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LIST OF ABBREVIATIONS AND ACRONYMS

ACCC	Adaptation to Climate and Coastal Change in West Africa
AO	Agreement Officer (USAID)
AOTR	Agreement Officer's Technical Representative (USAID)
APL	Local Action Project (Action Projets locaux)
APTE	Sanitation, Fisheries, Tourism, and Environment
BRPs	Biological Reference Points
CCLME	Canary Current Large Marine Ecosystem
CDP	Steering Committee
CL	Local Agreement
CLP	Local Fisheries Committees (Comités Locaux de Pêche)
CLPA	Local Councils of Artisanal Fishermen
CNCPM	National Advisory Council for Marine Fisheries
CoMNAC	National Committee on Climate Change
CONIPAS	Senegal Artisanal Fisheries Stakeholders Council
COPEM	Conseil des ONG et OP actives dans l'Environnement Marin
CRC	Coastal Resources Center
CRODT	Oceanographic Research Center Dakar, Thiaroye
CSE	Ecological Monitoring Center
CST	Scientific and Technical Committee
	Dakar Institute of Fishing and Aquaculture
DAMCP	Department of Community Based Marine Protected Areas
DEEC	Department of Environment and Classified Establishments
DITP	Department of Fisheries Processing Industries
DPM	Department of Marine Fisheries
DPN	Department of National Parks
DPSP	Department of Fisheries Protection and Surveillance
ENDA	Energy-Environment-Development in Africa
FENAGIE	National Federation of Fisheries EIGs
GDRH	World Bank Sustainable Management of Fishery Resources Project
ISRA	Senegalese Institute for Agricultural Research
ITA	Institute of Food Technology
IUPA/UCAD	Institut Universitaire de Pêche et d'Aquaculture - Université Cheikh Anta Diop
LPS	Fisheries and Aquaculture Sector Policy Letter
MPA	Marine Protected Areas
MPAM	Ministry of Fisheries and Maritime Affairs
MSC	Marine Stewardship Council
NAPA	National Action Plan for Adaptation to Climate Change
PAP/PGP	Fisheries Development Plan / Fisheries Management Plan
PMP	Performance Management Plan
PRAO	World Bank-funded West Africa Regional Fisheries Program
UCNP	National Program Coordination Unit (USAID/COMFISH)
URI	University of Rhode Island
USAID	United States Agency for International Development
USG	United States Government
V&A	Climate Change Vulnerability Assessment and Adaptation Planning
WAMER	West Africa Marine Ecoregion
WWF-WAMPO	World Wildlife Fund – West Africa Marine Ecoregion Program Office

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1. INTRODUCTION

The Collaborative Management for a Sustainable Fisheries Future in Senegal project (*USAID/COMFISH)* is a five-year initiative (February 14, 2011 - September 30, 2016) funded by the United States Agency for International Development (USAID). The project is implemented through a Cooperative Agreement between USAID and the University of Rhode Island (URI). Its implementing partners include government agencies, private sector players, university centers (UCAD, IUPA, IFAN, ISE), research institutes (CRODT, IRD), and non-governmental organizations (NGOs) working on fisheries resources along the coastal communities in Senegal.

The goal of the *USAID/COMFISH* project is to support the Government of Senegal's efforts to achieve reform of its fisheries sector, as provided in the Fisheries and Aquaculture Sector Policy Letter. The project does this by strengthening many of the enabling conditions necessary for improved governance and demonstrating effective tools for ecosystem-based collaborative management of its marine fisheries. These tools and approaches address the social, institutional and biological conditions that can bring about lasting behavior change and create an enabling environment for improving fisheries management in Senegal. In 1998, Senegal issued a Fishing Code that sets out the institutional and legal provisions for creating local governance bodies including Local Fishing Committees (CLP) and Local Artisanal Fishing Councils (CLPA). Fisheries data and research on the sustainability of some fish stocks have, in the past, have not been properly applied in collaborative fisheries management planning. As a result, local governance bodies for collaborative fisheries management do not adhere to all the criteria for sustainable management as defined in the Sector Policy Letter, and the majority of Senegalese fisheries lag behind in sustainable management practices. The *USAID/COMFISH* project seeks to create the conditions for establishing sustainable management units (UGD) for priority stocks that link bioecological/environmental aspects and human aspects (social, economic, legal and institutional).

This document is the project's "Annual Work Plan 4". It presents activities the *USAID/COMFISH* project will implement in FY14, from October 1, 2013 to September 30, 2014, in order to achieve its overall objectives.

Section one provides background on the fisheries sector in Senegal and also presents the project objectives and expected outcomes. Part two gives project results in the first three years. Part three provides a more detailed description of the activities planned for year four. It also includes activity timelines, yearly indicators and targets, and results by type of activity. Individuals responsible as well as the partners for each activity are also mentioned.

This work plan also presents the structure of the project's coordination unit, the monitoring and evaluation strategy, the reporting and performance management framework, and a budget summary. Appendix A outlines the Performance Management Plan, with targets and expected outcomes for each performance indicator. Appendix B presents the environmental monitoring plan, in compliance with the regulations in force in Senegal and the United States.

1.1 BACKGROUND ON THE FISHERIES SECTOR

The fisheries sector plays a key social and economic role in Senegal. It makes diverse and significant contributions to macroeconomic and social measures. The Ministry of Fisheries and Maritime Economy reports that about 400,000 tons of fish, worth 300 billion CFA Francs (about US$600 million), were landed in Senegal in 2012. Fisheries products make up 12.3% of export earnings and 1.3% of the Gross Domestic Product (National GDP). This does not include post-harvest activities like fish marketing, artisanal and industrial processing, and inland captures**.** Senegal in 2011 exported

147,907 tons of fish worth about 254 billion CFA Francs. The sector provides direct and indirect employment to about 600,000 persons.

The contributions from the fisheries sector to the national budget come from the sale of fishing rights to national companies (industrial fishing licenses and artisanal fishing permits), annual payments for the commercialization of fisheries products (on the local and export markets), and financial compensation for authorizations given to foreign companies. About 691,865,353 CFA Francs in the national budget in 2011 came from the sale of industrial fishing licenses, while barely 3.09 million CFA Francs came from artisanal fishing permits.

The annual fees for fish exports totaled 13,410,000 CFA Francs, with 7,470,000 CFA Francs collected from the sixty-three operational onshore establishments in Senegal and 5,940,000 CFA Francs from the sixty-three licensed fish exporting vessels.

Public revenue from fishing licenses declined between 2005 and 2011 following the suspension of the Senegal/EU Memorandum of Understanding on fisheries and the freeze on fishing licenses for coastal demersal fish, which represent over fifty percent of the income from industrial fishing licenses. In 2011, foreign fishing vessels contributed 839,265,469 CFA Francs to the national budget mainly through financial compensation for exceptional authorizations granted to pelagic trawlers.

The contributions fisheries make to macroeconomic indicators give the sector a decisive role in national development strategies and particularly in the National Economic and Social Development Strategy (SNDES) 2013/2017.

The fisheries sector also makes significant contributions to food security. Annual per capita fish consumption is 26 Kg in Senegal. This is higher than the world annual average and places Senegal among Africa's biggest fish consumers ahead of Tunisia (10.1 kg), Mauritania (10 kg) and Morocco (7.5 kg).

The emphasis on fisheries attracts substantial onshore and offshore investments to Senegal from public and private partners, and led the country to experience a period of fast and robust development between 1920 and 2000. Even today, the fisheries sub-sector continues to be one of the driving forces of economic and social growth in Senegal.

But in recent years the fisheries sector has been experiencing severe crises owing to the degradation and depletion of fisheries resources, misguided investments, overfishing, and overinvestment in onshore processing of fisheries products. This has reduced income for stakeholders, adversely affected jobs and reduced sub-sector contributions to economic and financial growth.

It was in this context that the Government of Senegal introduced and began implementing reforms with the support of its technical and financial partners. But progress in these reform efforts has been slow owing to many constraints: poor regulation of access to fisheries resources, poor control and regulation of activities in the entire fisheries value chain, the absence of an enabling institutional and legal environment for fisheries management, and the lack of skilled workers in the fisheries department, among other things.

Allowing the fisheries governance status quo to continue will drastically reduce production, provoke social crisis, loss of export earnings, and push a portion of Senegal's fleet into the already overexploited waters of other countries in this sub-region.

To re-energize the fisheries sector, the major constraints on its progress must be addressed. Conducting a collaborative diagnosis of the sector will be a key first step. This should pave the way to elaborate an operational action plan that truly addresses the concerns of stakeholders and

proposes solutions for a new takeoff. The Government is aware this must be done. It organized an Inter-Ministerial Council meeting on fisheries in 2013 that ended with recommendations on the way forward. The recommendations will help enhance fisheries governance, raise income for fisheries and local fishing communities, address nutritional needs, and improve the fisheries sector's contributions to the national economy.

1.1.1 Challenges and constraints in the fisheries sector

Fisheries managers today face the challenges of: providing responsible and sustainable fisheries management and stabilizing artisanal and industrial processing of fisheries resources. If these challenges are met, the fisheries sub-sector will regain its ability to create wealth and contribute to food security in line with the strategic guidelines of the SNDES and SCA. It will also improve the quality of products and its capabilities to export them. This will reinforce the sector's role in the national economy in terms of creating jobs and attracting foreign investors.

To achieve this objective, the constraints that need to be addressed are the following:

Poor regulation of access to fisheries resources: in artisanal fisheries there is poor regulation of access because of the: (i) improper use of fishing permits and its effects on the regulation of the artisanal fishing effort; (ii) poor supervision of boat registration; (iii) inadequate enforcement of the fishing code due to the lack of supervisors, the inapplicability of some provisions in the fishing code, the absence of adequately dissuasive sanctions in the code, and the total lack of knowledge or understanding of fishing regulations among stakeholders. In industrial fishing, the rights on access are based on the fishing license system which lacks proper provisions for resource management (no limits on fish harvesting).

Fishing overcapacity and overexploitation of key stocks: overfishing of key stocks reduces their availability, increases immature fish landings, exacerbates conflicts from access to the resource (recent conflicts between fishermen from Mbao and Thiaroye have been reported), and increases distance to fishing zones. Overfishing also undermines economic and financial viability in artisanal and industrial fleets and reduces domestic market fish supplies as well as raw material supplies to the processing sector. All these factors force fishing companies into bankruptcy.

Poor control and regulation of post-capture activities in artisanal and industrial fishing: artisanal fishing sites lack supervisors; the regulations for issuing authorization are not well applied; and fishmongers operate on the ground without supervision. Under these conditions, factories subject small fish traders to unfair competition on the beaches. There are no regulations on artisanal fish processing. Such weaknesses in the control system encourage unregulated exportation of fresh and processed products in the sub-region. Official export statistics do not record such sales. DITP, the department responsible for issuing permits for all industrial fishing exports, and particularly the exports shipped to the EU, is finding it difficult to accomplish its mission, and especially to monitor compliance with sanitation and hygiene standards. These difficulties result from the lack of human, material and logistical resources as well as from unsettled arrears payments to key service providers like laboratories. This poses a threat to Senegal's ability to maintain its fishery export license to EU member country markets.

Lack of appropriate regulation policies on the authorization and establishment of fish processing plants: in the absence of these regulation policies, fish processing and freezing facilities get established without due consideration to fisheries resource potential and sustainable catch. Moreover, there is no clear priority between local consumption and fish flour processing factories that get their supplies mainly from small pelagic fish (tuna, sardinella, mackerel), which are the

species that make up the staple diet of the population. Fish flour factories have been opening at fish processing sites (Mballing) in recent years. This considerably reduces space for the activities of women fish processors and exposes them to unfair competition.

Looking at the current overexploitation of fisheries, the fisheries processing factories have an overcapacity problem and are under-utilizing existing production facilities, making it difficult for industries to make a profit from their fish processing or cold storage activities.

Weak stakeholder consultation and participation mechanisms: this weakness comes from several factors: (i) professional organizations lack legitimacy and inclusiveness. Most have had the same leaders for over a decade and do not include a majority of stakeholders; (ii) the CNCPM and CLPAs are ineffective, poorly structured and lack clarity on their roles in fisheries management and lack resources for operational costs; (iii) there is no framework for formal, periodic and regular consultations between government and fisheries sector representatives.

Inadequate and unsuitable fisheries finance system*:* for artisanal fisheries, the financing system provided by the State, *Fonds de Financement de la Pêche Artisanale,* is currently fraught with blatant weaknesses that make it ineffective (high loan repayment default rate, low loan allocation levels, sluggish lending procedures, and a mismatch between the activities financed by the fund and the new priorities in the fisheries sector). Industrial fisheries still lack an adequate funding mechanism with specialized lines of credit, subsidy schemes, and loan guarantee systems. Businesses therefore cannot raise working capital, invest in modern production equipment, and improve the quality of processed products. Under these conditions, the restructuring needed to build mergers and partnerships in the fishing sector cannot be achieved.

Poor marine fisheries monitoring, control and surveillance system: current efforts to generate knowledge on the state of some resources in Senegal's EEZ are still inadequate for evidence-informed fisheries management. Fisheries research is weak for many reasons, particularly a notorious absence of skilled fisheries research staff. In the case of CRODT, for example, there are only 10 researchers. The institute cannot therefore address all demands for scientific evidence in real time. Research programs are still a far cry from their primary role, which is to support fisheries management due to poor interaction between researchers, administrators and fisheries practitioners. Because of the crucial role scientific evidence plays in fisheries management, the Department of Marine Fisheries, in 2010, assessed fisheries research activities. However, the recommendations from the assessment are still not implemented properly.

The fisheries surveillance system's structure, ways of working, and financial support arrangements still focus heavily on industrial fishing. But it is severely constrained due to: lack of adequate staff, non-operational radar systems, lack of navigation and communication technology (HF and VHF radio), and the absence or dilapidated state of sophisticated equipment for monitoring, control and surveillance like offshore patrol vessels and surveillance aircraft.

The focus on industrial fishing leads to a failure to recognize that artisanal fishing plays a key role in the majority of resource harvests. That is why the *USAID/COMFISH* project has taken steps in recent months to initiate co-surveillance (or collaborative surveillance) of artisanal fisheries. These initiatives engage artisanal fishermen through the CLPAs in planning and implementing surveillance activities. These activities have limited impacts due to legal constraints (fishermen lack the legal knowledge to identify offences) and operational challenges (technical resources are inadequate and fishermen lack motivation for surveillance).

Poor management of public infrastructure for fisheries sector support*:* the State, in the last two decades, has provided infrastructure to support artisanal fisheries (fishing pier, refrigeration

facilities, and artisanal fish processing areas). The State wanted to associate and empower local governments and professional organizations (PO) in the management of this infrastructure by establishing inter-professional economic interest groups (EIG). This management model is now fraught with problems that disrupt the maintenance and use of these facilities. Some excesses have been observed in the handling of refrigeration facilities, some of which were sold to foreign exporters, whereas the initial goal was for the infrastructure to facilitate fishery product supplies in the domestic market.

Unsuitable institutional and legal fisheries management framework: at the institutional level, the main constraints are that: (i) control over fisheries management and fisheries development is not separated, making it hard to prioritize fisheries management as prescribed in the Sectoral Policy Letter; (ii) the Ministry of Fisheries and Maritime Affairs' (MPAM) organizational chart lacks consistency and clarity on relations between central and field units; and (iii) technical departments have overlapping jurisdictions. On fisheries management, the responsibility for developing aquaculture and identifying Marine Protected Areas (MPAs) is assigned to other departments (Ministry of Environment and Sustainable Development). This disrupts overall coherence in fisheries and aquaculture policies. To address the fast evolving realities in the fisheries sector, the Ministry of Fisheries has started to revise the legal framework for fisheries to suit the new realities. But progress has been slow, particularly in the technical review of the Fishing Code and its enforcement (this began six years ago). Most provisions in the Code under review may be outdated even before they are enforced.

Inadequate public budget allocations for fisheries administration and management*:* the Department of Fisheries lacks sufficient budget to discharge its duties properly. This resource gap undermines its contribution to fisheries sector reform. Some national and sub-national structures with offices at the central and local level lack decent working space, modern technological equipment, and adequate logistical resources.

1.1.2 Significant climate change impacts on fishing communities and resources

The *USAID/COMFISH* project, in the design phase, identified coastal community adaptation and resilience to climate change threats as the main objective of its "climate change' component. Those threats include coastal erosion and habitat loss, sea level rise (from 0.5 to 1.0 meter in the next 50-to-100 years), more frequent sea storms, and saltwater intrusion in coastal aquifers. The project already began to tackle some of these physical threats on coastal communities in the second and third years of activity.

As the project's efforts to develop priority stock management plans progressed, it became indispensable to better understand the direct impacts of climate change on these stocks. The international community today recognizes that climate change, and especially global warming, pose a threat to fish stocks and affect their growth, reproduction, recruitment and migration. The FAO has published an important document that identifies climate change impacts on food security within a broader framework, and many agree today that dwindling fish landings could partly be a consequence of climate change. Certain stocks have migrated to new areas to find the temperatures they had initially in their natural habitat (such as the northward movement of sardinella). Climate change impacts on fish landings and supplies also affect communities involved in fish processing, trade, distribution and supply to processing plants, manufacturing of fishing gear, carpentry and other fishing-related activities.

The *USAID/COMFISH* project seeks to improve the resilience of fisheries stakeholders through all of its Intermediate Results, and has engaged in research on this issue with CRODT, CSE and the University of British Colombia (UBC) to try and understand the phenomenon and include adaptation measures in the management plans of the stocks concerned.

1.1.3 Government's response to fisheries sector challenges

The government's latest Inter-Ministerial Council meeting reviewed and analyzed the challenges facing the fisheries sub-sector to identify the key challenges it could tackle to restore the status of fisheries in national economic development and to make progress in coastal communities. The meeting issued recommendations to address challenges in many different areas, including to promote sustainable fisheries resources management and seafood exports; manage the infrastructure put in place to support artisanal fisheries; re-structure the fisheries sector and the artisanal fishing finance system; adapt the institutional and legal framework to the sub-sector's new guidelines; pursue the monitoring, control and surveillance of fisheries with an emphasis on the safety and security of artisanal fishermen; improve knowledge of the biological status of fisheries resources; and increase the financial and human resources available to the Ministry of Fisheries and Maritime Affairs (MPAM).

The *USAID/COMFISH* can be credited for anticipating and spearheading the strategic thinking that culminated in the recommendations above. On institutional and legal matters, the project establishes and implements Local Agreements (LC) with local and national partners and has guided the development of a collaborative management plan on sardinella, identified by stakeholders as the number one priority stock. This work to establish an ecosystem-based Sustainable Management Unit for sardinella goes along with a comprehensive institutional capacity development program aimed at local and national fisheries governance bodies, women processors, and research and training institutions. This work is at the request of the Department of Marine Fisheries (DPM). Stakeholder consultative meetings that took place during the first three years in the initial project intervention areas (Petite Côte) will extend in FY14 to new regions of the north coast (Saint-Louis) and Casamance (Ziguinchor).

On climate change, there were several meetings between the *USAID/COMFISH* project and the national Directors of Fisheries and Environment. The meetings were an indicator that the Government of Senegal is more determined to integrate climate change issues in the fisheries policy and the environmental policy. The process of integrating consultations of this nature in a broader forum like the National Committee on Climate Change (COMNACC, established by Presidential Order to report to the highest authorities on the actions and measures taken) has begun and is going to continue during the fourth year of the project.

1.2 USAID/COMFISH PROJECT STRATEGY

Continued establishment of sustainable management units: When the project first established contact with the Ministry of Fisheries and Maritime Affairs through the Department of Marine Fisheries (DPM) in April 2011, the issue of malfunctioning local collaborative management bodies (CLP and CLPA) was raised, and it was concluded that the reasons for the problem are the following:

- There was no geographic correspondence between local governance units (CLPAs) which had the power to identify and implement fisheries control measures.
- There was no local system to assess stocks and develop evidence-informed collaborative management plans.

To remedy the situation, the *USAID/COMFISH* project proposed the idea of establishing Sustainable Management Units (UGD). This year also, the process of establishing sustainable management units will continue in agreement with DPM, which recognizes that the approach contributes to the establishment of collaborative management plans for sustainable fisheries management. The 2013 Inter-Ministerial Council meeting strongly recommended this concept under the name "spatial/territorial management units". UGDs are based on local governance bodies (CLPA), the stocks targeted by stakeholders living in these CLPAs, the state of exploitation attested by scientific evidence, and local knowledge (of the stakeholders involved) on good fishing practices. The UGD will be established also on the basis of CLPA and inter-CLPA consultation frameworks that DPM has already established as provided in the 1998 Fishing Code. This means no change in the legal framework (1998 Fishing Code) would be necessary. An implicit part of the UGD concept is the ecosystem management concept of a unit stock. For example, the sardinella UGD, which spans the entire country, stretching across the coastal regions from Saint Louis to Kafountine, covers the unit stock harvested by the fishermen in all these local communities. The sardinella stock spans the West Africa sub-region, so the Senegal plan will be a first important step toward a future regional management plan for the sardinella unit stock.

Developing and implementing Local Agreements (CL): Local Agreements are key tools for establishing UGDs. One of the *USAID/COMFISH* project's major accomplishments has been to design and establish these UGDs. The first Local Agreements approved in the marine fishing sector were established by the project. These Local Agreements are provisions with legal value. Each CLPA is required to design one CL in a concerted and collaborative manner. CLPAs can establish CLs using the provisions in the 1998 Fishing Code. Local Agreements have force of law once they are approved by the CLPA leadership and the Divisional and sub-Divisional officers. The project has finalized six Local Agreements in its intervention area, and this contributes substantially to enhance fisheries resources governance at the local level.

To implement the Local Agreements, the project took steps to enhance the capacities of CLPAs. The measures were to:

- Set up committees;
- Train their members in fisheries monitoring, control and surveillance, in fishing laws, and collaborative sustainable fisheries management;
- Empower CLPAs and identify mechanisms for sustainable finance;
- Conduct climate change vulnerability assessments.

The aim of capacity building is to ensure that the Local Agreements contribute fully to the smooth running of UGDs in terms of performance of local governance as well as compliance with control measures for sustainable fisheries management.

Contributing to the use of Local Agreements/Good Fishing Practices/Collaborative Management Plans for climate change resilience: One of the project strategies is to demonstrate and encourage good fishing practices in order to help establish collaborative management plans. It was in this regard that the project identified good fishing practices across a number of local communities, shared them with other communities, and published them in the form of a magazine. The Local Agreements enable stakeholders to adopt these Good Fishing Practices (GFP) and change their behavior, and to preserve and use fisheries resources in a sustainable manner.

On climate issues, the individual and community strategies being used to reinforce climate change resilience include the prevention of coastal erosion and sea encroachment, and prevention of the depletion of fisheries resources through the promotion of GFPs, all of which have adverse effects on

fishing activities and the socio-economic conditions of those who depend on fishing activities. The project has developed adaptation plans, using coastal community vulnerability assessments on project sites, with contents that are similar to the management rules in various Local Agreements. So, implementing the current collaborative management plans will go a long way to strengthen climate change resilience in target communities.

On the other hand, climate change vulnerability and adaptation studies have highlighted several weaknesses in the way climate change adaptation measures are integrated into national policy and strategic decision-making processes. The weaknesses include: (a) the lack of knowledge on the underlying capabilities, resources and practices for community adaptation; (b) the absence of effective tools for providing information on climate change to local institutions and communities; (c) the absence of climate change in the planning and budgeting systems of the central government, local governments and communities; and (d) the lack of scientific knowledge on climate change at the national and local level. The *USAID/COMFISH* project has been working over the past three years to support the Government of Senegal so that it can more effectively integrate climate change in public policies, and to enable coastal communities, through the implementation of existing adaptation plans, to have an adequate number of tools necessary for increasing their capacities for climate change resilience.

Contributing to marine and coastal biodiversity conservation: The *USAID/COMFISH* project will also contribute to the biodiversity conservation objectives in the USAID 2005 biodiversity assessment and threats analysis in Senegal. The assessment showed that overfishing and destructive fishing methods were direct threats to marine diversity in Senegal, and more particularly to the endangered stocks that contribute significantly to national exports. It is in this respect that the project is identifying, testing and implementing policies and strategies capable of reducing or eradicating bad fishing practices, while also promoting the conservation of marine biodiversity and ecosystems.

Creating the enabling conditions necessary for sustainable fisheries management: One of the objectives of USAID Senegal is to support economic growth in Senegal by improving the results of the "Feed the Future" (FTF) program. The *USAID/COMFISH* project will contribute toward the objectives of the FTF program by concentrating on the sustainability of marine ecosystem productivity, reducing post-harvest losses, promoting international trade through eco-labeling (at the local level), and involving artisanal fishermen through the use of a gender approach in the value chain to bring about a considerable increase in the social and economic benefits that these artisanal fishermen derive from fishing. The *USAID/COMFISH* project will focus on establishing these elements which are enabling conditions for sustainable fisheries in Senegal.

1.3 PROJECT GOALS AND EXPECTED RESULTS

The goal of *USAID/Senegal* is to support the Government of Senegal's efforts to achieve reform of its fisheries sector, as provided in the Fisheries and Aquaculture Sector Policy Letter, so that it continues to generate income and ensure food security for the growing population. The *USAID/COMFISH* project supports this reform and promotes the objectives of biodiversity conservation, while also addressing the crosscutting themes of enhanced governance, gender mainstreaming and adaptation to climate change.

The *USAID/COMFISH* project seeks to develop and replicate new models for sustainable fishing to help Senegal institute sustainable management of the artisanal fishing sector. Many fish stocks, including sardinella, are shared with neighboring countries in the CCLME area. The project will therefore conduct activities to contribute towards the harmonization of artisanal fisheries

governance at the local, national and sub-regional levels, but most of its activities will concentrate on Senegal.

The longer term goal (20-30 years) of the *USAID/COMFISH* project is that fisheries in Senegal are no longer overexploited and provide: (1) the nation with a sustainable source of supply in high-quality protein; (2) in a way that contributes to the quality of life of artisanal fishing communities; and (3) maintains the capability of marine and coastal ecosystems to produce useful goods and services that the Senegalese people want.

The *USAID/COMFISH* project will contribute to the achievement of the following four major intermediate results:

IR 1: Institutional and stakeholder capacity strengthened at all levels of governance to implement an ecosystem-based, collaborative management approach to sustainable fisheries, to prevent overfishing, and to increase climate change resilience.

IR 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.

IR 3: Vulnerability assessed and capacity of vulnerable coastal communities strengthened to adapt to the impacts of climate variability and change.

IR 4: Increased social and economic benefits to artisanal fishing communities provide incentives to a continued sustainable fisheries agenda and increased climate change resilience.

1.4 DESCRIPTION OF PROJECT INTERVENTION AREA

At the beginning of the project, the intervention area covered the area under the Cayar CLPA (La Grande Côte) and the CLPAs on La Petite Côte (Joal/Fadiouth, Sindia, Mbour, Yenne/Dialaw, Rufisque/Bargny and Foundiougne). So all the CLPAs targeted by project interventions were in the regions of Thies, Dakar and Fatick. This zone harbors over 65% of the fishermen in Senegal, close to 65% of the fishermen contributing to the fishing effort, and 70 to 80% of small pelagic fish landings. Some actions on shrimp fisheries are also conducted in the Saloum Biosphere Reserve. The administrative map below (fig.1) shows these intervention areas as well as the site plans of the MPAs in Cayar, Joal and the Saloum Biosphere Reserve.

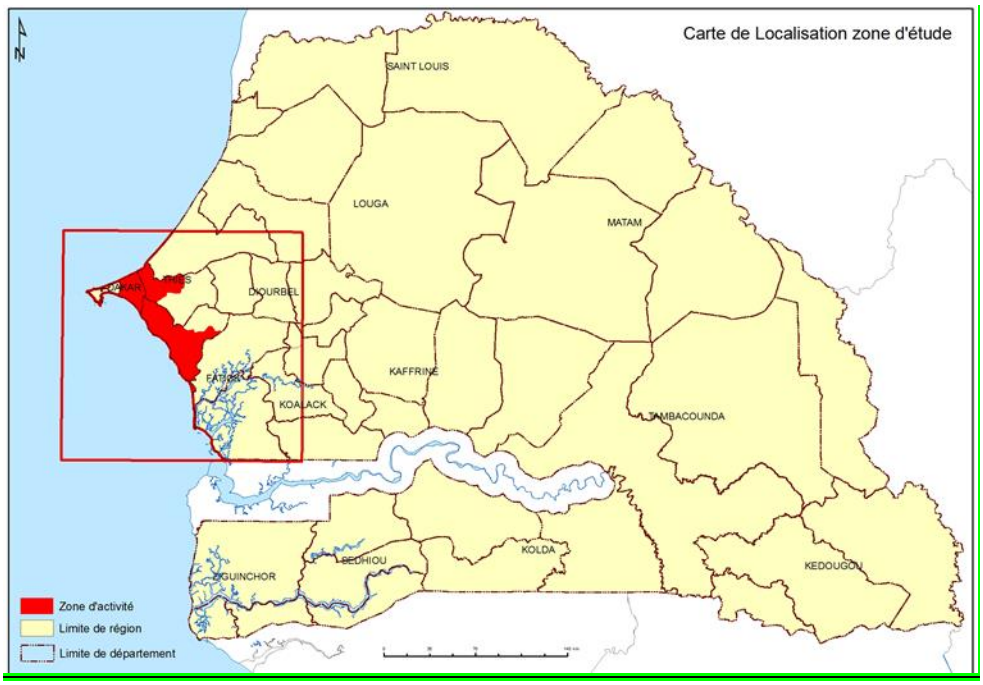


Figure 1: Administrative map of initial project intervention sites (source: CSE)

Following the logic it used to develop the first UGD stock based sardinella management plan, the *USAID/COMFISH* project has worked progressively to extend its intervention area to also cover the regions of Saint-Louis, Louga and Ziguinchor. In the Sédhiou region, the extension of the USAID/COMFISH Project's activities will help reinforce the fisheries activities supported by the USAID/Wula Naafa Project for the sustainable management of fisheries zones in the Boudié/Balantacounda area. Several demands from the Department of Maritime Fisheries, its field services and the stakeholders at the grassroots led the project to extend its activities in this manner. The map below (fig.2) shows the new areas (phase 2) and the old areas (phase 1) targeted by the project.

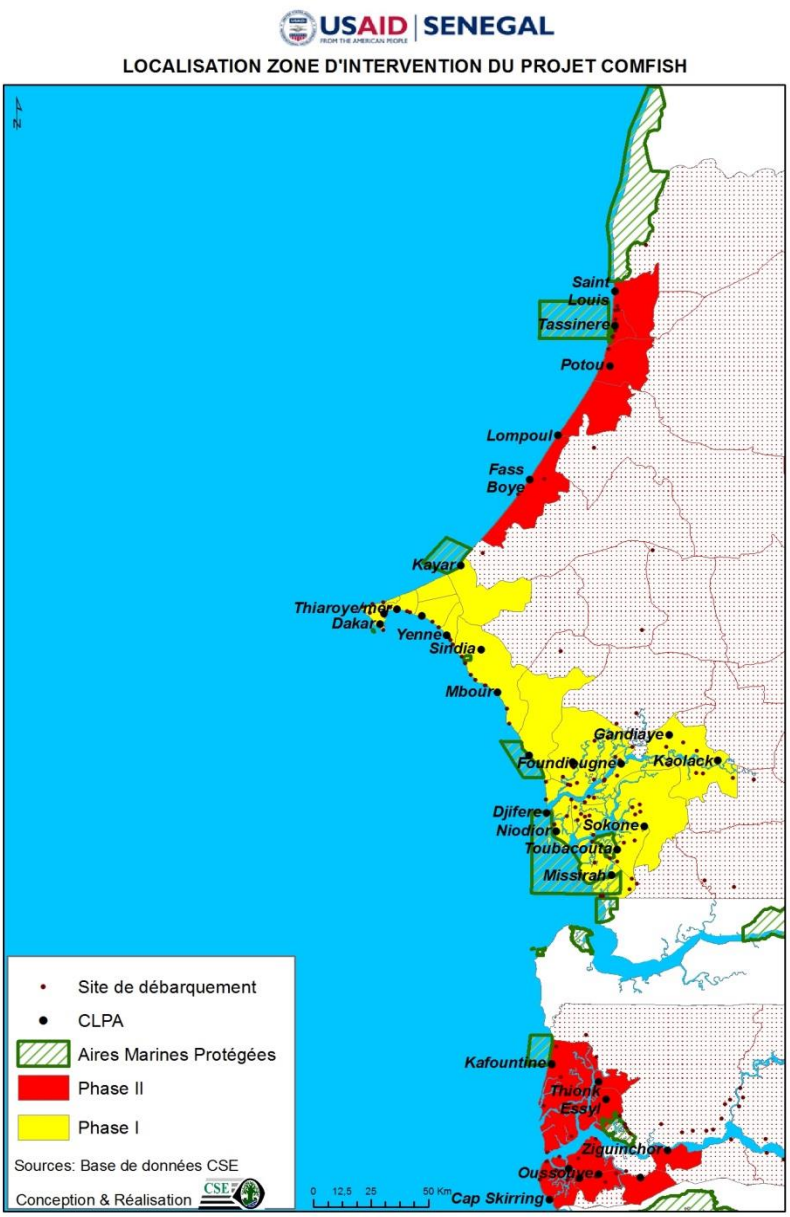


Figure 2: New and old project intervention areas (source: CSE)

The statistics below from DPM show that an important fishery of small pelagics in general, and sardinella in particular, has developed in the new project intervention area. To be consistent with our UGD approach, it was indispensable to include the coastal regions of Saint-Louis and Casamance so as to cover the entire biological area in Senegal of the species we are targeting for collaborative management planning. In terms of impact, any management measure initiated on the sardinella fisheries in these zones could have an impact on almost all of the fishing effort deployed on this species.

Description of the Ziguinchor zone: The Region of Ziguinchor has a coastline of about 86 km, an ecosystem with huge aquaculture potential, and a very diverse marine and inland waters network. The rivers and lakes are biologically very diverse and the coastline presents a wide continental shelf containing large stocks of fish, crustaceans and cephalopods. The lagoons also contain species like sardinella, bonga, pike, tilapia, mullet, captain, otoliths, catfish, shrimp, and mangrove oysters.

The fishery landings in the Ziguinchor region in 2012 were about 48,373 tons, worth 18,137,845,465 CFA Francs. The highest amount of small pelagic landings is on the Kafountine site, with about 11,515 tons of flat sardines, 2,234 tons of round sardines and 5,835 tons of bonga. The landings on the Elinkine site are composed of about 88 tons of sardines and 133 tons of bonga, while those on the Boudody site in Ziguinchor were about 337 tons of bonga fish.

According to local authorities in this region, there has been a major redeployment of national fishing effort on sardinella towards the Kafountine fishing center in recent years. This is why we are intervening in this zone to take this phenomenon into account in our efforts to establish management rules on sardinella and bonga.

Description of the Saint-Louis Region: Saint Louis is a coastal area located close to Mauritanian waters. It is a fishing area with enormous potential and huge stocks of pelagic fish, mostly sardines. Fishing is the main occupation in the region, and a direct and indirect source of income. It continues to be the main activity of the people living in the neighborhoods along the *Langue de Barbarie* where almost the entire workforce is engaged in fishing (women and men aged 15 years and above). Its impacts are beneficial not only to the residents of Saint Louis who are involved in the informal sector, but also to several other national and even foreign stakeholders.

Artisanal fishing is the only type of fishing practiced in this region, and the techniques used are: angling, gillnet fishing, potting, and seine net fishing. The most specialized equipment used for sardine captures are gillnets and purse seines which make up two-thirds (2/3) of the current artisanal fleet in Saint Louis.

By virtue of the fishing agreements signed between Senegal and Mauritania, the fishermen in Guet-Ndar obtain about 300 licenses that permit them to go fishing in Mauritanian waters. These agreements help reduce the pressure exerted on the resource at the local level. The landings recorded in the region in 2012 were estimated at 80,000 tons (about 40% of sardine landings at the national level), worth 73,385,050,840 CFA Francs. This represents a spectacular increase in landings compared to 2010.

In the Sédhiou region, the Project intervention area covers five rural communities and two districts. This includes the rural communities of Djirédji, Bambali, Simbandi Balante, Djibanar, Kaour and the Goudomp and Diattacounda districts. This area is characterized by an important fishery of shrimp and bonga (shad). USAID/Wula nafaa has developed in the area a Local Agreement for the sustainable management of fisheries resources.

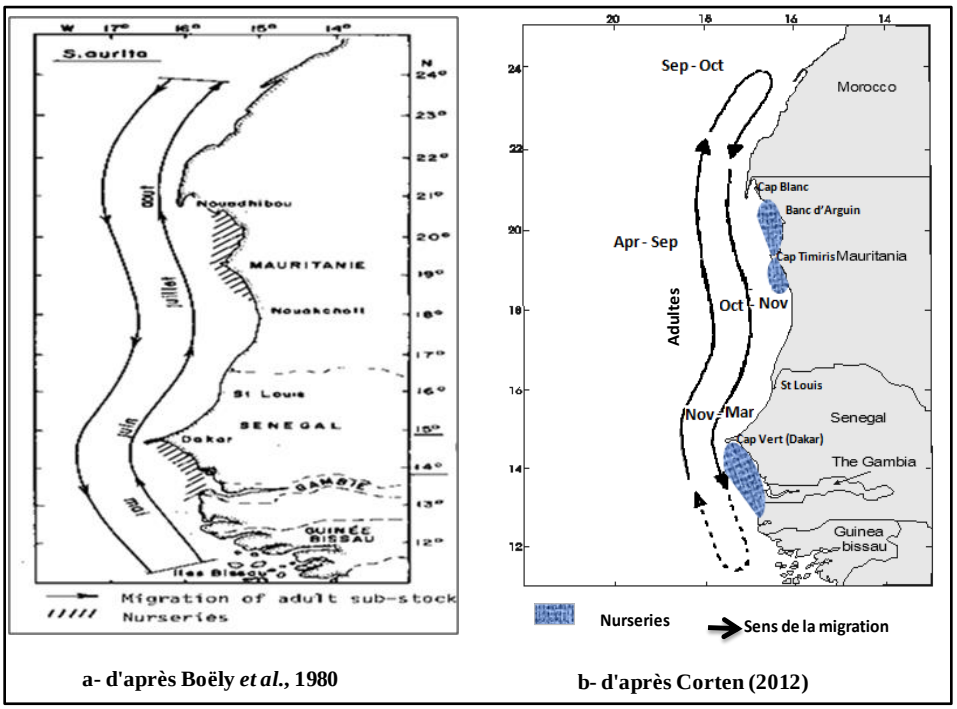
Description of the species: he table below summarizes the characteristics of the projects two priority species for collaborative management (sardinella and bonga).

Table 1: Characteristics of the first two priority species targeted by the *USAID/COMFISH* project (source: USAID/COMFISH)

Priority stocks/strategies	Fishing context and influencing factors
Species: *Sardinella aurita* and ***sardinella maderensis*** **Local name**: Sardinella, Yaboï **Family:** CLUPEIDES **Contribution from *USAID/COMFISH* project**: Developing UGD stock based local collaborative management plans on sardinella at the national level to contribute to DPM's development plan. This will include: 1. Giving stakeholders and CLPAs stronger capacities and instituting inter-CLPA consultations based on the Local Agreements; 2. Improving the data collection system (IUPA, CRODT); 3. Testing and demonstrating simple tools for collaborative stock assessments, identifying climate change impacts, and integrating information on IUU fishing; 4. Studying the economic value chain.	• Main species landed by Senegalese artisanal fishermen; • The product is accessible, cheap and plays an important role in food security; • Huge quantities are harvested by industrial fishing vessels; • The impact of IUU fishing seems to be high and may be underestimated; • Sensitive to climate variations (sea temperature, upwelling, winds, current, etc.) as seen in the changes in migratory and reproductive behavior; • Main species for the ecological stability and trophic mass balance of the region's ecosystem. • Large seasonal migrations that stretch from Ghana to Morocco.
Species: *Ethmalosa Fimbriata* **Local name**: Bonga, *Cobo* **Family:** Clupeidae **Contribution from USAID/COMFISH project:** Developing a UGD stock based collaborative development plan by: 1. Strengthening the capacities of the CLPAs targeted by this fishery (Saloum Delta and Casamance region); 2. Developing frameworks for consultation within CLPAs (Local Agreements) and at the UGD level (inter-CLPA); 3. Improving the stock information and assessment system (IUPA); 4. Assessing stock in the event where the stock is shared with The Gambia: consider possible consultations between the two countries.	• Affinity for estuaries and bays. • Preference for marine environment in older individuals. • Certainly only one population covering the Saloum and Gambia estuaries. • At sea, this species seems to stay very close to the coast in areas where the water is below 15- 25 meters deep. • Exploitable potential of 9 to 10,000 tons in the Saloum and Casamance estuaries. • Intense fishing activity in the Gambia and in the Sine Saloum estuaries, • Low pressure observed on part of the stock present in the coastal strip.

To better illustrate sardinella UGDs, the CSE will, in FY14, complete the mapping of the sardinella stock at the level of the UGD as well as the CLPAs involved in the fisheries for this species. The

diagram below (fig. 3 and 4) shows the main nursery areas of the two species of sardines captured in Senegal and the migration path of flat sardinella (Sardinella maderensis).



a- d'après Boëly *et al.*, 1980 b- d'après Corten (2012)

Figure 3: Migratory cycle of the Sardinella maderensis (Fréon, 1986)

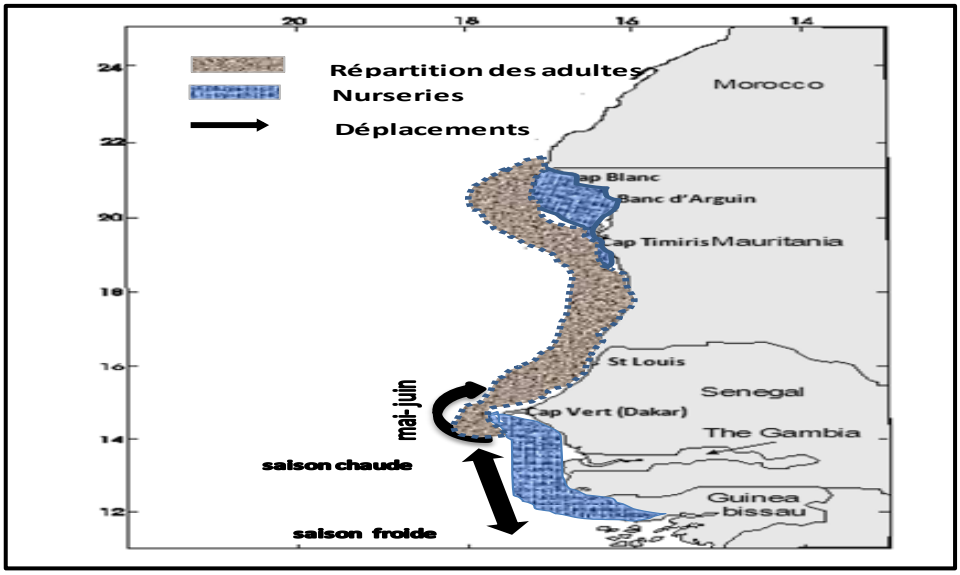


Figure 4 : Sardinella nursery areas

1.5 ESTABLISHING SUSTAINABLE MANAGEMENT UNITS: THE CONCEPT DESIGNED BY THE USAID/COMFISH PROJECT TO DEVELOP COLLABORATIVE MANAGEMENT PLANS

The purpose of the *USAID/COMFISH* project is to establish collaborative management plans on the targeted priority stocks, using the CLPAs as the institutional entry point, and to also create a unit

stock Sustainable Management Unit (UGD). The goal of this initiative is to synergize institutional, administrative, socio-economic and environmental factors in the process of establishing ecosystem-based sustainable collaborative management of fisheries resources in Senegal. The process of establishing UGDs is presented in the following diagram (Fig. 5) with a description of the four basic elements that will contribute to the creation of UGDs.

Figure 5. UGD Diagramme

Need for an adequate legal and institutional framework. Law 98-32 of 14 April 1998, instituting the Fisheries Code, and Order 98-498 of 10 June 1998, providing for the enforcement of this law, define the legal and institutional framework for implementing collaborative management in Senegal. The legal and institutional framework is defined by the creation of Local Councils of Artisanal Fisheries (CLPAs) as the pivotal body for collaborative management. The Law also defines their geographic distribution, role, function and the composition of membership.

It is in accordance with these provisions that the project has, in the past three years, been carrying out its activities with CLPAs as the foundation for local collaborative management. A CLPA is an apolitical not-for-profit professional organization. It is made up of the artisanal fishing stakeholders in a given area. The CLPA serves as a local governance structure. So it can establish, validate and apply management rules on fisheries resources, as well as facilitate the interrelationship between fishery stakeholders, on one hand, and State entities on the other.

The main objective of the CLPA is to bring all stakeholders together for sustainable fisheries resources management. The CLPA is the institution that makes it possible to do effective collaborative fisheries resources management. But CLPAs have been largely non-operational (lack of technical, institutional and financial resources) and often do not cover the unit stock ecological zones, which, from a biological standpoint, is crucial for sustainable management of fish stocks.

It was with the aim of turning these CLPAs into operational units and enabling them to actually underpin the process of establishing Sustainable Management Units that the *USAID/COMFISH*

project began to use **Local Agreements** (CL) as the legal tool for negotiating management rules in localities. This enabled the project in 2012 to create the first three Local Agreements which were validated and approved officially in Senegal's marine fisheries sector. The project continues to develop CLs in its new intervention areas (CLPAs in the Ziguinchor and Saint Louis regions) so that it can improve the way management rules are negotiated to change the bad behavior of stakeholders and introduce them to good fishing practices. In the zones where CLPAs do not yet exist, the project will support DPM to establish them and ensure they work.

The project is therefore going to continue developing and implementing CLs in its intervention zones, as well as formalizing stock-based inter-CLPA relationships (consultation frameworks) to implement collaborative management plans.

It is worth recalling that CL development begins with a request and show of interest by stakeholders willing to change poor fishing practices in their zones. After the request, the project supports them to set and apply rules for the sustainable management of one or more fish species. There are thirteen (13) steps in the process of establishing Local Agreements. The most important ones are:

- Inform the administrative and local authorities in the areas covered by the target CLPAs;
- Sign collaborative agreements between the *USAID/COMFISH* project and other key stakeholders;
- Set up a steering committee under the responsibility of the CLPA;
- Select and train the local CLPA "relay" facilitators to assist in formulation of the Local Agreement;
- Urge the relays to assess fisheries resources management and prepare a diagnostic report (fisheries potential, list of stakeholders, fishing units, artisanal processing techniques, etc.);
- Prepare fisheries maps of fish stocks and fishing areas, and coastal communities, using a collaborative mapping process;
- Set rules for access to the resource, based on challenges the diagnostic study identified in the fishing zones (management rules, coordination committee, surveillance, etc.);
- Harmonize and validate the rules in the Local Agreement;
- Urge the CLPA council and the local administrative authority to deliberate on and approve the Local Agreement;
- Disseminate the Local Agreement widely;
- Contribute to draft the management plans on priority stocks to establish the UGD.

Using Local Agreements to build capacity in target CLPAs: To operationalize CLPAs, it is necessary to first develop and implement CLs, and to formalize the structures of the CLPA (establishing implementing committees) and strengthen capacity (train committee members). The steps in this process include:

- **Establishing a coordination committee in the CLPA** with "local" stakeholders in the fisheries sector who will coordinate activities to implement the Local Agreement;
- **Establishing surveillance units** to oversee how the Local Agreement is implemented and resolve conflicts;

- **Establishing the Finance Committee** to collect, pay and distribute community taxes/fines. The funds CLPA receives from applying the Local Agreement are the taxes and fines paid by offenders. These taxes and fines must be levied according to the provisions of the Fishing Code that governs fishing activities. The money is used to fund CLPA operations;
- **Organizing annual evaluation meetings** (technical and organizational) on the Local Agreement with the coordination body, the CLPA council, resource persons and partners. This is an important step that gives stakeholders the opportunity to make amendments to ongoing activities and propose activities to the project for the next work plan.

Local Agreements: a prerequisite for applying good fishing practices and a mechanism for stakeholders to participate actively in developing collaborative management plans: The process of establishing and developing Local Agreements enables stakeholders to identify the assets and challenges of fishing, and to get the project's input from scientific evidence based on studies by partner research institutes. It further enables stakeholders to learn about the management rules in Local Agreements that can change their behavior and lead them to adopt good fishing practices. This process also contributes to better organizational structure of CLPAs and to strengthen the capacity of their various committees, so that the stakeholders have committees for monitoring, control, self-financing and oversight on management rules. The process is going to help CLPAs become self-reliant and self-financing.

The CL therefore serves as a tool that can enable stakeholders to: (1) identify a coherent list of activities for each CLPA and for all the CLPAs (covering the geographic and biological distribution area of a given unit stock) to engage in the sustainable management; (2) have information on the assets and challenges of fishing in their areas; and (3) contribute to revitalize local governance bodies by structuring CLPAs and establishing units for monitoring, control and surveillance, and the financial self-reliance of the CLPA.

This whole process makes it possible for CLs to give stakeholders the mechanisms for adopting good fishing practices, which is one of the prerequisites for developing collaborative management plans.

Need for collaborative stock-based planning: The process of developing and implementing stock-based management requires sound knowledge on the stock concerned and a thorough understanding of its harvest rate. This means all the stakeholders harvesting the stock should be involved and trained so that they can participate actively and effectively in thinking and diagnostic studies, and in efforts to establish a reliable scientific basis that will support the process. This was the approach used by the project to develop the collaborative management plans for bonga and two species of sardinella (Sardinella aurita, Sardinella maderensis). At the same time, the project has been pursuing efforts to establish a repository of scientific data and to build synergies for coastal shrimp (Penaeus notialis) and white grouper (Epinephelus Aenus) to support the PRAO program (World Bank) and build on the progress of the COGEPAS project (JICA) in developing and implementing management measures for these species.

Sardinella: With the support of scientific and technical partners, the *USAID/COMFISH* project is continuing to develop the stock-based collaborative management plan on this species through the six (6) CLPAs that were involved at the beginning of the project. These are the CLPAs in Sindia Nord and Sindia Sud, Mbour, Joal, Rufisque-Bargny, Yenne-Diallaw and Cayar. But considering that CLPAs in and out of the project all harvest the same sardinella stock, and that the project strategy consists in taking a collaborative management approach through UGDs, the three (3) CLPAs in Dakar (Pikine, Yoff and Hann) have been brought into the process, since the fishermen in these areas go regularly to the same fishing areas as those on the Petite Côte and harvest fish from the same stock. In

agreement with DPM, the management plan being developed will fit into the National Plan for Development of Small Pelagics. The process is also going to include St. Louis and Ziguinchor to ensure better coverage of the entire sardinella UGD.

The main stages for developing this plan are:

- Build awareness and inform stakeholders
- Diagnose/analyze the state of the resource (gather data on fishing challenges, validate scientific studies, mapping, stock assessment, etc)
- Validate and feedback information on the state of the resource with fisheries stakeholders
- Develop draft management plan and validate document with stakeholders
- Do periodic reviews (each year or every two years)

Bonga: Bonga is harvested mainly in Fatick and Ziguinchor because there is a Senegambia stock. Efforts to develop the management plan on this species will include four (4) CLPAs in Fatick (Missirah, Niodior, Bassoul and Djirnda) and two (2) CLPAs in Ziguinchor (Ziguinchor and Kafountine). The development process will be similar to the one on sardinella.

The figures below provide a better picture of the process.

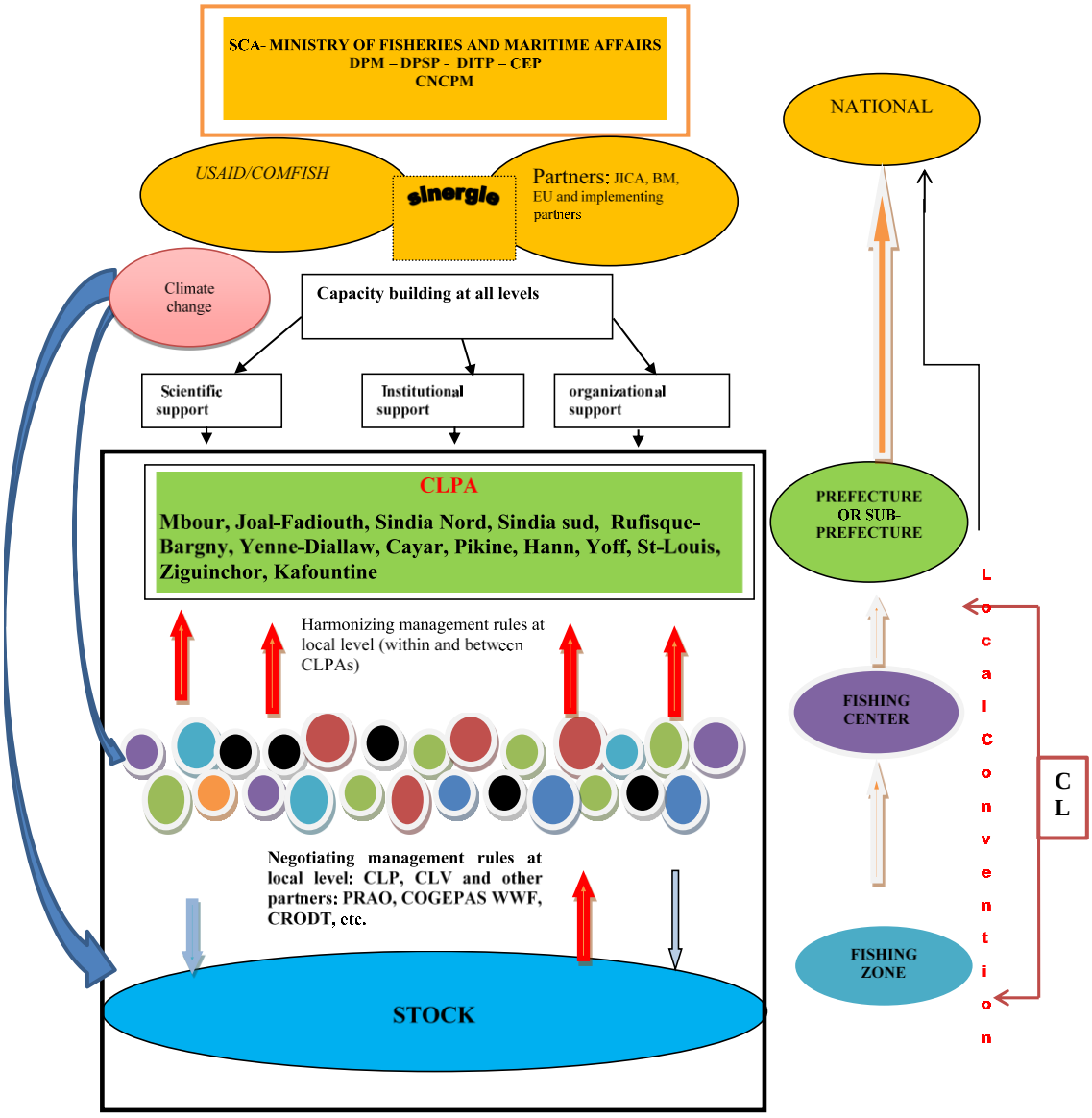


Figure 6: Sardinella UGD diagram and linkages to the different levels of governance through Local Agreements

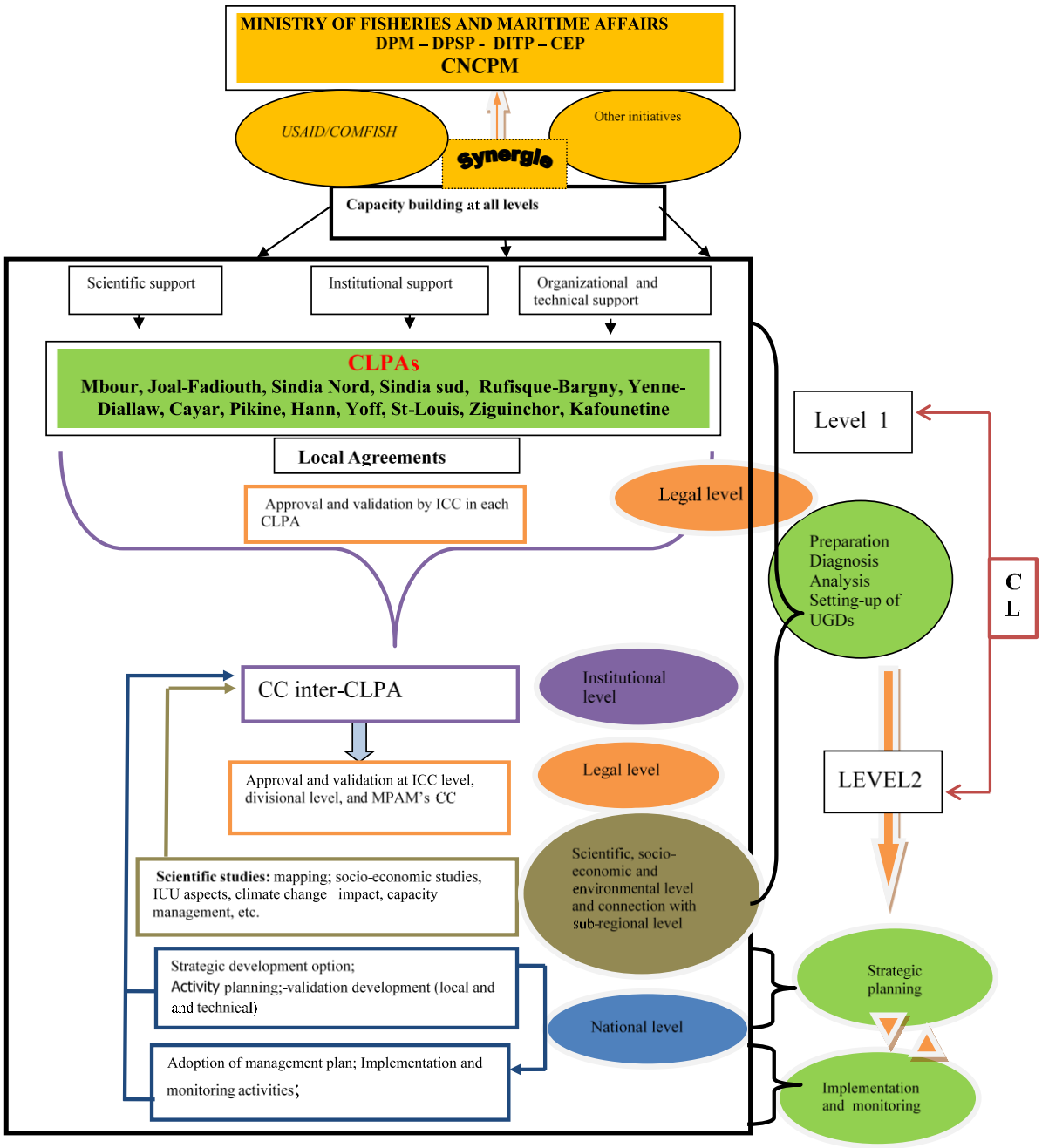


Figure 7: Description of how to establish the sardinella UGD development plan

2. SUMMARY OF ACCOMPLISHMENTS

To establish collaborative management plans on priority stocks, the *USAID/COMFISH* project's approach is to create, simultaneously, the enabling conditions necessary for enhanced local governance of fisheries in Senegal. This work goes on at three levels:

At local level in grassroots communities: develop stakeholder capacity and provide efficient and functional frameworks for consultation, so that the needs at the local level are better addressed in planning and decision-making on fisheries.

At the scientific and technical level: build capacity of fishery technicians, research institutes and university institutions to ensure scientific and technical knowledge is integrated adequately in efforts to prepare and establish collaborative management plans.

At the strategic and policy level: give policy and decision makers vital scientific and technical knowledge they can use for informed and coherent decision making.

After three years of work in these areas, the project's accomplishments are summarized below under the following Intermediate Results (IR):

IR1. Institutional and stakeholder capacity strengthened at all levels of governance to implement an ecosystem-based, collaborative management approach to sustainable fisheries, to prevent overfishing, and to increase climate change resilience

CLPA capacity building strategy: Through *USAID/COMFISH*, CLPAs in the project's intervention Zones are better structured and revitalized to organize meetings between their members. So far, nine (9) CLPAs (Sindia south, Sindia north, Mbour, Joal-Fadiouth, Cayar, Rufisque-Bargny, Pikine, Yoff, and Hann) have been restructured and serve as forums where local stakeholders discuss and reflect on sustainable fisheries management problems in these zones. These frameworks for dialogue and consultation among stakeholders were used to advance Local Agreements, and develop a sardinella management plan, promote good practices and strengthen CLPA governance structures. Thousands of people have participated in these dialogues. In FY13, over sixty focus group meetings were organized for stakeholders from the new CLPAs in Thies and Dakar as part of the process to develop a sardinella management plan.

Local Agreements in three new CLPAs (Yenne/Dialaw, Rufisque/Bargny and Cayar) were advanced in FY13. The process involves signing Memoranda of Understanding with the CLPAs, identifying stakeholders, organizing focus groups to set rules of access to fisheries resources, and then developing and getting validation and formal approval for the Agreements from the competent authority. Assistance was provided to successfully implement three Local Agreements already approved by CLPAs (Sindia, Mbour and Joal-Fadiouth). The project organized many training and outreach sessions during the capacity building of CLPAs, and development of CLs and sardinella management plan, and also demonstrated good practices to encourage them to adopt responsible behavior for improved management of fisheries. In addition, members of the Coordination and Advisory Bodies (ICC) have been trained and Committees established in the Sindia, Mbour and Joal-Fadiouth CLPAs for them to effectively implement the first three Local Agreements.

Five committees were established to strengthen organizational capacity and ensure proper implementation of the Local Agreements. The five committees are:

- Committee for Surveillance and Safety at Sea
- Committee for Awareness, Information, Training and Communication
- Committee for Conflict Regulation and External Relations

- Scientific Committee for Fisheries Research Management, Environment and Collaborative Research
- Committee for Finance and Partnership responsible for Infrastructure Management and Social Action

While developing Local Agreements, extension workers from the six CLPAs (chosen by their members) were trained. Their role is to facilitate meetings, collect fisheries data, prepare fact sheets, prepare meeting reports, and develop and implement self-initiated management measures. The project received wide acclaim from the administrative authorities and technical services for its efforts to install the CLPA-designated extension workers and train them. The project also hired four trained facilitators and a governance officer to oversee the entire process of strengthening capacity so that local collaborative management would be effective.

Good fishing practices: In 2013, meetings and workshops on good fishing practices were held in Cayar, Foundiougne and Joal Fadiouth for stakeholders from CLPAs, CLPs and other organizations. The goal was to encourage exchange of innovative ideas among fisheries stakeholders and, by doing so, encourage ethical behavior in fishery resource harvesting and management.

A selection process on good practices was implemented and the best two rewarded. It invited GREP (Group of Journalists on Environmental Issues) for media coverage to publicize, distribute and share information on these practices. This activity have helped raise the profile of project activities and triggered wide public interest in the *USAID/COMFISH* project strategy.

Stakeholders awareness and understanding on good practices was also a focus in the Yoff fishing community. The activity made it possible to interact with stakeholders, collect information on local communities, identify local leaders and the problems associated with octopus harvesting (using octopus pots), and identify the needs for behavior change.

Octopus and Cymbium improved management. The *USAID/COMFISH* project and FENAGIE organized a workshop in Mbour for over 139 participants to learn and discuss about management issues. Stakeholders at the workshop incluede fisheries practitioners (fishermen, wholesalers, and processors), 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 National Parks, etc.), and media practitioners.

URI Fisheries Leadership Institute: The Deputy Director of DPM, the Director of CRODT, the Director of WWF-WAMPO and *USAID/COMFISH* project staff all attended a leadership course organized by the University of Rhode Island's "Fisheries Leadership Institute." For the participants, it was an opportunity to build new partnerships and exchange ideas about tools and practices they could adapt and use to design fisheries policies for sustainable fisheries management in Senegal.

Fisheries post-graduate education: Two post-graduate training fellowships at the University of Rhode Island were granted to fisheries research and management staff from the Ministry of Fisheries and the Center for Oceanographic Research in Dakar-Thiaroye. These two fellows in fisheries governance and scientific evaluation of fisheries resources will contribute to the development and pursuit of sustainable collaborative fisheries management in Senegal.

Capacity building of research and training institutions: The project provided support to help strengthen the fisheries data collection and analysis systems at CRODT, IUPA, IRD/IFAN, ISE and CSE. One outcome of this support is three Master's Degree memoirs and two Doctoral Degree theses evaluating *USAID/COMFISH* project target stocks. Another outcome was a workshop convened by IUPA to educate participants on the new version of ELEFAN (ELEFAN in R) developed by

USAID/COMFISH with the University of British Colombia to assess biological stocks. Thirty participants attended the workshop from partner organizations (DPM, Ministry of Fisheries, local fisheries institutions, CEP, CSRP, PRAO, CCLME, CRODT, WWF, IUPA, IFAN, and PMU). The participants learned all the basics for using the ELEFAN (Electronic Length Frequency Analysis) method on IUPA and IFAN biological data to extract growth parameters from the size frequency of the species studied. The results will be used to develop management plans for the species concerned.

Empowerment of women in the fisheries sector: To give women stronger ability to protect their interests and have a voice in decision-making in the fisheries sector, the project developed a strategy and a plan of action for the empowerment of women, which was submitted to DPM and other partners. In Cayar, the project initiated a training program on leadership (with DPM's gender unit), literacy, fish product hygiene and quality, packaging, and labeling with a women's sardinella processing group. Action plans were designed after each training exercise. Synergies were built with other donors, projects and programs (IUCN, Nicolas Hulot Foundation, FONDEF) to implement these action plans. A modern artisanal processing facility is 95% completed and a Code of Conduct for processing was developed and approved by the group.

Innovative approaches for strengthening women's capacities were also applied. The project used educational tools like singing and dance, and images and documents provided in Wolof language to help them understand the presentations given by consultants and to create a friendly atmosphere for women to engage in discussions.

IR2. Fisheries strategies, policies and best practices identified, tested and applied to strengthen climate change resilience and address destructive and unsustainable uses of marine fisheries and biodiversity.

In the first three years of activity, the project had a substantial focus on improving scientific knowledge on priority species/stocks. The results achieved are summarized as follows:

Repository of scientific knowledge to support a sardinella management plan: Biological and ecological knowledge has been produced on the two sardinella species (Sardinella aurita and Sardinella maderensis) from studies done by CRODT. The studies improve understanding of:

- Population dynamics in the North-West Africa zone
- The key environmental factors influencing population dynamics of sardinella stocks
- Space and time variability of the resource in the West African coastal environment
- Fishing capacity and fishing stocks' biological status
- Socio-economics of the fishery
- Fishing effort and landings from Senegalese boats fishing outside Senegalese waters

Collaborative collection of biological data on fisheries: The project made efforts to build a collaborative mechanism for collecting, sharing and communicating scientific information on fisheries. This is being used also to establish evidence-based collaborative fisheries management plans.

Illegal, Undeclared and Unregulated (IUU) fishing: A report on IUU fishing in Senegal was submitted to the Ministry of Fisheries and consequently a Technical Committee was established. The Committee will be responsible for validating the methodology applied in the report and for follow up actions.

Fishing capacity management: *A Working Group was established with USAID/COMFISH facilitation to develop an action plan on fishing capacity management in Senegal*. The project will support the Working Group's operations.

Local knowledge of stock distribution and fishing areas using GIS: To rationalize access to resources in Local Agreements, the spatial distribution of stocks (sardinella, octopus, thiof, and cymbium) and fishing areas was mapped with fishing communities in partnership with CSE. See Figures 8-10.

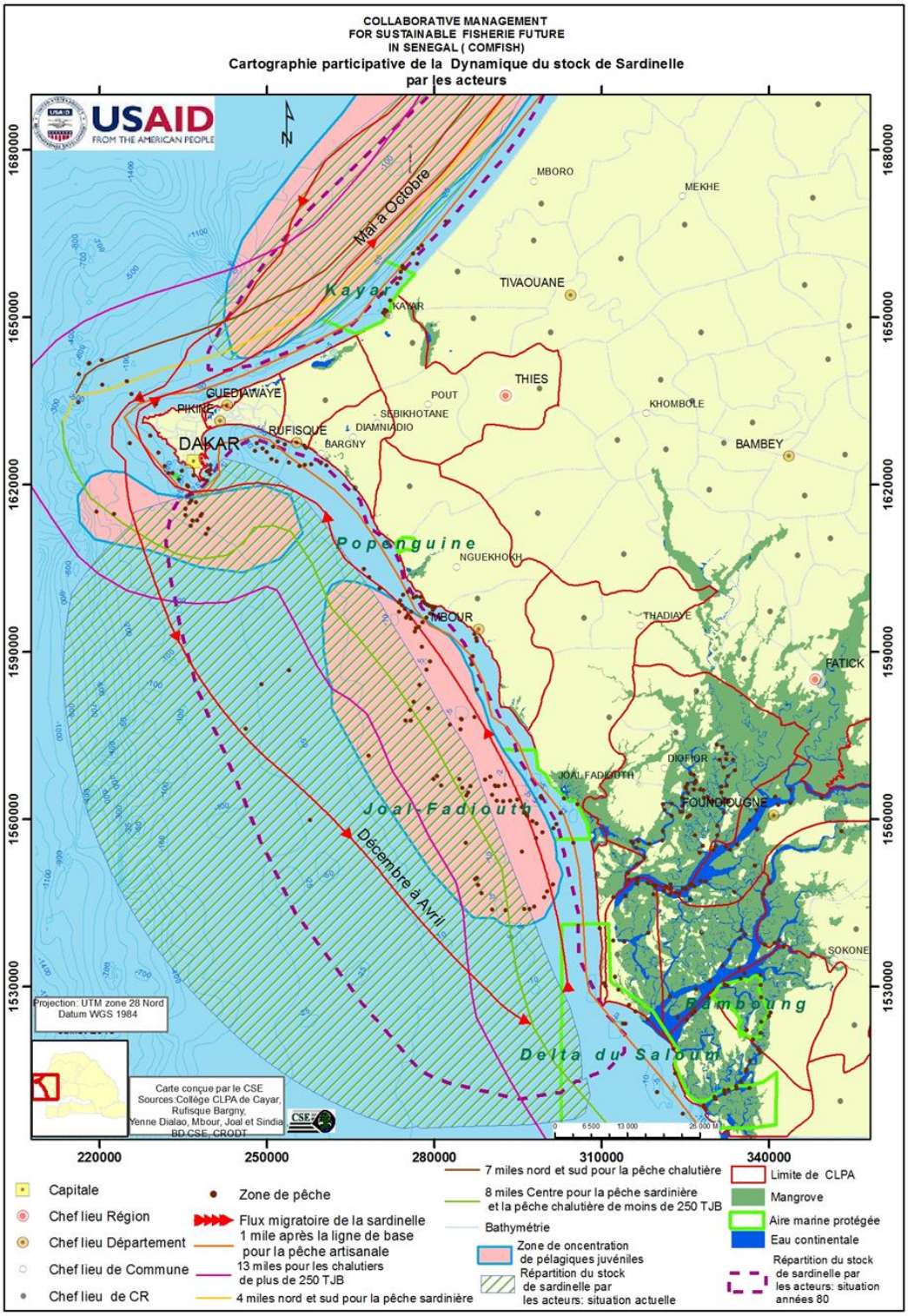


Figure 8: Map of sardinella stock dynamics based on local knowledge (Source: CSE)

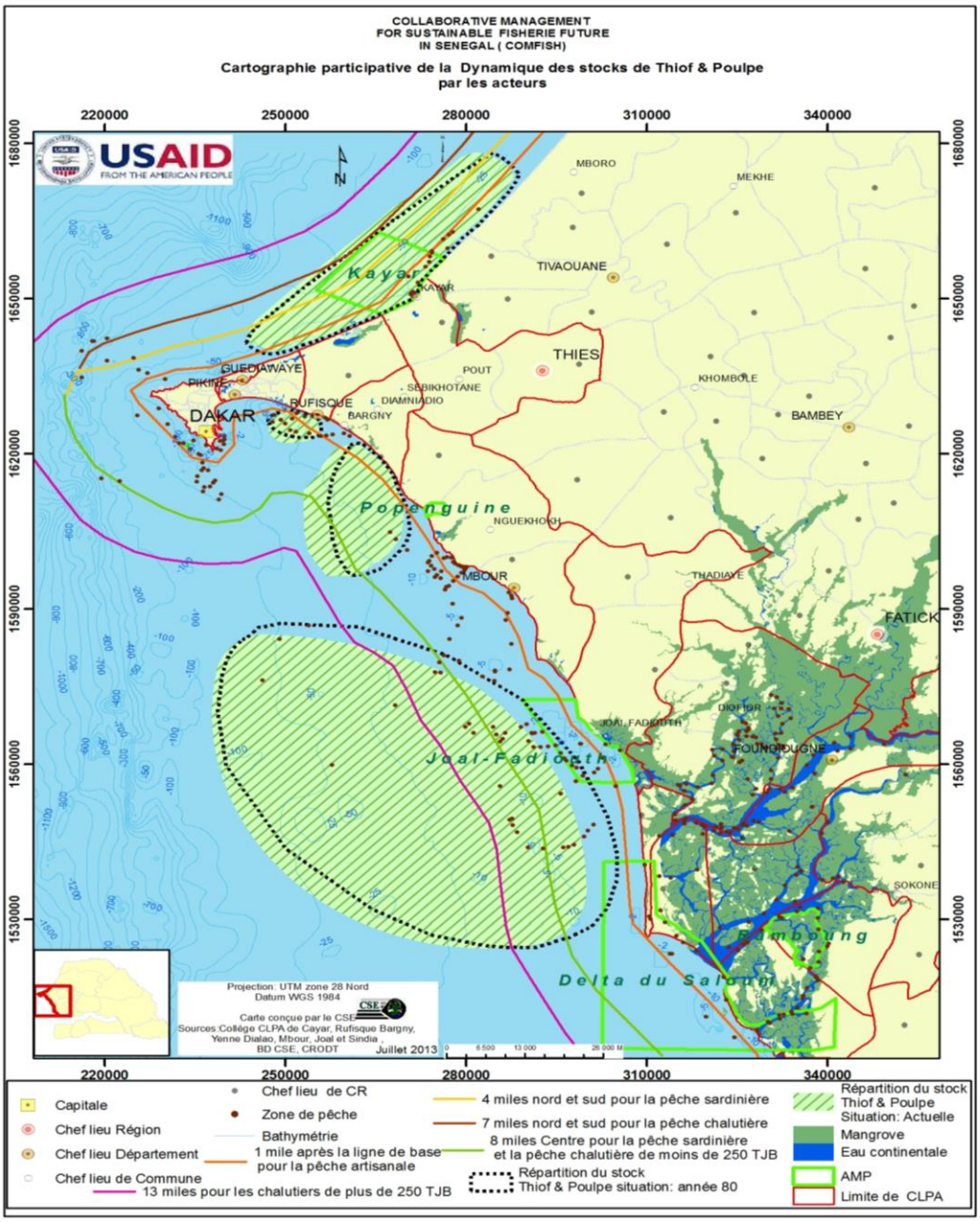


Figure 9: Map of octopus and thiof stock dynamics based on local knowledge

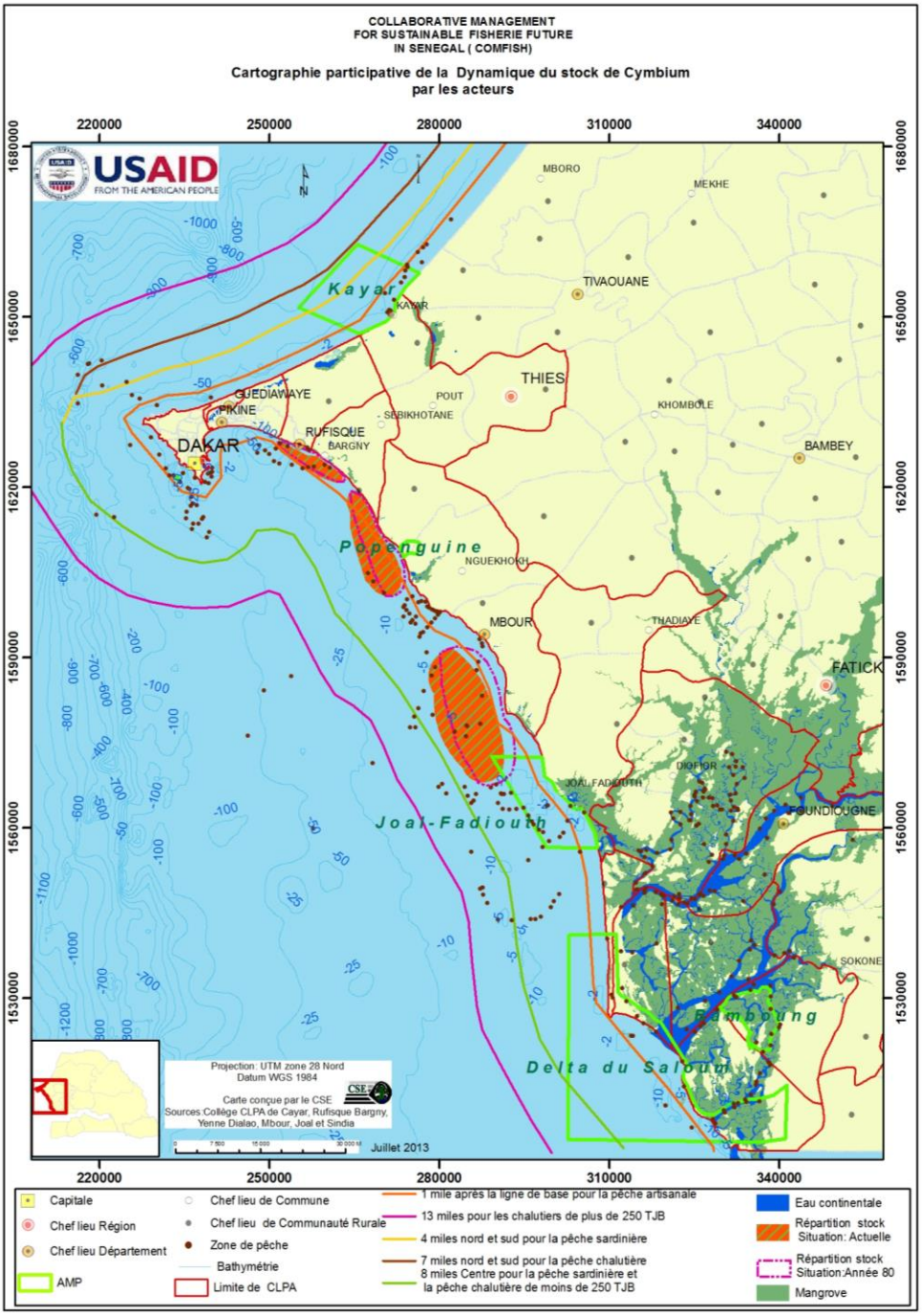


Figure 10: Cymbium stock dynamics

Biodiversity conservation: Activities were undertaken to support the action plan of the National Strategy on MPAs. They include assistance in promoting eco-tourism in support of the Joal-Fadiouth MPA and, support to equip the one-stop information desk at the Joal Fadiouth tourism service. This has helped former fishermen from the MPA embrace new careers as eco-guides.

The project also supported its partners (WWF and officers from the Department of National Parks) to participate in a training/competency building workshop in South Africa, and organized a workshop in Dakar (attended by all MPA managers in La Petite Côte) to develop a human resource performance management plan for MPA staff at these MPAs.

IR 3: Vulnerability assessed and capacity of vulnerable coastal communities strengthened to adapt to the impacts of climate variability and change.

Sustainable fisheries management cannot be achieved in Senegal without addressing climate change and building fish stakeholders' resilience. The project's accomplishments in the past two and a half years, include:

Strengthening cooperation between institutions on climate issues: A Steering Committee for dialogue on climate change was established in May 2013. Steering Committee institutions are DPM, DEEC, COMNAC, FENAGIE, CSE, REPAO, CRODT and *USAID/COMFISH*. The goal is to bring climate change into sector-based policies.

Training: The project has rolled out a series of training initiatives on climate change for implementing partners, ICC members from the project's nine target CLPAs, Cayar women fish processors, and stakeholders at the local level from the CLPAs in Joal/Fadiouth, Sindia, and Rufisque/Bargny. Training has been on the concepts of climate change, how it occurs, how it affects livelihoods, habitats and natural resources, and the identification of sustainable adaptation strategies. It has trained a total of 1,229 beneficiaries. Also, project and DPM staff went to the United States to attend a coastal management Institute at the University of Rhode Island (URI) on climate change.

Coastal community vulnerability to climate change and adaptation strategies: In partnership with the Institute of Environmental Sciences (ISE), vulnerability assessments were carried out in the three CLPAs in Joal/Fadiouth, Sindia, and Rufisque/Bargny. Also collaborative adaptation plans have been developed with the communities.

Scientific information on climate change and fish stocks and fishing infrastructure mapping: The sardinella studies have included analysis of the effects of environmental factors (sea water temperature and upwellings) on the distribution and seasonality of the stocks. There has been a northward movement of the populations. Also, the estuarine shrimp studies documented the effects of water temperature and salinity on shrimp abundance and seasonality. Finally, mapping of land use, infrastructure, and land cover have been produced to facilitate climate change vulnerability assessment and adaptation planning.

IR4. Increased social and economic benefits to artisanal fishing communities and increased climate change resilience

Baseline on stakeholders' socio-economic well-being. To measure what the project has done to improve the social and economic well-being of people living on the sites, a baseline was developed with indicators for monitoring and evaluating project performance. At the end of year four, a first assessment will be carried out using these same indicators.

Artisanal fish processing improvements. The *USAID/COMFISH* project has supported efforts to help women fish processors (mainly the salted, dried, smoked sardine or "keccax") in Cayar improve processing, working conditions, product quality, storage, packaging, and labeling; and to increase production capacity and profits from their activities. An artisanal fish processing facility was designed and constructed, which will serve as a model for other locations. All the work done around the fish processing unit with the support and involvement of universities (UCAD), research institutes (ITA) and the authorities (DITP, the Department of Environment, Cayar Fisheries Service, the Mayor's Office, etc.), makes this initiative one of the major accomplishments and an example that the *USAID/COMFISH* project can use to push and support the Senegalese authorities to scale up. Specific activities have included the following:

- An audit of processing infrastructure in Cayar was carried out to establish a baseline for assessing how project interventions improve the way the site functions.
- Microbiological analyses conducted on processed products were used to identify the constraints on processing practices, and to recommend ways of overcoming them. Steps were taken to improve storage conditions; a consensual Code of Conduct on best fish processing practices was developed and implemented, and the Hygiene Committee was strengthened.
- A strategic set of training sessions was delivered to support socio-economic improvements (see IR1).
- Establishment of a local label for the artisanal fishery products processed in Cayar

3. YEAR FOUR ACTIVITIES

3.1. INTRODUCTION

The goal of the *USAID/COMFISH* project is to establish fisheries management plans through Sustainable Management Units (UGD) for priority target stocks. To do this, the project focused on the processes illustrated in Figures 6 and 7 above. Figure 6 is called the Diagnosis and Analysis phase, which continued until the third year. It is essential in the ecosystem-based approach to sustainable collaborative management of fisheries. It helps us understand, through collaborative diagnosis and analysis, the dynamics and the complex interactions between the different factors (socio- economic, institutional, legal, cultural, biological, environmental) that need to be taken into account in the process. This has made it possible to design coherent and effective intervention strategies and synergies at the local, policy and strategic level. With this approach, the project has established action plans and strategies to use for the management of target stocks.

The project in year three focused on achieving the process shown in Figure 7. It began to implement the various strategies identified and/or developed in the previous years, to analyze the findings of the scientific studies to be used in establishing UGDs on sardinella and other priority stocks, and to develop the sardinella management plan. Year three was a pivotal year, for it enabled us to have total mastery over the complex UGD process and to focus on priorities. It also made it possible to record the first major results in activities on the ground, and to place the *USAID/COMFISH* project among the most important in the sector, barely three years after it began.

Year four is going to continue to implement the various policies, strategies and plans developed during the previous years to establish and roll out collaborative management plans on sardinella and bonga. It will focus also on expanding the project to new priority zones in order to complete the UGDs on these species.

Therefore, all the other strategic areas developed in the process are designed basically to strengthen efforts to develop and implement UGD stock-based management plans. These include: establishing a repository of scientific data, building capacity for governance institutions and stakeholders with new tools and approaches from the University of Rhode Island in the United States, strengthening dialogue between stakeholders at all levels of fisheries governance, building synergies between the programs involved in fisheries management, improving fishing community resilience to climate change, strengthening the livelihoods of stakeholders, mainstreaming gender through studies on the value chain, and establishing a local label to improve the quality of processed fish products.

3.2. DESCRIPTION OF YEAR FOUR ACTIVITIES

3.2.1. Institutional and stakeholder capacity strengthened to increase their resilience to climate change and implement collaborative management in UGDs:

Management institutions, professional organizations (POs), research institutes, training institutions, non-governmental organizations (NGOs) and development partners play an increasingly important role in finding answers to the problems in the fisheries sector. They work together with local stakeholders to deliver a growing number of initiatives that support the Government's efforts on collaborative fisheries management. These institutions and stakeholders need to have stronger capacity, and the *USAID/COMFISH* project has been working in this regard for close to three years.

The project, as in the previous years, will target capacity development at four levels of intervention: CLPAs, including fishermen's organizations in the project intervention zone, professional organizations in the fisheries sector, women fish processors and managers, and research institutes and training institutions working on fisheries.

Supporting the CLPA capacity development strategy, including fishermen's organizations in project intervention areas

To enable CLPAs to play their roles in local fisheries development and management, the project will continue to develop their capacity to help overcome the challenges that hinder them from functioning properly. These challenges include organizational, material, technical, managerial, and financial problems. The activities planned for year four will focus on CLPA functionality to finalize the restructuring phase and provide the necessary tools for CLPAs to be self-reliant financially and conduct their activities effectively.

The *USAID/COMFISH* project activities for strengthening CLPA capacity this year include:

- Supporting efforts to continue thinking on CLPA funding mechanisms and other management structures to establish sustainable internal funding mechanisms that enable them to fulfill their mandates;
- Increasing local government involvement in the financing of CLPAs;
- Supporting CLPA representatives to deliver retraining to their members on CLPA organization and the roles and responsibilities of Councils;
- Supporting new CLPAs to better characterize the fishing effort by identifying CLPA stakeholders in Dakar Ouest, Hann, and Thiaroye, as well as their fishing equipment;
- Supporting inter-CLPA consultation frameworks in each Division to do an evaluation as well as the preparations for fisheries resources management;

- Developing the capacities of stakeholders to establish a joint system for collaborative fisheries surveillance (CLPA, research institutes and DPM) to evaluate the impact of management plans and Local Agreements;
- Increasing the operational resources in fisheries services to support the CLPA secretariat (e.g. office equipment and supplies);
- Helping the Embassy of Japan to equip the CLPA Fishermen's Center in Joal Fadiouth.

The results expected from these activities are:

- Stakeholders knowledge of collaborative management improves;
- CLPAs in the project's new intervention areas are structured and functional;
- CLPA (ICC) communicate better with stakeholders through the support of CLPA representatives during retraining sessions and ICC meetings;
- Functional consultation frameworks exist for negotiating the management rules on target stocks;
- The Joal and Mbour CLPAs have functional work premises and equipment to discharge their duties effectively;
- The needs and possible sources of funding for operationalizing CLPAs are identified;
- At least one CLPA is equipped.

Persons responsible in the project: Amadou Niane, Amadou Ngaido, Vaque Ndiaye,

Partner institutions: WWF, CLPAs targeted by the project, DPM, consultants, JICA, local governments on project sites

Activity timeline:

Activities	FY14			
	Q1	Q2	Q3	Q4
Supporting CLPA representatives to do retraining on CLPA organization and the roles and responsibilities of Councils	X	X	X	X
Supporting CLPAs and other management structures to establish internal mechanisms for sustainable funding so that they fulfill their mandates properly	X	X	X	X
Increasing local government involvement in the financing of CLPAs	X	X	X	X
Supporting inter-CLPA consultation frameworks in each division to evaluate and prepare fisheries resource management activities	X	X	X	X
Assisting the inter-CLPA consultation frameworks in each division to set prices	X	X	X	X
Giving stakeholders stronger capacities to establish a joint system for collaborative monitoring of fisheries (CLPA, research institutes and DPM) to assess the impact of management plans in Local Agreements	X	X	X	X
Supporting local fishery councils to buy or rent decent, functional premises where they can work properly	X	X	X	X

Supporting CLPA operations in the new intervention areas (Ziguinchor, Kafountine and Saint Louis)	X			
Increasing the operational resources for the CLPA secretariat (office equipment and supplies, purchase of cartouche for SGs)	X	X	X	X
Helping provide equipment for the Joal Fadiouth CLPA center	X	X		

Outputs

- Reports on capacity development activities for local governance organs and stakeholders;
- Reports on the establishment of functional consultation frameworks;
- CLPAs have functional work premises and equipment to discharge their duties properly;
- Reports and action plans on activities to identify possible sources of funding for CLPAs through local governments on the project sites;

Developing capacity in organizations and helping implement the strategy on women

The *USAID/COMFISH* has been working in the past three years to improve fisheries governance by involving all the stakeholders concerned with the management of fisheries resources, including women. The activities targeting stakeholders will be strengthened through key initiatives such as:

- Developing the leadership capacities of professional organizations;
- Identifying women engaged in the fisheries sector, assessing their contribution to the sector and preparing a report on the findings of this study;
- Organizing training in the 7 CLPAs on women's rights, leadership values and principles;

The results expected from these activities are:

- Stronger capacities for organizations, in particular the women's organizations engaged in fisheries and in leadership;
- The voices of women, as well as their contribution in the sector, are heard, recognized and taken into account in the decision making process.

The persons responsible in the project are: Khady Sané Diouf, Najih Lazar

Partner institutions: APTE, WWF, CLPAs in the project zone, ENDA GRAF, COMHAFAT, MPAM, consultants, DPM

Activity timeline:

Activities	FY14			
	Q1	Q2	Q3	Q4
Developing the leadership capacities of professional organizations	X	X	X	X
Identifying women engaged in the fisheries sector, assessing their contribution to the sector and preparing a report on the findings of this study	X			
Organizing training in the 7 CLPAs on women's rights, leadership values and principles	X	X	X	X

Outputs:

- A report on the study on women in the fisheries sector and their contribution to fishing;
- A report on the leadership training session.

Strengthening the capacities of national structures for fisheries management, research, training, as well as for NGOs and stakeholders to improve the system for producing, sharing and communicating information on fisheries

This activity aims to test and demonstrate innovative approaches and tools imported from the United States, and designed to improve the capacities of institutions engaged in promoting scientific research and training to collaborate better in providing effective and useful findings for fisheries management. Through the "Sea Grant Program", the *USAID*/COMFISH project will strengthen national structures for management, research and training, as well as NGOs and stakeholders to improve the fisheries information system, establish adequate frameworks for consultation and build an effective partnership in scientific research for sustainable management of fisheries resources. The activities to be delivered include:

- Assessing the means and resources committed to extension education and training in fisheries, so as to build a partnership between fisheries research and management structures;
- Supporting collaborative collection of biological data on small pelagics to fill the gaps observed in the ongoing sampling process (for using ELEFAN);
- Sharing study findings and collaboratively collected data with fishermen to improve stakeholders awareness;
- Strengthening the capacities of technical fisheries officers and IUPA students by granting them fellowships;
- Sending four persons (Senegalese) to the USA as part of a study trip under the “Sea Grant” program;
- Producing a report on the outreach programs conducted across the world;
- Organizing a one-day workshop in Senegal to review and share the report and to develop a pilot project.

Other activities will be delivered to strengthen the capacities of strategic national structures. These activities fall under the efforts being made to develop and implement collaborative management plans. The activities include:

- Revitalizing the CNCPM through meetings;
- Liaising with SCA to support a follow-up workshop on the prerequisites of good fisheries governance (follow-up workshop on how commitments are implemented);
- Supporting, establishing and operationalizing the CLPA network and that on initiatives tied to Local Agreements/UGD.

The results expected from these activities are:

- An assessment is done on the means and resources used in outreach education and training in the fisheries sector, with a view to build a partnership between fisheries research and management structures;
- Strengthened capacities for strategic national fisheries management structures.

Who is responsible in the project: Khady, Najih, Vaque and Kathy

Partner institutions: IUPA, ISRA/CRODT, DPM, IRD/IFAN, WWF, SCA CNCPM, CLPA, IRI, etc.

Activity timeline:

Activities	FY14			
	Q1	Q2	Q3	Q4
Assessing the means and resources committed to extension education and training in fisheries, so as to build a partnership between fisheries research and management structures	X	X	X	X
Supporting collaborative collection of biological data on small pelagics to fill the gaps observed in the ongoing sampling process (for using ELEFAN)	X	X	X	X
Sharing study findings and collaboratively collected data with fishermen to improve stakeholders awareness	X	X	X	X
Strengthening the capacities of technical fisheries officers and IUPA students by granting them fellowships;	X	X	X	X
Sending four persons (Senegalese) to the USA as part of a study trip under the “Sea Grant” program;				
Producing a report on the outreach programs conducted across the world	X	X		
Organizing a one-day workshop in Senegal to review and share the report and to develop a pilot project		X		
Meetings to revitalize the CNCPM	X	X	X	X
Liaising with SCA to support a follow-up workshop on the prerequisites for good fisheries governance with SCA (follow-up workshop on how commitments are implemented)				
Supporting the Technical Committee for capacity management (in the fight against illegal artisanal (IUU) fishing	X	X	X	X
Supporting efforts to establish and operationalize the CLPA network and that on initiatives tied to Local Agreements/UGD	X	X	X	X

Outputs:

- Various reports on capacity building in institutions are produced, as well as memoirs or theses supported by the project;
- Report on the assessment of means and resources committed to extension education and training in the fisheries sector;
- Reports on workshops for assessing the implementation of recommendations from the workshop on prerequisites;
- Meeting reports on the activities of the Technical Committee on IUU.

3.2.2. Strategies, policies and best practices identified, tested and applied to reinforce resilience to climate change and address the destructive and unsustainable uses of marine resources that pose a threat to biodiversity conservation

To begin implementing effective strategies on bad practices, the project developed and implemented Local Agreements in its intervention areas. These agreements are a key set of rules that enable players to change their behavior and adopt good fishing practices. They also provide a diagnosis of fisheries that CLPAs can use to develop local management plans. The project has assessed and started to promote good fishing and conservation practices in its target areas. The scientific data produced by strategic partners (IUU fishing in areas outside Senegal's EEZ, management of fishing capacity, studies on the growth and length of target species) is going to be analyzed and used to develop management plans.

In the new intervention areas (Ziguinchor and Saint Louis), our partners will conduct further scientific studies, especially on sardinella and bonga, as well as a mapping of their distribution and fishing areas. The project will also develop Local Agreements to give the stakeholders in these areas the basic elements they need to better understand the constraints on fishing in their area, and to implement management plans on the targeted species. All these actions are summarized in this Work Plan. These interventions will make a stronger impact if they are coordinated and based on a more coherent strategy. It is in this respect that the project will continue to build synergies with partners, especially JICA, PRAO (WB), UCAD, WWF, which implement some of the activities.

In year four, the topics and activities in this component include:

- Implementing strategies for collaboration and synergy with programs and partners;
- Promoting Good Fishing Practices (GFP);
- Continuing to gather scientific data to use in collaborative management plans on targeted stocks;
- Preparing new Local Agreements in the project intervention areas;
- Implementing Local Agreements in some of the old intervention areas (CLPAs in Joal, Mbour, Sindia Sud and Sindia Nord, Yene/Dialaw, Rufisque/Bargny and Cayar);
- Finalizing the sardinella management plan and beginning to develop the bonga management plan;
- Supporting efforts to implement the national strategy on MPAs.

Establishing strategies for collaboration and synergy with programs and partners

The synergies the project will build this year will enable it to continue the work it has been doing with the APL (Embassy of Japan) project, the activities for protection and sustainable management of octopus fisheries, the activities conducted with the "Alliance for Sustainable Fisheries in Senegal", those it has planned to carry out with Enda Graf, FIT, EU (UNDP/WWF), and other USAID projects working in the same areas (USAID/Yajeende and USAID/ERA, etc. These synergies will enable the project to:

- **Build the Joal Fishing Center**: The Embassy of Japan has invited the *USAID/COMFISH* project to support their initiative to build a center for the fishermen in Joal, as a part of their programs. Our support will be to help equip the center so that the fishermen can use it for their activities.

- **Support efforts to implement the octopus, *thiof*, sardinella and bonga development plans**: The *USAID/COMFISH* project will continue to help CLPAs buy and use octopus pots. On the management of Thiof, work is already being done with the COGEPAS project. The project will further discuss and better negotiate the initiative so that it continues to work with the CLPAs concerned. At the same time, it will build synergies with the "Governance in West African Fisheries" program, which is funded by the European Union and implemented by UNDP/WWF as a part of the efforts being made to develop collaborative management plans (sardinella and bonga), ensure the "alliance" functions properly, and enhance biodiversity conservation through support to MPA activities, etc.
- **Use the Alliance for sustainable fisheries** to improve outreach on *USAID/COMFISH* project activities as well as those of its partners at the local and strategic level;
- **Support the "Collaborative governance, shellfish resource development, livelihoods enhancement and poverty reduction for Fadiouth women fish processors"** project, which is run by APTE to help reinforce climate change resilience in the communities in Joal-Fadiouth;
- **Support students and fisheries technicians to finalize their Masters Degree memoirs or Doctorate Degree theses** on collaborative fisheries management in Senegal. The *USAID/COMFISH* project supported three IUPA students to finish their Masters degrees in 2013. This year, it will discuss with USAID/ERA to see how the project can possibly grant fellowships to these students for their Doctorate Degree.
- **Build synergy with the USAID/Yajeende project** to set standards for the Cayar fish processing unit and work on the sardinella value chain study that CRODT will carry out this year**.**

The results expected are:

- Financial and human resources used in a complementary manner to establish management plans;
- Support provided to implement the Alliance's plan of action for sustainable fisheries;
- Pooling of funds and efforts in all ongoing initiatives to improve the management of resources committed.

Who is responsible in the *USAID/COMFISH* project: Vaque Ndiaye, Khady Sané DIOUF

Partner institutions and staff members involved: JICA, the PRAO project (BM), UCAD, WWF, APTE, DPM, USAID/Yajeende, USAID/ERA, CCLME etc.

Activity timeline:

Activities	FY14			
	Q1	Q2	Q3	Q4
Developing and validating a plan of action with the technical services working in the areas targeted by Comfish for COGEPAS activities on thiof and cymbium fisheries	X			
Supporting the activities of partners engaged in sustainable fisheries management (Octopus pots)	X			
Consolidating and monitoring other activities conducted jointly together with partners (Yajende, ERA, WWF/PNUD, etc).	X	X	X	X

Supporting efforts to implement the action plan of the Alliance for Sustainable Management	X	X	X	X
Establishing mechanisms for collaboration with the sub-regional fisheries committee and CCLME project on the sardinella management plan	X	X	X	X
Granting fellowships to four doctoral students (3 from IUPA and 1 from UGB in Saint-Louis)	X	X	X	X

Outputs:

- 2000 octopus pots purchased to contribute to the management measures initiated on this species;
- Alliance activity reports;
- MOU and other reports on synergy with partners, in particular on small pelagics (WWF/PNUD, APTE, ERA, Yayeende, CCLME, CSRP, etc.);
- Fellowships granted to doctoral students

Best Fishing Practices (BFP)

Activities on good fishing practices will be carried out at the national level. The project plans this year to set up a mechanism for monitoring the integration of best practices in management plans. It will do so together with WWF in the "Governance of West African Fisheries" program (EU/UNDP/WWF).

The results expected are:

- Good artisanal fishing practices are promoted;
- A system is established to monitor the integration of good practices in management plans;

Who is responsible in the project: Kathy and Najih

Partner institutions: WWF, IUPA, FENAGIE, CLPA, DPM, etc.

Activity timeline:

Activities	FY14			
	Q1	Q2	Q3	Q4
Supporting efforts to institute a national prize for innovative approaches to environmental conservation and the creation of income generating activities (co-funded with WWF)	X	X	X	X
Establishing a system for monitoring the integration of good practices in management plans	X	X	X	X

Improving the scientific database to begin developing collaborative management plans on targeted stocks

The project will continue this year to conduct basic scientific studies it can use to improve the scientific database for developing collaborative management plans. It is therefore going to update GIS mapping with information from the database on stocks, fishing gear, fisheries stakeholders, CPUE, and landings of the main species in the CLPAs supported by the *USAID/COMFISH* project. The project will do this work closely together with CSE, which is planning in this work plan to organize a

national validation workshop on the technical data generated by CSE since the beginning of the *USAID/COMFISH project.*

Considering the project's extended activity cycle, the mapping will cover the fishing areas, fish stocks and fishing infrastructure in the new project intervention zones, as well as the new areas under improved management, and the areas of biological significance covered by these new CLPAs (North and South Zone).

On the targeted species, CRODT and CSE will study the variations in the resource, based on climatic parameters as well as on variations in the catches and fishing effort in the new intervention areas (the 10 major species over the last 10 years.) In view of the plans to establish management plans on bonga fisheries, efforts will be made to conduct biological and socio-economic studies on the species stocks and fisheries.

With regard to sardinella, the project will conduct a study on the value chain of this species to support the ongoing management plan it has been working on with the USAID/Yajeende project and CRODT.

The results expected are:

Consolidation of the scientific database established by the project to support the ongoing process of establishing collaborative management plans.

Who is responsible in the project: Vaque Ndiaye, Najih Lazar, Khady Sané DIOUF

Partner institutions: CRODT, MPAM, CSE, CLPA, DPSP, IUPA, Yajeende.

Activity timeline:

Activities	FY14			
	Q1	Q2	Q3	S4
Updating GIS mapping with information from the database on fish stocks, fishing gear, fisheries stakeholders, CPUE, and landings of the main species in the CLPAs supported by the *USAID/COMFISH* project	X	X	X	
Organizing, together with CSE, a national workshop to present the technical data produced by CSE since the beginning of the *USAID/COMFISH* project	X			
Mapping the fishing areas, fish stocks and fishing infrastructure in the new project intervention areas, as well as charting new fishing areas under improved management, and areas of biological significance covered by the CLPAs in the new project intervention zones (North and South zone)	X	X	X	
Working with CRODT and CSE to conduct a study on variations in the resource based on climatic parameters (include in the TOR for CRODT)	X	X	X	
Conducting studies on Catches Per Unit Effort in the new project intervention areas (the 10 main species over the last 10 years)	X			
Conducting biological and socio-economic studies on bonga stocks and fisheries in order to help develop the management plan on this species				
Conduct a study on Bonga selectivity fishing gear	X	X		
Conducting a study on the sardinella value chain				

Outputs

- Mapping of fishing areas and fish stocks in the Northern and Southern regions

- Updated maps on the priority stocks
- 3 scientific reports produced by CRODT on the variations in the resource, based on climatic parameters, Catches Per Unit Effort in the new project intervention areas, biological and socio-economic studies on Bonga stocks and fisheries
- Report on Bonga selectivy fishing gear study
- A study on the sardinella value chain

Supporting efforts to develop Local Agreements in the new intervention areas

To cover the sardinella UGD in Senegal and prepare to develop the national management plan on the species, the project will prepare new Local Agreements for the CLPAs in Saint Louis, Ziguinchor and Kafountine. The Local Agreement will be based on the same model as the previous ones. The activities will include:

- Hiring additional field workers to begin preparing the Local Agreements;
- Training extension workers and facilitators on how to implement Local Agreements effectively;
- Informing the administrative and local authorities in the Saint-Louis, Ziguinchor and Kafountine CLPAs;
- Signing collaborative agreements between the *USAID/COMFISH* project and the CLPAs;
- Selecting and training community extension workers on the Local Agreement;
- Supporting the CLPAs to develop Local Agreements (support the extension workers);
- Reviewing the status of fisheries resources management and preparing documents;
- Organizing feedback sessions to share the review findings;
- Helping to process and analyze data, and setting management rules for the Local Agreement;
- Deliberating and approving the Local Agreements.

Results expected from these activities:

- The stakeholders are informed and educated about the process of developing Local Agreements;
- An MOU is signed and approved, defining the roles and responsibilities of CLPAs and the schedule for developing the Local Agreement;
- A review on fisheries resources management is done at the CLPAs concerned;
- Formal measures and rules are adopted at the local level for rationalized fisheries management on the sites concerned.

Who is responsible for this activity in the *USAID/COMFISH* project: Vaque Ndiaye, Amadou Mactar Niane, Saloum Cissokho, Frédéric Bambara, Amadou Ngaïdo

Partner institutions and staff members involved: CLPA, DPM, CSE, WWF

Activity timeline:

Activities	FY14			
	Q1	Q2	Q3	Q4
Hiring 2 new facilitators in the new intervention areas	X			
Training the facilitators				
Informing the local and administrative authorities	X			
Signing collaborative agreements between *USAID/COMFISH* and the CLPAs and selecting extension workers	X			
Training the extension workers on how to develop Local Agreements	X			
Supporting the CLPAs to develop Local Agreements (supporting the CLPA extension workers and secretaries) (06)		X	X	X
Reviewing fisheries resources management and producing the report		X		
Organizing feedback sessions to share the review findings			X	
Supporting efforts to process and analyze data and set management rules for the Local Agreement				X
Organizing follow-up meetings on the process of developing the Local Agreement together with CRODT and DPM		X	X	X
Deliberating and approving the local agreements				X

Outputs:

- Reports/Attendance list of the information meetings on the Local Agreement;
- Reports on the status of fisheries resources management on the sites concerned;
- The Local Agreements of the CLPAs concerned are validated by the ICC and approved by the administrative authorities.

Pursuing the roll-out of Local Agreements for the Joal, Mbour, Sindia Sud and Sindia Nord CLPAs

The Local Agreements for the CLPAs in Sindia, Mbour and Joal Fadiouth have been validated by the Coordination and Advisory Bodies (ICC) of the respective CLPAs. The next step is for the CLPAs to move forward and implement the rules and measures. To ensure that this is done properly, the project will focus on monitoring adherence to the rules and measures. It will continue building the capacities of the management bodies set up by the CLPAs. At the same time, it will inform and educate stakeholders on the management measures and rules in the Local Agreements. The project is also going to support local organizations, and especially women's groups, to make it easier for them to implement the Local Agreements in their production activities. The project's work to implement CLs will include:

- Continuing public education on the rules and measures adopted;
- Continuing to develop the capacities of the organs managing the Local Agreement:
  - ✓ Administrative and financial management
  - ✓ Internal fund raising
  - ✓ Development of the annual action plan
- Helping CLPAs to maintain hygiene on fish landing areas and processing sites;
- Supporting collaborative surveillance;

- Helping organize evaluations of Local Agreements;
- Organizing meetings to monitor implementation of the Local Agreements together with the technical services;
- Supporting women fish processors to follow the rules and measures for managing the Local Agreements;
- Supporting CLPAs to continue implementing Local Agreements through extension workers.

Results expected from these activities:

- The organs handling the Local Agreement in CLPAs (including the surveillance committees) function properly, and control and supervise the application of the local agreement;
- The CLPAs have started to mobilize funds internally to finance the surveillance of the Local Agreement;
- The CLPAs are equipped with materials to maintain hygiene on the landing areas;
- Women's groups are trained to follow the rules and measures in the Local Agreement.

Beginning to roll-out Local Agreements for the Rufisque/Bargny, Cayar and Yène/Dialaw CLPAs

With the Coordination and Advisory Bodies' (ICC) validation of the Local Agreements for CLPAs in Yène/Dialaw, Rufisque/Bargny and Cayar, the project finished covering most of the sardinella UGD in la petite côte. Considered as a key first step for preparing the sardinella management plan, this stage enabled the project to raise awareness among stakeholders on the need for them to manage resources in a sustainable manner, to help them get a better understanding of their roles and responsibilities, to conduct a collaborative diagnosis of the problems in sustainable management of fisheries resources, and especially to adopt consensual rules and measures for eradicating harmful resource management practices. To begin implementing these Local Agreements, the project will:

- Disseminate the rules of the Local Agreement;
- Establish or revitalize the management organs of the Local Agreement;
- Strengthen the capacities of the management organs of the Local Agreement;
- Support collaborative surveillance;
- Help evaluate the Local Agreements;
- Organize meetings to monitor implementation of the Local Agreements together with the technical services;
- Support women fish processors to follow the management rules and measures in the Local Agreement;
- Support CLPAs to start implementing Local Agreements (motivating extension workers).

The results expected from these activities are:

- The stakeholders are informed and educated on the management measures and rules set out in the Local Agreements;
- The management organs of the Local Agreement are established and trained properly to monitor and control the application of Local Agreement;

- Groups of women fish processors are equipped to adhere to the management rules and measures in the Local Agreements;
- Meetings to assess the Local Agreement are held (at least two).

Who is responsible in the *USAID/COMFISH* project: Vaque Ndiaye, Amadou Mactar Niane, Saloum Cissokho, Frédéric Bambara, Amadou Ngaïdo and facilitators

Partner institutions and staff members involved: CLPA, DPM, DEEC, WWF

Activity timeline:

Activities	FY14			
	Q1	Q2	Q3	Q4
Supporting CLPAs to continue implementing Local Agreements (financial support)	X	X	X	X
Pursuing the dissemination of rules	X	X	X	X
Continuing to strengthen the capacities of the management organs of the Local Agreement: – Administrative and financial management – Mobilization of internal funds – Preparation of annual action plans	X			
Supporting CLPAs to maintain hygiene on the fish landing areas and processing sites			X	
Supporting collaborative surveillance	X	X	X	X
Supporting evaluations of Local Agreements				X
Organizing meetings to monitor the implementation of Local Agreements together with the technical services		X	X	X
Coordinating meetings with the facilitators				
Supporting women fish processors to follow the management rules and measures in the Local Agreements	X	X	X	X
Supporting CLPAs to start implementing Local Agreements (covering the costs of extension workers)	X	X	X	X
Disseminating rules	X	X	X	X
Establishing or revitalizing the management organs of the Local Agreement		X		
Strengthening the capacity of the management organs of the Local Agreement: GAF (administrative and financial management)			X	
Supporting collaborative surveillance: Training on collaborative surveillance and patrols)			X	X
Supporting CLPAs to organize evaluations of the Local Agreements				X
Organizing meetings to monitor implementation of the Local Agreements together with the technical services		X	X	X

Outputs:

- Reports/attendance list on meetings for public awareness of the management measures and rules set out in the Local Agreements;
- Prefectoral or sub-Prefectoral Orders validating the choice of members of the management organs of the Local Agreement;
- Prefectoral Orders on the Local Agreements for Saint-Louis, Ziguinchor and Kafountine;
- Inter-CLPA consultation framework established.

Developing management plans

Sardinella: The development process continues this year. The project will formalize the consultation frameworks which were established last year to prepare for validation of the collaborative management plans in Joal Fadiouth, Mbour, Sindia Nord, Sindia Sud, Yenne/Dialaw, Rufisque/Bargny, Pikine, Hann and Dakar Ouest. To ensure sardinella management measures are used at the national level, the project plans to work fully with the *USAID/COMFISH* project's technical working group (established by DPM to support the process), the National Committee on Small Pelagics and the National Advisory Committee on Marine Fisheries.

CRODT will backstop the project's efforts to conduct diagnostic studies on the new project sites, as well as to begin developing the sardinella collaborative management plan with the support of a consultant. This work will be specifically in the Saint Louis and Kafountine CLPAs. For the Kafountine site, the activities can only begin after the CLPA has been installed.

Bonga: Year four activities on bonga fisheries will target the Sine Saloum region (CLPAs in Niodior, Bassoul, Djirnda and Missirah) and the Casamance region (Ziguinchor and Kafountine CLPAs). The project will start to develop management plans on these sites, conducting diagnostic studies as well as outreach and information initiatives on bonga fisheries.

Shrimp: In 2011/2012, the *USAID/COMFISH* project took over socio-economic studies that USAID and IUCN had conducted back in 2004. The project identified stakeholders involved in shrimp fisheries, as well as the equipment and infrastructure available to support shrimp harvesting activities. It followed this up with a one-year socio-economic monitoring exercise (2012 - 2013). The data collected was analyzed and a draft report produced. The next steps will be to:

- Finalize and give the technical services the findings of the socio-economic study on shrimp fisheries in Sine Saloum;
- Organize a feedback workshop on the findings of the socio-economic study on shrimp for validation with the CLPAs.

The project will share all these results with DPM to support the PRAO project's ongoing efforts to develop a management plan.

Results expected from these activities:

- The stakeholders in Thies and Dakar validate the collaborative management plans on sardinella in the consultation frameworks established in the Dakar, Thies and Mbour divisions for that purpose;
- Ziguinchor and Saint Louis start developing collaborative management plans on sardinella;
- Fatick and Ziguinchor start developing collaborative management plans on bonga;
- The Sine Saloum shrimp fisheries monitoring report is finalized;

- The technical validation of the document is done.

Who is responsible for the activity in the *USAID/COMFISH* project: Vaque Ndiaye, Amadou Mactar Niane, Saloum Cissokho and facilitators

Partner institutions and staff members involved: CLPA, DPM, WWF, FENAGIE

Activity timeline:

Activities	FY14			
	Q1	Q2	Q3	Q4
Finalizing the development of the management plan on sardinella fisheries in la petite côte, Cape Verde and Cayar: Validation by the local stakeholders in consultation frameworks	X	X		
The National Committee on small pelagics validates the collaborative management plan on the sardinella fisheries in la petite côte, Cape Verde and Cayar			X	
The CNCPM validates the collaborative management plan on the sardinella fisheries in la petite côte, Cape Verde and Cayar			X	
The Minister approves the management plan on the sardinella fisheries in la petite côte, Cape Verde and Cayar				X
Starting the development of new collaborative management plans on sardinella in the North and South zones	X	X	X	X
Supporting the Technical Working Group to contribute in developing the collaborative management plan on sardinella in the northern and southern areas	X	X	X	X
Preparing a literature review on sardinella fisheries, as a part of efforts to develop the Collaborative Management Plan on sardinella in the northern and southern areas	X			
Engaging in consultations with stakeholders in the northern and southern areas on the challenges and solutions for sardinella fisheries, as a part of efforts to develop the Collaborative Management Plan on sardinella in the northern and southern areas		X	X	
Organizing a meeting for technical validation of diagnostic studies and the literature review, as a part of efforts to develop the collaborative Management Plan on sardinella in the northern and southern areas			X	
Organizing a meeting for stakeholders to validate the diagnostic studies and literature review, as a part of efforts to develop the Collaborative Management Plan on sardinella in the northern and southern areas			X	X
Developing, and reporting with technicians, the scenarios/management options for developing the Collaborative Management Plan on sardinella in the northern and southern areas			X	
Validating with stakeholders the scenarios/management options for developing the Collaborative Management Plan on sardinella in the northern and southern areas			X	
Starting to draft the collaborative management plan on sardinella in the northern and southern areas				X

Consulting stakeholders in Fatick and Casamance on the challenges and solutions for bonga fisheries, as a part of efforts to develop the Collaborative Management Plan on Bonga	X	X	X	X
Finalizing and reporting, with the technical services, the findings of the socio-economic study on shrimp fisheries in Sine Saloum	X			

Outputs:

- Collaborative management plans validated by stakeholders in the Dakar and Thies regions;
- Study documents on sardinella fisheries validated by stakeholders in the Ziguinchor and Saint Louis regions;
- Study documents on bonga fisheries validated by stakeholders in the Ziguinchor and Saint Louis regions;
- Technical report on shrimp fisheries validated.

Supporting the national strategy for MPA management

To support biodiversity conservation while establishing UGDs and management plans on targeted stocks, the *USAID/COMFISH* project also includes initiatives to manage and protect fragile marine and coastal ecosystems and/or priorities of biological and ecological interest on its sites of intervention. WWF supports and implements almost all these actions.

The results expected are:

- Reinforced systems for collaborative surveillance in CLPAs/MPAs
- Validated national strategy on MPAs;
- Efforts initiated to establish protected fishing areas in the project's intervention zone (Rufisque and Mbour);
- Capacities strengthened for MPA/PFA workers in the ongoing professional certification initiative;

Who is responsible in the *USAID/COMFISH* project: Najih, Khady, Glenn, Karen

Partner institutions and staff members involved: WWF, DEEC, DAMCP, DPM, MPAM, URI

Activity timeline:

Activities	FY14			
	Q1	Q2	Q3	Q4
Strengthening collaborative surveillance in CLPAs/MPAs	X	X	X	X
Implementing corrective actions in MPAs and fishing zones targeted by the project	X	X	X	X
Advocating the validation of the national strategy on MPAs	X	X	X	X
Supporting efforts to establish protected fishing areas in the project's intervention area (Rufisque and Mbour)	X	X	X	X
Strengthening capacity for MPA/PFA workers as a part of professional certification	X	X	X	X
Monitoring and evaluating the impacts of MPAs on the basis of biological, socio-economic and governance indicators	X	X	X	X

Outputs:

- System established for collaborative surveillance in CLPAs/MPAs;
- National strategy on MPAs validated;
- Reports on capacity building for MPA/PFA workers, as a part of professional certification.

3.2.3. Vulnerability assessed and capacity of vulnerable coastal communities strengthened to adapt to the impacts of climate variability and change

The activities in this component aim increase climate change resilience in grassroots communities, marine and coastal ecosystems and institutions by establishing sustainable and effective adaptation strategies. These activities go along with efforts to implement management plans for sustainable fisheries management. The interventions target the local and national levels. In the first two years, the project educated stakeholders on the risks of climate change in the fisheries sector and in the coastal and marine environment. In year three, it conducted climate change vulnerability assessments in fishing communities and developed adaptation plans for the CLPAs in Joal/Fadiouth, Sindia, and Rufisque/Bargny. Last year also, the project conducted a study to improve knowledge of climate change impacts on fisheries in the coastal areas of Senegal and in the Sub-Regional Fisheries Commission (CSRP). These activities have established the enabling conditions for implementing the sustainable adaptation strategies identified in a participatory manner. In year four, the project will focus mainly on implementing actions that make a positive impact on the adaptive capacity of people and institutions. These interventions are based on three pillars:

Leading consultations to mainstream climate change issues in fisheries policies in Senegal: This component seeks to strengthen resilience in institutions and encourage them to mainstream adaptation to climate change impacts in the strategic documents on fisheries and the coastal and marine environment. First, there was a meeting that issued recommendations to re-open dialogue on climate change issues. Then, several discussions were held with key institutions addressing these concerns (DPM, DEEC, CSE, and REPAO COMNACC). Finally, a Steering Committee was set up with the support of the project. This committee has representatives from DPM, DEEC, COMNACC, ESC, FENAGIE pêche, *USAID/COMFISH*, as well as CRODT, DAMPC and ANAMS. The project's proposed strategy in year four is to set up a platform on fisheries. The said platform will be attached to the sub-committee on "vulnerability/adaptation" in the National Committee on Climate Change (COMNACC). COMNACC was established by presidential decree. It is a well-entrenched institution with adequate leverage to pilot consultations on climate issues in a sustainable manner, and to influence policy and guidelines in the area. It is in this respect that the project will conduct the activities described in the table below in year four.

The results expected are:

- A platform on fisheries, attached to the cub-committee on "*vulnerability/adaptation"* in the National Committee on Climate Change, is established;
- Consultations re-open between the State, research institutes, stakeholders, NGOs and development partners involved in fisheries, environment and climate change;
- Climate change issues are better addressed in sectoral policy documents at all levels of decision-making;
- There is consensus and synergy on the adaptation measures implemented on the ground to strengthen resilience to climate change and climatic variations.

- **Who is responsible in the *USAID/COMFISH* project:** Véronique Faye, Vaque Ndiaye
- **Partner institutions and staff members involved:** DPM, DEEC, DAMPC, COMNACC, CSE, CRODT, CLPA, WWF, APTE

Activity timeline:

Activities	Q1	Q2	Q3	Q4
Organizing a workshop for feedback and validation of the results of the diagnostic study on consultation frameworks, and establishing the platform for dialogue on fisheries/climate change	X			
Supporting the establishment and operationalization of the platform for dialogue on fisheries/climate change and its inclusion in the National Committee on Climate Change (COMNACC)	X	X	X	X
Providing support for the organization of 4 workshops to strengthen capacity, share information and ideas, and raise awareness of the vulnerability of fisheries and coastal communities to climate change. The workshops will be held with public institutions, particularly the national assembly, the economic, social and environmental council, the Ministry of Fisheries and Maritime Affairs and the Association of Local Elected officials in Senegal.	X	X	X	X
Building synergies on initiatives for adaptation to climate change with DEEC, DPM, development partners and other like-minded institutions.	X	X	X	X

Assessing coastal community vulnerability and formulating sustainable adaptation strategies: The activities in this section are designed to increase resilience to climate change in coastal communities and also, albeit indirectly, in marine and coastal ecosystems. In years 2 and 3 the project provided training to strengthen stakeholder capacity. In year 3 it also conducted vulnerability assessments at the community level and developed collaborative adaptation plans for the CLPAs in Joal/Fadiouth, Sindia Nord, Sindia Sud, and Rufisque/Bargny. This year the project will focus on disseminating results and implementing the adaptation strategies identified and approved by the communities. To implement these strategies effectively, the project requires substantial resources, good communication and consultations at local level, the support of all stakeholders (local administrative services, local authorities, development partners, fishermen, fishmongers, fish processors, and service providers) and interventions at various levels (political, strategic, scientific, etc.). The project is therefore going to be concentrating on delivering activities on the adaptation plans within the limits of its capabilities (by implementing CLs, collaborative management plans, and promoting the good fishing practices identified). It will also work in synergy with all partners in the intervention sites and nurture advocacy to the political authorities, so that they devote more emphasis (financially and technically) to adaptation actions the project can not address financially. This will optimize the impacts of the strategies in use.

The results expected include:

- Adaptation plans implemented in three project intervention sites (Rufisque, Sindia Nord, Sindia Sud and Joal) and community resilience improved;
- Synergies/partnerships built with development partners to implement adaptation plans for improved community resilience;
- Increased resilience for women in the fisheries sector, who are a vulnerable group;

- Knowledge available on the climate change vulnerability levels of the communities based in project intervention areas (Foundiougne, Mbour, Djirnda, Cayar, Missirah, Bassoul and Niodior, Yenne/Dialaw);
- Adaptation plans developed and validated together with local communities (Foundiougne, Mbour, Djirnda, Cayar, Missirah, Bassoul et Niodior, Yenne/Dialaw).

Who is responsible for the activity in the *USAID/COMFISH* project: Véronique Faye, Vaque Ndiaye

Partner institutions and staff members involved: DPM, DEEC, DAMPC, COMNACC, CSE, CRODT, CLPA, WWF, APTE

Activity timeline:

Activities	Q1	Q2	Q3	Q4
Implementing 3 adaptation plans together with local government areas in the CLPAs in Rufisque, Sindia Nord, Sindia Sud and Joal	X	X	X	X
Establishing a system for monitoring and evaluating implementation of the 3 adaptation plans through the use of indicators	X	X	X	X
Building synergies for the mainstreaming of gender in order to put in place efficient adaptation strategies	X	X	X	X
Strengthening the capacities of CLPA stakeholders affected by the sustainable management plan on sardinella, and who have not yet received training on climate change adaptation (400 stakeholders)	X	X	X	X
Strengthening the capacities of facilitators (10 PERS) in CC and replicating the capacity strengthening sessions among stakeholders to disseminate the results and contribute in raising awareness	X	X		
Conducting vulnerability assessments and strengthening the capacities of stakeholders on the Foundiougne, Mbour, Djirnda, Cayar, and Yenne/Dialaw sites	X	X	X	X
Developing and validating adaptation plans for the Foundiougne, Mbour, Djirnda, Cayar, and Yenne/Dialaw sites	X	X	X	X
Making use of the results of the *USAID/COMFISH* project and those of its implementing partners to develop climate change adaptation strategies in the fisheries sector and the marine and coastal environment			X	X

Improving the scientific database to support policy and decision making and action plans: Building the capacities of the institutions and coastal communities in the Joal/Fadiouth, Foundiougne, Mbour, Sindia, Rufisque/Bargny, Yenne/Dialaw and Cayar sites by making information more easily accessible to them is a decisive way to improve their resilience. The project is going to provide stakeholders and partners the scientific data required to support policy and decision-making and to help communities implement sustainable adaptation strategies. The project activities this year under this section are listed in the table below.

The results expected are:

- Available knowledge on climate change impacts on the space and time distribution of stocks, and particularly on sardinella stocks;

- Available information on the overall dynamics of the coastline from Cayar to Sine-Saloum.

Who is responsible for this activity in the *USAID/COMFISH* project: Véronique Faye, Vaque Ndiaye, Amadou Ngaïdo

Partner institutions and staff members involved: DPM, DEEC, DAMPC, COMNACC, CSE, CRODT, CLPA, WWF, APTE

Activity timeline:

Activities	Q1	Q2	Q3	Q4
Studying the erosion and flooding trends on the Cayar coastline in Sine-Saloum	X	X	X	
Analyzing the space and time dynamics of upwelling indices on Senegalese coasts and the correlation with migration and the spatial distribution of round and flat sardinella stocks	X	X	X	X

Outputs expected for this component

- Evaluation report on the dissemination exercise;
- Evaluation report on the implementation of CLPA adaptation plans in Rufisque/Mbargny, Joal/Fadiouth, Sindia Nord and Sindia Sud;
- Progress report on the Fisheries/Climate Change consultation platform;
- Report on community vulnerability to climate change in the project zone;
- Adaptation strategies and action plans;
- Study report on the evolution of the Cayar coastline in Sine-Saloum;
- Analytical report on the space and time dynamics of upwelling indices.

3.2.4. Increased social and economic benefits to artisanal fishing communities and increased climate change resilience

This component will tackle two aspects: analysis of the value chain and improvement of fishery product processing and storage techniques in the project intervention sites.

Analysis of the value chain: Value chain analysis identifies the entry points and opportunities for increasing profits and equity throughout the value chain (from the fish landing point to the processing sites, and from there to the sales outlets). The *USAID/COMFISH* project will put a particular emphasis on increasing added value for small-scale fisheries and artisanal women processors. This study is therefore going to analyze in depth the value chain of major artisanal fishery products in the project intervention area (Petite Côte, Saloum and the Cayar zone in particular). It will be done on the sardinella species, together with the USAID/Yajeende project, FIT, and CRODT, so that its findings are used in the current management plan on this species.

The study will address the problems in sardinella fisheries looking at processing, marketing, and seasonal fishing patterns. It will also include gender aspects and the particular needs around fishery products in the economic sectors to be addressed.

Improving artisanal fisheries techniques: To enable artisanal women fish processors to modernize their work tools, increase their production capacity, improve their working conditions and make more profit from their activities, the *USAID/COMFISH* project began from year one to improve the ways in which artisanal fishery products in the Cayar area are processed and stored. The flagship activity in this initiative is the modern artisanal fish processing plant (sardine) that was established

to help develop a local label for artisanal fish processing products from Cayar. The activities began with a diagnosis of the barriers to good fish processing practices. Then an action plan was developed to improve the techniques in use. The activities this year will finalize the establishment of the modern processing unit in Cayar. They include:

- Making the processing unit functional;
- Giving the women stronger management skills to run the modern processing unit;
- Assisting with the marketing of products and developing a marketing strategy;
- Promoting climate change adaptation (biogas and wind energy).

Expected results:

- Study conducted on sardinella value chain;
- Processing unit finalized and inaugurated;
- A well-functioning unit;
- An ongoing labeling process;
- Women receiving management training to run the unit properly;
- Newly identified renewable energy sources that further strengthen women's resilience to climate change.

Who is responsible for the activity in the *USAID/COMFISH* project: Khady Sané DIOUF, Karen Kent

Partner institutions and staff members involved: APTE, UCAD, ITA, DITP, CLPA, Women fish processors, DPM, consultants

Activity Timeline

Activities	Q 1	Q2	Q3	Q4
Conducting a study on the sardinella value chain	X	X		
Finalizing work on the modern processing unit	X			
Supporting the equipment of the modern processing unit	X	X		
Supporting technical oversight of the modern processing unit	X	X	X	X
Conducting microbiological analyses on the products processed in the unit		X		
Organizing training sessions on HACCEP (Technical quality control)		X		
Organizing training on management and accounting		X		
Organizing training on life skills	X	X	X	X
Supporting efforts to establish the unit's management committees	X	X		
Supporting the hygiene committee to function properly	X	X	X	X
Supporting the revolving credit fund to function properly	X	X	X	X
Organizing market survey tours across the country		X	X	
Developing a marketing strategy		X	X	
Providing support for participation in an agribusiness trade fair			X	X
Providing support for the establishment of a biogas system	X	X	X	X
Providing support for the establishment of a wind energy system	X	X	X	X

Outputs:

- Reports on the unit development process
- Reports on the training sessions conducted
- Report on the sardinella value chain

3.2.5. Communication activities

The *USAID/COMFISH* project's communication component is designed primarily to support the delivery of collaborative management plans for a sustainable fisheries future in Senegal by contributing to raise awareness and change behavior among grassroots communities via different channels, one being community radios, to communicate with key partners and other stakeholders using the media and other communication channels, and to enhance the project's profile with various tools.

In the first three years, the project designed a communication strategy, organized an official launch event, developed communication materials to raise its profile (road signs, flyers, kakemonos, banners, videos, etc.), and disseminated Local Agreements and information on other major issues about fisheries via the community radios in the areas covered by the Joal, Mbour and Sindia CLPAs.

Based on the objectives above and the priorities in the communication strategy, communication activities in year four will mainly be to continue and reinforce communication with stakeholders in grassroots communities in order to develop and implement collaborative management plans; to continue raising public awareness of the project's major activities and flagship results; and to continue building the communication skills of key stakeholders. The project will also continue the routine tasks of publishing bi-weeklies and success stories, producing audiovisuals on key project activities (videos), and talking about the project's work via Internet-based mediums such as the usaid.gov project's website, the CRC/URI website and social networks (e.g. Facebook and You tube).

Supporting the delivery of management plans : In order to start and/or continue disseminating Local Agreements and establishing collaborative management plans, the project will continue and/or enhance communication with local stakeholders on the ground via community radios in the CLPAs based in Joal, Mbour, Sindia (nord and sud), Rufisque/Bargny, Yenne/Dialaw and Cayar. To do this, the project plans to renew the MOUs it signed in year three with community radio stations like Class A (Joal), Dunya (Mbour), and Kondafé (Ndayanne/Sindia). It will also sign new MOUs with other community radios in Rufisque/Bargny, Yenne/Dialaw (Djoko FM) and Cayar, where a new community radio exists thanks to WWF.

In addition to these, the project will use three to four other networks (local private TV channels), including RDV *Dunya* in Mbour, to strengthen communication with stakeholders in year four, as recommended in June 2013 during the review of MOUs signed with the first three community radio stations above.

In the second and fourth quarters of 2014, there will be two other reviews on the MOUs signed with other radio and television networks to assess how well the contracting parties (*USAID/COMFISH* Project partners and radios) are implementing the MoUs and the impact these radio/TV programs are having on people's behavior.

Another project target in year four is to improve the quality of communication through community radios and increase its impact on target audiences. In this regard, the project and its partner radio stations will train radio extension workers/facilitators on the techniques of presenting radio programs.

Disseminating the fisheries sector women's declaration*:* As in year three, the project will work with partner community radios and other media outlets to disseminate the declaration by women in the fisheries sector. This will help raise awareness of women's interests, concerns and rights in the sector and/or highlight the interplay between women's challenges and problems in the fisheries sector. Together with these partner radios and other media outlets that have wider audiences, the project will organize special programs on the women's declaration to let many more people know about it. Every two months, it will bring women leaders into the studio to run their own radio programs on the women's declaration. The project plans therefore to involve these women in the training sessions on radio broadcasting techniques that it will organize this year for its extension workers/facilitators.

Enhancing project visibility: To continue enhancing visibility for its work and ownership by local partners and beneficiaries, the project will endeavor to improve its presence in the Senegalese media, to produce print and audiovisual materials that document its key achievements and successes, and to raise its profile on the Internet and via social networks.

Improving the project's presence in the media**:** To help achieve this objective, the project plans to sign an agreement with one national television network (RTS/TFM or RDV) to cover major project activities and to produce and broadcast at least three feature reports that will be handed to the project in DVD format. A press trip will also be organized in the third or fourth quarter of year four with about twenty journalists from various national and local media outlets in Senegal (radio, TV, print and online media). This press trip will be an opportunity to enhance the project's public profile and highlight the problems it tackles in the fisheries sector. Likewise, media inserts will be published in two popular local newspapers (Le Soleil and L'Observateur) to showcase some key achievements of the project. The project will organize programs not just in community radios but also with other national radio or television networks on major issues such as climate change. It will produce a video report on climate change and at least six radio programs on climate change impacts and adaptation strategies in coastal communities.

Audiovisual products and publications: Apart from using the media, the project will produce print and audiovisual materials to document its successes and other key issues.

The print materials will include at least three success stories on the project's major achievements in FY14, as well as **brochures** and **posters** to better present the accomplishments of the past three years to current and potential partners. Other publications may also be released based on the project's progress and accomplishments.

The audiovisual productions planned for this year include at least three videos on the results, steps or key issues of the project as well as a photo album on various issues (e.g. fishing gear, docks, and fish species). These print and/or audiovisual materials and other types of information mediums (fact sheets) will be used on the project's web page still under construction at usaid.gov, on the CRC/URI website, and social network interfaces (Facebook and YouTube).

Strengthening capacities in communication: Apart from enhancing the project's public profile and supporting activities on the ground, the communication component will strengthen capacity for project staff and the project's communication partners, as well as develop the skills of the communication officer.

- Strengthening capacities in communication for staff: To ensure that project staff members are better prepared to communicate about the project, there will be two training sessions in the second quarter. One will be on how to present the project via PowerPoint and the other on how to answer questions from the press.

- Complying with USAID procedures in communication: To enable partners to better comply with USAID communication procedures and facilitate communication between the project, USAID and partners, a training/retraining exercise will be organized for all project partners during the second quarter of year 4.
- Developing the skills of the project's communication officer: To enable the Communications Officer to strengthen his expertise and improve the quality of support he provides to the project, a training course will be organized for him in one of *USAID/URI*'s flagship projects in communication. This training will acquaint him with other successful communication approaches or experiences used by other USAID or URI projects.

- **Expected results**
  - 240 radio programs prepared
  - 24 TV programs organized and broadcast through other networks
  - 4 programs done on the women's declaration
  - 3 success stories written
  - a brochure is produced
  - one poster is produced
  - 3 videos are produced
  - 18 programs on climate change are produced with community radios
  - 1 video on climate change is produced
  - 1 Facebook Page on the project is opened and updated regularly
  - the project's web page on usaid.gov is up to date
  - 1 photo report on the project is done
  - 6 inserts are published in 2 newspapers
  - 4 publications are produced
  - 6 programs are produced on local knowledge sharing
  - Calendars and diaries are made
  - 12 staff members are trained in communication
  - 12 partners are trained on USAID communication procedures

Who is responsible: Frédéric BAMBARA, Amadou Ngaïdo

Colleagues involved in implementing the activities above: Vaque NDIAYE, Niane, relays, Khady Sané Diouf, Saloum Cissoko, Facilitators

Institutions involved: GREP, CLPA, AMARC, DPM, WWF, Alliance, community radios

Activity timeline:

Activities	FY14			
	Q1	Q2	Q3	Q4
Signing or renewing and implementing contracts with community radio stations to design and broadcast the project's key issues	X	X	X	X
Signing MOUs with 4 local television channels to cover and broadcast programs on the project's key areas of interest	X	X	X	X
Organizing 2 training sessions for CLPA/extension workers in radio communication and programming		X		X
Organizing 2 evaluation missions on MOU implementation with the radios/television networks and the impact of their programs on people's behavior		X		X
Pursuing the dissemination of the women's declaration via media outlets and other communication channels	X		X	
Drafting and disseminating at least 3 success stories on the project		X	X	X
Designing and producing at least 02 brochures/posters presenting the project	X		X	
Designing and disseminating at least 3 videos on the project's major activities/results	X		X	X
Signing an MOU with a national television network (RTS or RDV) for coverage and dissemination of the project's flagship activities	X			
Reporting the impacts of CC and the adaptation strategies used in vulnerable sites				
Organizing a press trip on the project's results/areas of activity			X	
Facilitating the organization of at least 2 radio or television programs on the project's key interest areas with national media		X	X	
Producing a photo album on the areas of focus and major activities of the project		X	X	
Promoting the project's activities on social media networks (Facebook, You Tube, Twitter)	X	X	X	X
Contributing to update the project's web page on USAID.GOV	X	X	X	X
Organizing training for project staff on how to present the project (PowerPoint or interviews)		X		
Organizing a retraining session for key project partners on USAID branding and marking procedures		X		
Organizing a refresher course for the project's communication officer in one of the URI project's in Ghana or in Gambia or at URI on the success stories of these projects			X	

Branding: In compliance with its branding and marking strategy approved by USAID/Senegal, the *USAID/COMFISH* Project will use different mediums to communicate with different audiences. These mediums include different types of publications, including materials for Information, Education and Communication (IEC): brochures, posters, leaflets, factsheets, guidance notes, etc.; PowerPoint presentations, banners, information and awareness meetings, and mass media including community radios. The main target audiences are active participants or local fishing communities, local and national fisheries administrative services, national policy makers, local NGOs and donors.

In accordance with the branding strategy, all the project's communication mediums will highlight the generous support of the American people through USAID. The partnership with and support of the Ministries of Maritime Affairs and Fisheries, Environment, local services for fisheries, and the

agencies and departments involved in various project activities will also be acknowledged. The publications to produce and the type of print format expected are outlined in the following table.

Synopsis of the communication products for year 4 in compliance with USAID Marking/Branding rules and procedures (ADS 320/AAPD 05-11)

Products	Type of USAID marking	Marking code	Targets
Video/film	USAID logo (associated with another if necessary)	M	Presentation to a Senegalese and non-Senegalese audience
Success-stories	USAID logo (associated with another if necessary)	M	Presentation to a Senegalese and non-Senegalese audience
Brochures	USAID logo (associated with another if necessary)	M	Presentation to a Senegalese and non-Senegalese audience
Press releases published during key project meetings	USAID logo (associated with another if necessary)	M	Presentation to a Senegalese and non-Senegalese audience
Technical reports	USAID logo (associated with another if necessary)	M	Presentation to a Senegalese and non-Senegalese audience
Communication workshop reports	USAID logo (associated with another if necessary)	M	Presentation to a Senegalese and non-Senegalese audience
Banners	USAID logo (associated with another if necessary)	M	Presentation to a Senegalese and non-Senegalese audience
Web articles	USAID logo (associated with another if necessary)	M	Presentation to a Senegalese and non-Senegalese audience
Factsheet	USAID logo (associated with another if necessary)	M	Presentation to a Senegalese and non-Senegalese audience
Posters	USAID logo (associated with another if necessary)	M	Presentation to a Senegalese and non-Senegalese audience
DVD	USAID logo (associated with another if necessary)	M	Presentation to a Senegalese and non-Senegalese audience

Marking codes: M = Marking, U=no marking, PE = Presumed exception, W=waiver

4. PROJECT MANAGEMENT

4.1. STRATEGIC PARTNERS AND BENEFICIARIES

Although the University of Rhode Island (URI) is the main implementing and management organ of the *USAID/COMFISH* project responsible for financial reporting to USAID/Senegal, the project's main

clients are public governance bodies, research institutes and training institutions. The only way to ensure the long-term success and sustainability of fishery reforms in Senegal is to ensure that national agencies and their local services acquire the capacity at the end of the project to sustain the commitment and support (political, technical and financial) to implement the reforms and new approaches made throughout the project. The *USAID/COMFISH* project will continue to strengthen these structures and agencies through a learning-by-doing approach. Similarly, the project will work with civil society and the private sector that also form a key link to sustainability. Other regional, national and local organizations will also play a key role in building partnerships for the implementation of project activities. The project's major implementing partners and their roles in the activities planned for year four are described below. Most of these institutions will receive funding as implementing partners of the *USAID/COMFISH* project to enable them to perform a number of activities mentioned in the work plan above.

The Ministry of Fisheries and Maritime Affairs (MPAM): The project works with the Ministry of Fisheries and Maritime Affairs (responsible for the management of fisheries resources in Senegal) through its technical departments: particularly the Directorate for Marine Fisheries (DPM) which is responsible for the establishment and implementation of management rules and the local institutions involved in collaborative management. Where necessary, the project works also with the Directorate of Fisheries Processing Industries (UITP), the Directorate of Fisheries Protection and Monitoring (DPSP), and the Studies and Planning Unit (CEP) which occupies a cross-cutting role by virtue of the fact that it is attached directly to the Cabinet.

The Ministry of Environment and Sustainable Development (MESD) is responsible for the management of protected areas, including some coastal and marine parks (the Department of National Parks), and the coordination of initiatives and responses to climate change through the Department of Environment and Classified Establishments (DEEC). Their role in this project has been equally important concerning marine conservation and climate change. In the early years of the project, they played a crucial role in finalizing and enabling the formal adoption of the national strategy on MPAs. In year four, this institution will be a key partner in the activities related to climate change and biodiversity conservation. WWF, CSE and APTE will work closely together with the Department on these activities. In addition, the Department of Community Areas (DAMPC) will be involved in many activities for marine and coastal ecosystem management. It is responsible for the development and implementation of state policy in the field of planning, management and development of an integrated and coherent national network of community areas, marine protected areas and artificial reefs.

University Institute for Fisheries and Aquaculture (IUPA): IUPA is a regional training and research institute at the Cheikh Anta Diop University (UCAD) which specializes in fisheries and aquaculture. Their role in the project will be to help implement strategies for human resource development, applied research and technical studies, as well as to develop and pilot an action research initiative. This initiative will include research, the Fisheries Administration, the University, civil society, and other stakeholders. IUPA will be involved in conducting a number of important meetings and in the process of developing collaborative management plans.

Ecological Monitoring Center (CSE): The mission of the Ecological Monitoring Centre (CSE) is to collect, process, analyze and disseminate data and information on the natural resources in a given sector using spatial technology to improve the management of natural resources and the environment. The CSE will be involved in the development of a GIS database and maps for the project and in a certain number of technical studies. These include: the integration of local ecological knowledge in the characterization of selected fisheries during efforts to develop

management plans; certain aspects of the vulnerability assessment; planning for adaptation to climate change and the identification of areas or effects of biological significance. CSE plays an important role in the spatial mapping of the country's main stocks as well as in the activities of the different donors engaged in the fisheries sector. Its activities cover the location and jurisdictions of existing CLPAs and the local governance administrations in the project's interventions areas.

Oceanographic Research Center in Dakar-Thiaroye (CRODT): CRODT is under the supervision of the Institute for Agricultural Research in Senegal (ISRA). CRODT will summarize the literature on the status of fish stocks and related workshops. It will assess fish stock information management and needs, and also be involved in assessing climate change vulnerability of fish stocks in species such as sardinella and demersal. Together with DPM, IUPA, and CSE, CRODT will form a hard core in the implementation of reliable information and management of fishing capacity systems in Senegal, as well as in the establishment of a program on fisheries research partnerships in Senegal to be initiated this year by the project.

World Wildlife Fund (WWF): The WWF Program's West Africa Marine Ecoregion Office promotes the sustainable management of natural resources in West Africa. Its conservation program is people-centered to ensure that all interventions address local needs and are implemented with the involvement of a wide range of stakeholders from the grassroots to the highest level of decision-making. WWF is an implementing partner in the fisheries initiatives of USAID's Wula Nafaa Program, and the University of Rhode Island's lead implementing partner for the USAID's Ba Nafaa project for West Africa, which is based on sustainable fisheries in the Gambia. Together with DPM, DAC, CRODT, ENDA and civil society, WWF will coordinate the implementation of activities on marine protected areas and contribute to important activities for strengthening institutional and stakeholder capacity. WWF will also help in developing the gender strategy and the institutional capacity strengthening strategies of CLPAs.

The Fédération Nationale des GIE de Pêche (FENAGIE): Since 1990, FENAGIE works to strengthen organizational capacities and fishery product processing techniques by building infrastructure and production units for women, supporting the creation of credit lines, and improving the living conditions of those who work in the fisheries sector. FENAGIE will take part in training professional organizations in leadership and literacy, and in finding ways to improve the artisanal processing value chain.

Assainissement Pêche Tourisme Environnement (APTE): comprises scientists committed to sustainable development through sanitation, fisheries, tourism and environment, and the mainstreaming of gender. APTE will help develop sustainable strategies for strengthening the role of women in decision-making. APTE will also take part in developing artisanal fisheries products, stakeholder capacity building, including women in leadership, and in studies on MPA effectiveness in biodiversity conservation and support to the development of eco-tourism in MPAs.

The roles and responsibilities of the various groups mentioned above will be refined progressively as the project activities progress. These roles are also going to evolve according to identified priorities and the effectiveness required to conduct activities. With time other relevant local institutions can be identified and involved as implementing partners. Although the number of partners involved may seem high, a well-coordinated inclusive approach is going to produce better results and provide opportunities for learning and experience sharing.

4.2. OFFICE STRUCTURE, STAFF AND ORGANIZATIONAL CHART

The project is implemented by a local staff team under a Program Director at the Dakar-based National Program Coordination Unit (UCNP). The UNCP office is a legal entity of the University of Rhode Island (URI), with a highly decentralized financial management system for local transactions (purchases and contracts) except for the rules and procedures governing sub-contractors based in the United States and international staff. The program's coordination responsibilities are decentralized as well. The UCNP and its Director are responsible for developing and implementing approved Annual Work Plans and achieving performance indicators. UCNP is USAID's main point of contact. It is responsible also for developing the project's technical reports, elaborating terms of reference for local consultants and partners, and supervising and managing local staff. Since URI is responsible for the project's financial reporting and achievement of performance indicators, it will provide technical and administrative support as required and supervise the local team. A local office is based in Joal in order to ensure closer monitoring and better coordination of field activities. The Joal site was chosen for two strategic reasons:

- It is at the center of the project intervention sites (Cayar, petite côte, Foundiougne and Casamance).
- Joal is the location for the regional inspectorate for fisheries in Thies, which makes it possible to collaborate better with the technical services for fisheries.

The project's implementing partners are trained progressively in performance management, on the TRAINET reporting tool, and the USAID rules and procedures for using markings/logos, the graphic charter and environmental compliance requirements. Under the supervision of the Coastal Resources Center (CRC), UCNP submits project reports to USAID/Senegal, while the URI submits official financial reports. At the request of USAID, the project team also provides expenditure estimates (accumulated) and related budget analysis.

CRC/URI and other foreign technical experts report to Dr. James Tobey, who is the manager of the *USAID/COMFISH* project at the Coastal Resources Center (CRC). The terms of reference of these experts are to be developed in close consultation with the Project Director. However, during their missions in the country, these foreign experts work under the Project Director. Subcontracts over US$250,000 are handled financially from URI and smaller contracts are managed by UCNP. The diagram below presents the project's organizational chart.

USAID/Senegal is invited to work planning sessions to contribute in developing the annual work plan and monitoring plan performance. The Project Director submits work plans and annual results achieved to the Agreement Officer Technical Representative for review, comments and approval. USAID is invited also to some major events and encouraged to take field visits. The Project Director sends periodic reports to USAID/Senegal to inform them on progress, challenges and achievements.

Regular project management and annual reporting activities will be carried out by the Coastal Resources Center (CRC) team and the *USAID/COMFISH* project coordination team. The services and reports to be produced include:

- Preparation and submission of three quarterly activity reports and one quarterly/annual report to the Agreement Officer Technical Representative (AOTR) at USAID/Senegal. These reports will be written in French and English.
- The fourth quarterly report (July-September) quarterly/annual report will include information about the said quarter, as well as a section that summarizes the achievements and challenges of

the year. This 4th quarter report corresponds to the annual report. It provides more details on the results achieved in the year of implementation and contains a table on the level of achievement of annual indicators on the indicators monitoring plan and annual targets for the following year.

- Data collected, analyzed and reported to USAID on indicators and targets for monitoring the project performances submitted in quarterly reports.
- Submission, by the Coastal Resources Center, of the annual work plan in French and English for approval by USAID.
- Provision of information for USAID's TRAINET system by producing regular and timely data on all training conducted by the project.
- Submission of monthly financial reports by *USAID/COMFISH* to the Coastal Resources Center.
- Submission of CRC/URI expense reports to USAID.

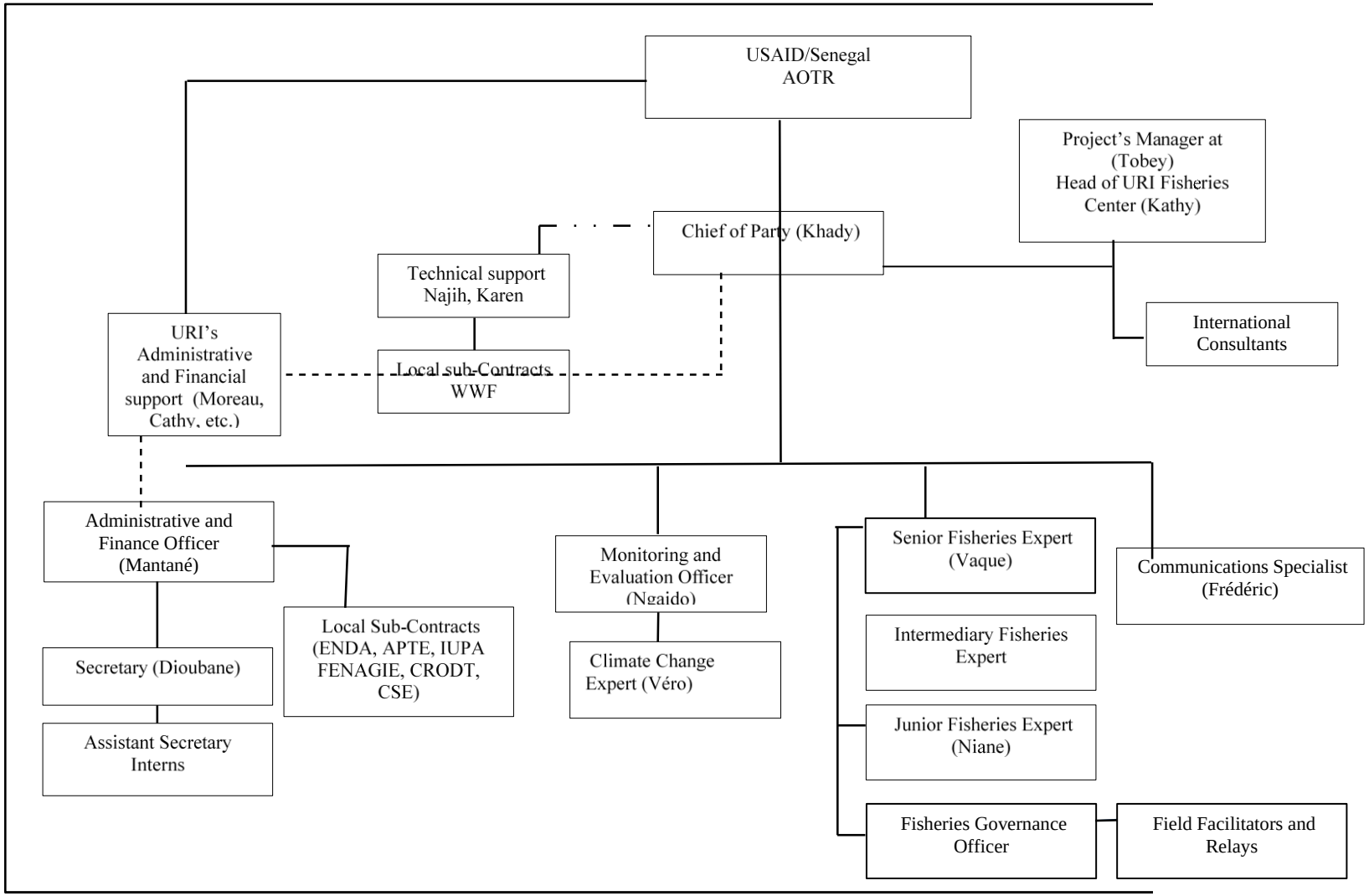


Figure 15: USAID/COMFISH project organizational chart

4.3. ACTIVITY TIMELINE: ROUTINE MANAGEMENT AND ADMINISTRATION

Activities	FY14				Who is responsible
	Q1	Q2	Q3	Q4	
Routine reporting					
Quarterly and annual reports to USAID	Jan.	April	Jul.	Oct.	KS/VN
Entry of training data into USAID's TraiNet system					AN
Submission of annual work plan to USAID for approval				Sept.	JT
Financial management					
USAID/COMFISH monthly financial reports to CRC					MD/CD/CM
Quarterly expense reports (accumulated) from CRC/URI to USAID					MD/CD/CM
Quarterly financial information from SF 425 to AO and AOTR					MD/CM

KS - Khady Sané, AN: Amadou Ngaïdo; MD: Mantané Diop
JT-Jim Tobey (CRC), CD: Cathy D. CRC), CM – Cindy Moreau

4.4. PERFORMANCE MANAGEMENT

According to the USAID ADS 203 Guide, the project's Results Framework and Performance Management Plan (PSP) must be submitted together with the annual work plan. The objective of the performance management plan is to evaluate effectiveness and measure how closely the activities outlined can contribute to achieve expected results. The PSP provides the basis for ongoing performance management, and for adaptive management of project implementation so that there is comprehensive learning on ecosystem-based management and results reporting to USAID. To monitor the level of achievement for some project indicators, such as the effectiveness of tools for CLPA capacity building and increased socio-economic benefits for the communities benefitting from project support, baselines were established at the beginning of the second year.

Semi-annual partner meetings are required to improve activity coordination. The project also organizes an annual activity planning workshop. During these meetings, the partners discuss the main achievements, challenges, and experiences. They also plan activities for the next year. These meetings are good opportunities for players to collect information and assess progress and the level to which results have been accomplished. The Director supervises the monitoring and evaluation officer on the field who keeps all the records and files/folders on evidence that results have been achieved and performance indicators met satisfactorily. She also does quality control and verifies compliance with the procedures.

Monitoring and evaluation timeline:

Activities	FY14				Local partners
	Q1	Q2	Q3	Q4	
Project activity annual planning workshop				X	All
Semi-annual partner meeting, learning retreat and annual activity planning with implementing partners, USAID and a number of donors and other projects		X			All
Quarterly reporting on monitoring and evaluation to USAID	X	X	X		All
Organizing two partner and project staff training workshops on monitoring and evaluation		X	X	X	All
Identifying CLPA stakeholders in Dakar Ouest, Hann, Thiaroye and all UGD sites (Zones North and South)	X	X			All
Identifying CLPA households in Dakar Ouest, Hann, Thiaroye and all UGD sites (Zones North and South)	X	X			All
Supporting staff and stakeholders on the field to conduct monitoring activities properly (monthly mission)	X	X	X	X	All
Monitoring the quality of data with partners	X	X	X	X	All
Monitoring work plan activities and adjusting indicators on an ongoing basis	X	X	X	X	All
Periodic work plan evaluations	X	X	X	X	All
Bringing Staff from Joal Fadiouth to monthly coordination meetings and the presentation of performances during coordination meetings	X	X	X	X	All
Organizing a training course for the monitoring and evaluation officer in one of the URI projects funded by USAID			X		All
Organizing facilitators' coordination meetings	X	X	X	X	All

Who is responsible for implementing this section: Amadou Ngaïdo

Persons involved: Khady Sané Diouf, Jim Tobey, Vaque Ndiaye, Saloum Cissoko and Facilitators

Apart from these activities, the project results framework and indicators for each result are provided in Annex 1, which also summarizes the performance management plan for this year 4 work plan and the targets to be met during the entire project. The specific monitoring outcomes, targets and indicators are reviewed annually to determine whether the targets and/or the project strategy need adjustments based on the experiences and lessons learned during the implementation phase.

4.5. ENVIRONMENTAL MONITORING AND PERFORMANCE

The mission approved the environmental monitoring plan in FY12 (Annex 2). This document includes an environmental monitoring and mitigation plan for project activities. Since most project activities are based on capacity building, the plan needs not be revised. Year four will basically continue the activities initiated in year 3. The quarterly reports and annual report will include an environmental mitigation and monitoring report.

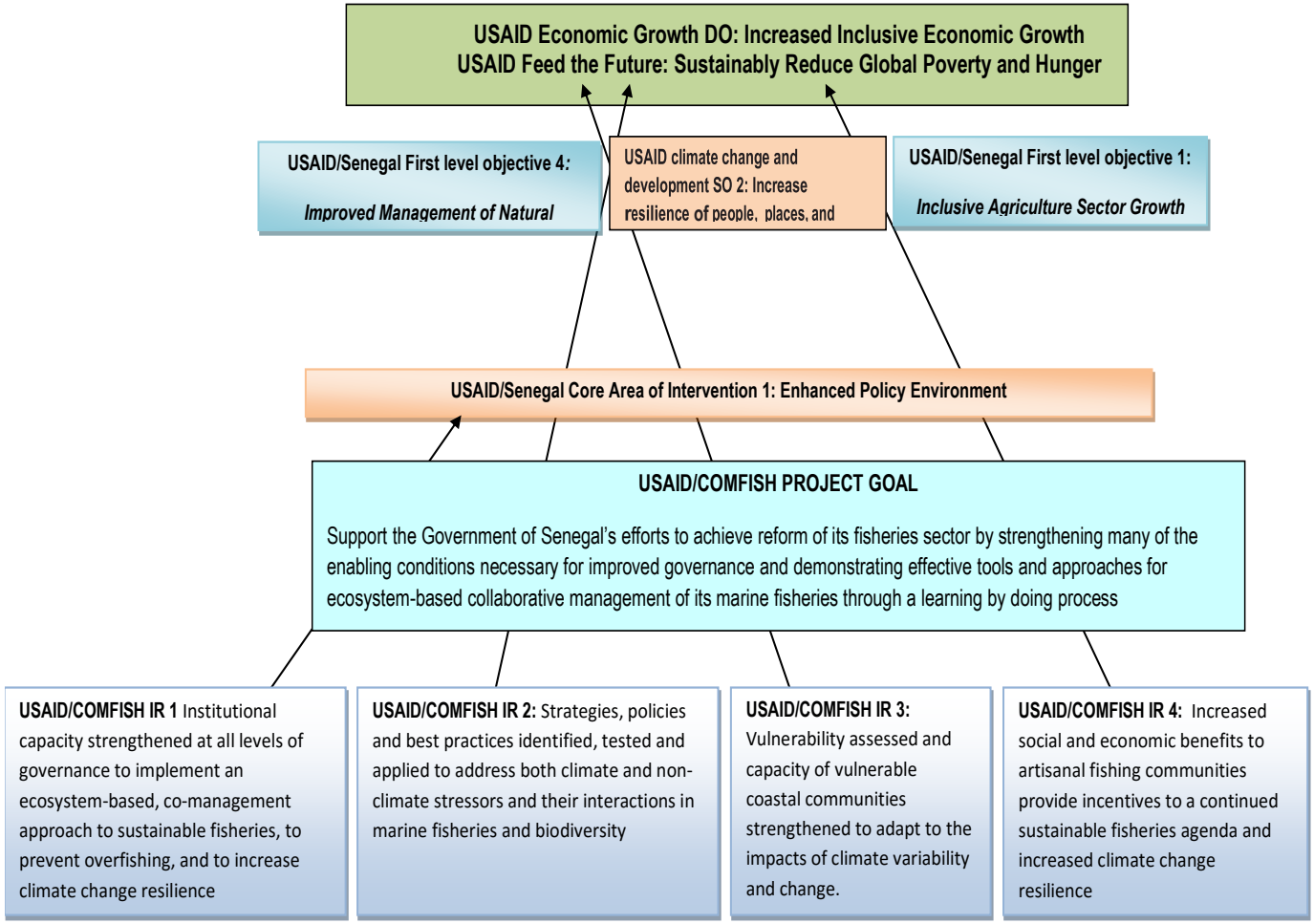
5. BUDGET

FY14 Budget by Program Element	Requested	Cost Share	Total
Institutional Capacity Building	$470,819	$95,837	$566,655
Policies and Strategies	$571,278	$186,341	$757,619
Climate Change	$286,035	$5,775	$291,810
Socio-Economic Benefits	$90,663		$ 90,663
Communications	$133,442	$53,324	$186,767
Project management	$776,827		$776,827
Total	$2,329,063	$341,277	$2,670,340
FY14 Budget by Object Class Category			
URI Personnel	$193,484	$170,794	$364,278
URI Fringe	$102,321	$ 68,318	$170,639
In country staff and consultants	$656,164	$ 12,500	$668,664
Subcontracts	$275,001	$ 68,750	$343,751
Other direct costs	$175,904		$175,904
Travel	$502,336		$502,336
Total Direct Costs	$1,905,209	$320,362	$2,225,571
Indirect	$423,854	$20,914	$444,769
Total	$2,329,063	$341,277	$2,670,340

6. ANNEXES

ANNEX 1: USAID-URI COMFISH RESULTS FRAMEWORK

The Results Framework below shows the overall intersection of *USAID/COMFISH* Intermediate Results (IR) with USAID/Senegal program objectives.



PMP baseline and target values

USAID/COMFISH PMP has fifteen (15) indicators selected from Feed the Future, Global Climate Change and Biodiversity programs of USAID (shaded grey in the table below). In addition, there are ten (10) indicators developed by the *USAID/COMFISH* project (rows not shaded).

Indicator	LOP Target	FY13 Target	FY13 Actual	FY14 Target	FY15 Target	Comments
Result 1: Institutional capacity strengthened at all levels of governance to implement an ecosystem-based, co-management approach to sustainable fisheries, to prevent over-fishing, and to increase climate change resilience;						
1. Increase by 75% of the management effectiveness composite index score of CLPAs in *USAID/COMFISH* sites by 2016	Increase of 75% (0.07)	NA	NA	Increase of 40% (0.056)	NA	Effectiveness criteria used by PRAO were added to the criteria developed by *USAID/COMFISH*
2. Number of individuals who have received USG supported short-term agricultural sector productivity or food security training (FTF 4.5.2-7)	4, 790	2, 090	1,840	1, 900	100	
3. Number of written and/or audiovisual productions intended for capacity building of co-management institutions and fisheries stakeholders	23	6	6	10	2	
4. Number of research and educational organizations, government agencies, and NGOs who have strengthened their capacity as a result of USG assistance	20	17	17	18	19	
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						
5. Number of action plans and/or projects developed to support the process of fisheries management	13	7	6	6	0	
6. Number of scientific reports contributing to the management plans for Sustainable Management	16	11	10	5	0	

Indicator	LOP Target	FY13 Target	FY13 Actual	FY14 Target	FY15 Target	Comments
Units (UGD)						
7. Number of lines of synergies created in the process of establishing Sustainable Management Units (UGD	9	4	3	3	1	
8. Number of policies/regulations/administrative procedures analyzed (FTF 4.5.1-24) stage 1)	48	13	13	18	4	
9. Number of policies/regulations/administrative procedures drafted and presented for public/stakeholder consultation (FTF 4.5.1-24 stage 2)	22	6	10	9	2	
10. Number of policies/regulations/administrative procedures presented for legislation/decree (FTF 4.5.1-24 stage 3)	20	6	11	9	1	
11. Number of policies/regulations/administrative procedures prepared with USG assistance passed/approved (FTF 4.5.1-24 stage 4)	18	5	11	8	1	
12. Number of policies/regulations/ administrative procedures passed for which implementation has begun (FTF 4.5.1-24 stage 5)	12	4	3	3	3	
13. Number of new technologies of fisheries management established	12	4	3	4	3	
14. Number of fisheries stakeholders who have established new concerted rules of fisheries resources management	47, 940	15, 000	11, 663	10, 000	2, 000	Stakeholders of Cayar, Rufisque/Bargny and Yenne/Dialaw's CLPAs Figure to review
15. Number of farmers and others who have applied new technologies or management practices as a result of USG assistance (FTF 4.5.2-5)	40, 000	20, 940	20, 940	32, 602	40, 000	Stakeholders of Cayar, Rufisque/Bargny and Yenne/Dialaw's CLPAs Figure to review

Indicator	LOP Target	FY13 Target	FY13 Actual	FY14 Target	FY15 Target	Comments
16. Number of hectares of biological significance and/or natural resources under improved natural resource management (Biodiversity indicator 4.8.1-26)	827, 555 ha	327, 104 ha	497, 555 ha	395, 952 ha	330,000 ha	Area covered by the fishing zone of Mbour, Joal, Sindia, Rufisque, Yenne and Cayar CLPA
17. Number of hectares in areas of biological significance under improved management as a result of USG assistance	413, 655 ha	34, 500 ha	41, 500 ha	62, 055ha	300, 000 ha	FY 13 actual: Area covered by MPAs of Cayar, Joal and Bamboung
Result 3: The vulnerability of coastal fishing communities are assessed and adaptation strategies are implemented to increase resilience to the impacts of climate change						
18. Number of people receiving training in global climate change as a result of USG assistance	2, 400	950	835	660	100	
19. Number of climate change vulnerability assessments conducted as a result of USG assistance	6	3	3	3	0	
20. Number of laws, policies, strategies, plans, agreements, or regulations addressing climate change (mitigation or adaptation) and/or biodiversity conservation officially proposed, adopted, or implemented as a result of USG assistance	12	3	3	6	3	3 adaptation plans implemented 3 adaptation plans proposed
21. Number of stakeholders with increased capacity to adapt to the impacts of climate variability and change as a result of USG assistance	11, 290	2, 090	6, 723	8, 500	0	Beneficiaries of vulnerability assessments and adaptation plans to climate change
Result 4. Increased social and economic benefits to artisanal fishing communities provide incentives to a continued sustainable fisheries agenda and increase climate change resilience						
22. Number of food security private enterprises (for profit), producers organizations, water users associations, women's groups, trade and business associa-	52	32	34	44	48	

Indicator	LOP Target	FY13 Target	FY13 Actual	FY14 Target	FY15 Target	Comments
tions, and community-based organizations (CBOs) receiving USG assistance						
23. Number of rural households benefiting directly from USG interventions	10, 331	5, 449	8, 363	10, 100	10, 331	Households of Mbour, Joal/Fadiouth, Sindia, Rufisque/Bargny and Yenne Dialaw's CLPAs beneficiaries of Local Agreements. In addition, households of Rufisque / Bargny, Yenne / Dialaw and Sindia's CLPAs are beneficiaries of vulnerability assessments and adaptation plans to climate change
24. Fishery sector stakeholders in the project sites perceive that their welfare is better off due to USG assistance (this is not an FTF indicator, but measures project impact)	NA	NA	Baseline	Survey	NA	Survey in FY 14 and in early FY2016

ANNEX 2: EMMP: MITIGATION PLAN

Category of Activity from Section 4 of EG IEE	Describe specific environmental threats of your organization's activities	Description of Mitigation Measures for these activities as required in Section 4 of the IEE	Who is responsible?	Sources of verification	Monitoring Method	Frequency of Monitoring
1. Education, technical assistance, training, etc.	No environmental impacts anticipated as a result of these activities.	Education, technical assistance and training about activities that inherently affect the environment includes discussion of prevention and mitigation of potential negative environmental effects.	COP	Education, technical assistance, training and other materials and reports	Review of materials	Quarterly
2. Reduce post harvest losses and improve product quality	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	For improved small scale landing, processing and product marketing facilities, including rehabilitation of existing facilities, and for construction of facilities in which the total surface area disturbed is less than 10,000 square feet (1,000 sq meters), and no protected or other sensitive environmental areas could be affected, the condition is that these activities shall be conducted following principles for environmentally sound construction, as provided in the Small Scale Construction chapter of USAID EGSSAA *http://www.encapafrica.org/EGSSAA/Word_English/construction.doc*. For the construction of any facilities in which the total surface area disturbed exceeds 10,000 square feet (1,000 square meters), the program shall conduct a supplemental environmental review according to guidance in Annex G (www.encapafrica.org/EPTM/AnnexG EPTM_Mar2005b.pdf) of the Africa Bureau Environmental Procedures Training Manual (EPTM) (http://www.encapafrica.org/eptm.htm). Construction will not begin until such a review is completed and approved by the Mission Environmental Officer. An illustrative list of environmentally sound construction principles includes: •The majority of materials used will be of local origin and will not contain any hazardous materials (e.g., asbestos or lead). •Investigate and use less toxic alternative products. •Excess construction material will be recycled wherever possible and disposal of unusable material will be done in an environmentally sound manner. •Construction will not require the use of heavy equipment, or in the unlikely event it does, proper safeguards will be taken to prevent	COP	Construction plans/ designs and photos of all facilities constructed	Review of materials and site inspection	Quarterly

Category of Activity from Section 4 of EG IEE	Describe specific environmental threats of your organization's activities	Description of Mitigation Measures for these activities as required in Section 4 of the IEE	Who is responsible?	Sources of verification	Monitoring Method	Frequency of Monitoring
	Increased harvests and threat to overfishing due to increased demand from improved quality Potential impacts of water supply & sanitation activities include damages 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 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	destruction of vegetation and soil erosion (e.g., runoff from the construction site which may be high in suspended solids or which may cause disruption to local drainage patterns). •No lead-based paint will be used. When (lead-free) paint is used, it will be stored properly so as to avoid accidental spills or consumption by children; empty cans will be disposed of in a environmentally safe manner away from areas where contamination of water sources might occur; and the empty cans will be broken or punctured so that they cannot be reused as drinking or food containers. For improved fish quality, reduced post-harvest losses, COMFISH will only support work in these areas on stocks or geographic regions where the COMFISH is also supporting sustainable management actions or where other initiatives are effectively supporting managed access to prevent overfishing. • For small-scale water and sanitation activities: • All water supply and sanitation activities should be conducted in a manner consistent with the good design and implementation practices described in EGSSAA Chapter 16: Water Supply and Sanitation. • All construction activities will be conducted following principles for environmentally sound construction, as provided in Chapter 3: Small Scale Construction of the USAID Environmental Guidelines for Small-scale Activities in Africa, which can be found at www.encapafrica.org. • Microbiological contamination of improved wells can often be prevented by aquifer protection measures and proper well design and maintenance. • Water quality testing is essential for determining that the water from a constructed water source is safe to drink and to determine a baseline so that any future degradation can be detected. Among the water quality tests which must be performed are tests for the presence of arsenic. Any USAID-supported activity engaged in the provision of potable water must adhere to Guidance Cable State 98 108651, which requires arsenic testing. The standards and testing procedures described in "Guidelines for Determining the Arsenic Content of Ground Water in USAID-Sponsored Well Programs in Sub-		Mgt. plan, MSC cert. or other evidence of measures to prevent overfishing Construction plans/ designs and photos of all facilities constructed	Review of materials Review of materials and site inspection	

Category of Activity from Section 4 of EG IEE	Describe specific environmental threats of your organization's activities	Description of Mitigation Measures for these activities as required in Section 4 of the IEE	Who is responsible?	Sources of verification	Monitoring Method	Frequency of Monitoring
		Saharan Africa" must be followed for potable water. • Initial water quality testing is the responsibility of the COMFISH project to assure. The project should also set in place capacities and responsibilities to provide reasonable assurance that ongoing water quality monitoring occurs. The standards for initial and ongoing testing should follow any applicable USAID guidance, as well as local laws, regulations and policies. Furthermore, a response protocol should be established in the event that water quality testing detects contamination. Ensure latrines are sited far away from shallow wells, cisterns, spring sources, boreholes and wetlands. Latrine pits will be dug in the unsaturated zone above the water table, & latrine pits protected against flooding & overflow due to intense rainfall. Establish & train community water & sanitation committees to manage, repair and maintain all water points and the watersheds immediately surrounding the water points, and provide hygiene education to participating communities. Training in sanitation and hygiene for local water and sanitation committees is provided to: Ensure community mobilization and public awareness of human health risks associated with water-borne disease vectors To encourage the development of community responses that are environmentally sound, cost effective, and safe To ensure control over the management of the facilities and operations that COMFISH is supporting Relevant local community rules, best practices & procedures of promotion of better environmental health developed & adhered to. Verification through site visits & photos to assure practices are in accordance with local community rules and best practices. The implementing parties will be expected to: Follow best engineering practices with qualified professional expertise; including opportunities for energy and water efficiencies. Identify and mitigate any direct impacts on the existing physical environment or surrounding socio-economic environment caused by the construction of and presence of the water or sanitation system. These impacts relate to resource use, earthmoving and construction, soil compaction, and impacts on neighboring populations.				

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		When feasible, the majority of materials used will be of local origin and will not contain any hazardous materials (e.g. asbestos or lead)				
3. Enhance fisheries value chains	Increasing the value of fish and product eco-labeling can give incentive to increase fishing effort and contribute to overfishing.	Value chain improvements must be implemented concurrent with activities that put management measures in place to ensure sustainability of harvests. COMFISH will only support value chain improvements or eco-labeling on stocks or geographic regions where the COMFISH is also supporting sustainable management actions or where other initiatives are effectively supporting development of management measures to prevent overfishing. A formal management plan does not have to be officially adopted prior to work on value chain improvements as long as a process is underway that is working towards adoption of formal management measures, or whereby rules are being informally implemented with similar sustainability aims. Since increased demand through export promotion of an eco-labeled product could increase harvests to unsustainable levels in the future, a management plan should be moving towards adoption and implementation. For eco-labeled products, to ensure the management plan meets adequate sustainability criteria, it should be geared towards obtaining international certification (e.g. MSC certification). Export promotion should be centered around the fact that the product is eco-labeled and meets international standards of sustainability.	COP	Management plan, MSC certififcation or other evidence that measures are being taken to prevent overfishing	Review of materials	Quarterly
4. Improve fishing community resilience to climate change	Alteration of nearshore sediment patterns resulting in displaced or accelerated erosion of beachfronts from inappropriate construction 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	*Activity: beach and dune nourishment, use of hard structures to combat erosion from sea level rise:* Use of hard structures or beach or dune nourishment to combat sea level rise should not be approved without additional screening prior to implementation. Promotion of green coastal barriers to combat erosion or stabilize beaches is allowed without further screening. Institutions proposing hard structures and beach nourishment should be encouraged to identify alternative options including soft engineering solutions including abandonment of built structures at risk or retreat/movement landward of those that can be moved. Soft solutions include restoration of natural vegetation for erosion control. *Activity: small scale agricultural activities that promote and carry out sustainable agriculture activities including tilling, cultivation, fertilization, harvesting, etc.:* All agricultural activities will be conducted following principles and provided in Chapter 1: Small Scale Agricultural, Chapter 11: Livestock and Chapter 12: Integrated Pest Management of the USAID environmental guidelines for small-scale activities in Africa, which can be	COP	TBD via env. screening	TBD via env. screening	Quarterly

Category of Activity from Section 4 of EG IEE	Describe specific environmental threats of your organization's activities	Description of Mitigation Measures for these activities as required in Section 4 of the IEE	Who is responsible?	Sources of verification	Monitoring Method	Frequency of Monitoring
	diversion for irrigation; bio-diversity loss from land fragmentation, conversion to agricultural use, or introduction of exotic species To be determined through environmental screening processes	found at www.encapafrica.org. Ensure that sensitive natural resources or ecosystems are protected from conversion to agricultural or livestock land uses in conjunction with productive water management activities. Maximize the promotion and use of water efficient technologies and approaches (e.g. drip irrigation). Maximize the promotion and use of soil and water conservation approaches and methods. Take measures to prevent groundwater or surface water contamination including: • Collecting agricultural wastewater from intensive livestock operations in holding lagoons • Implementing minimum setback limits for grazing and agriculture around water sources • Ensuring that well heads and springs are properly constructed an protected • Improving training of farmers in input use, especially chemicals • Revegitating critical watershed areas and applying soil and water conservation measures to upstream areas for better erosion control • Revegitating degraded and marginal areas to reduce runoff • Vegetating riparian areas to prevent erosion along stream banks • Maintaining existing condition of existing wetlands and constructing additional artificial wetlands for wastewater treatment if appropriate *Activity: Sub-grants:* Any sub-grants to support this project's activities must incorporate provisions that the activities to be undertaken will comply with the environmental determinations and recommendations of this IEE. This includes assurance that the activities conducted with USAID funds fit within those described in the approved IEE or IEE amendment and that any mitigating measures required for those activities be followed. In addition, environmental screening will be required. Environmental Screening Process: Implementing partners will take into consideration potential environmental impacts during the design and implementation process to achieve an environmentally-sound project design and to promote program sustainability. They will screen proposed activities according to the *Africa Bureau Environmental Report Form Review Process*, which is described in the **Bureau's Environmental Procedures Training Manual,** "*Annex G: Umbrella IEEs and Subgrant Environmental Screening*," as well as in the **Africa Bureau Environmental Guidelines, Part**				

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		III. Both can be found at http://www.encapafrica.org/resources.htm (Attached to this IEE as Annex 1). As described there, the screening categories include the following: *Very low risk* - activities that would normally qualify for a categorical exclusion under Reg. 216; *Moderate risk or unknown risk* - activities that would normally qualify for a negative determination under Reg. 216; *High risk* - activities that have a clear potential for undesirable environmental impacts and typically under Reg. 216 require an Environmental Assessment; and *High risk – typically not funded* - activities that either USAID cannot fund or for which specific findings must be made in an Environmental Assessment prior to funding.				