it is Direction de la Pêche (DP), for fisheries refugia it is Direction

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<sup>8</sup> Order No. 2007-0036 PR MAEM regulating the granting of fishing licenses

<sup>9</sup> Article 4 of Law No. 45/AN/04/5 specifies that “*Land and Marine Protected Areas are not enclosed areas and are not denied access. Livestock and fishing activities practiced in the traditional way and crafts, and ecotourism are allowed but regulated and controlled in order to preserve biodiversity.*”

<sup>10</sup> Article 1 of Order No. 2007-0035 / PR / MAEM regulating mariculture specifies that “*Depending on the best available scientific information, the mariculture are permitted outside protected marine areas*”

<sup>11</sup> Article 14 of Decree No. 2004-0065 / PR / MHUEAT concerning protection of biodiversity specifies that “*Cutting of mangroves for animal feed is allowed during the dry season which runs from 1 June to 30 September*”.

<sup>12</sup> Decree No. 2004-0065 / PR / MHUEAT - sperm whale, humpback dolphin Indo-Pacific, Risso's dolphin, Cuvier's beaked whale, pantropical spotted dolphin, spinner dolphin, dolphin blower

<sup>13</sup> Decree No. 2004-0065 / PR / MHUEAT - hawksbill turtle, loggerhead turtle, green turtle, leatherback turtles

de la Pêche (DP), for mangrove itis Direction de l'Aménagement du Territoire et de l'Environnement (DATE), and for social welfare and developmentis Agence Djiboutienne du Développement Sociale (ADDS).The agency responsible for international fisheries matters (foreign nationals fishing in EEZ and nationals fishing outside the EEZ of Djibouti) is Direction de la Pêche (DP).

The current legislation does not allow for restrictive/exclusive fishing licenses to be issued to particular user groups with conditions of the license including a contribution to the management of the fishing for which the license has been issued. Without such a system it will be difficult to introduce co-management since voluntary co-management may not be sustained when resources become limiting and there is open access.

## **POLICY REVIEW**

The policy review indicates that, in Djibouti, there is:

- **no** policy to change the legislation relating to the recognition of coastal and marine protected areas **primarily** declared for **biodiversity** protection;
- **no** policy to introduce legislation to recognise coastal and marine areas **primarily** as fisheries refugia;
- **no** policy to change the current legislation so as to prohibit , or set conditions for, fishing in coastal and marine protected areas primarily designated for biodiversity conservation;
- **no** policy to change the current legislation that allows all Djibouti nationals to be licensed to fish in the EEZ of Djibouti;
- **no** policy to change the current legislation regarding fishing by foreign nationals from Djiboutian registered vessels in the exclusive economic zone of Djibouti;
- **no** policy to change the current legislation that allows fishing by nationals of Djibouti outside the exclusive economic zone of Djibouti.
- **no** policy to allow mariculture in coastal and marine protected areas primarily designated for biodiversity conservation;
- **no** policy to change the current legislation that allows mariculture outside coastal and marine protected areas primarily designated for biodiversity conservation;
- **no** policy to change the current legislation regarding the conditions under which mangrove can be used in Djibouti;
- **no** policy to change the list of coastal and marine species that are currently protected under legislation in Djibouti;

- **no** policy to change the current legal status of any agency dealing with coastal and marine biological resources.

There is policy direction on co-management of coastal and marine biological resources in the draft Fisheries Master Plan of 2004. However, this Plan is still to be approved.

A Draft Law of Fisheries and draft implementing regulations was developed, in 2013, as part of the ACP Fish II project provide policy and a potential legal basis for co-management of coastal and marine biological resources, including fisheries, in Djibouti. The draft law and regulations have been validated, and are ready to be submitted to higher authorities for approval, hopefully in 2015.

### **CO-MANAGEMENT SCHEMES**

This review has been unable to identify any currently **operational** co-management schemes involving coastal and marine biological resources in Djibouti.

This review has been able to identify one **potential** co-management scheme involving coastal communities and mangrove in Djibouti. The scheme involved restoration of 80 hectares of mangrove area in Khor Angar.

The possible reason for the absence of operational co-management schemes and the limited number of potential schemes in Djibouti could be the lack of a legal basis for a co-management linked quota system for licenses for access to and extractive use of coastal and marine biological resources.

### **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 20 stakeholders interviewed 5 (25%) were female and 15 (75%) were male.

None of the stakeholders were involved in actual co-management schemes nevertheless all signalled an interest in potential co-management schemes. Rather, they do not have enough information about the importance of co-management and its relevance to their sector, hence the importance of training.

All 20 stakeholders interviewed identified national fishing as a significant livelihood and none identified international fishing. None of the stakeholders had a significant livelihood related to mariculture or mangrove use. 5 of the stakeholders indicated a significant livelihood associated with marine tourism and 5 indicated other significant livelihoods.

Unfortunately stakeholders were not questioned about significant livelihood concerns due to a misinterpretation of the questionnaire.



Key conclusions from the 20 stakeholder interviews concerning quality of life are that all stakeholders had a refrigerator. A majority did not have continuous access to freshwater. All had relatively close access to primary health care and education. All had eaten marine animals within the last day.

Unfortunately the questionnaire does not indicate whether the quality of primary health care and education were satisfactory or the status of other key indicators of poverty such as income and alternative livelihood opportunities.

## **DISCUSSION**

Many fisheries development programs have been implemented since the country gained independence in 1977 but with only limited success. Evaluation of these programmes suggests that the fault lies, not so much in the content of the programs, but in the lack of active participation by fishers. This lack of participation results in limited ownership of the process by the users of the resources and little transfer of knowledge and skills. In addition, the public sector has lacked the staff and technical capacity to manage the use of these resources and public sector management, without the co-operative participation of the users, will be even more labour intensive and difficult to sustain.

It is, therefore, essential to adopt a development strategy that takes into account lessons learned from past investments and enables resource use stakeholders, such as fishers, to participate in the management of fishery resources. Hence the proposal to engage resolutely in a management method that has already proven itself wherever it has been properly set up: co-management.

It is suggested that the main reason that co-management has not been introduced in Djibouti probably lies in the fact that there is no legal mechanism for allocating exclusive use to a restricted group of users to fish or to bring tourists to see wildlife.

It is suggested that there are two options for controlling access to and extractive use of coastal and marine biological resources including fishing. The first is to restrict access and use to all license holders and have no quota on the number of licenses. The second is to restrict the number of licenses that are issued using a quota system.

No doubt a combination of these two approaches could be followed, the latter requiring a change in the legislation. The draft Law of Fisheries and draft implementing regulations developed, in 2013, as part of the ACP Fish II may provide this legislation.

## **RECOMMENDATIONS**

Six recommendations are proposed as a result of this review.

### **1. QUOTA FOR LICENSES**

The most important recommendation comprises a proposal to amend legislation to enable a quota system for licenses for access to and extractive use of coastal and marine biological

resources and, where relevant, to make co-management a condition of the use of those licenses that are issued.

The draft Law of Fisheries and draft implementing regulations that have been validated and are pending enactment in 2015 need to be checked to determine whether they support co-management of coastal and marine biological resources

The issue of limiting fishing and non-extractive use licenses in support of co-management should be a priority consideration of the “*The Advisory Board of Fisheries*<sup>14</sup>”.

## 2. TECHNICAL SUPPORT FROM PERSGA

PERSGA should take a lead role in facilitating the 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.

## 3. STOCK ASSESSMENTS

A list of priority stocks to be assessed, including those subject to regional assessments, should be created. Efforts should be made to solicit funds for priority stock assessments and to implement the assessments and recommendations resulting from these assessments. Technical support from PERSGA for regional stock assessments is recommended.

## 4. ENFORCEMENT OF LAWS

The capacity of relevant agencies to deliver their legal mandate needs to be determined, deficiencies identified, and actions to reduce deficiencies proposed. Tools such as co-management that build environmental awareness in key biological resource use stakeholders and that reduce the need for, and investment in, enforcement by the state should be introduced.

Relevant laws should also be amended to provide for legal protection for species that are not listed in national legislation but that are listed under CITES.

## 5. MIGRATORY SPECIES

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 Djibouti is a party. Technical support from PERSGA regarding the management of migratory species is recommended.

## 6. FISHERIES REFUGIA

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<sup>14</sup> This Advisory Board also contains representatives from the Technical Committee of the Environment, and National Commission for Sustainable Development so is inclusive in respect of environmental matters.



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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 Djibouti EEZ as fisheries refugia with a focus on spawning and nursery areas.

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.

DRAFT

## 1. BACKGROUND

The following provides a review of legislative, strategy, policy and management opportunities and constraints to fisheries related **co-management**<sup>15</sup> of coastal and marine **biological resources**<sup>16</sup> in **Djibouti** in coastal and marine **biodiversity**<sup>17</sup> **protected areas**<sup>18</sup>, **fisheries refugia**<sup>19</sup>, 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.

## 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 used data collected using methods presented and agreed at a workshop held at the PERSGA headquarters in Jeddah held from 10<sup>th</sup> to 12<sup>th</sup> November 2014. The methodology comprised interviews, site visits and the completion of a number of templates. The consultants' contract is provided at 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	<b>National level Acts supporting co-management</b>	Is there a legal chain of custody for co-management from National level Acts?
2	<b>National level policies supporting co-management</b>	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?

<sup>15</sup>"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>

<sup>16</sup>**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.

<sup>17</sup>"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.

<sup>18</sup>"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".

<sup>19</sup>"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](http://www.unepscs.org/SCS_Documents/startdown/484.html)

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3	<b>Register of co-management/other practices</b>	Examples of operational co-management practices relating to use of coastal and marine biological resources.
4	<b>Proposed co-management agreements</b>	Examples of possible co-management agreements relating to use of coastal and marine biological resources.
5	<b>Stakeholder registration</b>	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 Djibouti. These are: (1) Iles MoucheetMaskali; (2) Haramous and; (3) Iles des Sept Frères and RasSyan, KhorAngar and forest Godoria. The boundaries of these protected areas still have to be specified in a regulation. However, proposed boundaries (A.B.D., & Associés, 2013) do not meet the 10% CBD Aichi target for 2020.

Protected area name	Yes/No/?	Law/regulation
Iles Mouche et Maskali	Yes	Decree protecting biodiversity 2004 No. 0065 / PR / MHUEAT and the Act to establish marine and terrestrial protected areas No. 45 AN / 04 / 5th L
Haramous	Yes	Decree protecting biodiversity 2004 No. 0065 / PR / MHUEAT and the Act to establish marine and terrestrial protected areas No. 45 AN / 04 / 5th L
Iles des Sept Frères and RasSyan, KhorAngar and forest Godoria.	Yes	Decree protecting biodiversity 2004 No. 0065 / PR / MHUEAT and the Act to establish marine and terrestrial protected areas No. 45 AN / 04 / 5th L

The legal review indicates that the term “*refugia*” or its equivalent is not specified in Djiboutian law.

Refugia name*	Yes/No/?	Law/regulation
None	-	The term “ <i>refugia</i> ” is not specified in Djibouti law.

\*Biodiversity protected areas could be made refugia if the use is compatible.

All Djibouti nationals have the right to fish<sup>20</sup> on obtaining a fishing license. The conditions required to obtain a license are:

<sup>20</sup> Order No. 2007-0036 / PR / MAEM regulating the granting of fishing licenses.

- Complete the application form provided for this purpose;
- Have Djiboutian nationality or be engaged in fishing on board a fishing vessel registered in Djibouti.
- Justify status as a fisher
- Provide 2 recent passport photographs

The license, once obtained, does not allow for fishing of species that are protected.

Other restrictions associated with the general fishing license can be issued by the Fisheries Director of the Ministry responsible for Fisheries:

- The type, amount and method of use of fishing gear and equipment;
- Periods and areas within which the vessel is authorized to fish;
- Species and quantities of fish whose capture is permitted, including, if necessary, restrictions on catches;
- Scientific observers.

Fishing is allowed, under certain conditions<sup>21</sup>, in coastal and marine protected areas primarily designated for biodiversity conservation. No particular conditions such as type of user, gear, target species (other than those that are generally protected) or closed areas and seasons are currently specified.

The legal review indicates that the term “*refugia*”, or its equivalent, is not specified in Djibouti law. No areas have been designated as fisheries refugia in Djibouti.

Fishing by foreign nationals is allowed in the exclusive economic zone of Djibouti only from Djiboutian licensed fishing vessels. Fishing by nationals of Djibouti is allowed outside the exclusive economic zone of country.

<b>Fishing allowed?</b>	<b>Yes/No/?</b>	<b>Law/regulation</b>
Coastal and marine PAs	Yes	Article 4 of Law No. 45/AN/04/5
Coastal and marine refugia	-	The term refugiais not specified in Djibouti law
Foreign nationals	Yes	Order No. 2007-0036 / PR / MAEM regulating fishing licenses Article 4.
Nationals outside EEZ	Yes	Act No. 187 / AN / 02 / 4th L on Fisheries Code. Article 7

The current legislation does not allow for restrictive/exclusive fishing licenses to be issued to particular user groups with conditions of the license including a contribution to the management of the fishing for which the license has been issued. Without such a system it will be difficult to introduce co-management since voluntary co-management may not be sustained when resources become limiting and there is open access. However, relevant legislation is proposed and is reported to be coming into force shortly (see policy review).

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

<sup>21</sup> Article 4 of Law No. 45/AN/04/5 specifies that “*Land and Marine Protected Areas are not enclosed areas and are not denied access. Livestock and fishing activities practiced in the traditional way and crafts, and ecotourism are allowed but regulated and controlled in order to preserve biodiversity.*”

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designated for biodiversity conservation<sup>22</sup>. The term “refugia”, or its equivalent, is not specified in Djiboutian law.

Mariculture allowed?	Yes/?	Law/regulation
Coastal and marine PAs	No	Order No. 2007-0035 / PR / MAEM regulating mariculture. Article 1
Coastal and marine refugia	-	The term refugia is not specified in Djiboutian law
Other areas	Yes	Order No. 2007-0035 / PR / MAEM regulating mariculture. Article 1

**Mangrove** use is allowed throughout Djibouti but only during the dry season when it can be cut for animal fodder<sup>23</sup>. Iles MoucheetMaskali, Haramous and Godoria are designated partly because of their mangrove.

Mangrove use allowed?	Yes/?	Law/regulation
Coastal and marine PAs	Yes	Decree No. 2004-0065 / PR / MHUEAT. Article 14
Coastal and marine refugia	-	The term refugia is not specified in Djiboutian law
Other areas	Yes	Decree No. 2004-0065 / PR / MHUEAT. Article 14

The coastal and marine species that are currently protected against exploitation **throughout** the coastal and marine areas of Djibouti are listed in Appendix V. The table below indicates which species/groups are (yes), are not (no) protected and which species/groups the protection status is unclear (?).

Species/group	Yes/No/?	Law/regulation reference including year
Dugong	Yes	Decree protecting biodiversity 2004 No. 0065 / PR / MHUEAT
Whales and dolphin (some <sup>24</sup> )	Yes	Decree protecting biodiversity 2004 No. 0065 / PR / MHUEAT
Marine turtle <sup>25</sup>	Yes	Decree protecting biodiversity 2004 No. 0065 / PR / MHUEAT
Marine turtle eggs	Yes	Decree protecting biodiversity 2004 No. 0065 / PR / MHUEAT
Humphead wrasse ( <i>C. undulatus</i> )	Yes	Decree protecting biodiversity 2004 No. 0065 / PR / MHUEAT
Shark (grey and whale <sup>26</sup> )	Yes	Decree protecting biodiversity 2004 No. 0065 / PR / MHUEAT
Manta ray	Yes	Decree protecting biodiversity 2004 No. 0065 / PR / MHUEAT
Coral	Yes	Decree protecting biodiversity 2004 No. 0065 / PR / MHUEAT
Mangrove	Yes*	Decree protecting biodiversity 2004 No. 0065 / PR / MHUEAT

\* Can be cut during the dry season.

The agency primarily responsible for managing coastal and marine biodiversity protected areas is Direction de l'Aménagement du Territoire et de l'Environnement (DATE) under Ministre de l'habitat, de l'urbanisme, de l'environnement et de l'aménagement du territoire (MHUEAT). For fisheries it is Direction de la Pêche (DP), for fisheries refugia (if designated)

<sup>22</sup> Article 1 of Order No. 2007-0035 / PR / MAEM regulating mariculture specifies that “Depending on the best available scientific information, the mariculture are permitted outside protected marine areas”

<sup>23</sup> Article 14 of Decree No. 2004-0065 / PR / MHUEAT concerning protection of biodiversity specifies that “Cutting of mangroves for animal feed is allowed during the dry season which runs from 1 June to 30 September”.

<sup>24</sup> Decree No. 2004-0065 / PR / MHUEAT - sperm whale, humpback dolphin Indo-Pacific, Risso's dolphin, Cuvier's beaked whale, pantropical spotted dolphin, spinner dolphin, dolphin blower

<sup>25</sup> Decree No. 2004-0065 / PR / MHUEAT - hawksbill turtle, loggerhead turtle, green turtle, leatherback turtles

<sup>26</sup> Decree No. 2004-0065 / PR / MHUEAT

itis Direction de la Pêche (DP), for mangrove itis Direction de l'Aménagement du Territoire et de l'Environnement (DATE), and for social welfare and development itis Agence Djiboutienne du Développement Sociale (ADDS). The agency responsible for international fisheries matters (foreign nationals fishing in EEZ and nationals fishing outside the EEZ of Djibouti) is Direction de la Pêche (DP).

### 3.2 Policy framework

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

The policy specified in the National Strategy and Action Plan for Biodiversity in 2000 to declare Iles Moucha and Maskali, Haramous and Sept Freres as biodiversity protection areas was implemented by legislation in 2004 (see above). No other areas are proposed as biodiversity protection areas even though the current areas are less than the 10% specified in the CBD Aichi 2020 targets.

Proposed protected area	Yes/No/?	Policy document name and year
None	No	None

The policy review indicates that there are no policies relating to the recognition of additional coastal and marine areas **primarily** declared as fisheries refugia.

Proposed refugia name	Yes/No/?	Policy document name and year
None	No	None

The policy review indicates that there is no policy to change the current law so as to prohibit, or set conditions for, fishing in coastal and marine protected areas primarily designated for biodiversity conservation.

The policy review indicates that there is no policy to change the current legislation that potentially allows all Djibouti nationals to be licensed to fish in the EEZ of Djibouti.

There is no policy to change the current law that allows fishing by foreign nationals from Djiboutian registered vessels in the exclusive economic zone of Djibouti.

There is no policy regarding fishing refugia in Djibouti.

Mariculture allowed?	Yes/No/?	Policy document name and year
Coastal and marine PAs	No	Strategy and the National Action Plan for Biodiversity Conservation.
Coastal and marine refugia*	-	The term refugia is not specified in Djiboutian law
Other areas in the EEZ	Yes	Master Plan for Fisheries.

\* There is no policy relating to fisheries refugia in Djibouti.

There is policy regarding the conditions under which mangrove can be used in Djibouti in the ICZM Plan. The policy indicates the implement measures to protect and restore threatened habitats such as mangroves



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Mangrove use?	Yes/no/?	Policy document name and year
Coastal and marine PAs	Yes	IZCM plan

There is no policy to change, or add to, the list of coastal and marine species that are currently protected under legislation in Djibouti.

Species/group	Yes/no/?	Law/regulation reference including year
None	No	None proposed for protection under the Djibouti NBSAP of 2002 or the fourth national report of 2009. Actual legally protected species are listed above.

There is no policy to change the current legal status of any agency dealing with coastal and marine biological resources.

There is policy direction on co-management of coastal and marine biological resources in the draft Fisheries Master Plan of 2004. However, this Plan is still to be approved.

A Draft Law of Fisheries and draft implementing regulations was developed, in 2013, as part of the ACP Fish II project provide policy and a potential legal basis for co-management of coastal and marine biological resources, including fisheries, in Djibouti. The draft law and regulations have been validated, and are ready to be submitted to higher authorities for approval, hopefully in 2015.

### 3.3 Co-management schemes

This review has been unable to identify any currently **operational** co-management schemes involving coastal and marine biological resources in Djibouti.

This review has been able to identify one **potential** co-management scheme involving coastal communities and mangrove in Djibouti. The scheme involved restoration of 80 hectares of mangrove area in Khor Angar.

The possible reason for the absence of operational co-management schemes and the limited number of potential schemes in Djibouti could be the lack of a legal basis for a co-management linked quota system for licenses for access to and extractive use of coastal and marine biological resources.

#### 3.3.1 Operational co-management case study

No case of an operational co-management scheme has been identified in Djibouti at the time of writing of this review.

### 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



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“Ecosystem Approach”. This review, therefore, included interviews with a number of key stakeholders concerning livelihoods and quality of life.

Of the 20 stakeholders interviewed 5 (25%) were female and 15 (75%) were male.

None of the stakeholders were involved in actual co-management schemes nevertheless all signalled an interest in potential co-management schemes. Rather, they do not have enough information about the importance of co-management and its relevance to their sector, hence the importance of training.

### 3.3.2 Potential co-management case study

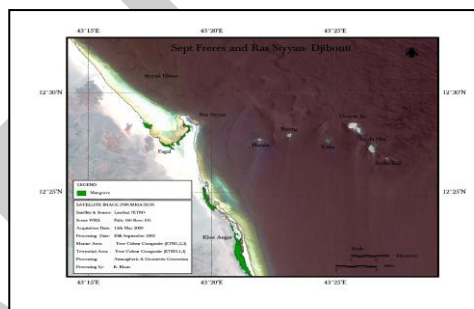
#### CASE STUDY OF A POTENTIAL CO-MANAGEMENT SCHEME

##### Mangrove forestation at Khor Angar

Four nurseries were established each containing 6,000 plants. Around 30,000 mangrove trees (*Avicennia marina* and *Rhizophora spp.*) were planted after dead trees had been cleared to restore 80 hectares.

Each activity involved about thirty people from the local population who were employed under the cash for work system.

The scheme does not reflect actual co-management because there is no delegation of management to particular users.



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The best way to protect a natural resource is to get the local population to take responsibility for the management of the resource using principles of co-management. Unfortunately the mangrove planting scheme only presents a potential for co-management since there is no mechanism to license the right to use the mangrove to the local population.

The following table summarises the results from interviews of 20 stakeholders concerning significant livelihoods.

Significant livelihoods	Number **	Percent
Fishing – National	20	100%
Fishing – International	0	0
Mariculture	0	0
Mangrove	0	0
Marine tourism	5	15%
Other	5	15%
<b>Total</b>	<b>30</b>	<b>-</b>

\* 20 stakeholders were interviewed. 5 (25%) were female and 15 (75%) were male.

\*\* The number of livelihoods can exceed the number of stakeholders since stakeholders can have multiple significant livelihoods.

All 20 stakeholders interviewed identified national fishing as a significant livelihood and none identified international fishing. None of the stakeholders had a significant livelihood related to mariculture or mangrove use. 5 of the stakeholders indicated a significant livelihood associated with marine tourism and 5 indicated other significant livelihoods.

Unfortunately stakeholders were not questioned about significant livelihood concerns due to a misinterpretation of the questionnaire.

The following table summarises the results from interviews of 20 stakeholders concerning quality of life indicators(see Appendix XII).

Quality of life indicator	Max*	Min*	Median
Refrigerators (number)	1 (20)	0 (0)	1
Drinking water (days' supply)	5 times per week (??)	2 times per week (??)	2 times per week
Primary health (km to)	3 (??)	1 (??)	2
Primary education (km to)	3 (??)	1 (??)	2
Main cooking fuel (oil – yes/no/?)	0	0	0
Main cooking fuel (gas – yes/no/?)	Yes (20)	No (0)	?
Main cooking fuel (wood – yes/no/?)	Yes (??)	No (??)	?
Main cooking fuel (charcoal – yes/no/?)	Yes (??)	No (??)	?
Cooking fuel (mangrove - yes/no/?)	Yes (1)	No (19)	?
Since ate marine animals (days)	1 day (20)	>1 (0)	1

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\* Sample size of 20 stakeholders. Numbers of respondents in (brackets)

Key conclusions from the 20 stakeholder interviews concerning quality of life are that all stakeholders had a refrigerator. A majority did not have continuous access to freshwater. All had relatively close access to primary health care and education. All had eaten marine animals within the last day. Unfortunately the questionnaire does not indicate whether the quality of primary health care and education were satisfactory or the status of other key indicators of poverty such as income and alternative livelihood opportunities.

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## 4. DISCUSSION

Marine fisheries, currently provide a fundamental contribution to food, employment, recreation, trade and economic well-being for the people of Djibouti. Fish is not, currently, exported, Estimates made in different projects have highlighted a potential annual maximum sustained production, in Djibouti, of 15,000 tonnes for species from coastal fisheries and 32,600 tonnes for species from pelagic fisheries (Darar, 2004). There is also good potential from aquaculture (both freshwater and marine) although this potential still has to be delivered. Despite this potential and investment domestic production of 250 tons in 1982 only rose to 450 tons in 1985 and then to 900 tons in 1990. Darar (2004) noted that with these measures, the average monthly net income per fisher rose from \$US68 to \$US113 by 2004. Whilst this is an improvement it does not match the increases in income for workers in other comparable sectors. More recent figures are lacking but it is evident that fisheries in Djibouti still involve relatively few artisanal fishers confined to very limited areas of the continental shelf and close to the capital. The importance of up-to-date information to support evidence based management cannot be overemphasised.

It should also be cautioned that even if the maximum sustainable yield (MSY) for the whole fishery may not have been achieved this may not be the case for particular elements of that fishery such as grouper, that have high value, that migrate to spawn and that are highly vulnerable to overfishing when they aggregate for spawning.

Many fisheries development programs have been implemented since the country gained independence in 1977 but with only limited success. Evaluation of these programmes suggests that the fault lies, not so much in the content of the programs, but in the lack of active participation by fishers. This lack of participation results in limited ownership of the process by the users of the resources and little transfer of knowledge and skills. In addition, the public sector has lacked the staff and technical capacity to manage the use of these resources and public sector management, without the co-operative participation of the users, will be even more labour intensive and difficult to sustain.

It is, therefore, essential to adopt a development strategy that takes into account lessons learned from past investments and enables resource use stakeholders, such as fishers, to participate in the management of fishery resources. Hence the proposal to engage resolutely in a management method that has already proven itself wherever it has been properly set up: co-management.

Co-management of coastal and marine biological resources requires that the users of these resources, are delegated responsibility for, and actively contribute to their management. This reduces the burden on the state to micro-manage the resource users and gives an incentive to the delegated users to manage use wisely. The role of the state is to ensure that these resources are used in such a way that they benefit current and future generations of all of the people of Djibouti.

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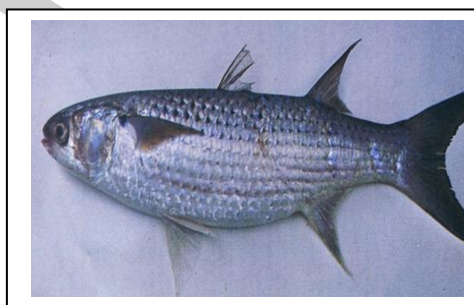
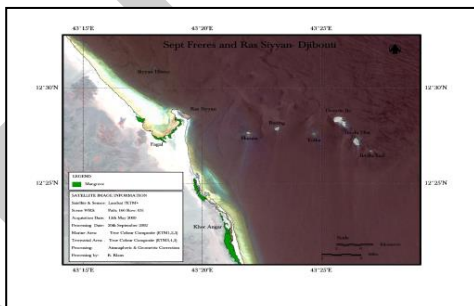
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### 3.4.1 Stakeholder example

Ahmed

Fishing

1. Ahmed, over 50 years old.
2. He lives in Khor Angar since birth.
3. Fishing around the mangrove.
4. He sells to wholesaler.
5. If there is a co-management, he thinks that his income will increase.
6. He believes that the future will be better now and he says he must put in place a co-management system.



No comment.



The state can meet its role by supporting research, providing incentives, generating revenue, specifying conditions of use and holding the resource users accountable to their conditions of use.

It follows that resource users, such as fishers, need to participate in policy and regulatory control of use if they are to agree to the conditions of use and to manage themselves and prevent inappropriate use when they use these resources. Conservation and monitoring of biological resources and the environment are not only the responsibility of the state administration but become the business of the users of these resources such as fishers.

It is suggested that the main reason that co-management has not been introduced in Djibouti probably lies in the fact that there is no legal mechanism for allocating exclusive use (quota) to a restricted group of users to fish or to bring tourists to see wildlife. For example, in respect of extractive use, any Djiboutian who wants to fish can obtain a license to fish. The same goes for non-extractive use. Any Djiboutian who wishes to operate in the nature tourism sector (diving, whale and whale shark watching sectors) cannot be excluded on grounds of carrying capacity. This situation is known as “*Open access*” or the “*Tragedy of the Commons*” means that no user has an incentive to manage use when other users do not also do so. This problem is made even greater when users are poor and have no alternatives and where enforcement by the state is weak.

There are two possible options for controlling access to and extractive use of coastal and marine biological resources including fishing. The first is to restrict access and use to all license holders and have no quota on the number of licenses. The second is to restrict the number of licenses that are issued. These options are discussed below.

### **No license quota**

Given the current legislation that potentially allows all Djiboutians to fish the only legally correct approach is to **restrict fishing equally to all fishers** who have licenses. Co-management would have to be voluntary. Restrictions would be applied to all license holders and could be by species (fishing of certain species is already prohibited); by condition of species (size, reproductive state etc), gear, by closed area or closed season; by setting catch quotas or by a combination of these measures. One disadvantage of such an approach is that it could eventually lead to conflict and increased management complexity if too many people are licensed. Such an approach would require significant policing by the State and efforts at voluntary co-management might be undermined if there were to be significant illegal fishing.

### **License quota**

The alternative approach is to propose a policy to change the legislation and, if accepted, change the legislation, to limit the number of licenses by type (through a quota). Licenses would then be issued within the quota according to a set of fair and reasonable criteria such as livelihood dependency, traditional use and sustainable use and also require that those that receive a license participate in the co-management of the resources that they use as a condition of the license.



It has been signalled in this review that fisheries resources in Djibouti are currently underexploited, although for certain species this may be debatable. If the fishery resource is currently underexploited then licenses may not need to be removed from those that already fish, just re-assigned, under a new quota system. If it is found that the number of licenses does need to be restricted then those that have to lose their license may need to be compensated and/or provided with alternative livelihoods.

No doubt a combination of these two approaches could be followed, the latter requiring a change in the legislation.

The draft Law of Fisheries and draft implementing regulations that have been validated and are pending enactment need to be checked to determine whether they support co-management of the use of coastal and marine biological resources.

## 5. RECOMMENDATIONS

A number of recommendations are proposed below to include the sustainable use of coastal and marine biological resources in Djibouti for the benefit of present and future generations of Djiboutian citizens.

### 5.1 Quota for licenses

**Issue:** It will be extremely difficult to introduce systems for the co-management of coastal and marine biological resources unless there is a quota restricting the number of licenses that are issued to access and extract these resources and conditions on the license to ensure an active contribution to the management of these resources.

**Recommendation:** A proposal to amend legislation to enable a quota system for licenses for access to and extractive use of coastal and marine biological resources and, where relevant, to make co-management a condition of the use of those licenses that are issued.

The draft Law of Fisheries and draft implementing regulations that have been validated and are pending enactment in 2015 need to be checked to determine whether they support co-management of coastal and marine biological resources

The issue of limiting fishing licenses and use of co-management should be a priority consideration of the “*The Advisory Board of Fisheries*<sup>27</sup>”.

### 5.2 Technical support from PERSGA

**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.

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<sup>27</sup> This Advisory Board also contains representatives from the Technical Committee of the Environment, and National Commission for Sustainable Development so is inclusive in respect of environmental matters.

**Recommendation:** PERSGA should be asked to 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.
- 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.

Other issues and recommendations related to the management of coastal and marine biological resources in Djibouti are identified as follows:

### **5.3 Stock assessments**

**Issue:** There is a relatively poor understanding of the status and management requirements of a number of stocks of coastal and marine biological resources in Djibouti.

Sea-cucumbers are not protected and the sea-cucumber fishery is not currently managed and is in danger of overexploitation. The only species of shark that are protected are grey shark and whale shark. Whilst turtle and dugong are legally protected turtles, sometimes as bycatch, are fished illegally partly because of a lack of awareness of their value to income generation from wildlife tourism. An effort should be made to raise awareness concerning income generating activities from tourism from these protected animals. No eco-tourism project observing turtles nesting, led by communities, is found in Djibouti. This kind of activity is a revenue generator to coastal communities and encourages them to protect this resource. Poachers become, under these conditions, the protectors of turtles. The dugong population of Djibouti is one of the largest in the region and is extremely sensitive to disturbance. Finally Djibouti is rich in coral and coral associated species that support coastal fisheries and attract tourists. However, coral is at particular risk from climate change and from poorly managed coastal development.

**Recommendation:** A list of priority stocks to be assessed, including those subject to regional assessments, should be created. Efforts should be made to solicit funds for priority stock assessments and to implement the assessments and recommendations resulting from these assessments. Technical support from PERSGA for regional stock assessments is recommended in section 5.2 above.

#### 5.4 Enforcement of laws

**Issue:** Poor enforcement of existing regulations.

For example collecting of shells, coral and turtle is not allowed under Djibouti legislation but shells, coral and turtle shells are sold in the Capital. This also goes against the commitments made by the Republic of Djibouti as a signatory of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

**Recommendation:** The capacity of relevant agencies to deliver their legal mandate needs to be determined, deficiencies identified, and actions to reduce deficiencies proposed. Tools such as co-management that build environmental awareness in key biological resource use stakeholders and that reduce the need for, and investment in, enforcement by the state should be introduced.

**Recommendation:** Relevant laws should also be amended to provide for legal protection for species that are not listed in national legislation but that are listed under CITES.

#### 5.5 Migratory species

**Issue:** There is currently no mechanism in Djibouti 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 Djibouti is a party. Technical support from PERSGA regarding migratory species is recommended in section 5.2 above.

#### 5.6 Fisheries refugia

**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 Djibouti.

**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 Djibouti 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.

## **APPENDIX I: CONSULTANT TERMS OF REFERENCE**

### **1. 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.

### **2. 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 co-supervision 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.

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## **APPENDIX II: CONSULTANT ITINERARY**

<b>Date</b>	<b>Location</b>	<b>Activity and key persons met</b>
16/12/2014 20/12/2014 03/01/2015 06/01/2015	Fishing port	Fishermen
12/12/2014	By phone	Director of Fisheries

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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	
<b>1. GENERAL</b>								
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.							
<b>2. OWNERSHIP OF BIOLOGICAL RESOURCES</b>								
2.1	Is (marine) wildlife (as opposed to domesticated/cultivated marine species) defined in the legal instrument?	Y	Y					
2.2	Is ownership of marine wildlife by the state	Y	Y					



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	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?							
<b>3. MANAGEMENT (authorisation includes designation of a regulatory body)</b>								
3.1	Is there an agency given responsibility for managing marine wildlife in the legal instrument?							
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?							

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3.5	Is there an agency given responsibility for <b>only</b> managing marine protected areas in the legal instrument?							
3.6	Is there an agency given responsibility for <b>only</b> managing coastal protected areas in the legal instrument?							
3.7	Is there an agency given responsibility for managing <b>both</b> 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)							

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	arrangement, or equivalent, specified in the legal instrument?							
<b>4. PERMITS/LICENSES</b>								
4.1	Is authorisation to fish marine wildlife required under the legal instrument?							
4.2	Is authorisation to fish marine wildlife in certain 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 <b>coastal</b> areas assigned for traditional/							

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	community use under the legal instrument?							
4.10	Are any <b>marine</b> 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?							
<b>5. Other relevant laws</b>								
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?							
5.5	Are there any marine species action plans referred to <sup>28</sup> ?							
5.6	Are there any references to certified sustainable marine fisheries?							

<sup>28</sup> For example is there a Shark Action Plan?

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5.7	Is there any law concerning international fishing?								
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DRAFT

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## III.2 National level Policies

<b>PERSGA AND SEM PARTNERS LOGOS</b>			
<b>NATIONAL LEVEL POLICIES SUPPORTING CO-MANAGEMENT</b>			
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		
<b>06 ECOSYSTEM APPROACH (see Annex A)</b>			
No	Policy	Score (0-5)	Comment
01/12	Public participation		
02	Delegation of management		
03	Transboundary effects		
04	Economic context		
05/10	Conservation/sustainable use/ sustainable development		
06	Carrying capacity		
07	Spatial and temporal factors		



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08	Long-term management		
09	Adaptive management		
10	See above		
11	Evidence based (scientific, indigenous, local knowledge)		
12	See above		
<b>07 CODE OF CONDUCT (See Annex B)</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		
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

<b>PERSGA AND SEM PARTNERS LOGOS</b>	
<b>REGISTER OF CO-MANAGEMENT/OTHER PRACTICES QUESTIONNAIRE</b>	
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.
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.  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).	

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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.

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)

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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.

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.	

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28	Any other conditions to the agreement?	
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	

### III.4 Potential co-management practices

<b>PERSGA AND SEM PARTNERS LOGOS</b>		
<b>REGISTER OF CO-MANAGEMENT/OTHER PRACTICES QUESTIONNAIRE</b>		
Please use this template to describe <b>possible</b> 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	

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	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.	
<p>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.</p> <p>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).</p>		
<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> <p>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.</p>		
<p>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.</p> <p>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</p>		



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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, 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.


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	

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	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 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	

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	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	

### 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	

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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 (do not prompt!).  Note: This will act as a baseline for determining project impact.	Livelihood	
		1.	2.
		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			

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**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			

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

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**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.

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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.


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.	



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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)	
<b>5.0: SIGNATURES</b>		
5.1	Date, name and signature of interviewer	
5.2	Date, name and signature/mark of stakeholder	
5.3	Date, name, contact details and signature of witness if requested.	

#### **APPENDIX IV: BIBLIOGRAPHY/REFERENCES**

Jean-Michel ROUX, May 2013, Argued proposal for four marine protected areas in the Republic of Djibouti.

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## APPENDIX V: PROTECTED COASTAL AND MARINE SPECIES

Species/group	Yes/No/?	Law/regulation reference including year
Article 5: The species listed below are endemic or endangered. As such these species enjoy special protection. Hunting, capture, trade, export and import of these species and their products are prohibited: warthog Eritrea, Somalia warthog, bat giant mastiff, cheetah, the beira antelope, gazelle Soemmering, gazelle Pelzeln, genet of Ethiopia, protèle the beisaoryx, gazelle Waller, the klipspringer the hamadryas baboon, vervet monkey, rat mane, leopard, caracal, francolin Djibouti, Djibouti beaumarquet of the sunbird, the spotted eagle, imperial eagle, the lesser kestrel, the seagull white iris, pale harrier, lesser flamingo, ostrich, Verreaux's eagle, python sebae, the sperm whale, dugong, humpback dolphin Indo-Pacific, Risso's dolphin, whale, Cuvier's beaked The pantropical spotted dolphin, the spinner dolphin, dolphin blower, hawksbill turtle, loggerhead turtle, green turtle, leatherback turtles, gray sharks, Napoleon, bigeye tuna, whale shark.	Yes	Decree No. 2004-0065 / PR / MHUEAT Wearing protection of biodiversity.
Article 11: The plant species listed below are endemic or endangered. As such these species enjoy special protection. Felling, removal, bleeding and uprooting of these species are strictly prohibited: Juniperusprocera, Livistonacarinensis, Dracaena ombet, Rhusglutinosassabyssinica, Tarchonanthuscamphoratus, Buxushildebrandtii, Terminalia brownii, Phoenix reclinata, Mimusopslaurifolia, HyphaenethebaicaBoswelliasppCommiphorasppRhigozumsomalense, Cadabarotundifolia, acacias acacia, Oleaeuropaea spp. africana, Balanitesrotundifolia, TeucriumspicatumPhagnalonlavronosii, Cynoglossopsissomalensis, Carallumamireillae, Matthiolapuntensis, Tavernieraoligantha, Aponogetonnudifloris, Geranium ocellatum, Hebenariamacrantha, HalopyrummucranataAmaranthussparganiocephalus.	Yes	Decree No. 2004-0065 / PR / MHUEAT Wearing protection of biodiversity.

## APPENDIX VI: PROPOSED PROTECTED COASTAL AND MARINE SPECIES

Species/group	Yes/No/?	Policy document name and year
None proposed	No	-

## APPENDIX VII: OPERATIONAL CO-MANAGEMENT SCHEMES

No	Operational scheme name	COM	INT	ZONE		FIS	MAR	MAN	MAR TOU	OTH
				BPA	REF					
1	None	No	No	No	No	No	No	No	No	No
Note: No operational schemes were identified.										

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Enter (Y) if yes, (N) if no, (?) if don't know. COM=co-management. INT = International, BPA = Coastal and Marine biodiversity protection area. REF = Fisheries Refugia. FIS = Fishing. MAR = mariculture. MAN = mangrove. MARTOU = Marine Tourism. OTH = Other.

## APPENDIX VIII: POTENTIAL CO-MANAGEMENT SCHEMES

No	Potential scheme name	COM	INT	ZONE		FIS	MAR	MAN	MAR TOU	OTH
				BPA	REF					
1	Khor Angar	?	No	Yes	No	No	No	Yes	?	?
Note: Unfortunately the potential is limited by the fact that exclusive use of the mangrove cannot currently be given to the community even assuming that it can generate livelihoods.										

Enter (Y) if yes, (N) if no, (?) if don't know. COM=co-management. PA = Coastal and Marine biodiversity protection area. REF = Fisheries Refugia. INT = International, FIS = Fishing. MAR = mariculture. MAN = mangrove. MARTOU = Marine Tourism. OTH = Other.

## APPENDIX IX: STAKE IN OPERATIONAL CO-MANAGEMENT SCHEME

No	Name of person interviewed	SEX	COM	INT	FIS	MAR	MAN	MAR TOU	OTH	
1	None									
Note: None of the interviewed stakeholders indicated that they were involved in an operational co-management scheme.										

SEX: Male = M, Female = F. COM=co-management. INT = international. FIS = Fishing. MAR = mariculture. MAN = mangrove. TOU = Tourism. OTH = Other. Mark(Y)if yes, (N) if no, (?) if don't know. If one stakeholder participates in multiple schemes then add rows against the same name.

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## APPENDIX X: STAKE IN POTENTIAL CO-MANAGEMENT SCHEME

No	Name of person interviewed	SEX	COM	INT	FIS	MAR	MAN	MAR TOU	OTH
1	None								
Note: None of the interviewed stakeholders indicated that they were involved in a potential co-management scheme.									

SEX: Male = M, Female = F. COM=co-management. INT = international. FIS = Fishing. MAR = mariculture. MAN = mangrove. TOU = Tourism. OTH = Other. Mark (Y) if yes, (N) if no, (?) if don't know. If one stakeholder participates in multiple schemes then add rows against the same name.

## APPENDIX XI: STAKEHOLDER PRINCIPAL LIVELIHOODS

No	Name of person interviewed	SEX	COM	FIS	MAR	MAN	MAR TOU	OTH	
1									
Notes:									
2									
Notes:									

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.

## APPENDIX XII: STAKEHOLDER QUALITY OF LIFE

No	Name of person interviewed	SEX	RFR	WTR	PRI	PRE	FUE	MAN	
1									
Notes:									
2									
Notes:									

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 kilometers. PRE = Enter distance to primary education facility in kilometers. 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.