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PENCOO GEJ
Collaborative Management for a Sustainable Fisheries Future
in Senegal**

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List of Acronyms

ACCC	Adaptation to Climate and Coastal Change in West Africa
AOTR	Agreement Officer's Technical Representative
BRPs	Biological Reference Points
CCLME	Canary Current Large Marine Ecosystem
CLP	Local Fisheries Committees (Comités Locaux de Pêche)
CLPAs	Local Councils of Artisanal Fishers
CNCPM	National Consultative Council for Marine Fisheries
CONIPAS	Conseil Interprofessionnel de la Pêche Artisanale au Senegal - National Fisheries Stakeholder Council
CRODT	Centre de Recherches Oceanographiques de Dakar Thiaroye – Oceanographic Research Center- Thiaroye, Dakar
CSE	Centre de Suivi Ecologique- Ecological Monitoring Center
DEEC	Direction de l'Environnement et des Établissements Classes
DITP	Department of Fisheries Processing Industries (Direction des Industries de Transformation du Poisson)
DPM	Direction des Pêches Maritimes - Department of Marine Fisheries
DPN	La Direction des Parcs Nationaux- Department of National Parks
DPSP	Department of Fisheries Protection and Surveillance
ENDA	Energy-Environment-Development
FENAGIE	Fédération Nationale des GIE de Pêche
FMP	Fisheries Management Plan
GDRH	World Bank Sustainable Management of Fish Resources Project
ISRA	Agriculture Research Institute of Senegal
IUPA/UCAD	Institut Universitaire de Pêche et d'Aquaculture- University Cheikh Anta Diop-Dakar Institute of Fishing and Aquaculture
IUU	Illegal, Unreported and Unregulated (fishing)
LPS	Fisheries and Aquaculture Sector Policy Letter of 2008 (Lettre de Politique Sectorielle)
MEM	Ministère de l'Economie Maritime - Ministry of Maritime Economy, Fisheries, and Maritime Transport
MPAs	Marine Protected Areas
MSC	Marine Stewardship Council
PLS	Fisheries and Aquaculture Sector Policy Letter of 2008
PMP	Performance Management Plan
PMU	Project Management Unit
PRAO	World Bank-funded West Africa Regional Fisheries Program
V&A	Vulnerability Assessment and Adaptation Planning
WAMER	West Africa Marine Ecoregion
WWF	World Wildlife Fund for Nature

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1.0 Executive Summary

FY12 is the first year of implementation activities following project start up and strategic planning in FY11 (Feb-Sept 2011). Identifying partners, preparing contracts, terms of reference, budgets, and training partners in USAID/COMFISH protocols, reporting and financial procedures accounted for much of the project's effort in Q1. Many of the sub-contract partnerships will continue beyond FY12 and these efforts will make it easier in the future to amend and extend sub-contracts.

Partner contracts include:

- WWF-WAMER
- CSE (Centre de Suivi Ecologique- Ecological Monitoring Center)
- CRODT (Centre de Recherches Oceanographiques de Dakar Thiaroye – Oceanographic Research Center- Thiaroye, Dakar)
- FENAGIE (Fédération Nationale des GIE de Pêche)
- ISE (Institut Universitaire de Pêche et d'Aquaculture/ Université Cheikh Anta Diop de Dakar)
- APTE (Association Pêche Tourisme Environnement)
- ISE (Institut des Sciences et de l'Environnement, Université Cheikh Anta Diop de Dakar, Dakar)
- IRD/IFAN (Institut de Recherche et Développement/Institut Fondamental d'Afrique Noir)
- UBC (University of British Columbia Fisheries Department)

The priority fish stocks selected by stakeholders at a national workshop in July 2011 are sardinella, cobo (shad), estuarine shrimp, octopus, and grouper. DPM with other donors is already working on some of these fisheries in management planning (shrimp with COMOPECHE World Bank project and octopus with JICA) and COMFISH will assist by filling gaps. For cobo and grouper, DPM with COMFISH will be the lead. The Senegalese fishery exploits a small segment of a West African sardinella stock, making management planning different from the other stocks. DPM regards the sardinella fishery as a high priority because it supports 70% of artisanal landings in Senegal. Therefore COMFISH will review all that is known about the West African stock and will also assess the coastal sardinella fisheries in each of the CLPA's where COMFISH is working.

A manual that describes a 14 step procedure to create "Conventions Locales" (legally binding agreements) to manage a fish stock was prepared and presented to each of the 7 CLPA's where COMFISH will work. The process was enthusiastically and unanimously approved in each. DPM with COMFISH will proceed to implement the full process in each CLPA.

This is the first phase of fisheries management planning for a unit stock. Afterwards, a Convention Locale "between" CLPA's will be developed. The grouping of CLPA's in a Convention Locale is what COMFISH calls UGD (Sustainable Management Units) and would be a first in Senegal. So far DPM has only created "within CLPA" Conventions Locales. Each UGD will bring together all CLPAs whose members/CLPs (Local Fisheries Committees) fish the same stock. DPM, COMFISH, IUPA, CRODT, IRD, CLPA's and all fishery stakeholders will create reports on the condition of priority stocks and management implications based on local knowledge, interviews, sampling at landing sites, and use of fisheries assessment models. Sampling of landings, effort and CPUE (Catch per Unit Effort) using a fisherman interview system was initiated in November in the Sine Saloum. These indicative assessments conducted will be shared with all CLPAs during consultative and information exchange workshops, as many as are needed to create understanding, CLPA and fishermen ownership and consensus.

A new consultation structure for bringing together IUPA, CRODT and DPM was proposed to DPM (the Partenariat) so as to initiate discussions about fisheries sector capacity needs and opportunities for synergies, especially human capacity and coordination and sharing of fisheries research and data. Over the medium to long term, an Integrated Fishery Information System is needed to optimize the use of existing data sets of DPM and CRODT. Terms of reference for the Partenariat were produced and are being reviewed by IUPA, DPM, and CRODT. The Partenariat will be developed under the idea of a Sea Grant/Land Grant type approach that ties research, extension and outreach together. A sub-contract with IUPA is being prepared that includes activities that demonstrate the Sea Grant type approach.

In the project's climate change result area, a technical report was produced which shows how climate change can impact catch rates and landings independently from excess effort. Out of 155 countries, Senegal is identified in a recent report as one of the countries for which landings and food security are most vulnerable to climate change impacts. DPM and COMFISH will work together to apply this technology to Senegalese fisheries so as to identify stocks and fisheries which need to be protected. A recently published in depth review also showed that climate change may impact landings in 132 national economies so as to increase economic hardship through reducing the value of the landings and the amount of protein available from fish. Senegal was identified as one of the eight tropical countries most likely to be impacted in this way, and is particularly sensitive because 72% of its animal protein is provided by fish.

COMFISH will also initiate work on vulnerability assessment and adaptation planning in fishing communities and will hold three Climate Change Training Workshops to train staff, partners and women (in Cayar) in how to identify climate change impacts, vulnerability, and plan adaptation strategies.

2.0 Introduction

COMFISH's strategic objective is to assist its main beneficiary – the *Departement de Pêche Maritime* (DPM) – to manage Senegal's artisanal fisheries sustainably by implementing the *Lettre de Politique Sectoriel* (Fisheries Sector Policy Letter). There are three main problems which USAID/COMFISH is helping to address and these are described below.

2.1. Excess Fishing Capacity

There is excess fishing capacity in both the artisanal and industrial sectors, which DPM is committed to managing by reducing the number of artisanal boats from 17,000 to 14,000; and the number in the industrial sector from 135 boats to around 100. Most stocks are overfished and landings fell from around 420,000 to around 350,000t (i.e. by around 20%) from 2006-08, the last years for which reliable estimates are available.

COMFISH and DPM have agreed in principle to create a Senegalese Action Plan for Managing Fishing Capacity (90% of which is artisanal)¹. When completed this Plan seeks to manage fishing capacity so that Senegalese fishing fleets take roughly the surplus production made available each year through natural productivity of the stocks.

¹ Using the internationally recognized methodology provided by FAO, 1999.



Figure 1: Soumbédioune fish landing site in Dakar

2.2. Stock Based Fisheries Management Plans

The priority fish stocks selected by stakeholders at a national workshop in July 2011 are sardinella, cobo (shad), estuarine shrimp, octopus, and grouper (in that order of priority). DPM is already working on FMPs for shrimp (DPM/Comopeche WB) and octopus (DPM/JICA/COGEPAS) so COMFISH will support and inform these FMPs with new biological and other data for shrimp and the first biological assessments for octopus so that DPM can formulate more informed Fishery Management Plans (FMPs).

For cobo and grouper, DPM with COMFISH will be the lead. DPM regards the sardinella fishery as Senegal's highest priority because it supports 70% of artisanal landings in Senegal. Therefore COMFISH will review all that is known about the West African stock and will also assess the coastal sardinella fisheries in each of the CLPA's where COMFISH is working so as to assist DPM to:

- Inform efforts to create a West African sardinella FMP
- Manage Senegal's response should serious overfishing and/or climate change impacts affect CLPAs and fishing villages which depend on sardinella

During the last 12 years Senegal has established a clear bottom up fisheries management policy based on village level consultations and decision making (Local Fishing Committees/Comités Locaux de Pêche, CLPs). The CLPs are now grouped into 22 established CLPAs (Local Artisanal Fishing Council/Conseil Local de la Pêche Artisanale, CLPAs) which create "Conventions Locales" (legally binding Local Fishing Conventions, CLs) through a consultative and participatory process. Once they are approved, CLs are legally binding and can be used to manage fisheries located in each CLPA. However CLPAs do not yet have clear geographic boundaries and are required to manage fisheries without identifying unit stocks. Each of the priority unit stocks chosen by COMFISH includes 5-10 CLPAs. Current village based management structures lack the stock based focus needed to relate control measures which they have at their disposal (e.g. effort, mesh size, closed seasons and areas) to stock productivity. Without this stock

based approach it is not possible to create FMPs which are the basis for sustainable fisheries management. Therefore there is no functional relation between control measures available to CLPAs and the productivity of the stocks which the CLPAs fish. Thus sustainable fishing in the CLPAs is not yet possible.

COMFISH and DPM have agreed in principle to the creation of Unites de Gestion Durable (Sustainable Management Units, UGDs) which will be stock based. Each UGD will bring together all the CLPAs and CPLs which work in and harvest a particular unit stock. Conventions Locales (CLs), currently established to manage fisheries “within CLPAs”, will be extended and adapted so that new “between CLPA” CLs will be created. These “between CLPA Conventions Locales” will become the tools which DPM may use to relate fishing effort to the capacity of stocks to grow and produce fish, i.e., to manage each stock sustainably. Before the close of the current COMFISH project several UGDs will have been created.

Other Projects are working in the CLPAs, such as the World Bank PRAO and COMOPECHE initiatives which have initiated a strategy for evaluating the functionality and performance of each of the 22 established CLPAs. This process was evaluated recently and approved by DPM so COMISH must work together with DPM and PRAO to synergize our CLPA work with their established approach.

PRAO has not addressed the question of creating stock based UGDs. DPM has agreed that this will be the main target for COMFISH. COMFISH must now proceed to implement the UGD concept by creating UGDs on priority stocks. Therefore, COMFISH will carry out simple but reliable fisheries assessments using an updated and expanded version of ELEFAN software, the most widely used assessment tool in West Africa. These assessments will be used to inform CLPA based fisheries strategies and as tools for creating FMPs, which will eventually be used by UGDs to manage their stocks sustainably.

2.3. Capacity Creation and Improvement of Sectorial Research and Management

The Senegalese fisheries research and management sector is segmented, with insufficient infrastructural investment. The available funding for these activities does not match the importance of the landings and of the fishery’s contribution to GDP.

2.3.1. Directly funded government research

CRODT is the main governmental fisheries research institute and has the mandate for stock assessment and advising DPM on fisheries management. However, its staff has been reduced from >35 to 7 during the last few years. COMFISH is partnering with CRODT to fill some of CRODTs’ gaps. A strategic change at the highest level is needed for Senegal to restore CRODT to its previous position as the West Africa’s pre-eminent fisheries and oceanography research institute; and to its previous competence in advising DPM on how to manage Senegalese fisheries sustainably.

2.3.2. IUPA/University of Dakar

IUPA is a young and dynamic organization which provides PhD level training in stock assessment, fisheries management and aquaculture. In partnering with COMFISH it is particularly interested in:

- developing the Sea Grant/Land Grant model through which research, extension and outreach create strong interactions between government, universities, and the fishing sector, so research is made fully relevant to fishers’ needs
- capacity building, promoting behavioral change for sustainable fisheries, and the application of science to sustainable fisheries management

COMFISH is preparing a partnership contract under which key URI Fisheries Center staff will strengthen these elements at IUPA so as to bring and demonstrate the usefulness of new technologies and approaches. This work is intended to continue through the life of the project.

2.3.3. Fishing capacity study

DPM has a small research unit and COMFISH and WWF will cooperate with this unit in carrying out a Fishing Capacity study. It was not possible to mobilize this work during FY2012 Q1, so it was delayed until Q2-Q3.

2.3.4. Initiating strategic structural change in the fisheries sector: the Partenariat

The following strategic challenges in the fishery will need to be considered:

- There is insufficient manpower at CRODT (at least 30 new scientist may be needed over the next five years)
- DPM needs more skilled manpower for it to support CLPAs and UGDs. At least 35-50 scientist/managers will be needed to support scientifically informed FPM based UGD management
- IUPA and URI see a strategic need for Sea Grant style research and COMFISH is supporting this for its duration, albeit within its limited means. For this approach to be mainstreamed into a continuing long term element of the fishing sector, a strategic national decision to establish and fund this work is needed.
- No complete formal study of human capacity needs of the fishing sector has yet been completed, but it is known that in some of the great fishing countries from 4-6% of the annual value of landings may be allocated to research and management of fisheries. It is unlikely that Senegal spends this amount and it is clear that its fisheries need much greater investment if they are to become sustainable.

As a strategy to address human capacity development needs COMFISH has proposed a new institutional tool which will, if accepted, bring together the three segments of the fishery sector (CRODT, IUPA, DPM) into a synergy through a new structural relationship, the Partenariat. This would be established by DPM as an official committee which could meet at least once every three months to address critical issues, to consult on ways to deal with them, and to create stakeholder support for high level solutions to them. The Partenariat is intended to be the institutional tool for introducing new ideas and technology. If approved and implemented it will assist IUPA in establishing a permanent Sea Grant type program, it will assist CRODT in rebuilding itself and assist DPM in building the manpower needed to manage fisheries through FMPS and UGDs.

During FY2012 Q1 IUPA gave enthusiastic support to the Partenariat. CRODT was not yet interested in participating and DPM has shown a partially positive and partially skeptical attitude which may be summed as approval for discussion but not yet for implementation. COMFISH and URI/FC will continue the Partenariat initiative during FY2012 Q2 and will offer to support the Partenariat in carrying out an eventual strategic review of human capacity needs in the fishing sector.

3. Activities, Achievements and Challenges of the Period

COMFISH coordinates with DPM and other fisheries donor projects to fine tune the role that COMFISH can play and seek synergies and opportunities to leverage efforts. Specific meetings with DPM and other donor efforts include the 6 December DPM/PRAO Workshop on assessment and evaluation of capacity and needs in all 22 CLPAs; and, 19-20 December DPM/COMOPECHE Phase 2 Technical Committee Meeting on cymbium and coastal shrimp FMPs. The complexity of players in Senegal fisheries (donors and local institutions) is a challenge which requires significant time devoted to coordination and meetings.

3.1 Policy Reform – Fisheries Sector Policy Letter

The most complex of three main challenges to introducing sustainable fisheries management to Senegal's fisheries in support of the Fisheries Sector Policy Letter is the creation of working structures which will allow DPM to manage stocks through CLP/CPLAs and UGDs.

3.1.1 Creation of legal and managerial structures which enable sustainable management of the coastal fisheries

3.1.1.1. History and background of CLPAs

Over the last 12 years Senegal has created 22 Conseils Locales de Pêche Artesanale (CLPAs) which bring together all the fishers who are involved in each CLPA. Each CLPA has an Executive Office (headed by the Chef De Pêche acting for the Prefet/Sous Prefet). All people who work in a particular sector of a particular CLPA (e.g. artisanal trawling; artisanal trammel nets; fisherwomen who process catches; middle men; etc) are grouped into "Colleges" (e.g. the Artisanal Trammel Net College; the Middle Men's College; etc). Each College elects one or more representatives to the ICC (Consultation and Coordination Committee). Thus all fishers are in some way represented on the ICC. The Executive Committee reports to the ICC which is led by the Prefet/Sous Prefet, who represents the Minister of the Interior in the district ("*le territoire*") and through him/her, the Presidency.

CLPAs can in principle control effort, mesh size, number of gear, establish closed seasons and closed areas and make other control decisions for their members. For any CLPA to implement any of these management measures, each CLPA must negotiate with component CPLs (village level management committees) to establish Conventions Locales (CLs, i.e. Local Fishing Agreements) which, once signed by the Prefet/Sous Prefet, are legally binding on the CLPA, all its component CPLs and on all their members.

However, until now there is not yet any official delimitation of CPLAs by area. Figure 1 shows the official DPM map for Senegal's CLPAs, each being located at a point indicated by an arrow. No CLPA has boundaries nor is territory allocated to any CLPA. There is general agreement among stakeholders that all fishermen/villages in the areas allocated to CLPAs in Figure 2 will be controlled/managed by the CLPA indicated but there is as yet no official recognition that CLPAs have such well-defined geographical structures. Thus, Figure 2 proposes a territorial coverage for each CLPA, but CLPAs do not yet function clearly in a territorial manner. Nor is the maritime jurisdiction defined. This lack of geographical specification may help to avoid delicate questions about overlap of fishing areas, which is a major source of fisherman conflict in some CLPAs. Yet it also impedes timely implementation of chosen management measures.

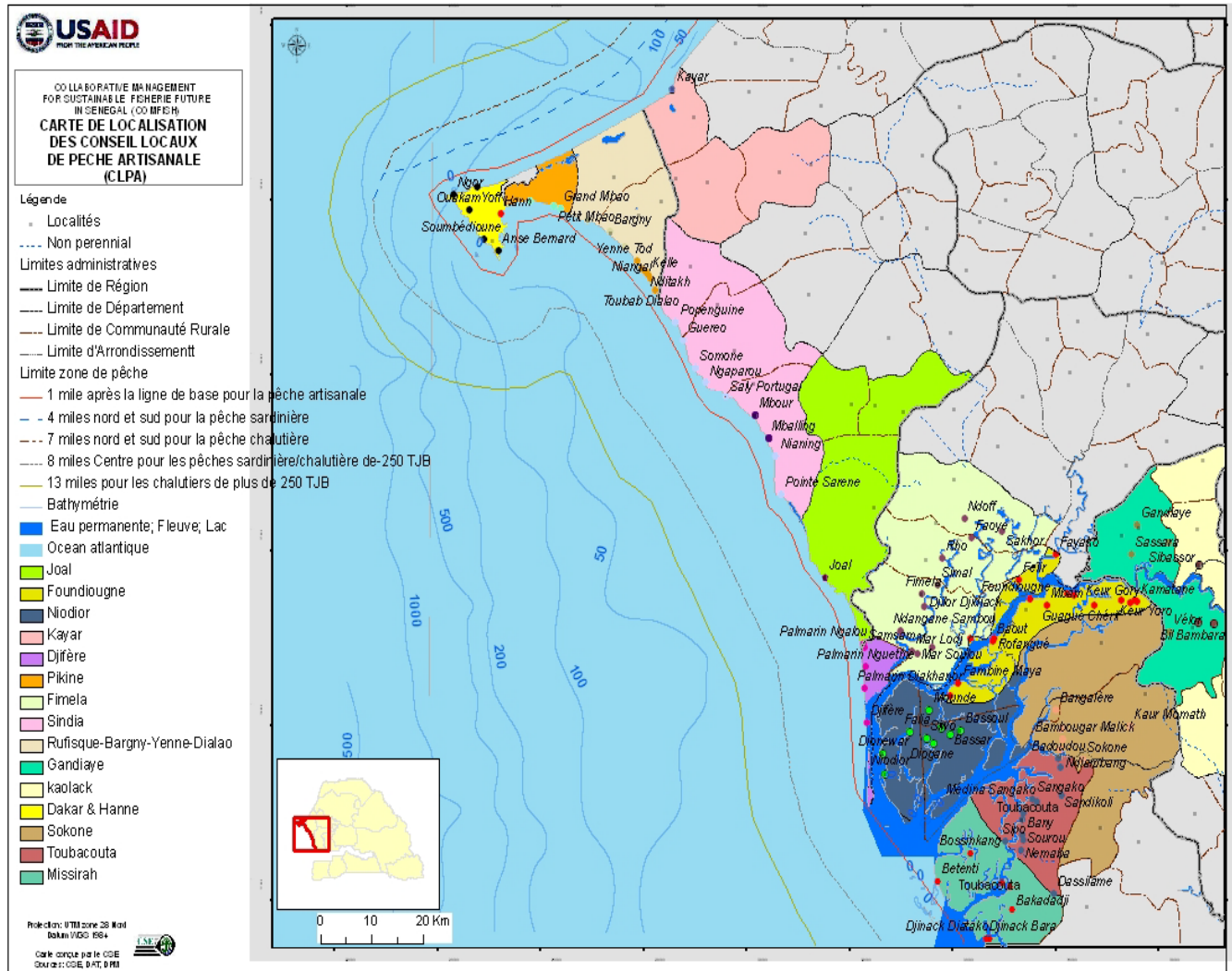


Figure 3: Map showing proposed geographical boundaries of CLPAs in the COMFISH current study area (source: CSE)

In December, CPOMFISH participated in assessment and discussion of the Cayar CLPA. DPM/PRAO has carried out a survey in each of the 22 existing CLPAs and has evaluated their performance using a set of pre-identified criteria². DPM/PRAO also reported that many CLPAs were non-functional and that only 11 out of 22 had prepared management plans of various kinds (“*en progres pour la cogestion*” progressing towards co-management). Only 1 out of 22 CLPAs had plans which were sufficiently advanced that the CLPA was deemed to be “*Pret pour progresser a la cogestion*” - ready to progress towards co-management. In addition there is a clear informal understanding that CLPAs and CLPs which are not supported/funded by development agencies are more likely to be non-functional.

² Ministry of Maritime Economy, Directorate of Marine Fisheries (DPM) and PRAO: Rapport D’Evaluation des *Conseils Locales de Pêche Artisanale (CLPA)*. Published the Artisanal Fisheries Division of DPM, June 2011. Dakar, 41pp. Reviewed and approved by DPM at the DPM/CLPA Workshop Dec 6th 2011.

3.1.1.2. Baseline for determining the functionality of CLPAs

In FY2012 Q1, COMFISH identified a set of 16 measurable criteria for estimating a baseline for CLPA functionality. These criteria were intended to be applied during FY2012 to establish a baseline to allow estimation of the effects of COMFISH's work in the CLPAs between 2012 and its end in Y2016. At the time these criteria were developed, COMFISH was not aware of the possible overlap with PRAO. During the Dec 6 DPM/PRAO Workshop, COMFISH and PRAO agreed in principle to synergize their efforts and avoid overlap. As part of this harmonization COMFISH will review and compare the PRAO and COMFISH criteria to determine whether PRAO has covered the ground as fully as planned: if so COMFISH can use PRAO's review as a baseline. If there are important gaps between what COMFISH is committed to do and what PRAO has done, COMFISH will hire a local consultant to complement the PRAO data without repeating measurements already carried out satisfactorily. COMFISH has asked DPM to coordinate this synergy during the Second Quarter of FY2012.

3.1.1.3. Unites de Gestion Durable (UGDs)

COMFISH and DPM have agreed in principle to establish stock based Unites de Gestion Durable (UGDs). Details of how they could be structured and managed were still being discussed in FY2012 Q1, and the following broad ideas have been informally agreed as a startup scheme:

- Each UGD is intended to manage one unit stock which may be targeted by fishers from several CLPAs. Management of each UGD will be based on Conventions Locales which will be created by CLPAs at two levels:
 - **Intra-CLPA Convention Locales:** these will target within CLPA management, following well established legal and institutional customs³.
 - **Inter-CLPA Conventions Locales:** When this intra-CLPA management mechanism has been successfully identified and approved by each individual ICC, all CLPAs which exploit a given stock will meet to identify for the first time a single inter-CLPA (between CLPAs) Convention Locale. This inter-CLPA Convention Locale will be the main tool used to manage the UGD.

While this process of creating intra- and inter- Conventions Locales is underway, research on the biology, catch and condition of each stock will be carried out in parallel in each CLPA, using the cost effective and timely ELEFAN method. Results and management implications will be discussed with each CLPA. In October, Sine Saloum shrimp sampling was initiated using a fisherman interview system developed by a previous USAID/IUCN project.

3.1.1.4. Construction of intra-CLPA Conventions Locales

So as to implement this strategy for CLPA and UGD based management through FMPs, COMFISH, under the auspices and chairmanship of DPM, held a two day Workshop in September. At this, COMFISH introduced the new 14 step process for training CPLAs in how to create the Conventions Locales needed to manage their fisheries sustainably, based on local Fisheries Management Plans. This process was approved by DPM.

³ COMFISH reviewed existing procedures for creating Conventions Locales and initiated a new 14 step process for creating intra-CLPA Conventions Locales was applied in seven CLPAs (see below, 3.1.1.4).

In November COMFISH and DPM held seven one day training workshops in highest priority CLPAs to train them in implementation of this 14 step process for creating intra-CLPA Conventions Locales. The process was unanimously approved in six of the seven CLPAs⁴.



Figure 4: One Day training workshop on *Convention Locale* at Rufisque CLPA

Although the process of creating intra-CLPA Conventions Locales is well known in many areas, so far DPM has not created or implemented any inter-CLPA Conventions Locales. A local expert was identified and recruited to work on a detailed analysis and description of a suitable *Pathway for Creating Inter-CLPAs Conventions Locales*, based on all previous Senegalese experience and COMFISH's recent work. A report is due in FY2012 Q2.

3.1.2. Partenariat and strategic institutional reform

During the last part of FY2011 and FY2012 Q1, discussions were held with IUPA and DPM about the proposal to create an extension based collaboration between the university sector (IUPA), the research sector (CRODT, fisheries and oceanographic research), and the government sector (DPM, MEM). The key idea is to create a research program which is extension driven so that research is targeted towards fishers' needs and so that results are presented to fishers, processors and fishery stakeholders for evaluation and appraisal. This strategy uses the Sea Grant/Land Grant type process as a starting point and a proposal for adapting and establishing this process was identified and presented to DPM and IUPA. IUPA approved the process enthusiastically during FY2012 Q1 and DPM is still reviewing the strategy but has accepted it informally and subject to further discussions. It is expected that the process could be approved by DPM in FY2012 Q2 and that the first meeting of the proposed Partenariat will take place soon after, so as to initiate, implement and coordinate the proposed Partenariat process. CRODT has at this time not yet joined in the Partenariat process.

⁴ The Mayor of the seventh CLPA was killed in a car accident so that approval was delayed by one month to allow observation of traditional mourning.

In addition to proposing the Partenariat as a tool for creating extension/research synergies, COMFISH has established a useful working arrangement with IUPA and has planned activities which will demonstrate many of the Sea Grant ideas so that Senegalese managers may observe them in action. This will generate support for and interest in the Partenariat.

3.2. Natural Resources – Fisheries Biodiversity and Ecosystem Management

3.2.1: Stock Identification: COMFISH identified the following priority fish stocks through a consultative fisherman driven process in FY2011 Q4 (July Workshop):

- (i) Sardinella
- (ii) Shad (locally called Cobo, scientific name is *Ethmalosa fimbria*)
- (iii) Shrimp
- (iv) Octopus
- (v) Grouper

COMFISH plans to work with WWF and CSE on mapping these resources from fisherman based geographically located information; and with CRODT using survey and other similar information. Both data sources will be used to map these stocks so that their relationship to CLPAs can be identified, and so that the UGDs (i.e. the CLPAs and the stocks they fish which form the basis for the UGD) can be mapped.

3.2.2. Delays in fish stock mapping

3.2.1.1: COMFISH's approach to sustainable management, described above, requires that each stock which is to support a UGD must be mapped, together with its component CLPAs. For various logistic and other reasons (including indifference of CRODT) this was not possible during FY2012 Q1 so the important process of stock and UGD identification was postponed into FY2012 Q2 or Q3. However Figure 3 shows some useful information on natural resource distribution, but does not yet provide stock based information.

3.2.1.2. Conservation of biodiversity and marine ecosystems

Figure 3 also provides useful preliminary information on areas which may be diagnosed later as potential hot spots. Available information on turtle, sea grass areas and mangrove distribution indicate an important nexus of mostly near shore areas which could eventually be baselined and surveyed over time so as to monitor changing status. Pelagic spawning areas may indicate sardinella spawning and the location of the stock. The concentration of various important species and resources off and near the Sine Saloum delta reflects the location of the MPA in that area. It could also lead to eventual identification of more focused biodiversity hot spots.

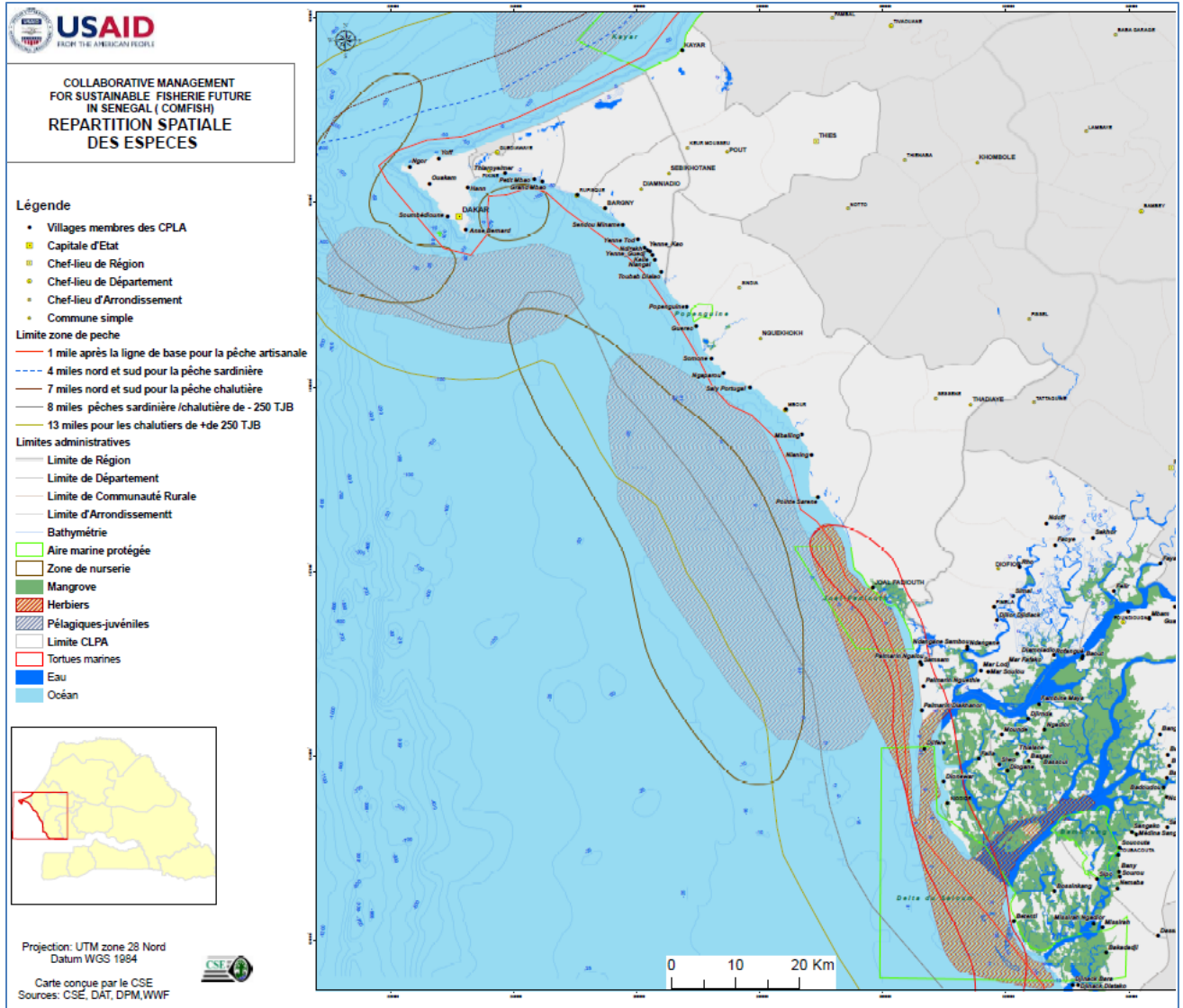


Figure 5: Map showing the distribution of species groups to be taken from the CSE report.

3.3 Augmentation of Socio-economic Benefits for Fishers

No work was carried out on socio-economic aspects of the fisheries in this Quarter. A base line survey of economic well-being of chosen fishing villages is planned for Q2.

3.4 Climate Change

In FY2012 Q1 COMFISH carried out a scientific review of climate change issues and related matters. This led to identification of two ways in which Climate Change can impact fisheries:

3.4.1. *Direct impacts of climate change on landings*

A short scientific review was made and information was found for some cool temperate and tropical fisheries where climate change can reduce landings materially. These included North Sea haddock and cod, and Bahraini shrimp.

A recently published in depth review also showed that climate change may impact landings in 132 national economies so as to increase economic hardship through reducing the value of the landings and the amount of protein available from fish. Senegal was identified as one of the eight tropical countries most likely to be impacted in this way, and is particularly sensitive because 72% of its animal protein is provided by fish.⁵

The potential impact of climate change on fisher incomes was not fully appreciated during the design phase for COMFISH, yet it is now certain that this issue needs to be researched so as to allow appropriate scientific inputs to DPM's strategy for sustainable management. DPM is aware of this gap and welcomed support from COMFISH which will help to identify:

- Stocks which are most sensitive to climate change and which are most likely to be impacted by it
- Possibilities of mitigating the effects of climate change on the volume and value of the landings, and on Senegalese food security

Technical details about the methodology which DPM and COMFISH propose to use to identify and manage the effects of climate change on fish stocks and landings are provided in Section 3.6.2.1.

3.4.2. *Direct impacts of climate change on fishing communities*

Direct impacts of climate change on fishing communities was identified as one of COMFISH's priority work areas during the design phase of the Project. During FY2011 Q3-Q4 COMFISH worked on these issues with ENDA ENERGIE to produce a first local Manual on how to conduct vulnerability assessments and adaptation planning in fishing communities, and looked for other local partners for this work. During FY2012 Q1 it became clear that there is as yet no pool of trained personnel who are able to carry out this work in Senegal. COMFISH organized three Climate Change Workshops for Y2012 Q2 (January 2012: See Section 4). These will produce the critical mass of trained personnel which can be used to implement COMFISH's work through identifying:

- Areas where climate change will be likely to impact coastal communities most seriously

⁵ Allison, E.H., 2009. Vulnerability of national economies to the impacts of climate change. Fish and Fisheries.

- Kinds of vulnerability which are most likely in each site (incomes, physical structures, natural resources, etc.)
- Adaptation measures which are most appropriate to each fishing community/site



Figure 6: Aerial view of crude salt pits for extracting salt demonstrating extreme soil salinization and sea level rise inundating what previously was dry land used for salt pits

3.5 Human Resource Capacity Development

3.5.1. Government based research institutes: CRODT

Until around five years ago the CRODT (Centre de Recherches Océanographiques de Dakar-Thiaroye) was the one of the West African Region's biggest and most respected fisheries research organizations, with history extending prior to 1950 (at least 10 years before independence). It is the legal guardian and steward of much of Senegal's fisheries data and has the mandate for stock assessment and providing scientific advice to DPM about managing fisheries. It collects some fisheries dependent data and owns an important research vessel. However for a complex nexus of reasons it has been reduced from a team of >35 scientists in the early 2000s to 7 scientists in 2012, and is no longer sufficiently manned or budgeted to meet its remit in full. It has not been able to survey Senegalese waters since around 2008. Reinforcing CRODT is therefore one of COMFISH's objectives. Discussions during Y2011-Q3 and Q4 led to identification of a common strategy for CRODT/DPM/COMFISH work. This work was delayed until FY2012 Q2 because CRODT did not have the necessary manpower to support the agreed joint activities which were planned. A contract was signed during late FY2012 Q1 and will be implemented in FY2012 Q2.

3.5.2. University based research

The IUPA (Institut Universitaire de Pêche et d'Aquaculture, Cheikh Antar Diop University, Dakar) is a relatively young but very active institution engaged in training fisheries scientists throughout West Africa and in pushing back the technical frontiers of stock assessment, fisheries management and aquaculture⁶. In FY2011 intense discussions yielded a clear picture of an enthusiastic team who are particularly interested in two areas of synergy with COMFISH, CRODT and DPM:

3.5.2.1. The Sea Grant/Land Grant approach

This is practiced in the USA and is particularly well known, in all of its various forms at URI. This approach is based on creating strong fisher/researcher links through extension work and is carried out at both research institutes and in Universities. IUPA is very interested and sees itself as being the correct base for transferring this approach to Senegal. During FY2012 Q1 COMFISH and IUPA identified a series of technical activities which will demonstrate this approach, including leadership training at URI and work targeting behavior change in fishermen. A contract is being prepared and will be implemented in FY2012 Q2-Q4.

3.5.2.2. Stock assessment

As explained above (Section 3.1.1.3) COMFISH will assist partners in the creation of FMPs to support inter-CLPA and UGD based fisheries management. First, indicative stock assessments must be available in each CLPA. Age based assessments using traditional ageing methods will be carried out to corroborate length based assessments. The two approaches will be applied using a well-established methodology⁷. COMFISH is collaborating with the University of British Columbia, Fisheries Department, on updating and rewriting ELEFAN, the most widely used size based stock assessment tool in West Africa and elsewhere in the South. The updated tool will be applied in June/July 2012 in a stock assessment workshop where data collected from January to June will be analyzed in "a learning by doing environment". Assessments of sardinella (two spp), shrimp (*Penaeus notialis*), shad and octopus will be produced. These assessments will provide indicative results which, although insufficiently robust to be used in actual management of each UGD, will be strongly indicative of the current status of each stock. CLPAs will review these results and combine them with all possible fisherman based information (their ideas about status and management needs).

3.5.3. DPM based research

DPM has a small but skilled research unit which is currently working on fishing capacity data. COMFISH and DPM have agreed to work on this issue along with WWF which is also interested. However, it was not possible for WWF to mobilize this task in FY2012 Q1 so this work has been delayed until FY2012 Q2 and Q3.

⁶ Aquaculture is not part of COMFISH's Program Description and accounts for only around 10,000t/YR compared to total landings of 350,000-400,000t over the last decade. Low aquaculture landings are primarily due to technical and cost related constraints.

⁷ Mathews, C.P., 1987. Fisheries Management in a Developing Country: the Most Appropriate Balance of Size and Age Related Methods for Practical Assessments, pp 321-334. In D.Pauly and G.R.Morgan (eds). Length Based Methods in Fisheries Research. ICLARM Conference Proceedings 13, 486 pp, ICLARM/World Fisheries, Manila Philippines and KISR, Saft, Kuwait.

3.5.4. *The Partenariat*

COMFISH has created a two pronged approach for introducing a Sea Grant like approach of research, extension, and outreach, and to increase the technical connections between:

- Government (DPM)
- CRODT (Research Institute Sector)
- IUPA (University Research Sector)
- Fishers and fishing sector stakeholders

3.5.4.1. *Demonstration and learning by doing*

The first prong is composed of the work initiated by URI Fisheries Center with IUPA: this involves carrying out Sea Grant style research, extension and outreach and related activities in which IUPA will be trained. This process will allow Senegalese fisheries scientists to work on the Sea Grant approach and to try its various elements out for themselves, in order to decide whether this activity should be continued when the COMFISH project ends. This work is being done under the IUPA partnership and contract mentioned above.

3.5.4.2. *Changing institutional structures in the fisheries sector (the Partenariat)*

In FY2011 Q3 and Q4 and during FY2012 Q1 COMFISH identified some serious structural and institutional gaps in the fisheries sector. These include:

- (i) CRODT's manpower was reduced from ≈ 35 to seven scientists between 2003 and 2005 for reasons of budgetary consolidation without any reference to the objective needs of the fishing sector.
- (ii) There is no fully integrated data management structure between CRODT and DPM: CRODT is recognized to have a very good fishery dependent data collection system, and until around 2000 operated a fisheries research vessel which regularly obtained fishery independent data. DPM operates another well managed fishery dependent data collection system and also collects some data not collected by CRODT. DPM and CRODT recognize the overlaps and opportunities for synergies but cannot address them systematically for lack of budgets and manpower
- (iii) DPM's *Lettre de Politique Sectoriel* (LPS) addresses issues such as artisanal and total fleet capacity management, climate change, and the need for addressing these questions using best international practices in assessments and management, but lack of manpower and research funding currently places these targets out of reach.
- (iv) DPM and MEM are committed to bottom upwards CLPA and UGD based management, yet this requires a body of well-trained scientists and managers. There are many well trained Senegalese scientists but they are now largely engaged in international and local consulting with NGOs and do not work for DPM or Senegal directly, so are not fully engaged in supporting Senegal. Nor is their long term engagement in managing Senegalese fisheries ensured.
- (v) IUPA is training the large numbers of Senegalese and West African scientists who will be needed to work in CLPAs and to maintain CRODT's internationally recognised capacity at levels needed for DPM to implement successfully the LPS. Yet a large minority or even more of its trainees and graduates are unemployed for lack of core funding at CRODT and other Senegalese fishery institutions.

For all of these reasons:

- An international consultant was recruited in FY2011 Q4 to identify the need for an Integrated Senegalese Capacity Development Plan for the fishing sector⁸. An indicative pathway for doing this was provided.
- Based on this report, Dr Najih Lazar, Dr Kathy Castro and Dr J. De Alteris of the URI Fisheries Center met with IUPA in FY2011 Q3 and Dr Najih Lazar came again to Senegal in FY2011 Q4.
- A brief proposal for a structure which could create a new mechanism for continual institutional change was prepared by COMFISH and IUPA and is accepted by both: The Partenariat.
- The Partenariat is envisaged as a committee which will be chaired and led by the Director of DPM or his Deputy, and will include *ex officio* voting representatives from DPM, IUPA, CRODT, with non-voting COMFISH staff invited as needed, for the life of COMFISH.
- The members of the Partenariat will identify solutions to all of the problems outlined above.
- Although IUPA supports this initiative, CRODT is indifferent and DPM while giving it cautious support and approval for discussion has also indicated scepticism and wanted a Senegalese sectoral review of human capacity for the fishing sector to be carried out before instituting the Partenariat.

COMFISH and IUPA agree that the Partenariat should be used to help DPM get support needed to identify solutions to issues (i) – (v) above which could include:

- a) Establishment of a Senegalese Integrated Fisheries Information System. This will create a single interactive data system which can unite DPM, CRODT and IUPA, and eventually UGDs and CLPAs, so as to optimise data collection, management, access and utilisation.
- b) Creation of a Senegalese Fisheries Capacity and Manpower Strategy which would objectively identify the needs for skilled manpower at CRODT, IUPA and DPM.
- c) Addressing issues related to transferring a Sea Grant type program to Senegal

Such needs cannot be satisfied quickly and will require strategic overview and eventual legislation so that they can be embedded in Senegal's laws and finances.

To move this idea forward during FY2012 Q2 COMFISH will:

- Initiate discussions with DPM to start the Partenariat, to agree to an agenda and to see whether there is support for this institutional approach.
- Hold a one day Policy Workshop targeting Directors and Deputy Directors, senior scientists and practitioners so as to present them with an overview of alternative development Pathways (first half) and to get their preliminary views and choices (second half).

3.6 Cross-Cutting Themes

3.6.1. Gender/gender equity

COMFISH obtained inputs on gender issues through two consultancies⁹ in FY2011 Q3. In FY2012 Q1 COMFISH used these inputs and held several discussions with women involved in fisheries¹⁰. A Gender

⁸ Lopez. To be finalized shortly.

⁹ Caroline Karp and Madeleine Hall-Arbor.

¹⁰ APTE: a new COMFISH Partner; at CLPA meetings targeting training in use and construction of intra-CLPA Conventions Locales.

Workshop on Identifying a Gender Strategy, scheduled for FY2012 Q1 was delayed until FY2012 Q2 (March) so as to allow consolidation of these ideas. This will be held under the auspices of DPM where consultants' results and other new ideas will be melded into a coherent targeted strategy which will be reviewed by DPM and may become the source of new ideas for ensuring equitable management of gender issues in Senegalese fisheries.

3.6.2. Science, technology and innovation

As mentioned above, a brief review of the likely impacts of climate change on fish landings worldwide suggested that climate change has influenced landings in other countries and is likely to have occurred already in Senegal¹¹.

A well-known but insufficiently documented observation suggests that starting around 1995 up to ≈15,000 artisanal fishermen (out of around 50,000) who used to fish in Senegal now fish outside Senegal. The common explanation is that overfishing has caused Senegalese fishermen to fish outside Senegal, but the study suggests that this shift might also be caused by migration of fish from lower to higher latitudes.

DPM has not yet addressed this issue but is interested in doing so. Therefore COMFISH has identified a method used previously to estimate quantitatively the different effects on CPUE (Catch per Unit Effort) of climate change and of excess fishing fleet capacity.

3.6.2.1. A method for identifying quantitatively the effects of climate change on stocks¹²

In FY2011 and early FY2012 COMFISH identified a strategy for focusing on fisheries and stocks which may already have suffered serious impacts from climate change, or which are likely to be impacted by climate change in the future. There is strong evidence of a marked increase in total effort in Senegal since at least the 1980s. Similar effort increases occurred simultaneously with falling landings and global climate changes in the North Sea, the Arabian Gulf and in other parts of the world. Although climate change and its effects on fisheries has not yet been documented for Senegal it is most unlikely that climate change has occurred elsewhere without having at least some important effects in Senegal too. To succeed in this new but essential task in FY2012, COMFISH must dissect, for at least a few important stocks, the separate effects of excess effort due to excessive capacity from the independent effects of climate change: both of which can affect CPUE and so fishing revenues independently of each other. This will be done using well know tools used on other parts of the world, and applying them to available data on sardine, shrimp, grouper and other COMFISH priority species¹³.

Potential impacts of climate change on Senegalese landings and food security include the following elements:

- Even small changes in mean water temperature (≈1⁰C over 2-4 decades) could significantly affect the size and age composition, species distribution, and abundance of fish stocks; and thus the value of the landings they can support.
- Temperature has an influence on the geographical distribution of stocks and a direct effect on the location and timing of spawning events, which, in the long run, also affect the growth and survival of species with a high commercial value.

¹¹ Mathews, C.P., November 2011. Untitled Draft MS, 12pp.

¹² This section and the following one were also included in the FY2012 Work Plan.

¹³ Sardinella; cobo (shad); shrimp; octopus; grouper and others (chosen in that order by the July Workshop covered in the FY2011 Annual Report).

- In an overheated environment, tropical fish species could show an ecosystem shift and migrate toward the poles. Species currently fished in Senegal could move north toward Mauritanian or Moroccan waters, which would decrease the productivity of Senegalese fisheries.
- There is tangible evidence of a migration of Senegalese fishermen towards other fishing zones since around 1995. This migration, often attributed to excessive fishing effort in Senegal, could equally be a result of climate change, or perhaps a combined result of both overfishing and climate change.
- Varying climate can increase uncertainty in fish supply and landings.
- Climate change can also influence the seasonality of landings: this could have unforeseeable results on the livelihoods of Senegalese fishermen.
- General temperature changes expose vulnerable marine species to high levels of stress and disease, in particular if they occur during periods critical to the life cycle of the species. Thus increases in water temperature and salinity could combine to create conditions which favor the spread of pathogenic organisms.

3.6.2.2. Assessing and managing the response of stocks to climate change in Senegal

COMFISH can apply tools and methods to launch a fishery management strategy which includes identifying and managing the effects of climate change on landings. This work can relate the productivity of stocks (their capacity to produce fish) to independent changes in climate and effort. COMFISH will address these issues with partners including CRODT, IUPA, and technical teams at DPM.

Work on the effects of climate change on landings will be carried out independently of, and at the same time as, work on the evaluation of vulnerability and the planning of adaptation to reduce the impacts of climate change on coastal communities, originally visualized as COMFISH's only work on climate change and fisheries.

3.6.3. Outreach/Communication

3.6.3.1. Project Launch

A major event of this Quarter organized by COMFISH was the official project "Launch." This took place on October 19th 2011 at a meeting attended by around 120 people and patronized by the Minister of the Marine Environment, DPM and other key Government of Senegal Officials; by the USAID Mission Director; by other fisheries projects and loan agencies; and by fisher groups. A short (15 minute) play advocating consultative CLPA/fisherman based management by men's and women's groups was performed by the fishermen and fisherwomen of Yoff. A prize to the winner of the project local name competition was awarded. Very extensive press and media coverage¹⁴ resulted and a much higher profile for COMFISH was observed in CLPAs¹⁵.

¹⁴ The Team Leader was greeted by people who had seen him on TV, and who congratulated COMFISH.

¹⁵ At a subsequent public meeting of all 22 CLPAs with >100 people to discuss CLPA development strategies, one CLPA representative noted COMFISH's habit of visiting to consult CLPAs before proposing new ideas; his remark was met with warm recognition.



Figure 7: DPM representative awarding a prize to the winner of the project local name competition

3.6.3.2. Technical reports

A number of technical reports are in final editing and formatting for distribution to partners and uploading onto CRC website and the USAID document archive system. They are:

- Vulnerability Assessment and Adaptation Planning Guide (ENDA ENERGIE)
- CLPA Assessment
- Fisheries Capacity Needs Assessment
- Climate Change Effects on Marine Fisheries
- Fisheries Spatial Information Database and Report (CSE)
- Role of Women in Senegal Fisheries
- National Workshop Proceedings on Priority Fish Stocks
- Quarterly and Annual Reports, Annual Workplan FY11 and FY12

3.6.3.3. Bi Weekly press releases for USAID

Three biweekly press releases were prepared and circulated by USAID:

- Choice of priority fish stocks in by fishermen working in a bottom up environment (October 2011)
- Project launch (November 2011)
- Launch of seven CLPA workshops which trained CLPAs in how to create intra- CLPA Conventions Locales: the first step in creating UGDs (December 2011)

3.6.3.4. *Partner communications strategies*

COMFISH held a workshop for partners on project communications strategies and how to support them. Internal and external communication strategy workshops are planned for January and February.

3.7 Project Management

3.7.1. *Consolidation*

A challenge in this Quarter related to getting off the ground a large number of amended sub-grants and new sub-grant awards. Management of sub-grants involved:

- Reviewing partners' technical reports
- Identifying five new partners
- Drawing up contracts and terms of reference with partners
- Training all partners in accounting, invoicing, and environmental compliance procedures to ensure that they meet URI and USAID requirements
- Training all partners in protocols for submitting reports and getting approval

3.7.2. *New partners identified and contracted in FY2012*

3.7.2.1. *APTE (Association Pêche Tourisme Environnement)*

APTE is a women fisher group which will train women in Cayar in processing sardine (70% of artisanal catches). APTE will address the following issues:

- Produce higher quality product with value added
- Ensure increased safety and hygiene
- Train women in how to evaluate climate change impacts on their work and livelihoods
- Identify and train potential leaders
- Increase women's role in natural resource management
- Reduce vulnerability of women
- Improve women's incomes and life styles in environmentally friendly and sustainable ways

3.7.2.2. *ISE (Institut des Sciences et de l'Environnement, Cheikh Antar Diop University, Dakar)*

ISE will cooperate with COMFISH as a partner to work on climate change impacts on fishing communities.

3.7.2.3. *IRD/IFAN (Institut de Recherche et Developpement/Institut Fondamental d'Afrique Noir)*

IRD and COMFISH will work together on aging fish (sardinella, thiof, and other species) so as to verify timely length based assessments of priority species stocks

3.7.2.4. *UBC University of British Columbia Fisheries Department (Dr Pauly)*

COMFISH is collaborating with UBC to produce an updated version of ELEFAN so as to support both timely and more robust size-based assessments of stocks in CLPAs and UGDs.

3.7.3. Project equipment and staffing

A new office Secretary was recruited to replace the current one who is leaving. A PMP Officer will be hired in FY2012 Q2.

4.0 Summary of Main Activities Planned for FY2012 Q2

- A. Policy reform
 - Local consultancy on inter-CLPA/UGD Conventions Locales (*Pathway for Creating Inter-CLPA Conventions Locales*), mid-March
 - Start up AFRICOM/USAID joint work on IUU fishing
 - Policy Workshop, mid-March (DPM to confirm interest)
- B. Natural resources
 - Start up of size frequency sampling system (IUPA, IRD, CRODT, Dr Najih Lazar URI/FC)
 - COMFISH sardine fishery description and review (Dr Najih Lazar)
 - Continue Sine Saloum sampling system for shrimp and shad (started October 2011)
- C. Climate change
 - Three Climate Change Workshops (January in Dakar and Cayar)
- D. Human resource capacity development
 - IUPA / FC Sea Grant technology transfer (Dr Najih Lazar)
 - Partenariat discussion with DPM
 - Partenariat meetings as soon as DPM approves
- E. Cross-cutting themes
 - Local gender workshop (one day, COMFISH office, Feb)
 - Gender in Fisheries Sector Strategy Workshop 20-23 March
- F. Project management
 - Start up for subcontracts for WWF; APTE; CRODT; FENAGIE; IUPA; CSE; IRD; ISE
 - One day training workshop in financial reporting and accountability for all partners
 - Two workshops on communications strategy

5.0 Success Stories

No Success stories were prepared during FY2012 Q1.

6.0 Annexes

1. Indicator Table
2. Environmental Compliance Update/ EMMP
3. Financial status

Annex 1. PMP Indicator Table

Indicator	FY11 Target	FY11 Actual	FY12 Target	Achievements each Quarter				FY12 Cumulative	Achievement notes and reference section in report	Challenge notes and reference section in report – i.e. IRs 10% different from target
				Q1	Q2	Q3	Q4			
Result 1: Institutional capacity strengthened at all levels of governance to implement an ecosystem-based, co-management approach to sustainable fisheries, and to prevent overfishing										
Management effectiveness of CLPA's at <i>USAID/COMFISH</i> project sites	0 (scorecard drafted)	0 (scorecard drafted)	Baseline estimated for each CLPA	-				-		
Number of institutions/organizations undertaking capacity/competency strengthening as a result of USG assistance	0	0	15	-				0		
Number of individuals who have received USG supported short-term agricultural environment enabling training	n/a	38 M (7 W)	700	157 M (37 F)				194	People trained in implementing Conventions Locales	
Result 2: Strategies, policies and best practices to overcome unsustainable and destructive marine resource use practices that threaten biodiversity conservation in the West Africa Marine Ecoregion identified, tested and applied.										
Number of policies/regulations/administrative procedures analyzed	2	13	11	0				0		
Number of policies/regulations/administrative procedures drafted and presented for public/stakeholder consultation	0	0	5	2				2	Manual for constructing conventions Locales drafted and presented	

Number of policies/regulations/ administrative procedures presented for legislation/decre	0	1	3	0				0		
Number of policies/regulations/ administrative procedures prepared with USG assistance passed/approved	0	0	2	0				0		
Number of policies/regulations/ administrative procedures passed for which implementation has begun	0	0	2	0				0		
Number of farmers and others who have applied new technologies or management practices as a result of USG assistance	0	0	0	0				0		
Number of hectares of areas under improved management	n/a	0	17,100	0				0		
Number of hectares in biologically significant areas under improved management	n/a	0	17,100	0				0		
Result 3: Vulnerability assessed and capacity of vulnerable coastal communities strengthened to adapt to impacts of climate variability and change										
Number of people receiving training in global climate change as a result of USG assistance	0	0	860	0				0		
Number of climate vulnerability assessments conducted as a result of USG assistance	0	0	3	0				0		
Number of laws, policies, agreements, or regulations addressing climate change proposed, adopted, or implemented as a result of USG assistance	0	0	0	0				0		
Number of stakeholders with increased capacity to adapt to the impacts of climate variability and change as a result of USG assistance	0	0	790	0				0		

Result 4. Increased social and economic benefits to artisanal fishing communities provide incentives to a continued sustainable fisheries agenda										
Number of private enterprises, producers organizations, water user associations, women's groups, trade and business associations, and CBOs receiving USG assistance	0	0	21	0				0		
Number of rural households benefiting directly from USG interventions	0	0	TBD	0				0		
Fishery sector stakeholders in project sites perceive that their welfare is better off due to USG assistance (this is not an FTF indicator, but measures project impact)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No target. Survey results will be analyzed and reported	

Annex 2. Environmental Compliance Update

No activities were undertaken in Q1 requiring an assessment of environmental impacts or mitigation measures.

Annex 3. Financial Status

For the first quarter of FY2012, a total amount of \$423,226 was expended out of an annual budget of \$3.2 million. The reason for this low amount relative to the annual budget is the delay in the implementation of some activities due to time required to prepare, approve and process partner sub-grants.