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PENCOO GEJ
(Collaborative management for a sustainable fisheries future in Senegal)**

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I. EXECUTIVE SUMMARY

The main objective of the USAID/COMFISH project is to support the Senegalese Ministry of Fisheries and Maritime Affairs, via its technical departments and particularly the Department of Marine Fisheries (DPM), in implementing the Sector Policy Letter that guides national efforts on the sustainable management of fisheries resources. What the project wants ultimately is to develop and establish collaborative management plans for priority stocks, by using the CLPA as an institutional entry point, and to transform these CLPAs into Sustainable Management Units in ways that synergize the institutional, administrative, socio-economic and environmental components of sustainable collaborative management of fisheries resources in Senegal. All these activities are intended to put to use appropriate and effective strategies that reinforce climate change resilience in coastal marine ecosystems and communities.

On policy dialogue and reform, the project organized several events during the reporting period:

- Supporting the creation of a national technical committee to lead the management of fishing capacity and IUU fishing;
- Re-energizing consultations on fishing capacity and IUU fishing;
- Holding consultative meetings with the authorities for policy dialogue on landings from the sub-region;
- Re-opening discussions on women's presence in fishery governance organs;
- Kick-starting efforts to establish the Steering Committee for dialogue on climate change in the fisheries sector, contributing to develop the national management plan for small pelagics, and pursuing consultations with DPM to establish flexible modeling of collaborative sardinella fisheries management plans.

The project continued to establish the sardinella UGD and to finalize the local conventions (CL) for the CLPAs in Yenne/Dialaw, Rufisque/Bargy and Cayar. The CL makes it easier to negotiate management rules in local communities and to formalize relations between CLPAs on the way they should engage with one another to develop and implement stock-based management plans. At the same time, the project pursued efforts with the CLPAs in Joal, Sindia and Mbour to implement their CLs, organizing and revitalizing the CLPAs that had successfully established monitoring committees for the proper management of these governance organs. A prerequisite for rolling out sustainable fisheries management plans is to develop and implement local conventions. In addition to working on local conventions, the project made progress in the development of the sardinella management plan. A first meeting of the sardinella Technical Task Force (ETT) took place on May 17th, 2013 at the DPM to validate the synthesis report on the constraints and solutions for sardinella fisheries as well as the methodology for establishing consultation frameworks. A second meeting took place in Mbour on June 20th, 2013 to review the synthesis reports and schedule activities for the months ahead.

In this quarter, the project finalized most of the scientific studies it had commissioned, and continued analyzing the findings to use them in developing management plans. These were the CRODT reports on *Assessing landings from the Senegalese boats fishing in the sub-region* and sardinella population dynamics in Northwest Africa, and on *illegal, unreported and unregulated (IUU) fishing*. As regards *biological data*, the project used ELEFAN to begin processing data sets collected by the IUPA and IRD/IFAN on flat and round sardines, bonga, thiof, shrimp and octopus. It also organized training, with the support of experts from UBC, to initiate participants to the new version of ELEFAN software (ELEFAN in R) using biological data from IUPA and IFAN. The trainees were thirty (30) participants from USAID/COMFISH partner organizations in Senegal (DPM, Ministry of Fisheries, CEP, PRSC,

COPE, CCLME, CRODT, WWF, IUPA, IFAN, PMU, and USAID/COMFISH). Together with Centre de Suivi Ecologique (CSE), the project mapped out cymbium, octopus, thiof and sardine stock dynamics, based on data gathered on the ground.

Activities with socio-economic benefits for women were critical in the reporting period. The project team pursued ongoing efforts to renovate the modern fish-processing unit in Cayar and continued to provide functional literacy to women's groups. It kicked off efforts to implement the code of conduct, organizing a feedback workshop in Wolof on the code of conduct and a series of tea-time chats thereon in "mbars". The project also completed the study on durable fish storage conditions. It revitalized the hygiene committee, hosted a delegation from USAID/YAJEENDE in Cayar, and began discussions with beneficiary groups on the ways and means of setting up a "revolving committee". Lastly, the project bought computer equipment and furniture for women, and organized a coffee talk on women's role in fisheries in Senegal to call the attention of authorities in the sector to the importance of taking a gender-sensitive approach to decision making.

On climate change, the steering committee for dialogue, meant to be a task force, was established on May 14th, 2013. The project pursued vigorous efforts on the diachronic study of the coastline and the dynamics of land use on the pilot sites, based on the satellite images taken in 1954, 1978, 1989 and 2012. At the same time, the project team trained stakeholders to give them a firm grasp of climate change impacts in their communities, and drafted the adaptation plan for each study site.

Finally, efforts to develop the capacities of stakeholders and institutions were pursued either by training actors and institutions directly, or by encouraging information-sharing and discussion meetings on the best management practices (BMP) and management measures currently in use in the project target areas.

In terms of performance, this quarter witnessed significant progress in institutional and stakeholder capacity development, implementation of the local conventions of the CLPAs in Mbour, Joal Fadiouth and Sindia, development of the sardinella management plan, the launch of three new local conventions, coastal community vulnerability assessment and improved fish processing techniques in Cayar.

On the "Strengthening institutional and stakeholder capacities in governance" component, the program developed the capacities of 2752 stakeholders in workshops, public education meetings organized around the local conventions, information and awareness sessions, and focus groups.

In this area, the project specifically organized 10 training workshops for 415 beneficiaries, including 296 men and 119 women. Cumulatively, 1127 individuals have been trained out of a yearly target of 2090, making a completion rate of 54%. The project plans to organize several training activities in the fourth quarter to meet this target. At the workshops, 5 research bodies, training institutes and government departments were trained along with the over 19 local beneficiary organizations (CLPAs, CLPs, EIGs) in the project area. This makes a cumulated total of 34 organizations trained out of the initial annual target of 32 organizations, indicating that the annual target on this indicator has been attained. To continue implementing the local conventions of the Mbour, Joal and Sindia CLPAs, the project convened 33 meetings on the meeting premises of fisheries stakeholders to educate 654 individuals. It also organized 39 radio programs in three community radios along the coastal area in the hope of educating a wider group on these local conventions. Apart from this, members were chosen for the four technical committees, set up by the project to implement the local conventions of the Sindia, Joal-Fadiouth and Mbour CLPAs. These were the Committee for "Surveillance and Safety at Sea (the Joint Surveillance Brigade)," the "Awareness, Information, Education and Communication" Committee, the "Conflict Resolution and External Relations" Committee and the

"Scientific Committee for the Management of Fishery Resources, Environment and Participatory Research." In Joal Fadiouth, these four commissions had a total number of 108 members representing all the CLPAs, while in Mbour and Sindia they had 73 and 383 members respectively. All these actors will be trained to implement the local conventions.

To develop the sardinella management plan, the project organized 16 stakeholder information and awareness events for 618 beneficiaries in various CLPAs. The objective of these meetings was to inform and educate the stakeholders on how management plans are developed, and to obtain their views, and identify the constraints and solutions for exploiting sardinella stocks.

The project team also started to develop three new local conventions. During the reporting period, it identified the stakeholders and assessed their equipment on various sites (Cayar, Rufisque/Bargny Yenne/Dialaw) to take stock of their capacities to manage fisheries resources. To understand the management initiatives underway and make proposals for new management measures, the project team held 60 focus group meetings in three CLPAs with different categories of actors (933 participants in the Rufisque/Bargny and Yenne/Dialaw CLPAs).

On climate change, the project organized three workshops in Joal, Ngaparou and Rufisque to share the preliminary findings of the studies on coastal community vulnerability to climate change. At these workshops, 132 people including 36 women were trained on the impacts of climate change on coastal communities. On a cumulative basis, the project trained 535 stakeholders on climate change out of an annual target of 950 individuals. The gap is going to be closed in the fourth quarter through large-scale dissemination of the findings on vulnerability assessment of the targeted sites. Draft adaptation plans for each study site have been prepared and will be shared in the next quarter.

In the reporting period, there was considerable progress in the renovation of the Cayar fish processing plant. The buildings are almost complete. The training workshops organized to share information on the code of conduct reached 22 women fish processors, while those on leadership benefitted 15 women leaders from 11 community-based organizations. These women leaders will replicate what they learned among their members during the informal focus group discussions they have regularly at the "Mbar". In doing so, they will enable the project to reach a considerable number of women on the artisanal processing sites in Senegal.

2. INTRODUCTION

The collaborative management for a sustainable fisheries future in Senegal project (USAID/COMFISH) is a five-year initiative funded by the United States Agency for International Development (USAID). It is implemented through a Cooperative Agreement between USAID and the University of Rhode Island (URI). The project's main executing partners include government services, the private sector, non-governmental organizations working in coastal areas and in the fishing sector, universities (UCAD, IUPA), research institutes (CRODT, IRD/IFAN) and several other NGOs.

The goal of the USAID/COMFISH Project is to support the Government of Senegal's fisheries sector reform, in accordance with the Fisheries and Aquaculture Sector Policy Letter, by strengthening the prerequisites for improved governance and promoting the use of effective management approaches and tools. These tools address both the social and institutional/biological aspects of sustainability. Generally, the Fisheries Code of 1998 makes provision for local governance organs through the creation of Local Fisheries Councils (CLP) and Local Councils of Artisanal Fisheries (CLPA). And, although some research has been conducted on the biological sustainability of some fish stocks, the findings have not been integrated fully into collaborative management plans. Consequently, the current mechanisms for collaborative management of fisheries resources at the local level do not fully take into account the criteria for sustainability enshrined in the Fisheries Sector Policy Letter, and most of the fisheries in Senegal are still not managed in a sustainable manner.

The USAID/COMFISH Project is going to support this fisheries sector reform, as well as promote the objectives of biodiversity conservation, including the cross-cutting themes of enhanced governance, gender mainstreaming and adaptation to climate change.

The USAID/COMFISH project seeks to develop and replicate new sustainable fishing models to help Senegal institute the sustainable management of the artisanal fisheries sector. Because most of the fisheries resources are shared between Senegal and the neighboring countries in the CCLME zone, activities will be led to assist in harmonizing artisanal fisheries governance in the sub-region, even though most of the project activities will be concentrated in Senegal.

The USAID/COMFISH project's long-term objective (20-30 years) is to see to it that fisheries in Senegal are no longer over-exploited and provide (1) the nation with a sustainable source of high quality protein, (2) so that this contributes to the quality of life of artisanal fishing communities, and (3) maintains the capacity of coastal and marine ecosystems to produce goods and services useful for, and desired by the people of Senegal.

The USAID/COMFISH project will contribute to achieve the following four major outcomes:

RI 1: The capacities of institutions and actors are strengthened at all levels of governance in order to establish an ecosystem-based collaborative management approach that prevents overfishing and increases resilience to climate change;

RI 2: Strategies, policies and good practices are tested and applied to build resilience to climate change and the capacities for coping with destructive and unsustainable uses of marine resources that threaten biodiversity conservation in the West Africa marine ecoregion;

RI 3: Coastal community vulnerability assessment and capacity development for climate change adaptation are provided;

RI 4: The sustainable management of fisheries resources helps improve social and economic benefits for fishing communities and reinforces their resilience to climate change.

This document, entitled Third Quarterly Report, presents the quarterly report on the activities implemented by the USAID/COMFISH project during the third quarter of fiscal 2013.

The document has four sections: an introduction; a first section that describes the major accomplishments during the reporting period; a third section that presents the project's cross-cutting activities (communication, monitoring compliance with environmental protection criteria, performance monitoring and evaluation); and a last section on project management and annexes.

3. SECOND QUARTER ACCOMPLISHMENTS

3.1. Policy Dialogue/Reforms

In the quarter under review, the project led several policy initiatives with fisheries sector authorities.

Validating the conclusions and recommendations of the regional workshop on good fishing practices: In April 2013, USAID/COMFISH and DPM together organized a technical meeting, with support from WWF, to share the recommendations of the workshop on managing fishing capacity, IUU fishing and catch reconstruction. The meeting proposed that a technical committee be established at the Ministry of Fisheries and Maritime Affairs to play a leadership role in the management of fishing capacity and IUU fishing.

Formalizing and establishing the national technical committee for fishing capacity and IUU fishing management: The Ministry of Fisheries and Maritime Affairs issued an official notification letter, with memo n° 0822 of June 12th, 2013, to establish the technical committee for the management of fishing capacity and IUU fishing. That was after Ministry officials finalized the introductory document on the creation of said committee with the support of DPM, CEP, WWF and SCA. The memo presenting the Committee outlined the member institutions and terms of reference, specifying that the duties of the Committee are to review and propose to the Ministry any initiative which can enhance the management of the fisheries in Senegal's EEZ. The Committee will be chaired by DPM with the support of all national structures and grassroots actors, fishers and industrialists' organizations, and the partner projects of the line Ministry.

Knowledge sharing meeting on the USAID/COMFISH project: A closed-door meeting took place at the DPM on June 27th, 2013 under the chairmanship of the Director of Fisheries. The meeting gathered representatives of DPM, WWF and USAID/COMFISH to examine the terms for validating USAID/COMFISH project documents on IUU fishing and on artisanal fishery landings captured outside Senegal's EEZ. The participants agreed that the National Technical Committee, which has a leadership role in the management of fishing capacity and IUU fishing, should review these documents and present reports on July 8 and 9, 2013.

Reviewing and discussing reports on IUU fishing and catch reconstruction in Senegal: A meeting was organized on June 5th, 2013 at DPM, upon the request of the USAID/COMFISH Director, to share the findings of studies that the project had conducted together with the University of British Columbia (UBC), represented on that occasion by Dr. Daniel Pauly and his team. The meeting took place under the stewardship of Senegal's Director of Marine Fisheries, and brought together experts from the Ministry of Fisheries, the SCA's COPE project, WWF and USAID/COMFISH.

The meeting proceedings comprised presentations by COMFISH and UBC respectively on the IUU fishing industry and on catch reconstruction in Senegal. These presentations were followed by highly enriching discussions on Senegal's ability to control IUU fishing and the accomplices at national, regional and international level who support the practice to expand. The findings were that industrial IUU catches are equal to the official catches of all the fisheries in Senegal, and that the issue needs to be addressed accordingly at the highest level.

The meeting also agreed that catch reconstruction was necessary, because most of the statistical data on catch landings that countries send to the FAO does not include the fish landings from certain related activities such as angling, occasional fishing, undocumented catches, etc. Consequently, the statistics are distorted, making it necessary to identify the different fishing activities in order to know the real amount of fish catches in country statistics. The USAID/COMFISH project assisted UBC in this project, and it will support the Directorate of Fisheries to validate the data UBC has collected already.

Discussing with authorities and validating TOR on "the census of women in the artisanal fishing sector": To assess women's role in artisanal fisheries, the project stakeholders agreed to conduct a census of the women active in the sector. USAID/COMFISH, together with the Ministry of Fisheries (DPM), WWF and Enda Graf held several meetings at the DPM to harmonize their approaches to this

work. All the partners validated the terms of reference before approval by the Minister of Fisheries. The Minister of Fisheries was enthusiastic about the initiative and officially contacted technical and financial partners, including WWF and USAID/COMFISH, to join in funding this study at national level. The study will be the first in Senegal to use statistical data in substantiating the social and economic significance of women in the fisheries sector. It will also be a tool for advocacy on the need to address the interests of women during the decision-making process in the fisheries sector.

3.2. Human and institutional capacity development

- Institutions

Contributing to strengthen the fisheries data gathering mechanisms of research and training institutes: As regards the collection and analysis of data on fisheries, the USAID/COMFISH project helped strengthen the capacities of CRODT, IUPA, IRD/IFAN, ISE and CSE through the support it gave these institutions to enable them to expand their mechanisms for collecting data in the project target areas. The findings from these initiatives helped students to complete three Masters Degree memoirs and two Doctorate Degree theses on the assessment of stocks targeted by the USAID/COMFISH project.

Training on the evaluation of biological stocks with software (ELEFAN Electronic Length Frequency Analysis). IUPA organized a workshop on this topic from June 3 to 8, 2013 at the Université Cheikh Anta Diop in Dakar. The main objective of the training workshop was to introduce participants to the new version of ELEFAN (ELEFAN in R) software, based on the biological data collected by IUPA and IFAN. The workshop brought together thirty representatives of USAID/COMFISH partner organizations in Senegal (DPM, Ministry of Fisheries, CEP, PRSC, COPE, CCLME, CRODT, WWF, IUPA, IFAN, PMU, and USAID/COMFISH). Experts from the University of British Columbia in Canada facilitated the training and helped the participants to improve their knowledge about the elements needed to use ELEFAN software in determining the parameters of growth, based on the length frequency of the species studied.

Building the skills of Fisheries Ministry officials and researchers: To contribute to the training and capacity building program of the Department of Marine Fisheries, the USAID/COMFISH project offered a five-month training grant, from December 1st, 2012 to April 30th, 2013, to Mr. Ousmane Ndiaye, Technical Inspector and Advisor at the Ministry of Fisheries, at the University of Rhode Island, USA. During the course, Mr. Ndiaye was under the supervision of a team of professors and specialists in marine fisheries governance and management. The objective of the training course was to review and study the current governance system in Senegal and experience the way the American system works, to be able to do a comparative study and come out with success stories that can be adapted to the system in Senegal. Using this approach, Mr. Ndiaye attended several meetings in local, regional and national councils across communities in Rhode Island, Baltimore, Massachusetts, Maine and Alaska. After concluding his visits and academic lectures, Mr. Ndiaye presented a concise comparative study analyzing the marine fisheries governance system to his supervisors, the students and fisheries managers in Rhode Island. After he returned to Senegal, Mr. Ndiaye presented these findings to the USAID/COMFISH team. In July, he is scheduled to give another presentation for the partners involved in fisheries management.

The project also granted another scholarship for training in fish population dynamics and biostatistics. CRODT proposed a candidate, Ms. Diop Mareme, who holds a Master's degree in fish biostatistics and environment from the Université de Gaston Berger in Saint Louis, Senegal. She is going to be under the supervision of a team of professors from the Department of Biological Oceanography, University of Rhode Island. Ms. Diop is currently finalizing preparations for the TOEFL test, and is expected, at the same time, to undergo training in population dynamics from July 1st to September 30th, 2013 at the University of Rhode Island Fisheries Center.

- Stakeholders

National workshop on building women's capacities in leadership: To implement the strategy for building the capacities of women in the fisheries sector, the USAID-COMFISH project and DPM together organized a leadership training workshop for women in the fisheries sector from June 24 to 26, 2013 in Dakar. The Department of Marine Fisheries coordinated this activity through the Office for Gender Equality to ensure better ownership of the results and delivery of future activities. The participants were leaders chosen from the CLPAs within the project area. There were two representatives from each CLPA, making 18 participants from across the project area. The training was provided entirely in Wolof and covered topics such as: the qualities of an effective leader, the advantages and disadvantages of leadership, getting a deeper understanding of leaders, how to appreciate leaders for the people they truly are, how to strengthen leadership, and what are the main lessons women can learn from this training exercise. At the close of the proceedings, the participants were better prepared to play their roles and discharge their responsibilities in women's groups and in local and national organizations for fisheries management (CLPA/CLP, CNCPM) with a view to making a more meaningful contribution to efforts aimed at having fisheries development and management plans in Senegal.



Photo1: Women's leadership training for women leaders from CLPAs in the project area

Sharing information about the BMP process and workshop: these workshops took place in Cayar, Foundiougne and Joal Fadiouth from May 17th to 23rd, 2013 and gathered actors from the CLPAs/CLPs in the communities concerned. Let us not forget that this contest was organized to raise awareness among stakeholders in the fishing sector and to emphasize the need for them to secure the same, or even better living conditions for future generations. It was intended also to encourage innovative ideas that can be shared with other actors in the fisheries sector. A fisherman who shares his experience with others can be a powerful tool for knowledge sharing, for stimulating the behavior change expected from other actors in fishery resource management, and for energizing the action steps needed to make a difference. This encourages sustainable management behavior and ethics in the fisheries sector. Such awareness contributes in a big way to success when efforts are made to develop and implement future plans for fisheries development and management in the artisanal fisheries in Senegal. There were 110 participants at the workshops.

Pilot project on octopus fisheries: In the efforts being made to implement the pilot project on octopus fisheries in Yoff, the project conducted site visits in the fishing village of Yoff. The visiting team gathered information on the local communities and identified local leaders, problems related to fishing octopus at the local level, and the needs for behavior change.

Organizing a meeting with actors in the coastal area to educate them on the management measures used in Mbour Division: to foster the collaborative management of local fisheries, several different management measures have been initiated by the actors in Mbour division under the CLPAs in

Mbour, Sindia and Joal. They are doing so with the support of the fisheries service, researchers and donors through projects like COGEPAS, GIRMAC, COMFISH, etc. To improve the effectiveness of the management measures in use, the USAID/COMFISH project, in partnership with FENAGIE, helped organize an awareness and dialogue promotion workshop on 05/29/2013 at Mbour for close to 130 actors representing all stakeholders: members of the fishing industry (fishermen, wholesalers, processors), the administrative and judicial authorities (Representative of the Director of Fisheries, the Divisional Officer of Mbour, the Prosecutor of Mbour, the Mayor of Mbour, fisheries officers, workers from the National Park, etc.), the USAID/COMFISH project, media practitioners, etc. The purpose of the workshop was to conduct an in-depth analysis of the management measures used, so as to make the necessary adjustments for the sustainable management of octopus, cymbium and sardinella fisheries in Mbour Division.

Developing CLPA capacities in collaborative surveillance for more effective Local Conventions: In its efforts to revitalize CLPAs and help kick-start the effective rollout of Local Conventions in the Mbour, Sindia and Joal CLPAs, the USAID/COMFISH program has established committees and is planning to train the members so that they can discharge their duties properly. To do so, it proposed Terms of Reference and hired consultants to train the committee members in charge of surveillance and safety at sea in the Mbour, Sindia and Joal Fadiouth CLPAs.

3.3. Natural resources/management plans/biodiversity and marine ecosystem conservation

3.3.1. Establishing a scientific resource base

During the reporting period, most of the studies planned last year were finalized and analyzed: IUU fishing, the landings of boats fishing outside Senegal's EEZ, collection of socio-economic data on the shrimp fisheries in Sine Saloum, fishing infrastructure mapping, fishing stock dynamics in time and in space. The only activity still going on is the collection of biological data by IUPAC and IRD/IFAN to complete the database and ensure that assessments on the growth of stocks is more effective.

Pursuing IUPA and IRD biological data gathering operations: Two monthly missions to gather biological data were conducted in April and May 2013. A third sampling campaign was set underway in June. Biological data is being collected on the size (length and weight) and reproduction (sex, stage of sexual maturity and fecundity) of the target species. The biological parameters studied are: size frequency, size-weight ratio, sex ratio, stages in sexual maturity, size of first sexual maturity and growth. A total number of 1736 individuals were measured and weighed, including 411 round sardines, 655 flat sardines and 670 bonga. For each species, 50 individuals were collected each month to study reproduction. An Excel datasheet was used to store all the biological data collected. This data is going to be processed to determine the size frequency and determine the parameters of growth and reproduction.

Mapping land use: This work is done in the CLPAs in Mbour, Joal, Sindia, Yene/Dialaw Rufisque/Bargny and Cayar (2010 or 2011) with high-resolution satellite images to locate fisheries infrastructure. After getting satellite images of land use in the CPLAs in Yenne/Dialaw, Mbour, Joal/Fadiouth, Cayar, and Rufisque, maps were produced on a 1/5000 scale. The results are used to improve understanding of spatial planning and spatial distribution of fisheries infrastructure in the CLPAs. They serve also as key tools for decision-making in governance organs.

There was a mapping of cymbium, octopus, thiof and sardinella stock dynamics with data collected on the ground during the last quarter and in the reporting period. The maps below show the current distribution of cymbium and sardinella stocks. The full reports on the dynamics of these stocks will be presented in the next quarter.

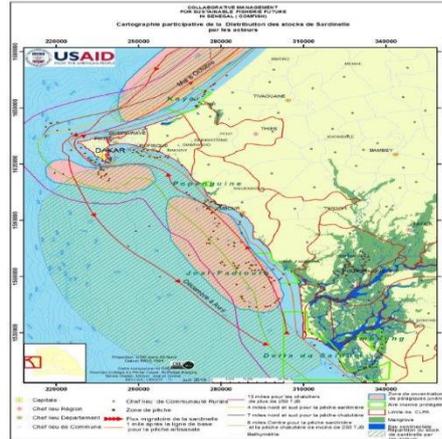
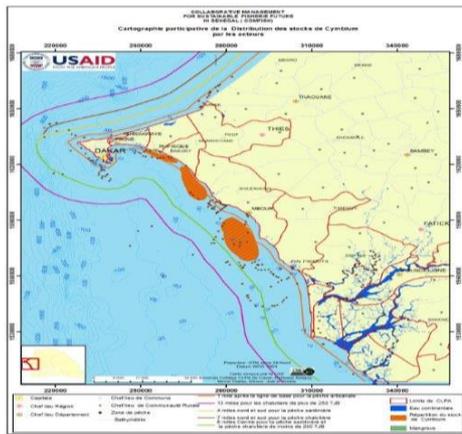


Fig.1: Current spatial distribution of Cymbium stocks Fig. 2: Current distribution of sardinella stocks

Finalizing CRODT reports and the IUU fishing and catch reconstruction report: After the submission of study reports on boat catches outside Senegal’s EEZ and on sardinella fisheries in the sub-region, project experts reviewed the reports, making a few corrections and input to refine the content. A technical validation meeting on said reports will take place at DPM in July.

On IUU fishing and catch reconstruction, the USAID/COMFISH project has already sent the draft reports for review, and eventually for approval by the technical committee established for this purpose by the authorities of the Ministry of Fisheries and Maritime Affairs.

3.3.2. Development of the sardinella management plan

To support the management of fisheries resources, the USAID/COMFISH project started in the last quarter to develop a sardinella fisheries management plan. The emphasis in the reporting period was on meetings (information and awareness meeting with sardinella sector actors to develop the management plan) with the various actors who make a living from artisanal and industrial sardinella fisheries. The project used the meetings to discuss with stakeholders (fishermen, fish traders and processors) about the various stages in the process of developing and managing sardinella fisheries, to identify and discuss the constraints, the causes of these constraints, the strengths and solutions related to this fishery sector; and to gather information on the indigenous knowledge base of the actors regarding the management of sardinella fisheries, their involvement in the process and the solutions they envisage for promoting sustainable fisheries management. It is in this regard that the project organized over fifteen (15) focus groups across the program coverage areas. The CLPAs in Dakar Ouest and Hann were added to the program to cover the sustainable management unit (SMU). Beside the artisanal fishermen, the project also had individual interviews with stakeholders in the industrial fishing sector, including fishmeal plants, with the support of DITP. It used these meetings to identify the constraints in the sardinella industry and to get their suggestions for sustainable management. There was a good presence from the stakeholders. A total number of 657 people attended the focus groups.

After these focus groups, two Technical Task Force (ETT) meetings were held respectively on May 17, with DPM serving as chair, and on June 20, under the chairmanship of Mr Diouf Sidya, Deputy Director of Fisheries and Chairman of the Technical Task Force on the Sardinella Management Plan,

to analyze the constraints and solutions proposed by stakeholders with a view to preparing the next step, which consists in developing management scenarios and options.



Photo 2: Group work on the sector's constraints in Joal Fadiouth

3.3.3. Supporting Marine Protected Areas

The Joal Fadiouth MPA Management Committee organized a meeting this quarter as a side event at the BMP feedback event. The meeting reviewed the recommendations of the study on gaps and weaknesses in MPA management, which started in Cayar, Joal Fadiouth and Bamboung at the end of 2012 and ended in January 2013. It was agreed that the financial resources earmarked to support the implementation of these recommendations would be mobilized and tested in Joal Fadiouth or Cayar, depending on the interest of actors in the MPA management Committees of these areas.

As concerns capacity building for MPA workers, this quarter was devoted to preparing the mission of Mr. Glenn Rucci from the Rhode Islands/CRC to Senegal. The mission is scheduled from July 1st to 12th, 2013 to build the capacities of MPA staff (state officials and grassroots actors) by establishing a human resource capacity assessment mechanism in the same way as the one running in East Africa under WIOMSA.

3.4. Cross-cutting themes

The cross-cutting themes addressed during the reporting period were coastal community adaptation to climate change, gender-related activities, fisheries governance/decentralization and communication and/or awareness activities.

3.4.1. Climate change adaptation

Two main activities were conducted during the reporting period: the meeting for the mainstreaming of climate change in fisheries policies and the one on coastal community vulnerability assessment.

Establishing consultation frameworks: a task force of representatives from various institutions came together on May 14, 2013 to set up a steering committee for organizing and supervising consultations. These were representatives of: DPM, DEEC, COMNAC, FENAGIE Pêche, CSE and the USAID/COMFISH project. The meeting proposed that this committee should also include educational and research establishments working on climate change and fisheries, such as the Laboratoire de Physique Atmosphérique (LPA), CRODT, IUPA, IRD/IFAN and ISE. The tasks assigned to the committee were:

- Conduct a diagnostic study of all the consultation frameworks already established in relation to fisheries and the marine and coastal environment to identify their weaknesses and the reasons why they were not working well;

- Develop a framework document to set the necessary and crucial conditions for effective consultation;
- Propose an adequate framework for conducting consultation;
- Formalize the platform for dialogue, defining the mission, objectives and strategies;
- Share all the results to the institutions identified to be members of the platform for consultation and COMNACC;
- Help set up the platform for consultation.

The terms of reference of the diagnostic study were developed and are now being processed for validation. The results of this work will be presented in the next quarter.

Coastal community vulnerability assessment: The first draft vulnerability assessment of the Rufisque, Sindia and Joal sites was developed. This was after the project shared the study findings with, and got validation from the local communities, inserted the corrections and comments, and then finalized the mapping. Accordingly, it trained 132 actors during the reporting period to better understand how climate change is affecting their communities, and then drafted participatory adaptation plans for each site.

Because most of the environmental and socio-economic data was analyzed in the last quarter, this report focuses only on the diachronic study of the coastline and the dynamics of land use, based on satellite images of 1954, 1978, 1989 and 2012. Generally, the study suggests that housing areas are progressing extremely fast in these coastal areas in-between the different dates, while there is an alarming regression of beach areas. This is confirmed by the map on land use in part of the Rufisque/Bargny CLPA between 1957, 1978, 2003 and 2010.

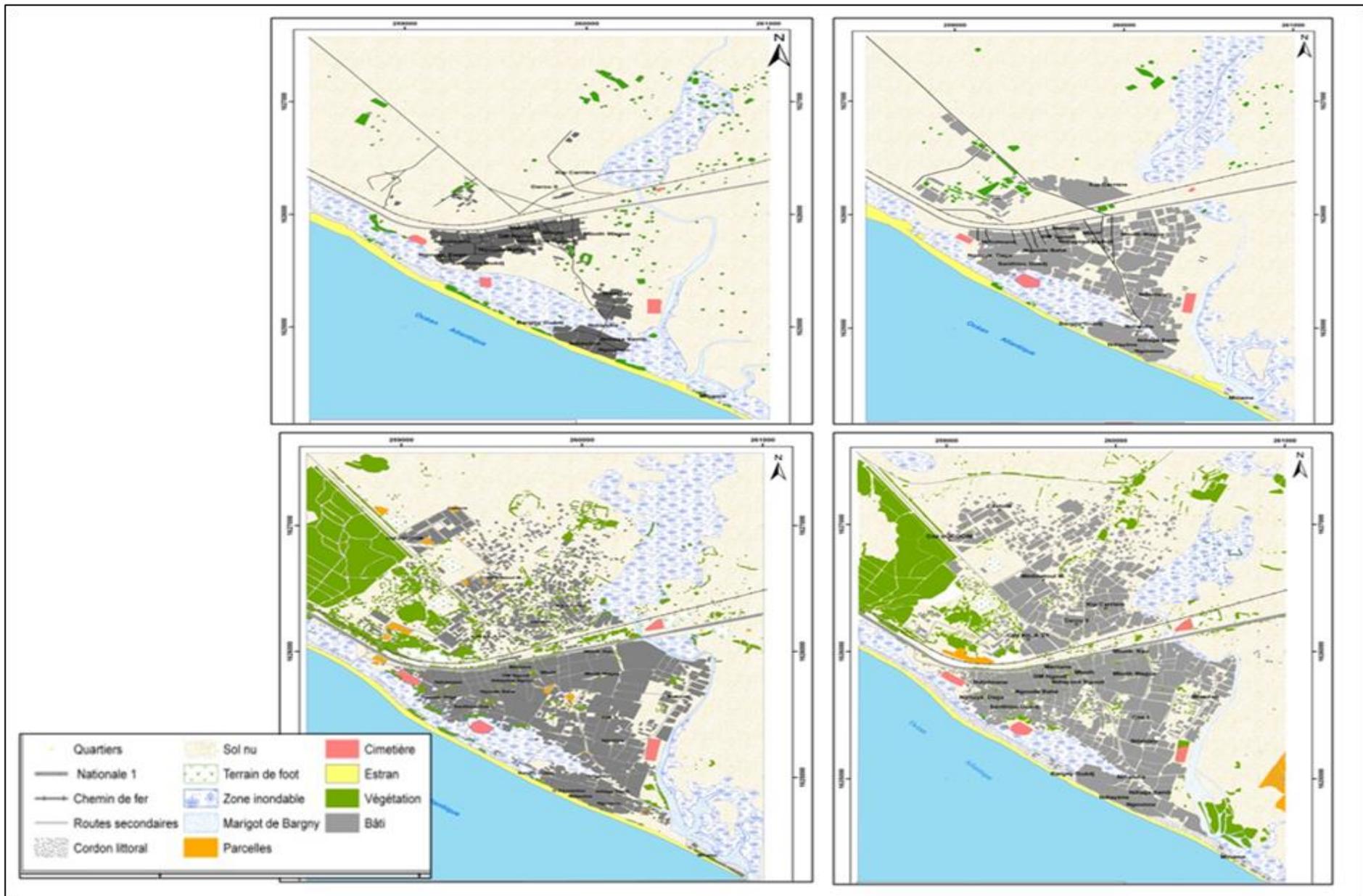


Fig.3: Map of land use in part of the Rufique/Bargny CLPA between 1957, 1978, 2003 and 2010

Coastal erosion is a long-established phenomenon in Rufisque/Bargny, but its amplitude only became manifest as from the 1960s. The curves derived from cartographic processing were used to assess the pace of change on the coastline. These results confirm the observations of the local communities.

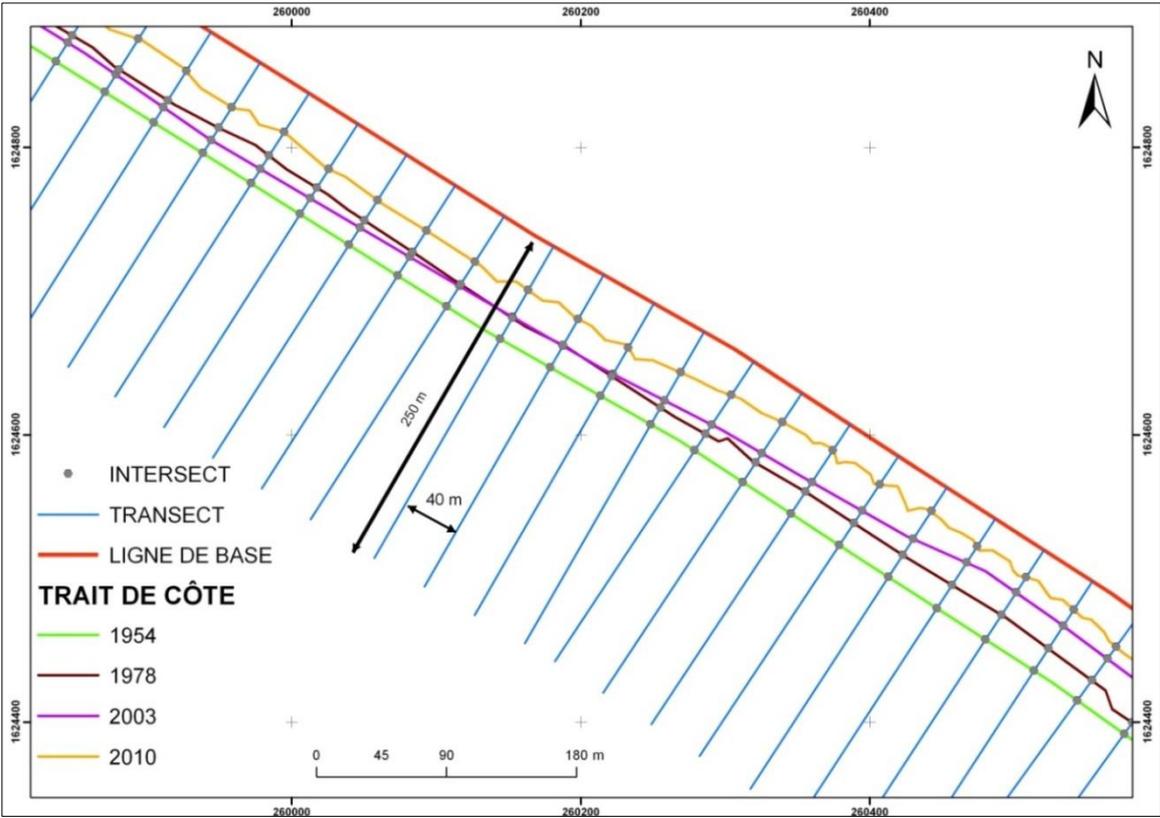


Fig.4: Estimates on the evolution of the coastline from 1954 to 2010

The analysis of the findings indicates the situation below:

From 1954 to 1978 the coastline regressed at an average rate of **-1,04 m/year**, making a total surface area of **72513,52 m²** that was been eroded.

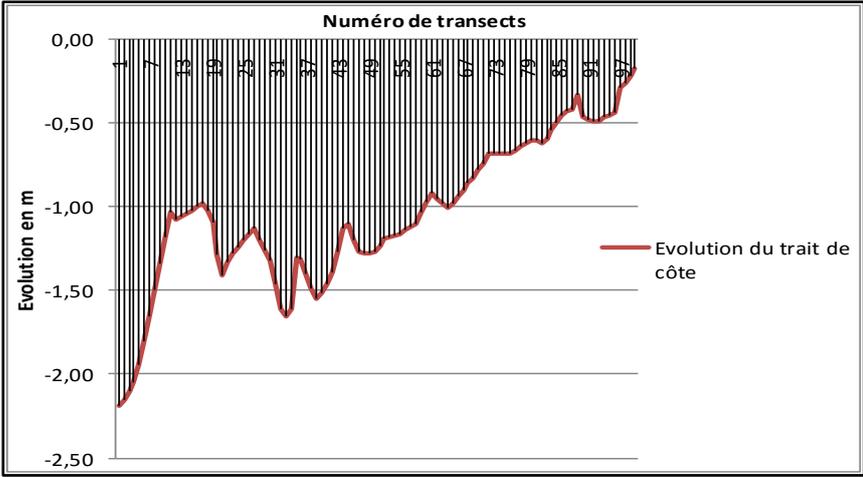


Fig.5: Curve showing the evolution of the Bargny coastline from 1954 to 1978

From 1978 to 2003, the average regression rate was lower (**-0,35 m/year** with a total eroded surface area of **28416,01 m²**). During this period, there was accretion, albeit of low magnitude, observed in the area with an accumulated surface of **4105,50 m²**.

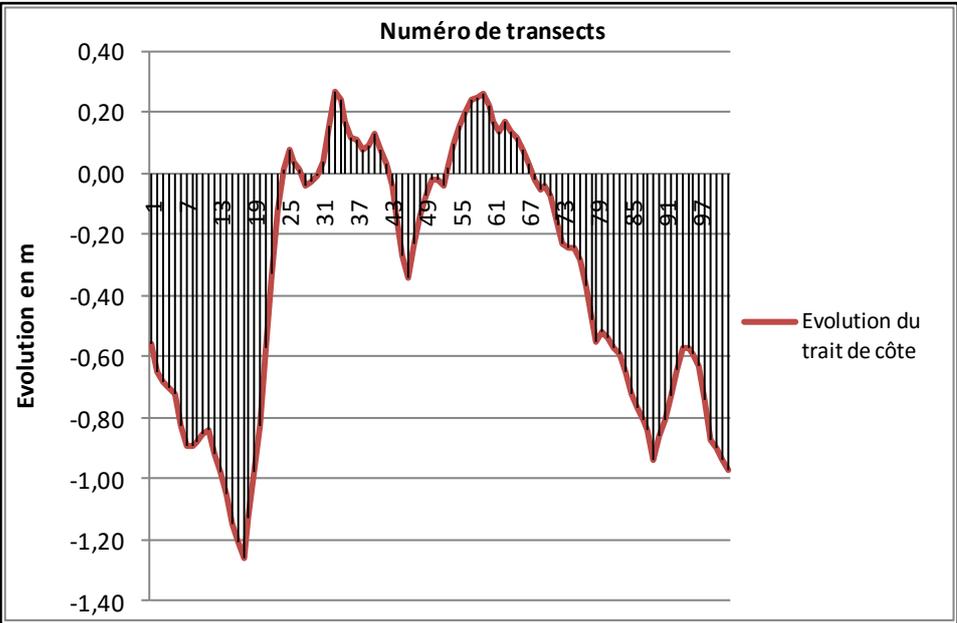


Fig.6: Curve showing the evolution of the Bargny coastline from 1978 to 2003

Intense coastal erosion was observed between 2003 and 2010, with the coastline regressing at an average rate of **-3,71 m/year** or a total eroded surface area of **78234,25 m²**. In some areas, the regression rates exceeded **-7 m/an**.

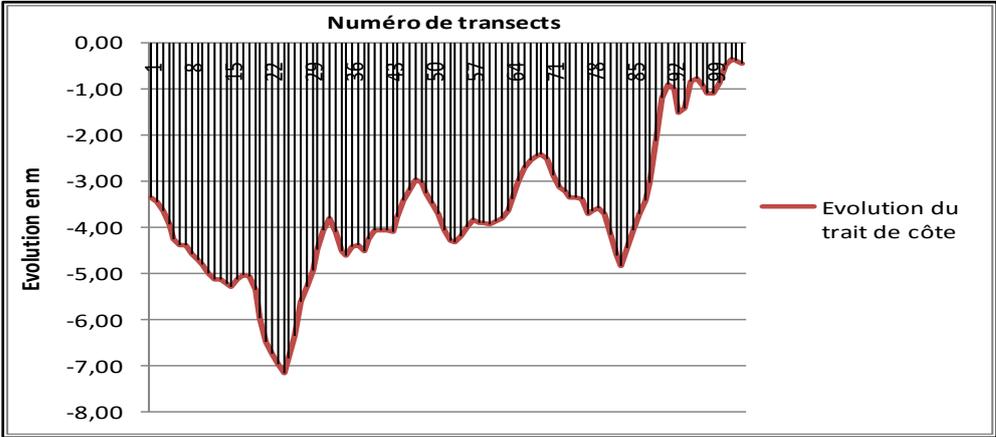


Fig.7: Curve showing the evolution of the Bargny coastline from 2003 to 2010

All the trends observed render coastal communities vulnerable to the impacts of climate change to varying degrees, depending on the site. The incidence of certain structural factors exacerbates the problem. The sites that were covered in the study are all developing very fast (rapid urbanization, population growth). This makes them particularly vulnerable to climate change, which is increasingly posing a threat to community livelihoods and aggravating poverty. Coupled with this, there is the lack of sanitation, health services, infrastructure (fishing pier, processing site, a center for fishermen) and sustainable housing, alternative income-generating activities and access to finance. Adaptation plans for each study site were proposed and are being processed for approval.

3.4.2. Gender

Organizing a coffee chat to enhance the role of women in decision-making in the fisheries sector:

To improve the conditions of women, and tackle the constraints and challenges they face in the fisheries sector, the project led initiatives to improve understanding of women's role in the fisheries sector and to find better ways of addressing their needs. These initiatives were based on several mechanisms and programs that were being implemented to involve women fully in the development process.

It was for this reason that USAID/COMFISH partnered with the Alliance for Sustainable Fisheries (a forum for sharing ideas on collaborative governance of fisheries in Senegal) and WWF to organize a chat on women's role and place in sustainable management of fisheries in Senegal. The chat offered a wonderful opportunity to listen carefully to the concerns of women in the fisheries sector and to find ways and means of harnessing their contribution to give them a more active role in decision-making on the sector. The project used this entry point to correct the absence of women's concerns and take a gender approach to the recommendations in the "Introductory Document" of the Inter-ministerial Council on Fisheries (date ... 2013). The Director of Marine Fisheries served as chair during this coffee chat that brought together fisheries experts, women fish processors and journalists (from all public and private media) to discuss:

- Women's status and role in Senegal's fisheries sector;
- High-growth sectors reliant on women's labor, as well as the threats and weaknesses undermining growth in these sectors, as fisheries resources dwindle with time;
- The social and economic contribution women make to the fisheries sector;
- Women's contribution to the promotion of good governance in the sector;

At the end of the discussions, recommendations for improving the condition of women in Senegal's fisheries sector were issued and will be submitted to the Senegalese authorities.



Photo 3: Coffee chat, June 27, 2013

Pursuing renovation of the modern fish processing plant (work in progress): Work is still in progress on the construction site to establish the plant. The contractor is putting the finishing touches to the buildings. Wiring and plumbing is being done as the work progresses. The consultants hired to do the work at each stage discuss with the building consultant and fish technologist to ensure compliance with required standards.

Meanwhile, the monitoring committee set up by APTE pays regular visits to the site. These visits are important, as attested by the relevant recommendations the committee members make as work progresses on the construction site. The committee includes people with a wealth of experience in the fishing sector. Mr. Alassane Samba Diop, the Mayor's representative, is a perfect example. He is a

fisheries expert and a specialist in fish processing who served as Chief of Service for fisheries in the Cayar area for at least ten years.

As for the equipment, APTE is working closely together with the fish technologist to begin installing the ovens and drying racks. APTE always recommends a participatory and inclusive approach to the installation of such equipment. It was suggested that a first prototype should be built for the women to test, and for the Monitoring Committee to approve before work continues. The same approach will be used for the drying racks.

However, there are some obstacles that could slow down progress and delay the completion of the buildings. These include tiling the courtyard of the plant, which was not covered in the budget, and buying some equipment that is vital for completion.

A temporary signboard bearing the USAID logo will be placed in front of the plant (in progress). This is standard USAID procedure for construction work.



Photo 4. Putting finishing touches to the plant. *APTE. 2013.*



Photo 5. Visiting the construction site. *APTE. 2013.*

Pursuing functional literacy classes: Literacy classes are given regularly on the field. The supervisor goes once a month to supervise the classes and work with the instructors on the field to improve their skills. He has given them teaching/learning tools. The tools include an instructor's logbook, which corresponds to the course worksheet for the week, and a roll-call register to check the women's attendance. Literacy classes serve also as key moments for sensitization, which lends credence to the concept of functional literacy. That is why APTE set the rules in the code of conduct on literacy classes. These rules have already been translated into Wolof and tested with women. With help from the supervisor, the instructors are now working on a document that compiles all the lessons learned already in hygiene, quality, and other project areas. When this document is finalized, it will be reproduced as a literacy course manual for all women fish processors in Senegal. The manual will be a document exclusively for women in the trade who have undeniable knowledge in the fish processing sector.

Securing women’s ownership of this tool is a major concern for APTE and its partners, especially the fisheries department. This ownership is a key first step for working on the processing site. To ensure the code is applied effectively, there has to be good communication for awareness of the significance of the code. This was why APTE organized several meetings during the reporting period. After the phase of participatory development and validation of the document, APTE and the fisheries department organized an information sharing session for women to launch the code officially.

With these crucial stages achieved, the project hired a consultant to translate the code of conduct into simple Wolof. The feedback lasted three days and brought together over twenty women. The rules in the code of conduct were translated in the form of poems and songs that will be used in literacy classes.



Photo 11. Women learn the rules, using the Wolof version of the code. APTE. 2013

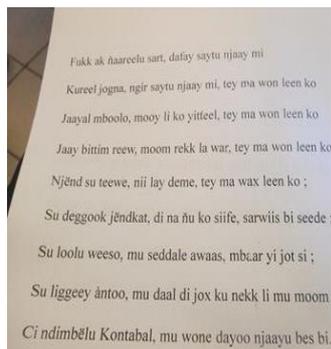


Photo 12. The rules translated into Wolof in the form of poems. APTE. 2013.



Photo 13. Group picture. APTE. 2013.

Organizing tea-time chats on the code of conduct in “mbars”

Tea-time chats were organized to educate women on the application of the code of conduct. The chats began in June 2013 and are scheduled to take place in all the “mbars” (rest areas that symbolize the smallest organizational entity on the site). APTE introduced this idea to improve communication with women fish processors. In Senegal, the meetings often take place after meals. They are moments of friendship, sharing, discussion and solidarity. APTE opted for this approach to improve women’s level of information and awareness. Awareness raising is done during literacy classes, but not all women enroll for these classes. Hence, these tea-time chats are a better way of reaching the highest possible number of women working on the site to gather their views and impressions on the conditions for applying the code. The chats are facilitated by project coordinators, the presidents of the two EIGs on the site, and the local project worker. The involvement of leaders in activities for awareness shows the importance accorded to the code of conduct and its ownership by women. During the meetings, the objectives of the code of conduct and its importance are discussed. The ways and means of applying the code more effectively are also identified with the women.



Photos 14 and 15: Women in mbars (mbar 1 & 2), courtesy of APTE. 2013.



Photo 16: Tea-time chat. Tea is served to the women to create a more friendly atmosphere for discussions. Cliché APTE, 2013.

Finalizing the studies on long-term fish storage conditions: The goal of this study was to test *keccax* prepared under good hygienic conditions by using different types of packaging. It entailed observing the product's behavior inside the packaging, giving indications on its life cycle and estimating the expiry date. The study was conducted by two university professors (a biologist and a veterinarian) and a fish technologist. It used samples of sardinella prepared under the supervision of consultants who made sure strict conditions of hygiene were observed.

Samples of *keccax* were used to carry out tests and report on the smells, tastes and colors perceived in order to generate and select a list of relevant, and possibly discriminatory descriptors. During the tests, the panel or jury for sensory analysis was made up of 2 women fish processors and 3 fisheries service officials from Cayar. They were asked to give a mark on the attributes, using a scale ranging from 4 to 0, and corresponding in descending order from “very good” to “poor”.

The major conclusions from this study were:

- Unsalted *keccax* is much more difficult to produce and store than salted *keccax*, regardless of the species of sardinella and the type of packaging (slow drying, infestation by fly maggots, fungal growth, ...etc.);
- Salted *keccax*, produced with flat sardinella seems to be more resistant to storage conditions;
- Accelerated decay of salted *keccax* prepared from round sardinella can be related, in part, to its high level of fatty acid, as well as to oxidation encouraged by the presence of oxygen (poor sealing and micro-leakages, caused by the fins of whole size fish that pierce some of the plastic bags). The rapid deterioration may also result from the non-homogeneous conditions of drying, causing some of the sardines not to be processed properly.

- The color, texture, taste and smell of the finished product are maintained with the packaging bag, container, or plastic bowl.
- Storing *keccax* in a plastic container is conducive to the maintenance of the product's organoleptic quality.

This study gave clear indications on the proper means of storing *keccax*. The study also gave a rough indication on the product's life cycle if it is produced under the required conditions of hygiene. With these specifications, the product will meet the requirements of certain special markets (supermarkets) that need to have such information before accepting it.



Photo 17. Tested plastic bowl. APTE. 2013.

Photo 18. Tested plastic bags. APTE. 2013.

Photo 19. Tested container. APTE. 2013.

Revitalizing the hygiene committee: After remobilizing the hygiene committee, APTE continues to support its actions on the processing site. Regular meetings are organized with the committee to foster its work and overcome the obstacles that are undermining its efforts. The actions initiated already show that the committee members are determined to maintain hygiene on the site (material management and cleaning plan). The cleaning sessions are done properly at present (2 times each month). But the chairperson of the committee has reported some failures. The women fail to observe some rules of hygiene. It was therefore agreed that more severe sanctions should be taken against defaulters. The project coordinator stressed the importance of maintaining hygiene on the site to preserve the Cayar label. It is the prerequisite for all else. She commended the women on their commitment to keep the site clean. She also announced that the project would give them a horse cart to facilitate the disposal of waste from the processing site. An order has already been placed for this equipment and it will be made available to the women in July. The waste disposal bins have already been made.

Building synergy with the USAID/YAJEENDE project: After the Cayar women met with the USAID/YAJEENDE project, they hosted a delegation from the project on June 6th 2013. The USAID/YAJEENDE project is a nutrition and food security support initiative funded by USAID. The project trains service providers (APS) whose role is to give people in deprived areas better access to basic foodstuffs. It was on this basis that APTE and the project partnered together to organize the meeting between the women fish processors in Cayar and the APS, both of which are supported by USAID projects. This partnership was facilitated by USAID/COMFISH through Mrs. Khady Sane Diouf, Deputy Director, who initiated the process. The delegation included 12 APS from the regions of Matam and Tambacounda. They were accompanied by the USAID/YAJEENDE technical team, made up of 3 persons (two facilitators and one nutritionist).

The marketing committee and the women leaders in Cayar welcomed the delegation from USAID/YAJEENDE to the processing site. The women talked about the products available on the site, the terms of collaboration with the APS, and the availability and prices of Cayar products. The Cayar women fish processors used the occasion to display some of the processed products. They also watched a film on the APS.

At the end of the meeting, the participants reaffirmed the importance of this encounter for APTE, its partner organization, USAID/COMFISH, and USAID/YAJEENDE. It was a sign that synergies could be created between USAID-funded projects, as well as between actors engaged in trade. The partnership could go even further, because the facilitators expressed their wish to explore other forms of partnership in training and trade, so that it is a win-win in many respects.

At the same time, the USAID/JAYEENDE project's Dakar office was discussing with APTE to find ways of collaborating on the hygiene component. USAID/YAJEENDE wants to build on some of the experience and lessons learned in hygiene and sanitation, especially in waste management, and APTE has accumulated plenty of experience in Senegal on that area. APTE is now implementing two projects on waste management and recovery in the Joal and Mbour communes with EU funding under the 10th FED.



Photo 20. The delegation visits the processing site. APTE. 2013.



Photo 21. Women processors welcome the USAID/YAJEENDE delegation in the conference room APTE. 2013.



Photo 22. Exhibition of some of the products processed by the women in Cayar. APTE. 2013.

Discussing the establishment of a “revolving” committee: A training initiative was organized already in this regard and a meeting held in June to set the terms of execution. The meeting brought together the APTE project coordinator, the project's field liaison officer, the leaders of the various “mbaar”

(there are nine of them), and the presidents of the two EIGs. The proceedings opened with a statement of the meeting objectives and an overview of the measures taken to establish a revolving credit facility. There was agreement that the revolving credit facility should begin working as quickly as possible, and that it should be accessible to all women on the fish processing site to prevent the exclusion of some women considered to be “individual”, because they were not enrolled in any of the EIGs. Access will be based on a contract, accompanied by the required documents, in accordance with the principles agreed during the training on the revolving credit system. The modalities were clearly established (payment of a registration fee of 1000 FCFA, photocopy of the national identity card and a duly filled registration form). The full application is submitted to the credit committee’s office, which has a register to record the identity of those applying for credit. The committee includes all the chieftains of the “*Mbaars*”, the presidents of the two EIGs on the site, the president of the management committee, and two supervisors (one from APTE and an official from the fisheries department in Cayar). The committee is soon going to define the terms for granting and refunding loans, and these will be put on record with the support of APTE.



Photo 22: Meeting with the credit committee. APTE. 2013.



Photo 23: Discussing with the women. APTE. 2013.

Procuring computer equipment and furniture for women beneficiaries: To continue building the women’s skills after the computer lessons they received, the project gave them a set of equipment (A desk-top computer, power back-up device, printer and camera). This equipment will enable the women to easily master the use of the computer and explore all it has to offer (information, communication, trade, marketing, accounting). The women will receive functional training on the use of this equipment when it is established.

Apart from this, the project has already purchased office equipment (table, cabinets, chairs) to be installed in the processing plant once it is completed.

This equipment will enable the women to work under good conditions in professionalizing their trade.

3.4.3. Governance/Decentralization

During the reporting period, the project organized the CLPAs (local governance bodies) to make them functional and able to discharge their duties in the sustainable management of local fisheries. The process of establishing Local Conventions continued in new areas to cover all the project sites and ensure better implementation of the preconditions for developing management plans.

Establishing technical committees to implement local conventions: The project has finished establishing technical committees in the Mbour, Joal Fadiouth and Sindia CLPAs. This approach recognizes that an organization develops to address the problems facing the community. The technical

committees that have been set up do include representatives from each college and are led by a chairperson and a secretary. All the committees have been installed democratically in plenary. The gender question remains central to this process in order to empower women, who are fewer in the ICC. Let us not forget that the five committees established in each CLPA are the Committee for Surveillance and Safety at Sea (Co-monitoring Brigade); the Awareness, Information, Training and Communication Committee; the Conflict Regulation and External Relations Committee; the Scientific Committee for Fishery Resource Management, Environment and Participatory Research; and finally the Finance and Partnership Committee for Infrastructure Management and Social Affairs.

The next stage will be to train the committee members (a total number of 564 members representing the three CLPAs in Mbour, Sindia and Joal) so that they are better equipped to discharge the roles and responsibilities assigned to them.



Photo 22: The Joal Fadiouth CLPA plenary to appoint committee members

Pursuing public education on the local conventions: Building public understanding of the Local Convention is an activity that goes on throughout the implementation process. In the reporting period, the project mainly used radio programs to share information and raise awareness on the management of fisheries resources with the wider public. To do this, the USAID/COMFISH project forced a partnership with three (3) community radio stations, namely la c ti re in Joal-Fadiouth, Radio dunya in Mbour and Radio in Poponguine/Ndayane, to support the implementation of activities for the sustainable management of fisheries resources. During the reporting period, 16 radio programs were produced on themes such as:

- Establishment of committees;
- Sensitization for the renewal of fishing permits;
- Sensitization on the conditions of work to safeguard the agreement on the fishing pier in Joal Fadiouth;
- Sensitization on biological recovery;
- Collaborative surveillance;
- Sensitization on the development of the sardinella management plan;

These themes were identified together with the actors, technicians and the radio host.

Organizing focus group meetings for the new Local Conventions: In the efforts being made to develop Local Conventions, provision was made to review the management of fisheries resources. Accordingly, the program organized meetings with various categories of actors (fishmongers, fishermen and fish processors, etc.) to gather information on the constraints facing actors in the fisheries sector and suggestions on how to find solutions for improved management of fisheries

resources. This work began in the previous quarter and ended during the reporting period. In all, over 60 meetings were organized in the 3 CLPAs. About 900 persons took part in the meetings.

The next stage will be to organize feedback workshops to validate the information gathered and identify the management rules for the Local Convention.



Photo 23: Focus group

Identifying actors and taking stock of fishing materials to develop new Local Conventions: The baseline surveys on actors and fishing materials, which began in the previous quarter, have just been completed. They were conducted by CLPA community volunteers with the support of project facilitators. The findings, after processing and analyzing the data, were as follows:

Among the actors, there was clear predominance of fishermen in each CLPA, with the following proportions: Cayar 68%, Rufisque/Bargny 67%, and Yenne/Dialaw 62%. For the other trades such as artisanal processing, the proportions were higher in Yenne/Dialaw, Rufisque/Bargny and Cayar respectively with 28%, 22% and 3%.

With regard to fishing gear, 8 types were identified with variances in number and distribution from one CLPA to the other. There were more single lines in Cayar (69%), while gillnets were more predominant in Rufisque/Bargny and Yenne, with 26% and 94% respectively.

3.4.4. Communication

In the period under review, the project activities on communication were mainly to pursue radio programs with community radio stations and broadcast programs to partner local communities to reach the actors at the grassroots, to ensure media coverage of the project's flagship activities, and to spotlight some of the project's successes through success stories.

Pursuing radio programs: Apart from field meetings, communication with actors at the grassroots continued mainly by planning, coordinating and disseminating new programs that addressed the major concerns of local fishing communities and key project issues, including the topical issues in the fisheries sector.

In the reporting period, there were 39 radio programs on a range of key themes such as the sustainable management of sardinella or octopus, safety at sea, fishing permits, the CLPA's role and ways of working, local conventions, USAID/COMFISH project objectives and approaches, etc. These programs were broadcast through the project's three partner radio stations: La Côtère (Joal), Dunya (Mbour) and Kondafe (Ndayanne/Sindia) with an average number of 13 programs per partner radio.

Assessing the partnership agreement with community radio stations: From June 24 to 25, 2013, the partnership agreement signed with La Côtère, Dunya and Kondafe was assessed in accordance with

the terms of reference of said agreement. During the assessment, led by a joint team including the project communication officer, community outreach workers and a facilitator, there were several meetings with representatives of actors at the grassroots, the local authorities of the fisheries sector and community radios to examine the implementation of the agreement (e.g.: the program format, duration and number of programs...) and the reaction of actors to the programs.

This assessment confirmed that fishing communities are interested in the programs and the topics addressed in them. An average number of 8 telephone calls are made during each program, making 32 calls per month. Many of the respondents were fishermen who affirmed that the radio programs helped them better understand what CLPAs are, what role they play and how they function; and that this made it easier for them to join the CLPA and play an active role in their local communities. But they also wished that the time when the programs are broadcast in Joal should be moved to 9 p.m. from the initial schedule set from 4 p.m. to 5 p.m. every Thursday, or that the programs be re-broadcast at the same time to allow fishermen to listen to them. They wanted also that other communication mediums such as the Mbapatt (wrestling) and local/private television channels should be used to strengthen communication with stakeholders (through round table discussions, public debates, street interviews).

The respondents proposed also that there should be at least two programs per week in Mbour to strengthen communication with stakeholders, and that training sessions, such as the ones organized last April, should be conducted for community facilitators/outreach workers. They requested further that special programs should be organized for closer communication with stakeholders and that decent transport fares should be given to the resource persons who travel a long way, so that it is easier for them to move from one place to another during programs.

Media coverage: the media covered two of the project's flagship activities in the reporting period. These were the press conference organized for the *ELEFAN training workshop*, hosted by IUPA from June 4th to 8th, 2013 and the coffee chat organized by the project on June 28th, 2013 together with the Alliance for sustainable fisheries.

The press conference, facilitated by Pr. Daniel Pauly of the University of British Columbia (one of the trainers at the workshop) about the impact of climate change on socio-economic and political stability in Senegal, was covered widely in the media, including several television stations, radio stations and print media outlets, such as the West Africa Democracy Radio, Sud FM, Walf FM, SEN TV, RDV TV, and online media outlets:

1. http://www.aps.sn/articles.php?id_article=114326
2. http://www.aps.sn/articles.php?id_article=114329
3. http://www.lesoleil.sn/index.php?option=com_content&view=article&id=29472:peche--le-rechauffement-climatique-menace-les-ressources-halieuistiques&catid=51:economy&Itemid=63
4. <http://www.journalbic.com/economie/2290-a-cause-de-la-peche-illicite-leconomie-senegalaise-perd-chaque-annee-300-millions-dollars.html>
5. <http://xibaaru.com/un-expert-souligne-les-effets-negatifs-du-rechauffement-climatique-sur-les-stocks-halieuistiques/>
6. <http://apanews.net/news/fr/article.php?id=201829#sthash.ZwQsq0Sr.dpuf>

The coffee chat was on the theme: “*the status and role of women in the sustainable management of fisheries resources*”. It was also covered by part of the national press, including APANEWS, RTS, SEN TV, Sud FM, RFM, Walf FM, APS and 8 online media outlets.

Success stories: Two of the project's flagship activities on the field, which are considered as examples of success, were used to prepare articles and videos that illustrate the project's impact on the ground. Two success stories were written after the field missions in June. The stories were on how the project's functional literacy program was making a difference in the professional activities and the day-to-day lives of women fish processors in Cayar, and on the impact that the project's radio programs had on CLPA operations.

3.4.5. Science/Technologies

Environmentally sensitive modeling of the Senegalese sardinella fishery: Modeling of the Senegalese sardinella fishery was carried out using CPUE, E and C, together with (i) the CRODT Temperature Index, TI; (ii) the CRODT Upwelling Index, UI; and (iii) the Atlantic Oscillation Index (AMO). A strong and robust model based on TI was developed and shows that higher sardinella landings occur at higher temperatures. This model explains why landings from 2008-11 in Senegal and the Region are higher than expected. A biologically useful model using UI shows that higher upwelling increases landings, but the model is weak and not robust enough to be used in managing the fishery. Models based on AMO were not useful because the AMO has a cycle of around 25 years while the available time series (30 years): the available time series is too short to allow meaningful analyses.

Environmental modeling carried out so far suggests strongly that climate change affects Senegalese sardinella landings but the environmentally sensitive models developed so far are not sufficiently robust to be used for informing MPAM/DPM for inclusion of information in PMFPs.

ELEFAN workshop: The IUPA/UBC/COMFISH partnership held a Workshop from June 3rd to 8th, June 2013 at IUPA to present and train around 35 participants in use the new Beta Version of ELEFAN IN R. The routines for fitting and estimating growth parameters to the data obtained by the IUPA fish sampling team were tested and successful fits were obtained for five of COMFISH's six priority species; *Sardinella aurita*, *S. maderensis*, cobo, thiof and octopus. Data for shrimp were not appropriate as they covered only juveniles: samples were taken on the seaward side of the Sine Saloum at Betenty but did not contain sufficient adults. To obtain adequate growth parameters for shrimp, sampling will have to be repeated using commercial samples taken from artisanal boats which take all sizes e.g. using trammel nets (or perhaps specially designed traws if trammel nets do not take a sufficiently large size range). The strategy of sampling commercial catches was successful for the other six species. Additional data on sole (from The Gambia), cockles (from IUPA) and Mugil (CRODT) were also brought by participants and were analyzed successfully.

4. Project management

4.1. Strategies/mechanisms/partnership

A number of meetings were held to develop collaborative strategies for building lasting impacts through project interventions. These were:

- The working session with the technical services and the Joal CLPA coordination committee to discuss additional funding for the construction of the CLPA house in Joal in 2014;
- The technical meeting with the chief of post in Joal on the pursuit of the Thiof management activities initiated by COGEPAS;
- The DPM's decision to include the USAID/COMFISH project in the Small Pelagics Project, with a view to writing the Small Pelagics Management Plan under the CSRP;

- The development of the MOU with CCLME and FAO for them to join in developing the sardinella management plan;
- Building synergy with USAID/YAJEENDE to identify markets for the sale of products processed by the women in Cayar.

4.2. Lessons learned

Most of the activities that began in year two of the USAID/COMFISH project came to an end during the reporting period, and the impacts are starting to be felt on the ground. The project stakeholders, and the authorities alike, are increasingly showering praise on the approaches and tools used by the project. This has not only earned us more recognition and acceptance from the actors. The authorities are more willing to include USAID/COMFISH project experts in most of the ongoing processes. The points outlined below attest that the project is progressively gaining recognition in the decision making sphere:

- The USAID/COMFISH project has been included in the team drafting the small pelagics (sardinella) management plan.
- The committee for small pelagics invited the project to present its sardinella management plan development model;
- The authorities have asked the project to implement DPM's action plan for Senegal's small pelagics committee. They are convinced the project has an effective approach to involving local communities in fisheries management processes to establish UGDs, and to building institutional and stakeholder capacities at all the levels of governance. Hence, they have asked the project to replicate the same models in the other CLPA areas that are not covered by the project;
- The project has been invited to provide scientific support in the ongoing fisheries management processes. But most of the scientific data we gather in our research is sensitive. This requires that we feed the data back and get it validated by the authorities before it is published.
- Experts from the project took part in drafting the introductory document for the inter-ministerial council for Fisheries.

This stream of requests the project is getting from policymakers and grassroots actors shows that it has been giving effective support for the government of Senegal to implement the fisheries sector policy letter. But the project clearly cannot do everything because it has limited financial resources and time. To make stronger impact and deliver sustainable interventions, the project must stay focused on areas where its contributions can make a big difference in the fisheries sector.

Looking at the very positive impact that communication has on our activities, this aspect of the program should be developed so that it can better showcase our results.

5. Activities planned for the next quarter

Policy reforms/dialogue

- Support the operationalization of the national technical committee in charge of leading the fishing capacity and IUU fishing management;
- Help organize the meeting for sharing the documents developed in the USAID COMFISH project;
- Support and take part in the initiative on “the census of women in the artisanal fisheries sector”;
- Meeting to share with the authorities and actors the activities of the next work plan;

Developing human and institutional capacities

- Support CLPA representatives to feed back training on the organization of CLPAs and the work of the Council;
- Assess the means and resources earmarked for information sharing and training in the fisheries sector to establish a partnership between research institutes and fisheries management organs;
- Organize meetings to revitalize the CNCPM and CLPA representativeness in this body;
- Organize training in the CLPAs on the rights of women, and the values and principles of leadership;
- Popularize the declaration by women;
- Organize meetings to implement the consultation framework on National Partnership for Joint Scientific Research on fisheries;
- Develop an action plan for the National Partnership for Joint Scientific Research on fisheries;

Natural resources/management plans/biodiversity and marine ecosystem preservation

- Establish a mechanism to monitor the mainstreaming of good practices in the establishment of management plans;
- Work through CLPAs to build synergies with partners working in the same area (e.g. COGEPAS);
- Pursue the collection of data on sardinella, shrimp, octopus, cobo and Thiof;
- Organize a working group on biological and socio-economic evaluation of sardinella stocks;
- Use the results of these evaluations to support the establishment of collaborative management plans;
- Feed back the conclusions of the workshop on stock evaluation and analysis methods and discuss the results through a series of meetings in the USAID/COMFISH project coverage areas (IUPA);
- Establish a joint system for collecting data on *thiof* and octopus (synergies with JICA);
- Establish a technical working group for processing and analysis of capture and capacity data;
- Update mapping with the database of information on stocks, on CLPAs supported by the USAID/COMFISH project and on administrative governance units;
- Continue to update elements for mapping fisheries (fish stocks and fishing areas) and the coastline (CSE).

Management plans

- Continue developing the sardinella management plan
- Establish consultation frameworks on the sardinella management plan
- Finalize the technical document for socio-economic studies on shrimp fisheries

MPAs

- Take measures for the administrative authorities to officially approve the National Strategy on MPAs.
- Develop an action plan for the constraints and solutions identified in the study with a view to improve MPA management on the project sites t (Joal, Cayar, ZPP)
- Implement the MPA managers capacity building strategy
- Cross-cutting themes

Adaptation to climate change

- Feedback, approve and validate reports and action plans on costal community vulnerability to climate change
- Conduct a study on the existing consultation frameworks for climate change
- Organize a feedback workshop on the study and establish a fisheries and climate change consultation platform

Gender equality

- Continue to build the plant;

- Equip the plant (make ovens and drying racks after consulting with the fish technologist);
- Continue literacy classes;
- “Tea-time chats’ in the “mbars”

Governance/decentralization/Local Conventions and management plans

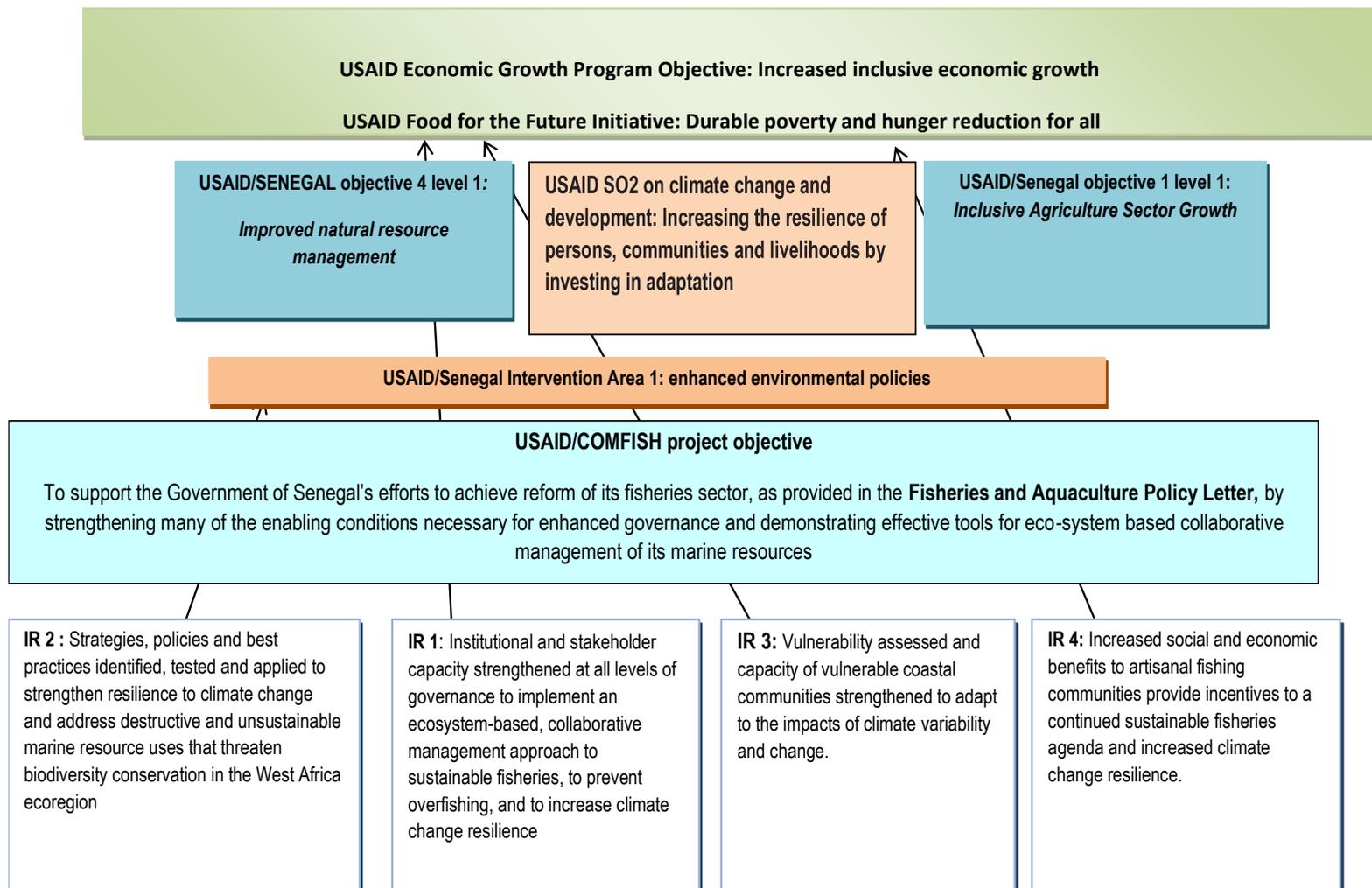
- Continue to share information on the local convention
- Train CLPA committee members
- Assess local conventions
- Continue to develop the local conventions of Rufisque/Bargny, Yenne/Diaiaw and Cayar
- Feed back, approve and validate three local conventions
- Begin to establish inter-CLPA consultation frameworks
- Continue developing the sardinella management plan

Sensitization/Communications

- Share information widely on the declaration by women in the fisheries sector
- Support the implementation of local conventions through community radios

6. ANNEXES

Annex 1: TABLE OF INDICATORS



Performance quarter 3 FY 2013

Indicators	LOP target	2013 target	Q 1 results	Q 2 results	Q3 results	accumulated/average	Observation
<i>Result 1: The Capacity of institutions and stakeholders are strengthened at all levels of governance to increase their resilience to climate change and facilitate implementation of co-management as part of UGD:</i>							
1. 75% increase of the composite index score for CLPAs management effectiveness in USAID/COMFISH Project sites by 2016	75% increase in terms of index score (0.07)	20% increase in terms of composite index score (0.05)	NA	NA	NA	NA	
2. Number of individuals who have received USG supported short-term food security and productivity training	4 790	2 090	M = 305 F = 293 Tot = 598	M = 71 F = 43 Tot = 114	M = 296 F = 119 Tot = 415	M = 672 F = 455 Tot = 1127	54% achievement rate of the annual target.
3. Number of print media and audio-visual products designed for strengthening the capacity of co-management institutions and that of fisheries stakeholders	15	9	0	3	0	3	
4. Ratio of women who have received short term training on food security (in relation to the total number of people trained)	55%	50%	49%	38%	29%	40%	
5. Number of research and training institutions, of governmental	20	17	2	7	5	14	DPM, Alliance WWF, COPEM, IUPA, IRD, IFAN, CRODT, DPSP, SCA

Indicators	LOP target	2013 target	Q 1 results	Q 2 results	Q3 results	accumulated/average	Observation
departments, consultation frameworks and NGOs whose capacity was strengthened as a result of USAID/COMFISH Project							CNFTP, CEP, DITP, DAMCP
Result 2: Strategies, policies and best practices identified, tested and applied to address both climate and non-climate stressors and their interactions in marine fisheries and biodiversity							
6. Number of action plans and/or projects developed to support fisheries management process	9	7	0	1	1	2	Action plan for the consideration of climate change by promoting renewable energy
7. Number of technical studies contributing to the management plans of UGDs	11	11	3	1	4	8	<p>Titles of documents :</p> <p>Estimation préliminaire des captures de la Pêche Illicite Non Déclarée et Non Réglementée au Sénégal, sources de données, logique, et conclusions.</p> <p>Evaluation de l'effort et des captures réalisés hors de la ZEE sénégalaise par la pêche artisanale</p> <p>Conditions de longue conservation du poisson BRAISE-SECHE (<i>keccax</i>) à Cayar</p> <p>Amélioration des connaissances sur les aspects du changement climatique et la pêche dans les zones côtières du Sénégal et des pays de la Commission Sous-Régionale des Pêches (CSRP)</p>

Indicators	LOP target	2013 target	Q 1 results	Q 2 results	Q3 results	accumulated/average	Observation
8. Number of synergies created in the development of UGDs	8	4	1	0	2	3	Synergy with JICA for the construction and equipment of fishermen house of Joal Synergy with Yajeende Project
9. Number of policies/regulations/administrative procedures analyzed	33	13	6	0	0	6	
10. Number of policies/regulations/administrative procedures drafted and presented for public/stakeholder consultation	17	6	0	0	0	0	
11. Number of policies/regulations/administrative procedures presented for legislation/decrees	12	6	0	0	0	0	
12. Number of policies/regulations/administrative procedures prepared as a result of USG assistance passed/approved	14	5	1	0	2	3	Official note of creation of technical committee of the management plan of sardine Official note of creation of management committee of capacity

Indicators	LOP target	2013 target	Q 1 results	Q 2 results	Q3 results	accumulated/average	Observation
13. Number of policies/regulations/administrative procedures passed for which implementation has begun	15	4	0	3	0	3	Extension of local conventions through 39 radio broadcasts Establishment of five technical committees in each CLPA
14. Number of new technologies for fisheries resources management developed	10	4	0	0	0	0	
15. Number of stakeholders who have put in place new regulations for the collaborative management of fisheries resources	40 000	15, 000	0	0	0	0	
16. Number of producers and others who have applied new technologies or management practices as a result of USG support (indicator 4.5.2-5 of FTF)	40 000	20 940	0	20 940	0	20 940	Actors of Mbour, Joal Fadiouth and Sindia's CLPAs
17. Number of hectares of biological significance and/or of natural resources under improved management as a result of USG assistance	827 555 ha	327 104 ha	0	41500 ha	309 704 ha	327 104 ha	Adoption and startup of implementation of local conventions of Mbour, Joal Fadiouth and Sindia

Indicators	LOP target	2013 target	Q 1 results	Q 2 results	Q3 results	accumulated/average	Observation
18. Number of hectares in biologically important areas under improved management as a result of USG assistance	364 500 ha	34 500 ha	0	41500 ha	0	41500 ha	Marking of Cayar MPA ; completion of the “Diagnostic study of gaps and constraints in the governance of marine protected areas of joal-fadiouth, Cayar and Bamboung” (Joal MPA=17 400 ha, Cayar MPA= 17 100 ha and Bamboung MPA= 7 000 ha)
Result 3: Vulnerability of coastal communities assessed and their capacity to adapt to the impacts of climate change strengthened							
19 Number of people receiving training in global climate change as a result of USG assistance	2 400	950	M = 234 F = 169 Tot = 403	0	M= 96 F =36 Tot= 132	M= 330 F=205 Tot=535	Achievement rate of 56%
20. Number of climate vulnerability assessments conducted as a result of USG assistance	4	3	0	0	0	0	Restitution to the sites of vulnerability assessment conducted First draft planned in july 2013
21. Number of laws, policies, agreements, or regulations addressing climate change proposed, adopted, or implemented as a result of USG assistance	11	3	0	0	0	0	3 adaptation plans planned in july 2013
22. Number of people with increased capacity to adapt to the impacts of climate variability and	4 790	2 090	598	114	415	1127	

Indicators	LOP target	2013 target	Q 1 results	Q 2 results	Q3 results	accumulated/average	Observation
change as a result of USG assistance							
Result 4: Sustainable fisheries management provide increased resilience to climate change and increased social and economic benefits to artisanal fishing communities							
23. Number of food security private and for profit enterprises, producer associations, water users association, women's associations, businessmen and businesswomen's associations and CBOs receiving assistance from USG	52	32	11	4	19	34	Dakar-Ouest and Hann's CLPAs beneficiaries of development activities of the management plan of sardine 12 other stakeholder organizations attended the quarter 3 workshops
24. Number of rural households benefiting directly from USG interventions (FTE indicator 4.5.2-13)	10 331	5 449	0	5 449	0	5 449	Households of CLPAs of Mbour, Joal and Sindia who are beneficiaries of 3 local conventions from USAID/COMFISH project.
25. Fishery sector	Na	Na	Na	Na		Na	

Indicators	LOP target	2013 target	Q 1 results	Q 2 results	Q3 results	accumulated/average	Observation
stakeholders in project sites perceive that their welfare is better off due to USG assistance							

Annex 2: FINANCIAL REPORT

Budget items	Current FY 13 Budget	Reporting quarter				Total of current FY 13	Total of expenses since the beginning of the project	Balance of current FY	% of annual budget spent
		Apr-13	May-13	Jun-13	Total Quarter3				
a Personnel	(b)	(c)	(d)	(e)	(f) = (c)+(d)+(e)	(g)	(h)	(i)=(b)-(g)	(j)=(g)/(b) * 100
b. Students	\$324,546	\$25,161	\$25,160	\$23,968	\$74,289	\$236,211	\$665,513	\$88,335	73%
c. Consultants	\$0	0	\$0	\$0	\$0	\$0	\$3,500	\$0	0%
d. Other Direct Costs	\$808,538	\$80,277	\$98,461	\$84,681	\$263,419	\$702,430	\$1,957,447	\$106,108	87%
e. Subcontracts	\$190,109	\$19,812	\$9,359	\$6,640	\$35,811	\$190,718	\$546,470	-\$609	100%
f. Travel	\$352,962		\$102,832		\$102,832	\$260,113	\$706,610	\$92,849	74%
g. Equipment	\$317,117	\$28,783	\$10,192	\$7,146	\$46,121	\$149,484	\$365,950	\$167,633	47%
h. Tuition	\$0	\$0	\$0	\$0	\$0	\$0	\$103,463	\$0	0%
i. Total Direct Charges (sum of 6a-6h)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
j. Indirect Costs	\$1,993,273	\$154,033	\$246,004	\$122,435	\$522,471	\$1,538,956	\$4,348,953	\$454,317	77%
k. Totals (sum of 6i-6j)	\$429,081	\$39,693	\$40,422	\$31,833	\$111,948	\$343,236	\$944,604	\$85,845	80%
a Personnel	\$2,422,354	\$193,726	\$286,427	\$154,267	\$634,420	\$1,882,192	\$5,293,558	\$540,162	78%

Annex 3: ENVIRONMENTAL MONITORING

Category of Activity	Environmental threats	Mitigation Measures Taken	Who is responsible for monitoring?	Sources of verification	Monitoring Method	Frequency of Monitoring
1. Education, technical assistance, training, etc.	No environmental impacts anticipated as a result of these activities.	No mitigation measures taken for this quarter	Deputy Project Manager	Education, technical assistance, training and other materials and reports	Review of materials	Quarterly
2. Reduce post harvest losses and improve product quality	<p>Improved facilities could result in disturbance to critical resources and sensitive ecosystems, changing access to water by animals, people and vegetation, or degrading water resources, sedimentation of surface waters soil erosion, or contamination of groundwater and surface water</p> <p>Increased harvests and threat to overfishing due to increased demand from improved quality</p> <p>Potential impacts of water supply & sanitation activities include damages to natural or sensitive ecosystems, depletion of freshwater resources, creation of stagnant water that could create breeding opportunities for water-borne disease vectors, contamination of water sources causing increased human health risks</p> <p>Land use change, degradation of water quality, increased human health risks from contamination of water, soil, and food by human pathogens, degradation of estuarine and marine and surface shallow groundwater water quality adversely affecting both human and ecosystem health</p>	<p>The monitoring committee conducts its regular visits.</p> <p>After the development and validation of Cayar processing unit's code of conduct, a debriefing session was organized with women processors for its implementation.</p> <p>The different rules in this code of conduct have been translated into Wolof in the form of poems and songs that will be introduced in the literacy classes.</p> <p>In order to ensure the hygiene and quality of products in the processing unit and prevent the spread of diseases, the project is in the process of revitalizing the safety committee.</p> <p>The project has made available to women processors cleaning's materials (wheelbarrows, shovels, brooms, mufflers, etc.). Women processors organize a cleanup of the site twice a month.</p>	Deputy Project Manager	<p>Construction plans/ designs and photos of all facilities constructed</p> <p>Mgt. plan, MSC cert. or other evidence of measures to prevent overfishing</p> <p>Construction plans/ designs and photos of all facilities constructed</p>	<p>Review of materials and site inspection</p> <p>Review of materials</p> <p>Review of materials and site inspection</p>	Quarterly
3. Enhance fisheries	Increasing the value of fish and product eco-	No value chain	Deputy Project	Management plan, MSC	Review of	Quarterly

Category of Activity	Environmental threats	Mitigation Measures Taken	Who is responsible for monitoring?	Sources of verification	Monitoring Method	Frequency of Monitoring
value chains	labeling can give incentive to increase fishing effort and contribute to overfishing.	activities this FY	Manager	certification or other evidence that measures are being taken to prevent overfishing	materials	
4. Improve fishing community resilience to climate change	<p>Alteration of nearshore sediment patterns resulting in displaced or accelerated erosion of beachfronts from inappropriate construction</p> <p>Natural habitat destruction or degradation, degradation of marginal lands land water; marine pollution from soil erosion or use of agricultural chemicals; reduced water availability from water storage or diversion for irrigation; bio-diversity loss from land fragmentation, conversion to agricultural use, or introduction of exotic species</p> <p>To be determined through environmental screening processes</p>	No mitigation measures required	Project Manager	TBD via env. screening	TBD via env. screening	Quarterly