Gambia-Senegal Sustainable Fisheries Project

Annual Report and Year 2 Work Plan

October 1, 2010 – September 30, 2011

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For more information contact: Coastal Resources Center, University of Rhode Island, Narragansett Bay Campus, South Ferry Road, Narragansett, Rhode Island 02882, USA. Brian Crawford, Director International Programs at Email: brian@crc.uri.edu; Tel: 401-874-6224; Fax: 401-874-6920

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Contact Information

Ousman Drammeh
Project Manager
Gambia-Senegal Sustainable Fisheries Program (Ba Nafaa)
Tel: 220-779-68-11
Email: o_drammeh@yahoo.com

Mat Dia
Director
World Wide Fund, The Gambia
Tel: 220-986-69-31
Email: matdia55@yahoo.fr

Brian Crawford
Director, International Programs
Coastal Resources Center
University of Rhode Island
Tel: 1-401-874-6225
Fax: 1-401-874-6920
Email: **brian@crc.uri.edu**

Kim Kaine
Global Program Coordinator
Coastal Resources Center
University of Rhode Island
Tel: 401-874-6823
Fax: 401-874-6920
Email: kkaine@crc.uri.edu

Georgette Yarboi-Quayson
Administrative Office Technical Representative
U.S. Agency for International Development / West Africa
Tel: 233-244-532913
Email: gyarboi-quayson@usaid.gov

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1. Introduction

The ***Ba Nafaa*** project is a five-year regional initiative supported by the American people though the U.S. Agency for International Development (USAID)/West Africa Regional Mission. It is implemented through the University of Rhode Island (URI)-USAID cooperative agreement on Sustainable Coastal Communities and Ecosystems (SUCCESS). The World Wide Fund West Africa Marine EcoRegional Program is the regional implementing partner. Project activities are carried out in partnership with the Department of Fisheries (DoFish) and stakeholders in the fisheries sector in The Gambia and in Senegal. The focus is on sustainable fisheries management including the shared marine and coastal resources between The Gambia and Senegal. However, most field activities are in The Gambia.

This document describes the planned Year 2 (October 1, 2010 – September 30, 2011) work activities of the *Gambia-Senegal Sustainable Fisheries Project (**Ba Nafaa**)*. The contents of this workplan were generated from discussions and outputs developed during meetings with project staff and through consultations with the Department of Fisheries and other key stakeholder groups via meetings and workshop events. The document is organized into five main components. First, background information as well as Project goals and key results expected over the life-of-the-project are described. This is followed by a brief summary of Project accomplishments to date, and a detailed description of Project activities to be implemented in Year 1. It includes a task implementation schedule as well as expected outputs and results per activity area. For each respective activity area, the workplan also identifies the responsible Project staff and participating partners to guide teams involved in implementation. In addition, the Project management structure, the monitoring and evaluation strategy, and the corresponding performance and reporting framework are described. Summary budget information is also included. Appendix 1 provides a summary of the performance plan targets and the results to be achieved for each performance indicator.

1.1 Background

In West Africa, an estimated 1.5 million tons of fish are harvested annually from the region's waters, with a gross retail value of US$1.5 billion. In The Gambia and Senegal artisanal fisheries (fishermen operating from small vessels primarily in nearshore waters.) make up a majority of the fisheries landings and contribute significantly to income generation and local food security for coastal communities and for many communities inland where fish are traded. Much of the artisanal landings, especially sole and shrimp are also key export earners in the fisheries sector. In both The Gambia and Senegal, most people live within the coastal zone and derive their livelihood, food security, and way-of-life from fishing. Some 200,000 people in the Gambia and 600,000 in Senegal are directly or indirectly employed in the fishing sector. Seafood products are a leading export of the region and generate as much as 20% of the gross value of exports. While the

majority of seafood exports are destined for European Union (EU) markets, a growing volume of trade goes to the U.S. and other countries in the region. Fisheries trade results in valuable foreign exchange earnings, revenue for government, and employment opportunities that go well beyond the labor directly involved in harvesting.

Fisheries products are especially critical to the rural poor. Fish provides the main source of animal protein for the average rural family in the sub-region, where annual fish consumption can be as much as 25kg per capita. In many rural areas, fishing serves as a "social safety net" when farming turns unproductive due to depleted soil, drought, disease, or other factors.

In addition to direct socioeconomic benefits derived from fishing, a well-managed sector can benefit other aspects of the region's economy and quality-of-life. This includes a growing tourism sector and a number of globally and regionally significant parks and natural heritage areas. With annual tourist arrivals surpassing 120,000 in The Gambia and 400,000 in Senegal, a growing number of tourists are taking advantage of the countries' ecologically significant reserves, parks, and protected areas—most of which have direct links to the fate of well-managed fisheries. These include but are not limited to the Sine-Saloum Delta Biosphere Reserve in Senegal and in The Gambia to the Niumi National Park, the Baobolon Wetland Reserve, and the Tanbi Wetland Complex—all are designated Ramsar sites and contain globally significant wetlands.

Senegal and The Gambia are centrally located within the West African Marine Ecoregion (WAMER) that spans 3,500km of coast in western Africa (Mauritania, Senegal, The Gambia, Cape Verde, Guinea Bissau, and Guinea). Its most striking feature is the powerful coastal upwelling of cold water that create a tremendously productive food chain supporting incredible biodiversity in one of the most diverse and economically important fishing zones in the world. Over 1,000 species of fish have been identified, along with several species of cetaceans including dolphins and whales, and five species of endangered marine turtles. This immense productivity is further enhanced by several major river/estuary/delta complexes that provide additional influx of nutrients and sediments to the marine realm, adding to its biological productivity. The estuarine wetlands are globally significant breeding and over-wintering grounds for numerous migratory birds.

The ecoregion is also known as the Canary Current Large Marine Ecosystem. Fish that spawn in northern nurseries seasonally migrate southwards (as do the fishermen) and provide food for human fishing communities along the way. In addition, recent satellite tracking has confirmed that green turtles lay eggs along the remote beaches of Guinea Bissau and travel northwards through Senegalese and Gambian waters to graze in the rich sea grasses of Mauritania. In short, the unique combination of climate and upwelling supports species and habitats that represent critical resources locally, nationally, regionally, and globally. Areas of international, regional and local significance within the WAMER are shown in Figure 1. The stretch from the Saloum Delta in Senegal, The Gambia River and the entire coastline of the Gambia, as well as the Casamance river system is one contiguous area that has regional biodiversity significance.

High levels of fishing effort, however, puts unsustainable pressures on limited fish stocks—only further exacerbated by recent improvements in fishing gear that increase fishing efficiency. As more boats search for fewer and fewer fish, the use of destructive, habitat-destroying fishing techniques such as bottom trawling, and beach seining have increased dramatically. Increased fishing has also led to increased capture of endangered marine turtles, juvenile fish, and expansion of the trade in shark and ray fins.

To address these threats, more integrated management approaches are needed at the local and regional scale, including approaches that move toward more sustainable fisheries utilization with less impact on the rich biodiversity of this region. Reducing overfishing through more sustainable harvesting practices will result in a healthier marine ecosystem, including higher biomass of standing stocks and more balanced species assemblages. In addition, promoting more sustainable use practices will help address the wasteful problem of incidental bycatch and capture of endangered species.

In short, at stake in a successful ecosystem-based approach to fisheries management is the ability of millions of people to sustain a resource-dependent existence while at the same time protect the overall ecological integrity and biodiversity of the region. The Project workplan described below sets out to contribute to addressing this challenge.

1.2 The Gambia Fishery Context

The marine fishery of the Gambia is located in the highly productive upwelling zone of the Canary Current Large Marine Ecosystem (CCLME). Seasonal upwellings and the flow of nutrients from the River Gambia (an estuary attracting fish for feeding and spawning) make the marine waters a highly productive area with rich fishery resources, both pelagic and demersal. The River Gambia and its tributaries are about 2,500 km in total length with 480 km of its length in the Gambia. The upwelling phenomenon starts in Morocco and Mauritania and the northern plateau of Senegal in November moving south and attaining maximum effect on the Senegambia plateau in March/April.

There are two types of fisheries in The Gambia—artisanal and industrial. The total fish landed from both the artisanal and industrial sub-sectors were estimated at nearly 40,000 MT in 2006 and 47,000 MT in 2007. In 2006, the artisanal fishery contributed approximately 37,000 MT (93 %) with 3,000 MT (7%) from the industrial fisheries. *Bonga*/shad and round and flat sardinella are the main species by volume landed by the artisanal fishermen—estimated at 18,000 tons in 2006.

In the mid 1960s The Gambia witnessed the transformation of the artisanal fishery from paddled canoes with simple fishing techniques to one with modern fish-capturing technologies and larger canoes with outboard engines, which resulted in an increase in fish landings. Decades of growth in the artisanal fishery combined with the activities of the industrial fishery has caused high levels of exploitation, especially of high-value fish, crustaceans and cephalopods. Production in the artisanal fishery has increased from 10,000MT in 1985 to approximately 40,000MT in 2007, while industrial production has

been declining. Reports of dwindling catch per unit of effort indicate that high-valued demersal species are under threat from high levels of exploitation. Regular assessments carried out by the Demersal Working Group of the FAO's Committee for Eastern Central Africa Fisheries (CECAF) also indicate that the major fish demersal fish stocks are either fully or overexploited. Pelagic stocks are also considered to be fully or overexploited regionally, but there are some indications that The Gambian stocks may not be fully exploited.

Industrial fishing primarily targets high-value species such as sole, snappers, shrimp, cuttlefish, and octopus. In 2007, a total number of 32 industrial fishing vessels operated with a license in Gambian waters—15 shrimp trawlers and 17 fish\cephalopod trawlers. All industrial vessels operating in Gambian waters are foreign-owned and foreign fishermen dominate. These vessels land their catches in foreign ports where the fish is processed, packaged and labeled as products originating from those foreign ports. The absence of a deep water port is the reason that the industrial fleet does not land their catches in The Gambia as is required by fisheries licensing regulations. A deep water landing dock in Banjul is now under construction. This construction project was developed and supported by the Gambia Artisanal Fisheries Development Project supported by the African Development Bank and BADEA (Arab Bank for Economic Development). Completion is scheduled for 2010.

The industrial fisheries sub-sector also includes industrial seafood processing plants that purchase fish from the artisanal fishery and provide permanent and part-time employment to between 1,500 to 2,000 people (mainly women). Presently, there are seven processing plants, three of which export to the EU. Two plants are temporarily closed due to lack of material (fish) and high operating costs. Lack of adequate fish for processing is an annual problem, especially when most Senegalese fishers return to Senegal for Ramadan and Tobaski (Islamic holidays). The Senegalese dominate the coastal fishery, so during these religious holidays the amount of fish from the artisanal fishery that is available for processing drops significantly and the processing plants close. It is expected that the new deep water port in Banjul will reduce the problem of lack of material and the need to operate below capacity. Processing factories also suffer from unreliable provision and high prices for electricity—electricity represents the greatest cost for processing plants with The Gambia having one of the highest kilowatt hour cost of electricity in Africa. Another problem is the high cost of financing.

The artisanal sector, which is the major supplier of both food fish for the Gambian populace and raw material fish for commercial fish processing plants, provides direct employment to 1,410 head fishermen and 4,694 assistant fishermen. Considering fish buyers, processors, boat builders, fuelwood collectors, and other ancillary activities it is estimated that over 200,000 people are directly or indirectly dependent on artisanal fisheries for their livelihoods. Of the 1,410 head fishermen operating in the artisanal fisheries, 805 are Gambian nationals and 605 foreign. In the coastal area, however, foreign nationals—mainly Senegalese—form the majority with 249 head fishermen compared to 167 Gambians. These foreign nationals also form the vast majority of artisanal shrimp fishermen along the estuary of the River Gambia. The number of canoes

and fishermen operating in artisanal fisheries steadily increased from 1983 to 1997, but thereafter and until 2006 declined. The artisanal subsector is highly diverse, incorporating marine, estuarine and freshwater fishing operations. The majority of the communities located along the Atlantic coastline and close to the River Gambia and tributaries engage in some form of artisanal fishing activity. The more prominent fishing communities are located along the Atlantic coast and include the coastal villages of Kartong, Brufut, Tanji, Sanyang, Gunjur and Bakau, and the riverbank villages of Albreda, Bintang, Kemoto and Tendaba.

Artisanal fishing crafts are predominantly dug-out canoes along the river, and planked open hull vessels (pirogues) of the Senegalese type along the marine coast. There is now one manufacturer of fiberglass fishing canoes on The Gambia coast, but there are still very few fiberglass boats in the artisanal fishery. Most fishermen (74 %) own their canoes followed by joint ownership (14%). The Frame Survey revealed that 94% of the fishermen use canoes for fishing and the most common type of canoe used is dug-out (50%) followed by planked-dugout (37%). There are also 1,082 un-motorized and 625 motorized canoes.

Pelagics are now the dominant catch of the artisanal fishery. Gear used in the pelagic fishery includes surround gillnets and purse seine nets and the main species that are caught are shads (Bonga), sardinella, anchovies, mackerel, barracuda and jacks. Demersal species are caught by artisanal fishermen using set/bottom gillnets, drift nets, traps, and hook and line. Various species of croaksers, solefish, catfish, cuttlefish, threadfins, grunts and groupers are captured with these fishing gears. Stow nets and drift nets (fele-fele) are especially used by artisanal fishermen for catching shrimps in the estuary and tributaries.

With regard to fish market outlets, about 60 percent of fishermen sell fish catches through Banabana (fish dealers) and 31 percent sell directly to consumers. The rest sell through bidding. The artisanal fish catch is either sold among the local communities for processing (drying and smoking) or is transported and marketed in major towns and villages in the interior. Post harvest losses are high due to a combination of oversupply, lack of preservation and lack of market. The processed fishery products are transported and sold in inland markets, and some are exported to neighboring countries. A proportion of the artisanal fish catch of high value (shrimps, soles, sea breams, lobsters) are purchased by industrial seafood processing companies for export abroad.

The Gambia’s fisheries sector operates under the authority and responsibility of the Minister of Fisheries, Water Resources, and National Assembly Matters through the Department of Fisheries (DoFish). The policy, legal and management framework for fisheries in The Gambia is provided by the 2007 Fisheries Act and the 2008 Fisheries Regulations. A draft Fisheries Management Plan for shrimp, sardinella and sole fish was prepared in 2009. The Fisheries Act mandates a Fishery Advisory Committee and Community Fisheries Centers as the institutional structure for inclusive oversight of the sector and also allows for decentralized fisheries co-management. The policy objectives of the fisheries sector as articulated in policy documents include:

- Rational and long-term utilization of the marine and inland fisheries resources
- Improving nutritional standards of the population
- Increasing employment opportunities in the sector
- Increasing foreign exchange earnings
- Increasing and expanding the participation of Gambians in the fisheries sector
- Improving the institutional capacity and legal framework for the management of the fisheries sector

The policy objectives of the fisheries sector are linked to key national development objectives that include: increased food self-sufficiency and security; a healthy population and enhanced employment opportunities for nationals; increased revenue generation and foreign exchange earnings; and the attainment of national social and economic development. They are designed to support key national development objectives as outlined in the Poverty Reduction Strategy Paper and The Gambia Incorporated Vision 2020, which are blueprints for national development and eradication of poverty.

The Fisheries Act empowers the Minister of Fisheries, Water Resources and National Assembly Matters and the Director of Fisheries to declare Special Management Areas for purposes of community-based fisheries management; establish open or closed seasons for specified areas and fish stocks; define minimum fish size regulations; and impose gear and fish method restrictions.

1.3 Program Goal and Key Results

The goal of the ***Ba Nafaa*** Project is to support the Government of The Gambia in achieving its fisheries development objectives by contributing to the following vision:

> *Artisanal fisheries and coastal ecosystems in The Gambia and selected stocks shared with Senegal are being managed more sustainably, incorporating significant participation of fisherfolk in decision-making, and attaining improved economic benefits for both men and women involved in the market value chain.*

Ba Nafaa builds on the on-going efforts of the Department of Fisheries in The Gambia, working with several community fisheries centers and their management committees to improve fisherfolk involvement in the management of fisheries resources. More specifically, to further the development and implementation of the draft fisheries management plan for sole, sardinella, and shrimp. Shrimp and sole are important export commodities so this involves partnerships with export processing businesses as well. These are also shared stocks with Senegal. As gender equity is another important aspect of the project, Ba Nafaa is benefiting both men and women in the fisheries sector by also working with oyster harvesters—a women-dominated fishery whose importance is often under-recognized.

Key Results for the ***Ba Nafaa*** Project are to:

- Contribute to government objectives of sustained and increased social and economic benefits for artisanal fishing communities including food security, increased income and employment.
- Institutional capacity at all levels of governance to implement a fisheries co-management approach is strengthened in order to sustain socio-economic benefits for fisherfolk and other beneficiaries in the market value chain.
- Unsustainable and destructive marine resource use practices, including bycatch of marine turtles and juvenile fishes, are reduced.
- Key habitats and marine areas important in the life stages of commercially important fish as well as threatened and protected species of marine turtles and mammals are protected.

Project Strategies

- A participatory co-management approach that engages fisher folk in decision-making.
- An ecosystem-based approach that looks not only at the fish, but protection of critical habitats and reduction of fishery impacts on threatened marine species
- Mainstreaming gender dimensions that provide opportunities for both men and women to benefit economically and participate in decision-making.
- A threats-based approach to coastal and marine biodiversity

Within The Gambia, specific objectives are to:

- Strengthen the capacity of community fisheries centers to manage fisheries and engage in more effective enforcement of rules through training and learning-by-doing.
- Strengthen the capacity of the DoFish and community management committees to conduct fisheries stock assessments and implement community-based management plans.
- Identify and implement opportunities for improvements in the value chain of the key species of economic importance, including export opportunities.
- Establish community-based protected areas to serve as critical habitats for marine turtles and mammals and as spawning and nursery grounds for commercially important fish.

Regionally, the Project aims to:

- Strengthen regional management of shared stocks by addressing registration of fishermen.
- Improve international trade competitiveness.
- Increase regional cooperation for conservation of marine turtles and mammals.
- Promote bilateral exchanges to share lessons on sustainable fisheries management.

Geographic Scope. The Project concentrates its activities on the marine and coastal resources and fisheries stocks shared among the Casamance, the Gambia River and Saloum Delta region—an area of regional biodiversity significance (see Figure 1). The majority of on-the-ground activities occur in The Gambia, where ***Ba Nafaa*** focuses on the artisanal nearshore fisheries along the Atlantic coastline as well as the estuarine- and mangrove-dominated portions of The Gambia River (see Figure 2 below). A sister project

in Senegal, called the Wula Nafaa project, is working on fisheries management in the Saloum Delta and Casamance River. Together, these two USAID-supported initiatives are expected to have a significant impact on improved management of this biodiversity-rich area.

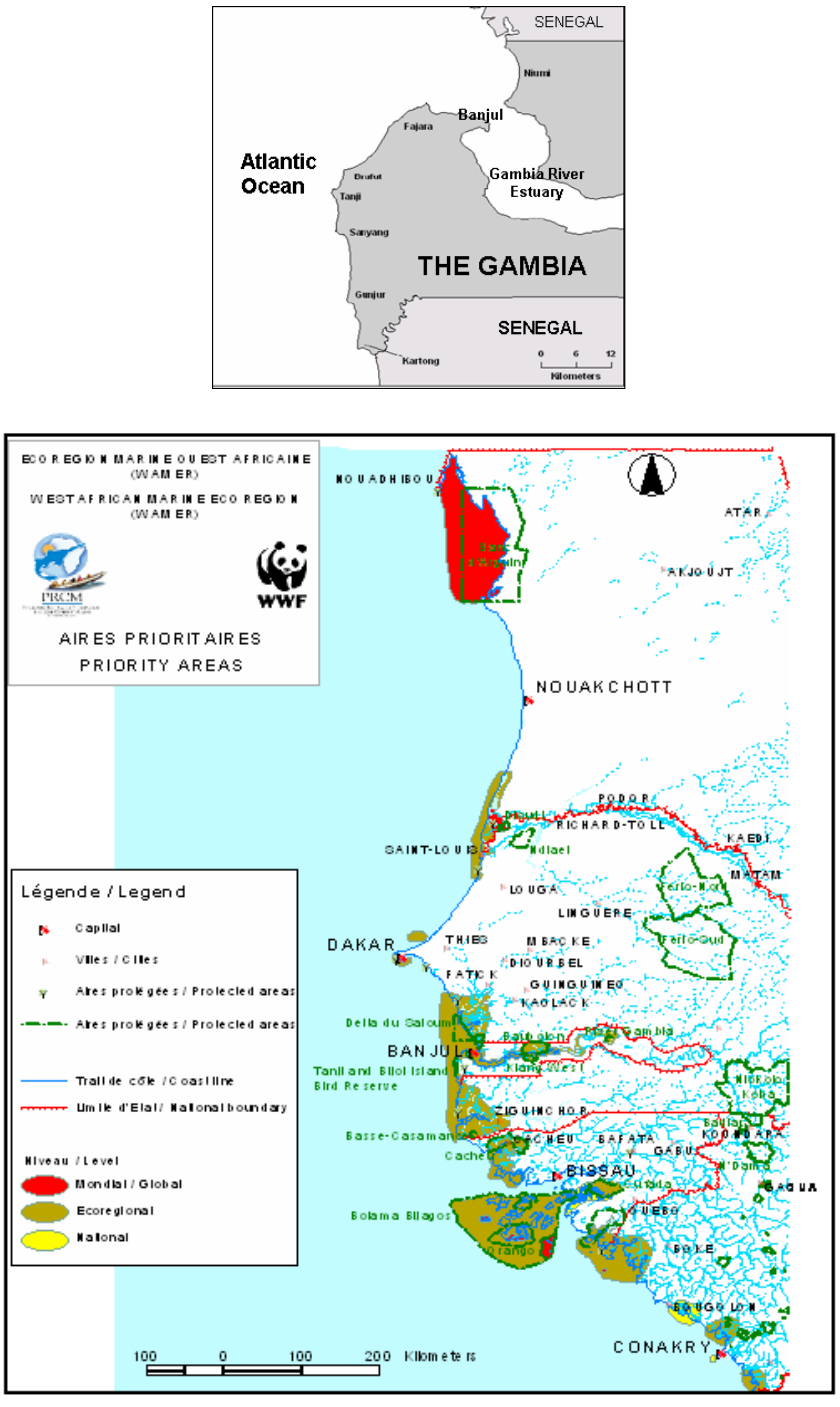


Figure 1: Areas of Biodiversity Significance in the WAMER and The Gambia River Estuary and Atlantic Coast

2. Summary of Accomplishments to Date

Major accomplishments in the first year of the project are provided below. For a summary of project results relative to performance indicators, see Appendix A.

Tanbi Wetland and the Oyster Harvesters

- Co-management planning processes initiated for management in the Tanbi mangrove protected area, involving 500 women harvesters
- Management committees established and actively participating in planning processes
- Development of improved oyster products by the TRY oyster harvesters association that allows for sale of products through the closed harvest season
- Initiation of water quality monitoring of the Tanbi wetland and bi-valve harvesting areas to determine health risks and potential for starting a shellfish sanitation program that could open new markets for fresh/raw products
- Feasibility study on village banking conducted and 3 oyster communities have met the requirements to establish village community banks.
- Pilot aquaculture farms started to test their feasibility for enhanced production

The Sole Fishery

- Co-management processes initiated for the sole fishery with community fisheries centers in 7 landing sites

Figure 2: Tanbi National Park

Figure 3: Locations of actual sole fishing from major landing sites

- Management committees established and actively participating in planning processes
- Agreement with the Marine Stewardship Council on accelerated movement towards international certification of a sustainable Gambian sole fisheries product
- Value chain analysis to identify ways to improve incomes in the post-harvest chain
- National Sole Fishery Co-Management Committee elected and community meetings on management and harvesting measures initiated.

Capacity Building

- Exchanges between fishermen and women from The Gambia and Senegal to learn about effective co-management approaches, oyster aquaculture and for value chain improvements
- Institutional strengthening grant to the TRY women's oyster harvesters association to establish credit and savings, business and fundraising strategies
- Over 300 stakeholders in government and private sector trained in fisheries management, climate change adaptation, aquaculture and microcredit systems
- Over 300 persons benefiting economically from assistance packages provided

Figure 4: Meeting of Gambia with fishermen in Senegal to learn about the Kayar co-management model

3. Year Two Activities

3.1 Introduction

The priorities for Year 2 will continue to concentrate on the sole and oyster fisheries in The Gambia. Progress on establishing co-management plans has been slower than initially anticipated, so no work on any additional fisheries complexes will start until these milestones are achieved.

3.2 Sole

WWF Lead: Drammeh
CRC Lead: Castro
Cooperating Partners: DoFish, NAAFO, GAMFIDA, Community Fisheries Centers

Key issues and Progress to Date

Total landings in The Gambia in 2006 were 1370MT—wedge sole 279MT, sand sole 186MT, and Senegalese sole 906MT. Burfut, Sanyang and Gunjur and Kartong, the four primary sole landing sites, were collectively responsible for approximately 50% of the total artisanal fisheries landings of sole along the Atlantic coast. In addition, a portion of the catch is taken in deeper waters by the industrial trawl fisheries that operate in Senegal and Gambian waters. None of this fish, however, is landed in The Gambia. DoFish estimates that the industrial fleets when in Gambian waters harvest 371 MT from The Gambia, (industrial fleet lands 27% of the total sole landings of the artisanal and industrial fleet combined).

The sole fishery had a pre-audit conducted based on MSC (Marine Stewardship Council) criteria, so a clear road map of sustainability issues has already been formulated. *Ba Nafaa* has entered into a MOU with MSC to assist the fishermen, processors and Department of Fisheries address the deficiencies reported in the pre-audit report. In addition, sole is one of the key export earners, but is harvested primarily by artisanal fishermen. The original management plan for sole was drafted by the Department of Fisheries with little input of fishermen and processors. The project has facilitated the set up of community based sole committees and a national co-management committee (NASCOM) and a new draft management plan is being prepared. However, additional stakeholder processes are needed before this plan is completed and can be submitted for approval by Government.

Under the 2008 Fisheries Act (Section 15), The Minister of Fisheries can establish Community Fisheries Centers (CFCs) for the purposes of community-based fisheries management, allocate fisheries management areas for which the CFCs are responsible, and prescribe rights and responsibilities of CFCs with respect to the Special Fisheries Management Areas. Under the Act, the Minister (through the DoFish) can also determine total allowable catch for any stock of fish, and can allocate shares of the total allowable catch and designate these as property rights. Under the Fisheries Regulations of 2008, all fishing vessels must be registered and obtain fishing licenses as well. Therefore, the legal framework for effective management of the fishery, including managed access and/or allocation of property rights, is in place for this fishery. Also, the sole fishery is believed to have few bycatch issues. This combination of factors leaves the Project team optimistic that attaining certification is very likely in the near term. Community meetings concerning requirements for vessel registration have also been held and the registration process will be started shortly.

The *Ba Nafaa* goal in terms of the sole fishery is to assist the fishing industry associations—The Gambia Artisanal Fisheries Development Agency (GAMFIDA) and the National Association of Artisanal Fisheries Operators (NAAFO)—and the DoFish to meet the sustainability criteria required to be eligible for MSC certification. The MSC audit report identified very specific areas for improvement in order to meet sustainability criteria. Some of the key performance conditions and recommendations are summarized as follows:

- ***Harvest Strategy:*** There is a concern that the current system does not include an adequate mechanism for monitoring and control of the status of the stock, nor does it define the points at which management action will be taken, or indeed precisely what form such action would take. This should be written as part of a future management plan and evaluated with respect to likely success in achieving management objectives. Possible controls could include, but not be limited to, agreed effort controls, an export quota for processors within the MSC certification, a minimum size and closed areas and seasons.

- ***Stock***: In order for fisheries managers to make informed and timely management decisions, it is necessary to improve the understanding of stock status and to identify

reference points to inform the harvest control rule. A reasonable amount of information is available to enable appropriate analysis in the form of landings and effort data (from DoFish) and landings by species and size (from processing plants). This assessment indicated that there was sufficient likelihood that the stock was not overfished.

- ***Retained Species***: Landings data provided by DoFish did not enable retained species to be determined by specific gear type.

- ***ETP monitoring***: Improved integration between the various NGOs collecting information is needed to provide a clearer picture of fishery/ETP (Endangered, Threatened and Protected species) interactions. Information must be recorded in gear-specific way.

- ***Ecosystem***: Relatively few ecosystem interactions of concern in the fishery. However, there is no place for disposal of waste at landing sites and at sea. A plan that could sensitize fishermen and development of a code of conduct would be helpful.

- ***Subsidies***: The report stated that subsidies are available to the artisanal fisheries sector. However, it is the understanding of the *Ba Nafaa* team that this is inaccurate. For instance, fuel mix subsidies were removed many years ago (in 1994), unlike Senegal where such subsidies remain. The plan also needs to ensure that *if* there are subsidies, they do not lead to increased fishing effort.

- ***Research***: It is clear that a useful amount of research is undertaken by DoFish. It is less clear how research is commissioned in a strategic fashion. The development of a research plan that informs the objectives of the fisheries policy would enable issue- and policy-relevant research to be undertaken when funds are available.

Audit Recommendations included the following:

- ***More transparent decision- making***. At the time of the assessment, a regulation on minimum size was being passed. However, it is unclear what the decision-making process was and what information was used to make the rule.

- ***Monitoring, Control and Surveillance***. While recognizing that initiatives such as co-management should improve compliance, this has not yet been demonstrated. Landings need to be more consistently monitored.

In addition to the pre-audit findings, there is also a need for more information with which to ascertain whether the sole fishery is impacting on other marine species of importance. In particular, many dead marine turtles wash up on the beaches, near some of the landing centers for sole. It is not clear what is causing these mortalities, but it is possible that certain fishing gears could be part of the problem. The MSC pre-audit report suggests that the nets used for sole fishing are unlikely to be causing significant mortalities of

marine turtles since they are bottom nets (1 meter in depth). At-sea bycatch data is being collected as part of *Ba Nafaa* activities.

Processing plants are not operating at full capacity for several reasons. One reason is their lack of enough product volume for export and market channels, as well as low prices paid to the fishermen. Another is the high price of electricity, which hampers their ability to be competitive. While the latter factor impacts the sole fishery, it affects many other export commodities as well. For instance, shrimp is no longer exported as The Gambia cost structure for processing plants (electricity) makes it unprofitable. The value chain for sole also revealed that there is a significant amount of sole that is landed in The Gambia, but then shipped to Senegal. Senegal traders seem able to provide a higher price than Gambian processers can pay. This export is not reported but if more of this "export" was processed in The Gambia, could provide higher volume for Gambian exporters. This issue of trade and exports and relative price structures is complicated and requires more assessment to determine potential courses of action.

Project Actions in Year 2

The Program will continue to assist DoFish in implementing the recommendations in the sole pre-audit report. The geographic focal area is the primary sole landing sites of Burfut, Sanyang, Gunjur and Kartong, Tanji, Batukungku, Bakau, Banjul. However in stakeholder meetings it was revealed that there are additional sites where sole is caught and which need to be brought into the planning and management process. These include, Kemoto, Bintang, Tangkula, Balingo, and Albreda and the fishing villages located on the northern coastal strip from Barrato the border with Senegal. While the emphasis will be on management of the artisanal fleet (the assumption is that this is much more important than the industrial fleet as all artisanal-caught sole goes to local Gambian processors or is illegally transported into Senegal), the industrial fleet may eventually be limited to an annual total allowable catch (TAC) and other measures as well. This would need to be linked to the on-board observers assigned to each industrial vessel.

Most of the sole destined for export is sold in the EU. Discussions with US importers have indicated that developing a US market for sole is likely not viable and the Gambian exporters should continue to concentrate on the EU market. However, most of the *Ba Nafaa* activities will continue to concentrate on putting in place a sustainable fishery plan and other measures and capacity required for The Gambia to obtain the eco-label through MSC certification. It should be noted that it is the industry and government responsibility to apply for and obtain the MSC certification, including payment of audit fees. Therefore, project resources are dedicated to helping them obtain a level of capacity and systems that provide a high probability of certification. This will also require DoFish to build new procedures and priorities into their statistics program and budgetary allocations for ongoing costs of data collection and analysis. If certification is achieved, then concentrated efforts to improve marketing opportunities will be pursued. Processors in The Gambia believe that they will be able to obtain better prices through improved market opportunities with an eco-label and ability to sell more products at higher prices directly to retail outlets. While a price premium cannot be assured, ecolabeling will

provide opportunities for more market channels, and less risk of being cut out of EU markets in the future if EU sustainability standards are not met. Specific activities and outputs in Year2 are described below

Hotspot mapping

The field work on mapping coastal sole fishing areas, habitat types and fish migrations and spawning areas has been completed for the South shore. This has clarified many of the questions regarding red and black sole species behavior along the coast. Work will continue to include the North shore and river areas which may
indicate a two stock population structure. This information will be compiled into a summary report and aspects of this work used for the management plan for sole. This aspect will have a high priority in the first quarter. A Peace Corps Volunteer, Emily Nichols, is assisting with this mapping process.

Figure 5: Ba Nafaa Project staff conducting water sampling at sole fishing sites

Activity Implementation Schedule

Activity	FY 2011				Local Implement. Partners	WWF Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
Maps for the south coast areas produced					DoFish	Emily	Castro
Field work along the North coast					DoFish, fisherfolk	Gibril, Emily, Ousman	Castro
Maps produced for the North Coast					DoFish	Emily	Castro

Key Outputs and Milestones

- Report produced with maps on habitat fishing areas, migration and spawning areas for both the South and North coast areas.

Workshops for developing a sole management plan

Considerable groundwork has already been conducted for the preparation of a sole management plan in Year1. This has included conducting community meetings at the major landing sites to identify issues and collect baseline information regarding the fishery in terms of gears used, seasonality of fishing, catch composition, and local knowledge on the migration and spawning locations of the sole. Several workshops have also been conducted with all key stakeholders including sole fishermen, fish marketers, processers, exporters and government agencies concerned.
At a recent workshop held in September, 2010, stakeholders elected a formal management committee, established the committee "constitution" with roles and responsibilities, and agreed to a set of objectives for the fishery. A working draft of a management plan has also been prepared. Additional meetings will be needed to develop consensus on harvesting rules to achieve management objectives among other elements of that plan. Once a final draft management is assembled and agreed to by stakeholders, it will need to be

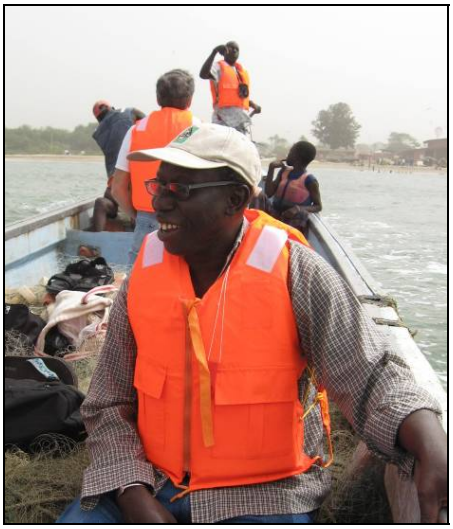


Figure 6: Participatory "hotspot" mapping of sole spawning areas and key habitats with fishermen

submitted for formal approval by the Director of Fisheries and the respective Minister. It is estimated that this process will need at least an additional six months to complete, although since this is very much a process oriented approach, timing is difficult to predict

and may move faster or slower based on how quickly consensus can be reached on outstanding issues such as harvest rules.

Activity Implementation Schedule

Activity	FY 2011				Local Implement. Partners	WWF Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
Assist with refining management objectives and activities to reach objectives					DoFish NASCOM, GAMFIDA, NAAFO	Ousman Gibril	Castro
Compile data regarding mesh size selection for "gill" nets used in the fishery (use video to confirm).					DoFish	Ousman Gibril	Parkens
Assist co-management committees to design appropriate harvesting tools and rules					DoFish GAMFIDA NAAFO	Ousman Gibril	Castro
Assist DOF and co-mgt committees in developing stock assessment processes, and reference points (					DoFish	Ousman Gibril, Emily	Castro/ Somers
Community meetings to negotiate and develop consensus on plan					DoFish GAMFIDA, NAAFO	Ousman Gibril	Castro
Draft mgt plan prepared and review by government and stakeholders					DoFish	Ousman	Castro
Management Plan approved by Dir. and Minister					DoFish	Ousman	Castro
Strengthen new co-management committees					DoFish, GAMFIDA, NAAFO	Ousman Gibril	Castro

Key Outputs and Milestones

- Management plan submitted to Director of Fisheries and Minister of Fisheries

Sole by-catch assessment

The project will continue to assist in participatory by catch assessment and landings data of the sole fishery with DoFish and the Community Fisheries Centers. This may also be incorporated as some of the standard information monitoring as part of the sole stock assessment, and built into management plan actions. However, a key issue to investigate is whether there are any bycatch issues with a particular concern for marine turtles and sharks, and the impacts/extent of impacts that the gears used in sole fishing may have on these threatened and endangered species. Although bycatch is considered low in this fishery, there is a need to confirm this by conducting an actual survey by gear type over a one-year fishing cycle. This process has been started and will continue until 12 months of data are obtained.

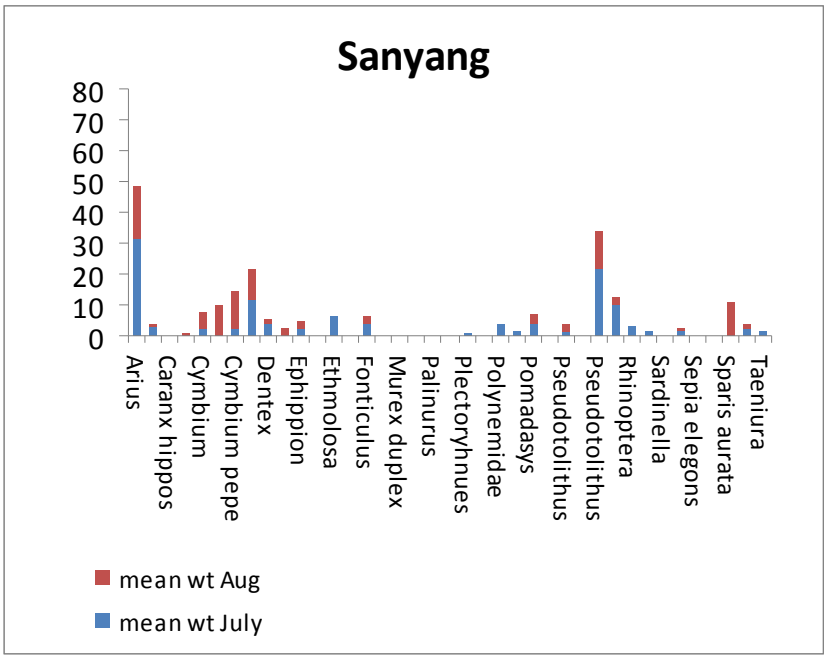


Figure 7: Species composition of by-catch by weight of bottom set gill nets used for sole fishing from the Sanyang landing site

Activity Implementation Schedule

Activity	FY 2011				Local Implement. Partners	WWF Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
By catch assessment field work					DoFish	Gibril	Castro
By-catch report prepared					DoFish	Ousman	Castro/ Somers

Key Outputs and Milestones

- By-catch report prepared

Sole stock assessment

The MSC team performed a rapid stock assessment using available information to determine that the stock of red sole is not overfished. However, they had several recommendations for improving data collection and analysis. This includes the recommendation to collect data from multiple sources that can then be combined and form the basis of a co-management approach. Data needs and sources noted in the report include:

- Obtain grade quantities from the processing plants as a long term relative index.

- Ensure that representative samples of landings include species, length, weight, sex and maturity as well as scale and otolith collection (can also be done at processing plant).
- Develop separate growth models for red and black sole (collect otoliths and tag-recapture program)—currently, only data on red sole growth is available.
- Develop a research survey that will track relative abundance over a time series.
- Develop a tagging program—this would aid in determining stock areas, spawning behavior, fishing mortality, growth and abundance.
- Determine gill net selectivity

Significant progress has been made on data collection. There is now sufficient data for length-weight relationship for both red and black sole. Length frequency data has been collected through the landings program and graded export product amounts are being provided by the processing sector. Landings data will continue to be collected and then analyzed for a re-assessment of stock status.

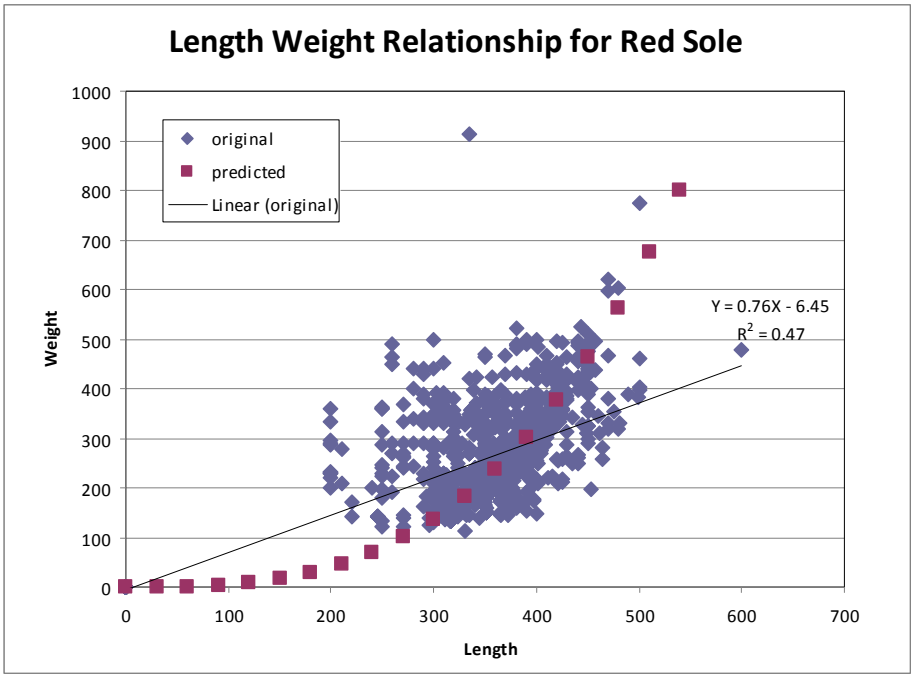


Figure 8: Length Weight Relationship for Red Sole

In Year1, stock assessment and biostatistics training events were held for DoFish Staff and staff from two fishing companies (Atlantic Seafood Company and Rosamond Trade). The short term aim is to build up the capacity of the Department to be able to meet the minimum requirements for conducting stock assessments of sole required for sole certification. In the longer term, they will need to develop greater capacity to do the same for other fisheries. Experience with the first set of two events indicates that there is

a high level of varying capabilities and skills among the staff. Training sessions were slowed down for some to make sure the more challenged learners could stay caught up. We find this to be inefficient and not cost effective and have decided to change strategy. The most advanced learners will be selected via testing to undertake an intensive training of trainers program at URI in June. Removing them from the locale of the day to day work also provides for greater attention of the learners. The advanced group, once trained, will then be responsible to train other staff at DoFish.

However, given the limited resources of the Department, including human resources, the stock assessment plan also needs to include identifying staff that will primarily be responsible for data collection and inputting into spreadsheets, and those that will be responsible for analysis of data and reporting back to the sole management committee on those results for management action. Recent floods in Banjul also resulted in a significant loss of computer equipment within DoFish, hampering their overall ability to compile and analyze data. Therefore, the project will assist them by replacing destroyed computers with new laptops.

Figure 9: Stock assessment training workshop with Department of Fisheries staff

Activity Implementation Schedule

Activity	FY 2011				Local Implement. Partners	WWF Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
Continue to collect landings data					Gabriel	Gibril	Castro/
Analysis of data and preparation of a stock assessment report					DoFish	Ousman	Castro/ Somers/ DeAlteris
Provision of computers to DoFish					DoFish	Ousman	Castro/
Development of a DoFish organizational strategy and budget for sustaining data collection needed t					DoFish	Ousman	Castro/ Somers
Stock assessment training at URI					DoFish	Ousman	Castro/ Somers/ DeAlteris

Key Outputs and Milestones

- Updated stock assessment report prepared and presented to the sole mgt committee
- Computer system in statistics division up and running again.
- DoF annual budget request includes resources for continuing sole stock assessment data collection and analysis
- At least 2 persons trained and capable of supervising data collection and conducting analysis of data

Vessel registration/licensing

Vessel registration and licensing is a necessary step in understanding the total effort in the sole fishery and ultimately to achieve satisfactory scores for MSC certification. The Project is assisting DoFish with registration efforts in the key ports for sole fishing and other landing sites along the south and northern coasts. This is necessary in order to keep track of all fishing vessel arrivals and exits as well as to establish a baseline for an eventual policy to limit entry. Vessel registration and licensing is required under the new Fisheries Act and associated regulations. However, since Project resources are not sufficient to conduct vessel licensing and registration throughout the country, *Ba Nafaa* efforts are concentrating on the south and northern coasts and the estuarine landing sites of where the majority of sole catch is landed. Community meetings have been held with all the landing sites along the Atlantic coast. Once registration is complete, this will provide a basis for the possibility of restricting additional access to the fishery (limiting entry), which may be one measure considered by the management committee to prevent overfishing. Ultimately, licensing can also pave the way to consider possible establishment of catch shares in this fishery. If appropriate information management systems are put in place, and the fact that sole is only landed in a few centers, means that a share system may be feasible. While this may not be part of the initial fisheries management plan for sole, the feasibility of a share system and discussions with fishermen concerning interest and willingness to experiment with such a system, will be activities in subsequent years of the Project—once other basic fisheries management measures are in place. Ba Nafaa will provide materials for stenciling registration numbers on all vessels registered as well as assist DoFish in developing the registration forms, their printing and distribution. However, DoFish will be responsible for actual registration processes and collection of registration fees.

Activity Implementation Schedule

Activity	FY 2011				Local Implement. Partners	WWF Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
Community meetings for registration of vessels					DoFish	Ousman	Crawford
Printing of registration forms					DoFish	Ousman	Crawford
Provision of materials for marking registration numbers on vessels					DoFish	Ousman Gibril	Crawford

Key Outputs and Milestones

- Atlantic Coast vessels registered and registration numbers marked on each vessel

Assessment of the cross border trade in Sole

The value chain for sole identified the fact that an unknown quantity of sole is transshipped into Senegal and much of this transshipment is not being fully captured by the DoFish statistics (and distorts Senegal sole capture statistics) and implication on marketing an eco-labeled product is also a concern. Sole is loaded into trucks coming from the Casamance but reported as caught in Senegal and then transshipped to Senegal for eventual processing and export. This illegal trade can have significant impacts on trying to accurately assess landings of sole caught in Gambian waters as well as have impacts concerning ecolabeling. Ecolabeling may help curtail this trade, but other measure might be identified to bring this illegal trade into the open. Therefore, additional assessment of the cross border trade is needed to fully understand market context and opportunities for improved marketing that benefits more fully Gambian fishermen, processors and exporters. Since cost differences in the two countries have been cited as key reasons for the lack of processing activity in The Gambia and exports to Senegal, this assessment will to the extent possible, also look into the comparative cost structure for processing plants and exports to Europe in the two countries.

Activity Implementation Schedule

Activity	FY 2011				Local Implement. Partners	WWF Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
Select consultant and prepare TOR for cross border trade study					Min Fisheries, Fisheries Dpt of Senegal, and Min of Fisheries of Senegal	Soumare, Ousman	Tobey
Interviews and travel to The Gambia and Senegal (traders, processors, fishermen, government officials)					Ministry of Fisheries, Fisheries Dpt of Senegal, and Min of Fisheries of Senegal	Soumare, Ousman	Tobey
Internal review of consultant's draft report					Ministry of Fisheries, Fisheries Dpt of Senegal, and Ministry of Fisheries of Senegal.	Soumare Ousman	Tobey
Discuss bilateral trade at bilateral lesson exchange workshop (see section 3.7)					Ministry of Fisheries, Fisheries Dpt	Soumare Ousman	Tobey

					of Senegal, and Ministry of Fisheries of Senegal.		
Finalize report and discuss at bilateral meeting					Ministry of Fisheries, Fisheries Dpt of Senegal, and Ministry of Fisheries of Senegal.	Soumare Ousman	Tobey
Select strategic follow-up actions to address the issue					Ministry of Fisheries, Fisheries Dpt of Senegal, and Ministry of Fisheries of Senegal.	Soumare Ousman	Tobey

Key Outputs and Milestones

- Final report on cross border trade
- Findings and recommendations from discussion of issues at bilateral lesson exchange workshop (see section 7)
- Plan of action for Year 3 workplan to address cross-border trade issues

Early actions at the landing sites

The Project set aside a small amount of funds in Year1 to address community-driven concerns within the initial targeted fishing areas. Water and sanitation was identified as an issue in almost every landing site. Due to the substantial costs of developing water and sanitary improvements at the existing landing sites, Ba Nafaa resources were not considered sufficient to address this need. A concept paper on this was submitted to USAID/West Africa and reviewed favorably. Therefore, a specific request for additional funds will be submitted this year to enable upgrades and improvements to landing site water and sanitary facilities in six to seven sites. Addressing such needs would lead to improved hygiene and improved quality of the fish supplies that enter the domestic and export markets. It would also be an important step in extending HACCP (Hazard Analysis and Critical Control Point) concerns beyond just the export processing plants and into the landing centers as well. Outputs for this activity will be contingent on whether additional funds will be received or not from USAID/West Africa. A supplemental workplan for water and sanitation activities will be prepared if funds are provided.

Key Results

No.	Indicator	Target
4	# of agencies or management bodies strengthened or created	10 (Sole mgt committee, 8 community based mgt committees at CFCs, DoFish Statistics unit)
5	# of personnel trained in resources management	2 (stock assessment)
6	Improvements on a governance scorecard	# is increasing
10	No of reports documenting transboundary issues	1 (cross border trade in sole)
12	Hectares in areas under improved management and covered by the sole fisheries mgt plan	20,000 hectares
13	# of technological innovations adopted:	To be determined and incorporated into the sole mgt plan
16	# of vessels registered/licensed	TBD (actual # of unregistered boats estimated at 50 along south coast but actual will be determined once registration process for the area is complete and may be higher)
17	Hectares under effective mgt	Baseline established on target reference point or other biological indicators and based on stock assessment results

3.3 Oysters

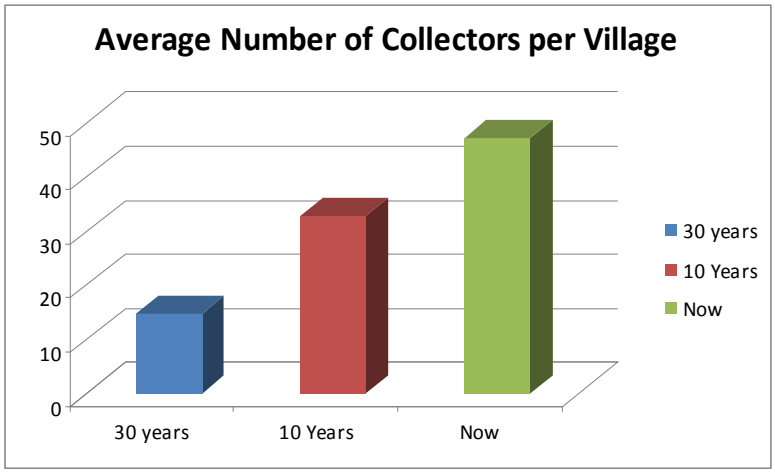
WWF Lead: Babanding
CRC Lead: Lee
Cooperating Partners: DoFish, Depart. of Forestry (DF), DPWM, TRY

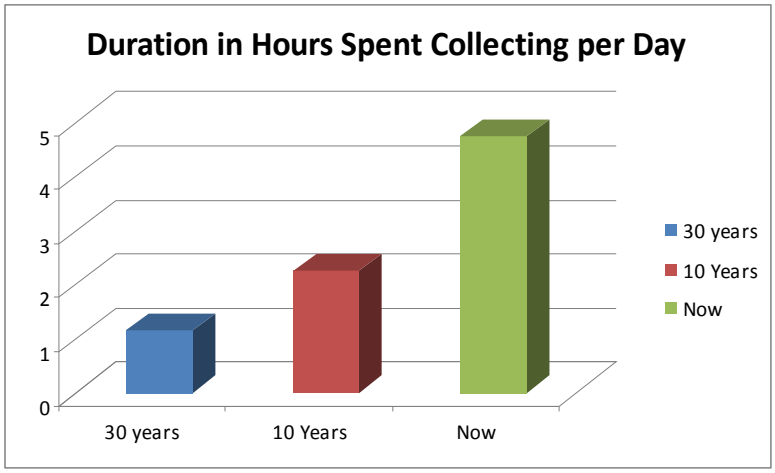
Key issues and Progress to Date

The oyster fishery is somewhat unique as it is dominated by women gatherers. Women also dominate the processing and marketing of oysters. There is very little information on this fishery and official fisheries statistics do not include it in the annual landing statistics. On the South Bank of The Gambia River and in the vicinity of the capital of Banjul, nine communities make up the majority of harvesters in this sector with harvesting concentrated in the Tanbi Park—a Ramsar site. TRY, the women oyster harvesters' producer association does not constitute a Community Fisheries Center as is found at the coastal landing sites. However, under the Fisheries Act of 2008, they can be organized into community-based management committees responsible for management of the oyster fishery in the Tanbi wetlands, which can also be designated as a special management area for the purpose of oyster fisheries management. The Fisheries Act also allows for the allocation of property rights (Section 11) which the communities are starting to claim unilaterally. Our main aim in this work element is to develop a model of a community based approach to management of the oyster and cockle fisheries on a small ecosystem scale – for the Tanbi National Park. Once this model is adopted and being

implemented successfully, the goal of the project would be to expand this model to the other mangrove sub-ecosystems in the Gambia River.

PRAs conducted in Year1 revealed that there are significant concerns about overharvesting as women have to travel longer and farther, take more time to gather oysters and are collecting smaller size oysters. Conflicts between communities are also emerging over harvesting areas as communities start to implement informal and unilateral rules for harvesting (e.g. closed season, exclusive community use zones). There are no formal rules legitimized via government nor are there any formalized committees for managing conflicts or determining rules.





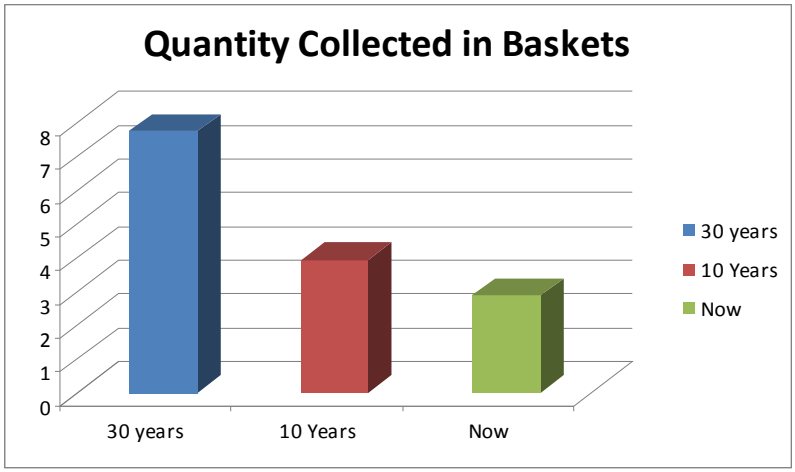


Figure 10: Perceptions of changes in catch and effort of collectors as reveled from the PRAs

The project has had several stakeholder meetings involving representatives from each of the communities harvesting cockles in the Tanbi National Park as well as other communities from Kartong that are also now TRY members. These meetings have included local leaders (Alkalos), legislative representatives and key government agencies including DoFish, DPWD and NEA. These workshops have started to build an

understanding of the management issues and need for an improved co-management approach as well as map out a framework for a management plan. Importantly, all the stakeholders are now supportive of the project approach to and aware of the forthcoming process for developing consensus and approval of a plan. The most recent workshop mapped out an institutional framework that would include community based committees for each harvesting village as well as a Tanbi ecosystem wide management committee.

The project has just started water quality studies on whether there are public health risks from contamination of the harvesting areas (e.g. contamination from *E. coli* bacteria in the water where the oysters are grown).

From a marketing perspective, some progress has been made; TRY women oyster harvesters association conducted a study tour to the Senegal and were trained in improved processing. They now have the ability to pickle oysters for sale during closed seasons to extend income earning for a longer period throughout the year. The government has also allocated a physical market point for the oyster gatherers in the Serekunda central market, but much is also still sold in the open along the road leaving Banjul. The TRY Oyster Harvesters Association was also provided a grant to establish microcredit schemes for the women, develop a business plan, and develop a fundraising strategy where they can develop an association meeting center. The association has also expanded from an initial membership of approximately 50 women, to 500 women representing all the communities exploiting the Tanbi wetland as well as the Kartung estuary area. Training workshops to discuss co-management concepts were also initiated to prepare the women with basic knowledge to start the co-management planning process.

Project Actions in Year 2

A key strategy for the oyster fishery is teaming up with TRY, the local women oyster harvesters association and build on what this organization is already doing with the oyster and cockle gatherers. Building the capacity of this organization to serve members needs and uplift their quality of life is a key long term goal. *The Project also aims to demonstrate an ecosystems-based approach to community-based management of the fishery and adjacent mangroves.* The project's near term goal is to develop a model of a co-management plan that empowers the women harvesters to directly manage the harvesting of the oysters and cockles, and that can be replicated in other mangrove subsystems within the country and region. TRY is planning on eventually expanding its membership further to other areas and the management planning process can be replicated to new areas as TRY membership also grows towards becoming a national association. Building on Year 1 activities summarized above, the following activities will be undertaken in Year 2.

Meetings and workshops to complete preparation and formal adoption of a co-management plan.

This activity is the highest priority for the oyster component of the project in Year2. The immediate goal here is be to establish a management plan for the nine communities in the Banjul area (for the entire Tanbi National Park) as a pilot, and then expand this example to other locations such as the north bank in subsequent years. This will requires coordination between DoFish, Forestry, and Parks and Wildlife Management, the TRY association and local leaders. While the planning process has been started, much work still needs to be done to develop full consensus on management objectives, agreed harvest rules, structures and functions of the area co-management committee and community-based committees. This is a similar process to the strategy also started for stakeholder engagement in the sole fishery. Important issues to be resolved before a management plan can be finalized include designation of exclusive use zones for each community. Conflicts remain between Lamin and Abuko. These use zones then have to be mapped along with open areas as well as potential closed areas and included in the management plan. While there have been both PRAs conducted in each community and Tanbi wide meetings, elements of a management plan now need to be drafted and reviewed in meetings at the community level as well as endorsed by stakeholders Tanbi-wide. This will likely require several iterations of individual community meetings as well as Tanbi wide stakeholder meetings until full consensus is reached. Once this has occurred, the management plan will be presented to DoFish, DPWM and Forestry for formal approval at the department as well as minister level.

Work with stakeholders to complete the following milestones for inclusion in the management plan:

1. Develop management objectives and sustainability indicators at biological, ecological and socio-economic levels
2. Develop harvesting strategies to achieve a sustainable fishery through a series of community level meetings and stakeholder workshops.
3. Develop other management measures needed to achieve objectives including producer association strengthening (TRY), livelihood development

Activity Implementation Schedule

Activity	FY 2011				Local Implement. Partners	WWF Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
Meetings w/ TRY association reps from each community to draft rules, decision making processes and committee structures, develop management measures					TRY,DoFish, DoF, DPWM	Babanding Ousman	Crawford
Follow-up meetings within each community and local leaders for feedback and inputs					TRY, DoFish, DoF, DPWM	Babanding Ousman	Crawford
Additional TRY association meetings to revise rules as needed					TRY,DoFish, DoF, DPWM	Babanding Ousman	Crawford

Prepare a draft management plan for review, incorporating information from scientific studies, PRAs and community meetings into a consolidated document					TRY,DoFish, DoF, DPWM	Babanding Ousman	Lee, Crawford
Final review of final draft by TRY association representatives					TRY,DoFish, DoF, DPWM	Babanding Ousman	Crawford
Technical review by government and area representatives					TRY,DoFish, DoF, DPWM	Babanding Ousman	Crawford
Revisions made as needed					TRY, DoFish, DoF, DPWM	Babanding Ousman	Crawford
Submission for approval by the various departments and agencies concerned					TRY,DoFish, DoF, DPWM	Babanding Ousman	Crawford
Signing ceremony and/or launch event					TRY,DoFish, DoF, DPWM	Babanding Ousman	Crawford

Key Outputs and Milestones

- Conflict between Lamin and Abuko is resolved (and any other intercommunity conflicts over exclusive use zones)
- Management plan drafted, reviewed by all stakeholders, approved by DoFish, DPWM, and Forestry and the Minister of Fisheries
- Approved management plan printed and distributed to all stakeholders.
- Implementation started

Compile and continue to develop scientific and local knowledge to effectively manage the biological and socio-economic aspects of the fishery, including the following activities:

- ***Complete studies on determining peak spawning period, growth parameters and stock assessments— Complete studies on determining peak spawning period, and sustainability criteria for oyster management***—The use of closed seasons and areas are one of the management tools available to the oyster co-management teams. However in order to maximize the effect of these, it is important to understand basic oyster biology of the Gambian oyster, timing of spawning and growth rates. An in situ study is being conducted using ceramic tiles to: (1). Measure monthly settlement to create an index of spawning activity (2). Evaluate growth rates (3) Monitor environmental data to correlate with spawning and growth i.e. water temperature, salinity and dissolved oxygen and (4) conduct a market survey to monitor weight of oysters over the season to determine if it provides an index of harvest sustainability. Year 1 data was collected starting in July so many of these time series are not long enough to see trends or correlations. This will continue in year 2 to complete a one year study. Upon completion, compiled information will be made available to the co-management teams and Department of Fisheries to apply to management planning options.

***Monitoring** of seasonal oyster settlement patterns is important for improving aquaculture productivity and determining appropriate harvest rules to sustain yields.*

Figure 11: Monitoring seasonal oyster

- ***Continue the water quality study*** with DoFish and the Department of Water Resources of all the main oyster harvesting areas in the Tanbi Wetland area to determine whether or not growing areas are contaminated. This is a necessary step in considering the possibilities for marketing fresh raw oysters to restaurants or exporting them. A URI expert on shellfish recommended that at least 3 years of data will be necessary to understand seasonal trends and to provide a sufficient baseline required for eventual export certification. The water quality study will help assess the feasibility of developing a shellfish sanitation management plan with DoFish in subsequent years, which is required for growing/harvested areas that export to the US and the EU, and recommended if the goal is to establish local markets for raw oysters targeted at tourists staying in local hotels. Preliminary results of the water quality study show that most of the sites have coliform levels within international standards, encouraging results but longer time series data is required. Results of the water quality studies will be feed back to key government stakeholders and TRY association. Staff of DoFish and Department of Water Resources (DWR) will be provided with a short term internship in the Department of Health and Dept of Environmental Management in Rhode Island which are responsible for implementing the FDA approved state shellfish sanitation program. The aim of this internship is to give the agencies a thorough understanding of the high standards, methods and criteria if they want to obtain FDA approval of a sanitation program that meets import criteria.

- ***Improvements in the Value Chain:*** A feasibility study on improved landing and marketing facilities and outlets is delegated to TRY as part of their strengthening grant just provided at the end of year1. Based on this feasibility study, physical improvements in the marketing facilities or possible construction of a modest small scale kiosk on the roadside leading from Banjul will be supported. The aim here is to

provide oyster gatherers with improved processing center(s) in the Banjul area that provide for cleaner and more sanitary processing and sales location(s) and can provide a safer and higher value product to local consumers. Additional project support will be provided on continuing product diversification, improved packaging and labeling both through specific training events as well as additional direct grants to TRY.

- ***Complete pilot aquaculture activities and assess technical practicality and economic feasibility*** to determine if further effort should be put into this potential livelihood activity. Start experiments with the "floating basket" technique as a way to conserve juvenile oyster usually discarded during harvesting practices.

Activity Implementation Schedule

Activity	FY 2011				Local Implement. Partners	WWF Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
Studies on spawning and growth					DoFish, DoF, DPWM	Babanding and Peace Corps.	Castro
Water quality monitoring					DoFish, DWR	Babanding DWR	Rice
Feasibility study of market outlets					TRY	Babanding Ousman	Tobey
Construction of small scale market facilities					TRY	Babanding Ousman	Tobey
Pilot aquaculture as an supplemental livelihood					TRY,DoFish	Babanding Ousman	Rice

Key Outputs and Milestones

- Report on spawning and growth study
- Report on market study
- Report on settlement growth and mortality
- 2 government officers trained in shellfish sanitation program standards in RI
- Water quality report on first 12 months of field data produced
- Water quality results fed back to all Tanbi stakeholders.
- Oyster value chain completed and results incorporated into draft management plan
- Report on feasibility of oyster aquaculture in the Tanbi

Strengthen TRY via continuing grants to build association capacity as an advocacy and producer group.

Year1 was spent training many members of TRY as well as developing a grant proposal for funding by the project. The grant was provided and implementation just started at the end of Year 1. The project will assist TRY by providing technical support in achieving the objectives and activities outlined in the grant, such as development of a business plan and fundraising strategy, and micro credit scheme in particular. The project will also provide training to association members in microfinance, literacy and numeracy, and

improve their ecological knowledge through environmental education. If most of the initial grant activities for TRY are implemented successfully, a second grant to TRY will be considered. This grant could provide for additional training of TRY members, market facility improvements, additional seed funds for microcredit schemes and supplemental livelihood development.

Peace Corps Placement: The Project has had discussions with US Peace Corps about a possible Peace Corps Volunteer (PCV) placement with WWF for the oyster activities. A job description will be prepared and oyster harvesting communities contacted about interest in a volunteer placement as a community must provide housing for a PCV.

Activity Implementation Schedule

Activity	FY 2010				Local Implement. Partners	WWF Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
Implementation of initial strengthening grant					TRY	Ousman	Lee
Second TRY strengthening grant					TRY	Ousman	Lee
WWF-Dakar institutional assessment					TRY	Soumare, Ousman	Lee
Microenterprise training					TRY	Ousman	Tobey
Literacy training					TRY	Ousman	Lee
Market and product development					WWF	Ousman	Lee, Wilkensen
Peace Corps Placement					TRY	Ousman	Crawford

Key Outputs and Milestones

- Business plan and fundraising strategy developed
- TRY temporary association center opened and operating
- TRY actively raising funds for association support from sources other than the project.
- At least 50 members trained in various skills and knowledge to improve resource management capabilities and business management capabilities.

Kartong Management Planning

As TRY member ship has expanded, more oyster harvesters have taken an interest in the management planning activities now focusing in the Tanbi National Park. The project's long term goal is to start replicating this process in other estuarine areas of the country. However, the project does not want to start processes in other areas until the Tanbi Na\tional Park planning process and formal adoption is complete. However, TRY membership includes representatives from Kartong, which harvest oysters in a different estuary than the Tanbi area, located near the southern border of the country. The project expects that the Tanbi plan will be completed in the second quarter which will free up some staff time to start working in another estuary. Since Kartong representatives of TRY have already been attending meetings concerning the Tanbi, as well as in other project events, including participation in PRAs, this area is the next logical place to start additional area level community-based planning. Kartong will be less complicated than

the Tanbi area as it involves only one community. Therefore, this management plan or special fishery management area, will involve negotiations within only one community. This work will also engage a Peace Corps Volunteer stationed in Kartong, Casey Donahue, who is also participating in the Tanbi planning activities and familiar with the process.

Activity Implementation Schedule

Activity	FY 2010				Local Implement. Partners	WWF Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
Community meetings to start the management planning process					DoFish, DPWM, Dept of Forestry	Babanding, Casey Ousman	Crawford

Key Outputs and Milestones

- Initial draft of a community-based management plan

Key Results

No.	Indicator	Target
1	# of businesses and persons economically benefiting	50
2	# receiving assistance packages	50
3	# of people with improved access to loan capital	50
4	# of agencies or mgt bodies strengthened or created	One oyster/cockle mgtt committee created
5	# of personnel trained in resources mgt	2- water quality
6	Improvements on a governance scorecard	yes
7	# of harvesters with use rights	500
12	# hectares in areas under improved management: • Oyster mangrove area as community-based management zones	6000 hectares
13	Number of technological innovations adopted • Oysters, ban on small sized collection • Formal closed season	1
17	Hectares under effective management • increased density in no-take areas	Not tracked this year

3.4 Catfish

WWF Lead: Gibril, Ousman
CRC Lead: Castro
Cooperating Partners: DoFish, NAAFO, GAMFIDA, Community Fisheries Centers

Key issues to Address

Initially, the project was proposing to work on shrimp and sardinella as additional species for improved management. However, after close consultation with DoFish, these species were not seen as priorities. First, a sardinella management plan for this regional stock is being developed by the Canary Current Sub-Regional Fisheries Commission. Additional value added to this effort by BaNafaa is considered low and therefore work on this fishery will not be started. While shrimp is an important export commodity, costs and price conditions are not very favorable for export at present and therefore a low priority now for DoFish. However, saltwater Catfish, which is a stock of importance for local and regional food supply is relatively important. Very little is known about these stocks. This fish is also caught with bottom set gill nets and long lines and is part of the demersal species assemblages along with sole. Much of the catch is targeted during spawning aggregations outside the mouth of the Gambia river just prior to the rainy season. Hence concerns over this fishing practice and associated risks to sustainability of the stock. Since this fishery is associated with the same nets, landing sites and fishermen as sole, a catfish management plan along with sole can be easily integrated with work already done on sole and involves the same stakeholder groups. Management responsibilities for this stock could also be added to the charge of the sole management committee. Ultimately, this strategy also allows the project to incrementally build to a multispecies management plan for demersal stocks, primarily targeted by the bottom set gill nets and long lines. This strategy acknowledges that a more complex multispecies management plan can only be considered as capacities for management among fisheries stakeholder groups and DoFish also increase and are demonstrated. By working with the same stakeholder groups, the project can stay more focused and make more rapid progress towards this goal.

Work on Catfish will not be started until the sole management plan is completed, formally adopted and launched so as not to stretch the capabilities of the project on too many work streams at the same time, overextending their capacities. Initial activities planned for the second half of the workplan year include PRAs and value chain assessment of catfish. In Year1 a value chain assessment was conducted on Shrimp. While we will not be continuing to work on this species at present, minor editing is needed before the report is finalized. However, no additional work will be undertaken.

Project Actions in Year 2

- ***PRAs on Catfish.*** PRAs will be started in major catfish fishing communities following the similar PRA processes used for sole and oysters..

- ***Completion of value chain report on Shrimp***. This bulk of the work on this report has been finished and only needs minor final editing and then can be published. A validation workshop will be held with key stakeholders before it is finalized and published.

- ***Value chain on Catfish.*** This value chain assessment will span the harvesting in The Gambia to the end users in multiple countries as some of the smoked and dried product in particular is exported regionally and a smaller amount marketed

internationally as well. An important part of this value chain is also looking at the wood used for smoking and drying the product. Conversations with some fish smokers indicate that wood is becoming harder to find and more expensive to obtain. As this activity involves cross border trade as well, this work will likely include a regional consultant working with a local Gambian consultant to assemble all the pieces of the value chain.

- ***Validation workshop on Catfish.*** Once the PRAs and value chain are completed, a validation workshop with stakeholders will be held and subsequent to this workshop, both reports finalized. This information base will set the stage for management planning activities and value chain improvements projected in Year3.

Key Outputs and Milestones

- Report the shrimp value chain completed and published
- Catfish PRA summary report
- Catfish value chain report
- Validation workshop

Activity Implementation Schedule

Activity	FY 2010				Local Implement. Partners	WWF Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
Complete shrimp report and publish					DoFish	Ousman	Tobey
PRAs on Catfish					DoFish	Ousman	Castro
Catfish value chain assessment					DoFish	Ousman	Tobey
Validation workshop on Catfish PRAs/value chain					DoFish	Ousman	Castro/ Tobey

Key Results

No.	Indicator	Target
10	Number of reports documenting transboundary issues and alternative solutions	3 reports (shrimp and catfish value chains, Catfish PRA)

3.5 Climate Change Adaptation

WWF Lead: Soumare
CRC Lead: Tobey
Cooperating Partners: N/A

Regional Workshop: Climate change impacts present additional challenges for fisheries management — to the ecosystem, coastal communities and fisheries infrastructure. Studies of the WAMER predict that changes in climate will drive changes in the migration and abundance of commercially important fish species, and affect fishing

communities, landing sites, and critical estuarine ecosystems. Consideration of climate change is part of the underpinning of an ecosystems-based approach to fisheries management. In Year 2, the project with WWF-WAMER will convene a regional workshop with a focus on building awareness of climate change issues in fisheries and MPAs and strategies for incorporating these issues into fisheries and marine conservation decision-making. The workshop will be held in Senegal (tentatively) in both French and English, and invite several representatives from each of the seven countries of the **Commission Sous-Régionale des Pêches** (CSRP) that includes Cape Verde, Gambia, Guinea, Guinea Bissau, Mauritania, Senegal, and Sierra Leone.

Key Outputs and Milestones

- Workshop prospectus
- Workshop agenda, session plans, and background materials
- Workshop proceedings
- Participant actions on climate change projects post-workshop

Activity Implementation Schedule

Activity	FY 2011				Local Implement. Partners	WWF Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
Define workshop goals and objectives, participants, venue, and organizing committee					N/A	Soumare, Dia	Tobey
Identification of participants and invitations					N/A	Soumare, Dia	Tobey
Request participants to collect fisheries, MPA and climate change information on their respective country following a template of questions					N/A	Soumare, Dia	Tobey
Define detailed workshop agenda, facilitators and resource people, and session plans					N/A	Soumare, Dia	Tobey
Convene regional workshop						Soumare, Dia	Tobey
Prepare summary of workshop proceedings and distribute to participants for comments and then more widely					N/A	Soumare, Dia	Tobey
Load proceedings on CSRP, WAMER and URI websites					N/A	Soumare, Dia	Tobey
Follow-up mentoring and communication with participants to evaluate post-workshop climate change projects					N/A	Soumare, Dia	Tobey

Key Results

No.	Indicator	Target
8	# on individuals participating in regional meetings and/or exchanges	21
9	# of regional workshops/meetings on policy reform	1

3.6 Water and Sanitation

WWF Lead: Drammeh
CRC Lead: Tobey
Cooperating Partners: TBD

No specific water and sanitation activities are planned in this workplan. However, a concept paper was prepared and submitted to USAID/West Africa for consideration of substantial add on funding for such activities which are beyond the current scope of the Ba Nafaa project design and budget. The concept paper proposes additional funding of $445,321 over a three-year period to support needed water and sanitation activities linked to the artisanal fishery and Community Fishery Centers (CFCs). These centers are fish landing and public fish market sites where fish is taken from boats, washed and iced, sold, and in some cases, smoked in adjacent processing facilities. Some catch is sold and transported to export processing plants. There are seven CFCs in seven fishing villages located along the South Atlantic coast and 11 CFCs in the major inland fishing villages along both banks of the River Gambia. The Ministry of Fisheries and specific CFCs have indicated that Water and Sanitation are development priorities for the artisanal fisheries sector and have expressed their interest in having the *Ba Nafaa* project provide assistance in this area. The *Ba Nafaa* Project is not working in all of these landing sites, but mainly those along the Atlantic Coast and The Gambia River estuary involved in the sole, sardinella and shrimp fisheries. In addition the project is working with oyster harvesters in nine communities where household sanitary facilities as well as sanitary facilities at oyster processing and marketing points are also lacking.

The objectives of these WatSan activities are to improve water supply and sanitation at least seven public fisheries landing/processing facilities. This will provide direct benefit to the thousands of fishermen, oyster harvesters, women fish venders, small scale fish processers and other laborers that utilize these facilities daily. An added benefit is that clean water supply and sanitary facilities at these sites will also result in improved sanitary handling of seafood supply and result in safer and healthier seafood product that enters both the local food chain as well as processing centers for export. The beneficiary communities will enter into a management agreement with the project to include sustainability elements that will ensure that the facilities are properly maintained over a long period of time.

If this concept and additional funding request is approved, then a supplemental workplan for this component will be developed and provided to USAID/West Africa for approval.

3.7 Capacity Building, Communications, Outreach and Coordination

WWF Lead: Drammeh
CRC Lead: Crawford
Cooperating Partners: DoFish, WWF-WAMER, WIOMSA

Degree training for DoFish staff

Another strategy of the *Ba Nafaa* Project is to develop the capacity of staff within the Department of Fisheries. One approach will be to provide degree training for mid-career staff within DoFish. There is a strong cadre of approximately one dozen mid-career professionals who cannot be advanced through promotion within the civil service system as they lack the appropriate degree qualifications, in spite of the fact that they have ample experience and competencies. This creates a morale problem and is typically a problem for retaining highly skilled people within the Department. Most of these individuals have completed two-year diploma programs, but require a four-year degree to be promoted. Such degrees in fisheries are not available in The Gambia and require training outside the country. Individuals from DoFish with two years of study already completed have been selected to continue degree training to a four year level (i.e., the Project will provide support for an additional two years of education). Degree training at Nigerian universities is very cost effective. Several individuals have been nominated for these degree scholarships and have been accepted for admission in 2011. These individuals will begin their continued education in 2011 semester.

MPA Pro certification

The Western Indian Ocean Marine Science Association (WIOMSA) has established a professional certification program for Marine Protected Area (MPA) professionals. This program assesses individuals against a set of standard competencies developed by MPA experts as the minimum standards required of MPA managers. The program certifies those who meet the standards and helps those who do not meet the standards to develop personalized learning plans for addressing deficiencies found. West Africa currently has no individuals that can serve as certifiers of MPA professionals in this region. Therefore one MPA expert from the region will be trained in assessment methodologies so that in subsequent years, West Africa MPA managers can avail of this certification program.

The Gambia and Senegal are exchanging lessons in artisanal fisheries co-management and actively working to address transboundary issues that affect sustainable fishing of shared stocks.

As anticipated, a number of bilateral issues are emerging as the project gains experience on the ground. Cross border trade in sole as well as catfish as been explained previously. In addition, both Senegal and The Gambia now are starting to register fishing vessels and this raises questions about requirements for boats operating in both countries. In addition, through the USAID/Senegal Wula Nafaa Project and World Bank funded activities, formative co-management experience for artisanal fisheries are emerging in both countries. Therefore, incorporating opportunities for sharing experience and discussing bilateral issues of mutual concern are now appropriate to be included in the Ba Nafaa workplan this year. This will involve a bilateral workshop on fisheries issues of mutual concern on the three topics mentioned above: (1) registration and licensing of artisanal fishermen, (2) sole fishery and cross border trade issues, and (3) lessons learned on co-management

URI Fisheries Institute

In Year1, four individuals attended this URI based three-week event. The Director of Fisheries, the Project Manager, the Executive Director of TRY and the President of the National Association of Artisanal Fishermen (NAAFO). This experience helped develop a strong core team of leaders working in key aspects of the project that have a common vision of key ingredients and processes needed for effective collaborative fisheries management initiatives that integrate an eco-systems based approach. An additional two participants - to be determined (likely one project staffer and one private sector representative) – will be sent to the 2011 Fisheries leadership Institute event.

Communications and outreach

The Project will produce several outreach and communications products in Year 2. This will include preparing outputs of many of the technical studies conducted as "technical reports" and made available via the CRC website. The workplan, periodic project highlights and success stories and management plans will also be made publically available via the CRC website and the DEC clearinghouse. The project will also work with the communications officer at USAID/West Africa to inform them of weekly events that may be of interest to have USAID staff attend, review of press releases and provide them with success stories.

Activity Implementation Schedule

Activity	FY 2010				Local Implement. Partners	WWF Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
DoFish staff attend degree training					DoFish	Ousman	Crawford
WAMER staff undertakes MPA-PRO certification assessor training					WWF-WAMER	Arona	Ricci
Bilateral workshop on exchanging lessons					DoFish, Wula Nafaa, WWF WAMER Senegal Min Maritime	Arona, Ousman	Crawford
URI Fisheries Institute					DoFish, Private sector assns	Ousman	Castro
Stories as part of quarterly reports					N/A	Ousman	Crawford
Technical reports "published"					N/A	Ousman	Crawford/ Kaine

Key Outputs and Milestones

- 2 DoFish staff continue degree training to BSc level
- 2 stakeholder s attend URI Fisheries Inst
- 1 WWF-WAMER staff enters MPA-Pro certification program
- Report on Bilateral workshop on fisheries issues of mutual concern

- Story provided to USAID/West Africa on a quarterly basis
- Technical reports published on CRC web and sent to DEC clearinghouse including sole and shrimp value chains, oyster PRAs, and sole and Tanbi estuary fishery management plans.

Key Results

No.	Indicator	Target
5	# of personnel trained in resources mgt	5 (2-Degree training, 1 MPA-PRO certification, 2 Fish. Inst.)
8	# on individuals participating in regional meetings and/or exchanges	30
9	# of regional workshops/meetings on policy reform	1 (bi-lateral workshop)

4. Project Management

4.1 Strategic Partners

Since this Project is an Associate Award under the Leader with Associates Cooperative Agreement for *Sustainable Coastal Communities and Ecosystems* (SUCCESS) Program, the Coastal Resources Center (CRC) at the University of Rhode Island (URI) is the lead institution responsible for overall Project management and implementation including programmatic and financial reporting to the USAID/West Africa Regional Office. The World Wide Fund (WWF) West Africa regional office and its program located in Dakar, Senegal with a field office in The Gambia is the primary regional and in-country implementation partner.

Several other organizations play critical partnership roles in implementation or as primary clients who benefit from the Project (see Figure 2). The Gambia Department of Fisheries (DoFish) is the primary national institution slated for institutional strengthening as well as the Department of Parks and Wildlife Management. Also targeted are the National Association of Artisanal Fisheries Organization, and the Fisheries Management Committees at the Community Fisheries Centers and the TRY women oyster harvesters association. Each will contribute resources (e.g. staff time, equipment, etc.) to implementing a unified vision for the Project. Additional partners with roles include the USAID West Africa Regional Office and USAID Senegal. At the regional scale, the USAID Wula Nafaa II Project and other ongoing donor regional initiatives also play a role. The Project also coordinates with other U.S. government-funded initiatives in the region as appropriate.

4.2 Operational Staffing and Lines of Authority

CRC and the WWF West Africa regional office are the primary Project management and implementation partners. CRC will supervise WWF in their role in the Project. The in-country Project Manager (PM) is a full time position contracted by and housed in the WWF field office in The Gambia. He is the primary liaison with the USAID/West Africa Regional Office in Accra, Ghana. The PM develops detailed terms of reference, contracts and supervises local consultants and other local partners contracted to provide Project services. All full time local staffs are contracted by WWF. Both WWF and CRC provide short-term foreign technical assistance and consultants as needed. The PM directs and supervises in-country field staff and activities, and is responsible for day-to-day field operations in The Gambia.

The WWF National Program Coordinator in The Gambia serves as a senior advisor to the project. The WWF-WAMER Director of Conservation (Arona Soumare) provides WWF supervision of the PM (Ousman Drammeh). The Director of International Programs at CRC/URI (Brian Crawford) also serves as a senior advisor and is the URI staff with overall responsibility and oversight of the Project. Since URI is the legally entity in charge of the Project, Crawford is also the URI staff responsible to USAID. Extension staff are supervised by the PM and serve as the lead organizers, facilitators and liaisons with community-level government, civil society organizations and local NGOs. The PM will also act as the main liaison with strategic partners in The Gambia at the national level and in the region, especially with the DoFish in The Gambia and Senegal, and with key private sector stakeholder groups. Figure 4 depicts the internal operational structure of the Program.

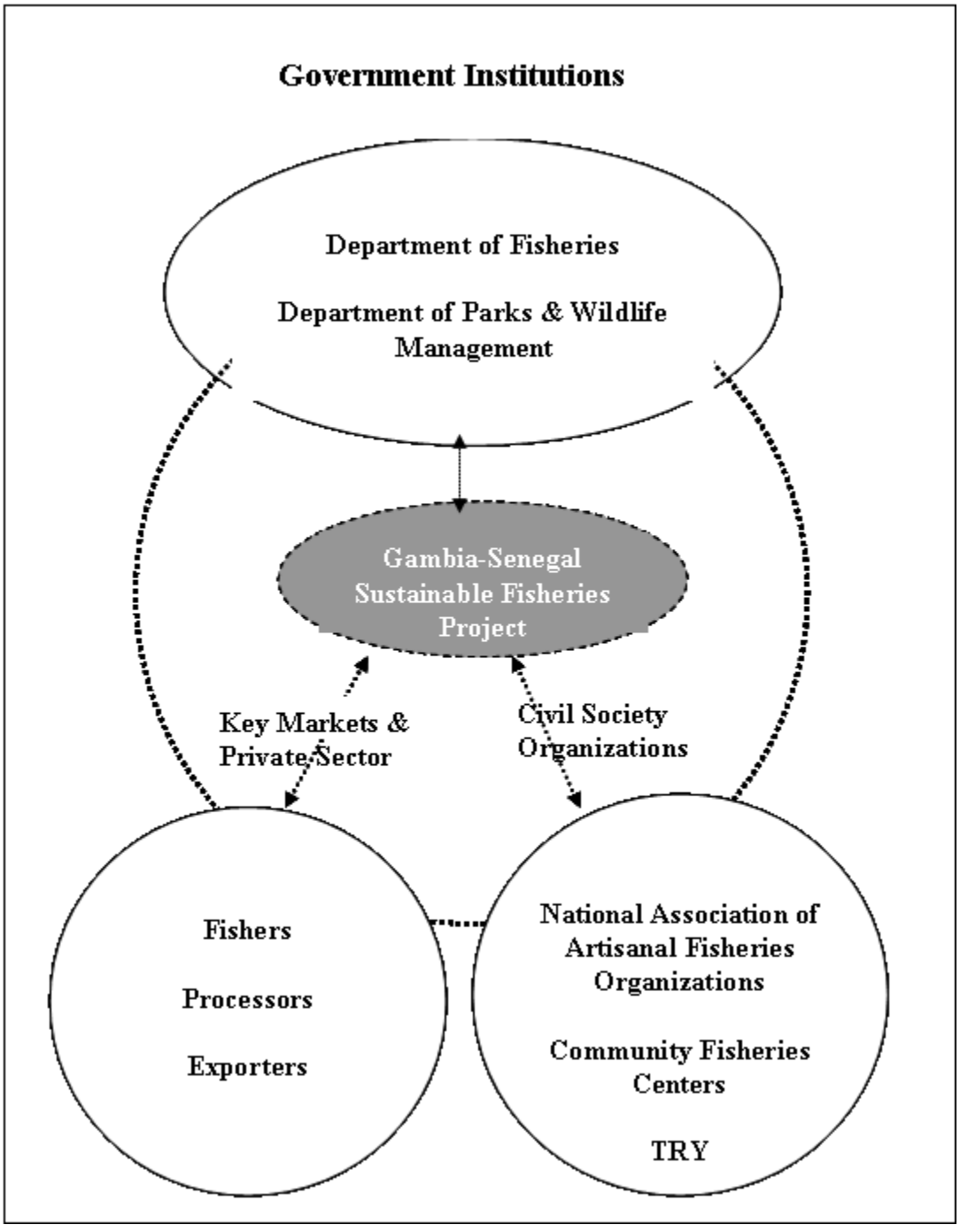


Figure 12: The Gambia Project Key Partners

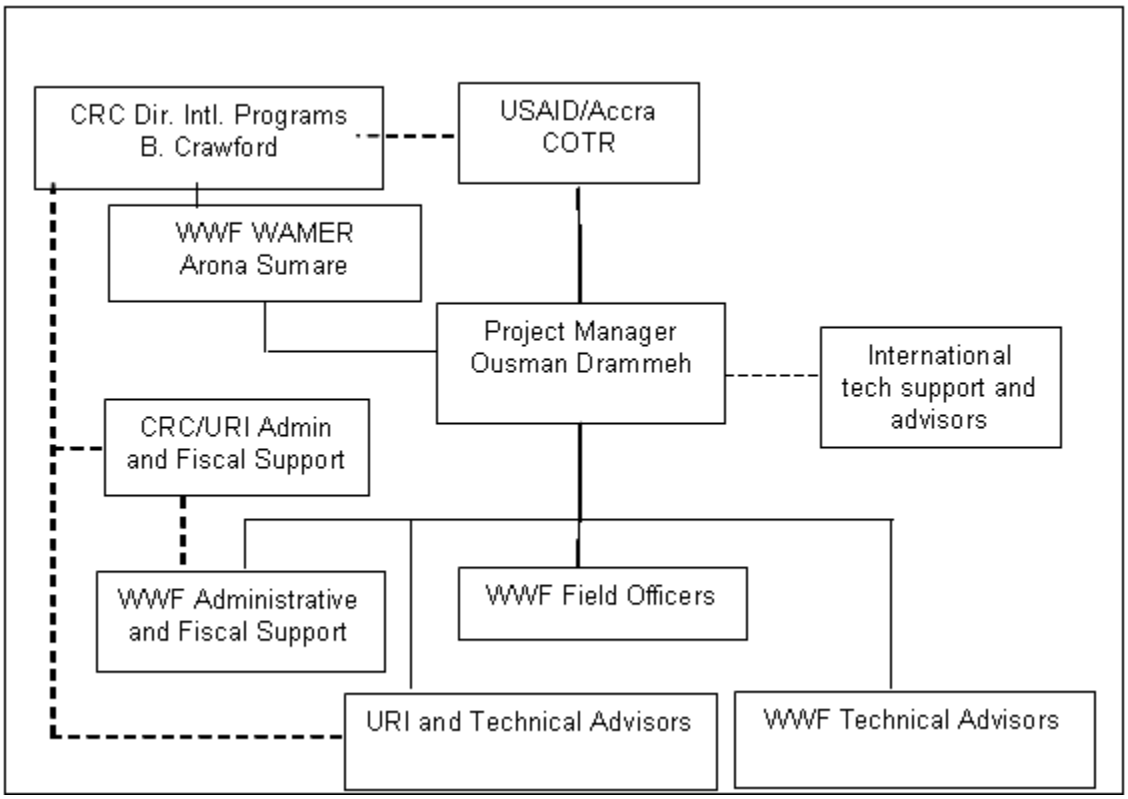


Figure 13: Operational Structure of the Program

Staff responsibilities for key management activities are depicted in the table below.

Program Areas	Local Implementing Partners	WWF Person	CRC Point of Contact
Project Management			
PMP reporting	WWF	Ousman	Kaine
TraiNet	WWF	Ousman	Kaine
Quarterly financial reporting	WWF	Gaye	Kaine
Quarterly program reporting	WWF	Ousman	Crawford
Annual work planning	WWF	Ousman	Crawford

4.3 Performance Management and Reporting

The goal of performance management and evaluation is to encourage adaptive management and learning within the Project and to report results to USAID/West Africa.

This requires collecting timely information using indicators selected to provide meaningful information on progress towards stated objectives. In Year 1, the Project developed a Performance Management Plan (PMP), a summary of which is presented in Appendix 1. The PMP includes key results, refined performance targets disaggregated by year, specific monitoring parameters, and source(s) of data for each indicator. Time-bound targets were refined through the work planning process in consultation with local partners and beneficiaries. These targets will be reviewed annually and adjusted as necessary based on Project progress, experience and lessons learned.

Quarterly performance monitoring reports document progress on achieving results. These reports include: 1) a comparison of actual accomplishments against the targets established for the period; 2) explanation of quantifiable outputs generated by Project activities; 3) reasons why goals were or were not met. The data reported is supported by evidence collected and filed by the PM, or his designee, who will serve as the in-country PMP coordinator. The CRC provides quality control measures to ensure the PMP system is properly implemented.

The *Ba Nafaa* Project invests resources in monitoring and reporting to foster learning and adaptive management. Learning and sharing occurs across implementation sites and with other projects and programs. An internal self- assessment is conducted annually in conjunction with the work-planning meeting.

Regular Project management and annual reporting activities are carried out by the CRC and WWF senior management team and coordinated by the PM. Main tasks and reporting requirements include:

- Preparation and submission of quarterly progress reports to USAID/West Africa CTO (Cognizant Technical Officer) and DoFish
- Timely and regular input of data into the USAID TrainNet system for all Project training activities
- Annual self-assessment of progress and annual workplan preparation and submission by CRC/WWF for approval by USAID
- Collection, analysis and reporting of data to USAID on Project indicators and targets for Project performance monitoring, submitted quarterly as part of the standard quarterly progress report
- Monthly accounting reports sent from WWF to CRC
- Expenditure reports submitted to USAID from URI

The schedule for producing the above listed tasks and reports are provided in the table below.

Management and Administration Activity Implementation Schedule

Activity	2010-2011												Responsible Person
	O	N	D	J	F	M	A	M	J	J	A	S	
Routine reporting													
Monthly activity updates to CRC													OD
Monthly key staff (WWF-CRC) Skype conference calls													BC
Quarterly PMP reporting													OD
Draft quarterly report to URI for review													OD
Review comments from CRC													BC
Quarterly reports to USAID													OD
Input PMP training data into the USAID TraiNet													KK
Stakeholder progress reporting and annual planning													OD
Workplan to USAID													BC
Workplan approval by USAID													GYQ
Financial Management													
Monthly account reports from WWF to CRC													MG
Expenditure reports to USAID from CRC/URI													KK

BC-Brian Crawford (CRC), KK-Kim Kaine (CRC)
OD - Ousman Drammeh (WWF), MG - Mamadou Gaye (WWF)
GYQ – Georgette Yarboi-Quayson (USAID/Accra/WA/PO)

4.5 International Travel Schedule

This international travel schedule does not include travel between The Gambia and Senegal, which for planning and management purposes is considered local travel. The following list captures all international travel other than within and between The Gambia and Senegal.

1st Quarter

- Tobey (early November). Planning for climate change workshop and cross border sole trade study. Governance score cards on sole and oyster fishery. Value chain activities and water and sanitation.
- Crawford (December) review of PMP targets and work on proposed changes based on lessons learned to date, review of oyster management plan progress
- Crawford and Ousman (December) to Accra to present and discuss Project accomplishments and activities, PMP revisions w/ USAID
- Castro(December) – follow-up on co-management plan drafts and stakeholder processes for oyster and sole and review of and analysis of information gathered on sole and oysters

2nd Quarter

- Lee (January). Follow-up on TRY strengthening grant
- Wilkensen (January). Work with TRY on value added marketing and business development strategies and value added products
- Rice (January) Review of water quality studies and aquaculture pilot projects
- Castro (March). Review of bycatch assessment surveys and management planning.
- DoFish Staff depart for degree training in Nigeria
- Tobey (March). Regional Workshop on climate change adaptation

Third Quarter

- DoFish and DWR staff (June) to RI for water quality internship
- DoFish Stats Div staff(June) to URI for stock assessment Training of trainers
- Tobey (June). Follow–up on value chain assessments.

Fourth Quarter

- Crawford and Castro (August) Bilateral workshop on fisheries issues. Project review and FY 2012 work planning

4.6 Environmental Monitoring and Compliance

Based on the initial environmental evaluation (IEE) under preparation for the Project, monitoring schemes are in place to ensure no significant environmental impacts are occurring for those actions or projects which are identified as possibly causing minor environmental impacts. In Year 1 all of the activities fall under categorical exclusions (e.g. trainings, meetings, bycatch assessments, environmental surveys). There are no plans at this time to implement gear exchanges, which in some instances can have an impact on endangered species of marine mammals or marine turtles depending on the type of gear exchanged and the type of new gear provided. Several activities are anticipated to require some monitoring and may require minor mitigation measures to avoid any significant impacts. These are any early actions taken at some of the coastal landing sites—e.g., possible construction of water and sanitation systems or other minor infrastructure improvements, and/or construction of small scale marketing facilities or landing facilities for oyster harvesters. Possible mitigation measures include actions to reduce erosion or sedimentation into adjacent water bodies during and after construction, to ensure proper siting of wells or bore holes dug, and to ensure there is water quality testing at the well sites and ensure proper siting of latrines and septic systems. The specific actions will depend on results of the participatory appraisals, the needs identified by the communities, and the results of the feasibility studies.

4.7 Branding

The *Ba Nafaa* Project provides information through many existing channels. This includes through presentations at meetings, conferences, outreach sessions and other forums as well as through print media—e.g., peer-reviewed articles in professional journals, locally produced Information, Education and Communication (IEC) materials, pamphlets, brochures, policy briefs, guides, and PowerPoint presentations. The main target audiences include local communities, local government agencies, national policymakers, grassroots NGOs, and other donors. Acknowledgement is always given to the generous support of the American people through USAID in all Project communications and materials. Also recognized are partnerships and support from local government ministries, agencies and departments who participate in various activities of the Project.

Synopsis of Planned Communication Items Affected by USAID Marking/Branding Regulations (ADS 320/AAPD 05-11)

Item	***Type of USAID marking***	***Marking Code***	***Locations affected/ Explanation for any 'U'***
Press materials to announce Project progress and success stories	USAID logo (co-branded as appropriate)	M	Primarily a Gambian audience
Project brief / fact sheet	USAID logo (co-branded as appropriate)	M	Primarily a Gambian audience
PowerPoint presentations at meetings, workshops and trainings	USAID logo (co-branded as appropriate)	M	Primarily a Gambian audience
Brochures/posters on environmental issues	USAID logo (cobranded where/as appropriate)	M	Primarily a Gambian audience
Landing or marketing site facility improvements	USAID logo / stickers (cobranded where/as appropriate)	M	Primarily a Gambian audience
Project Office/room within WWF/Gambia office in Banjul	Project sign in English and local dialect name as well *(Ba Nafaa*) but no USAID identity used	M	Primarily a Gambian audience
Project vehicles, office furnishings and computer equipment purchased for project administration by WWF	No USAID identity used	U	Standard exclusions under USAID marking guidelines/policies

Marking Codes: M = Marked, U=Unmarked, PE = Presumptive Exception, W=Waiver

5. Budget

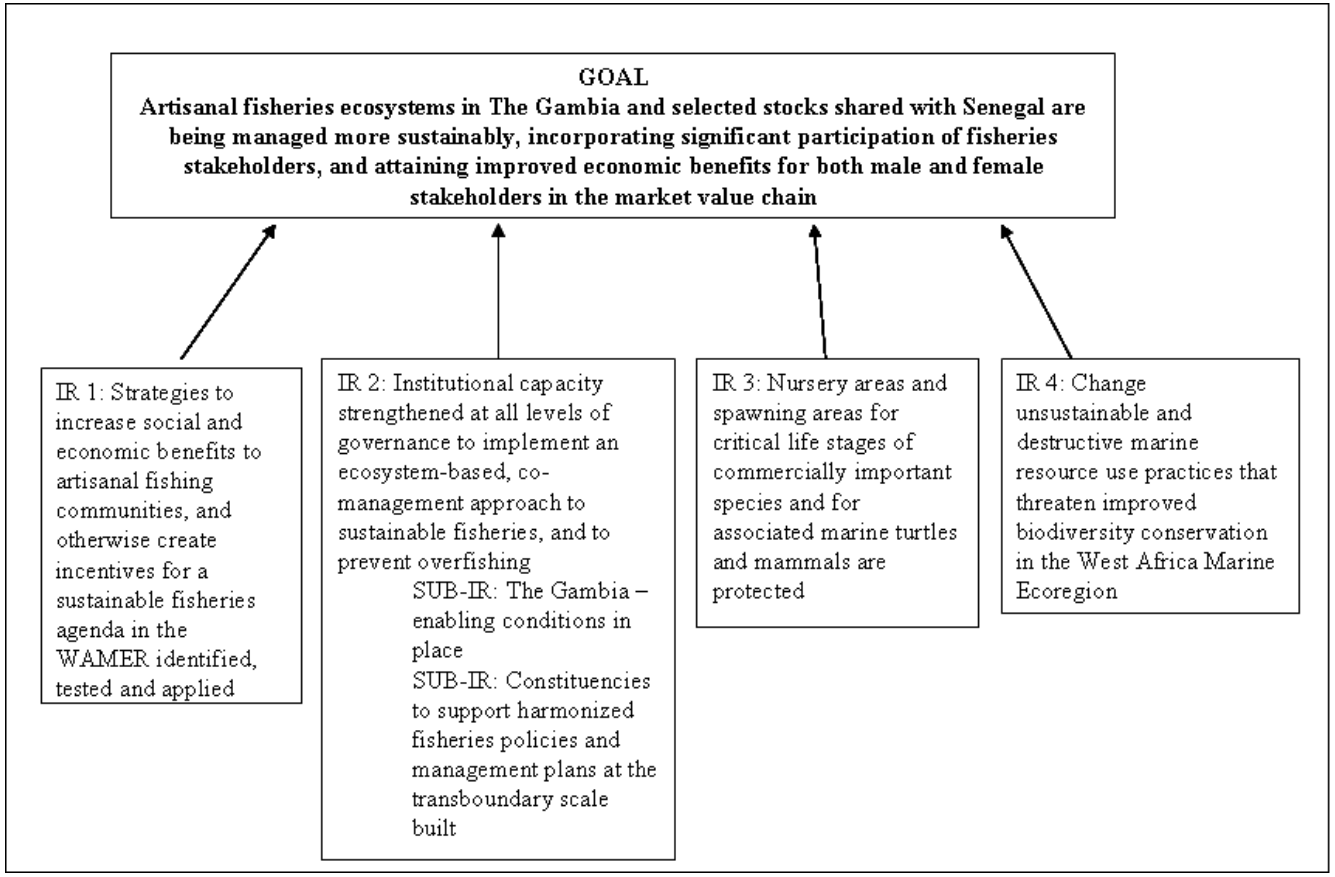
The Year 2 summary budget of USAID funds is shown below by: (1) major accounting (object class) line items, and (2) estimates of funds allocated by major activity category. URI and WWF cost share is not included. Year 2 budget assumes balance of obligated funds remaining of approximately $270,000 and an additional obligation required for Year 2 of approximately $580,000

By object class category	**URI**	**WWF**	**Total**
Personnel	131,033	101,060	232,093
Fringe	44,606		44,606
Consultants	10,500		10,500
Other Direct Costs	21,878	330,437	352,315
Travel	70,467	17,545	88,012
Indirect Costs	72,406	56,130	128,536
TOTAL	**350,890**	**505,172**	**856,062**

By activity	**URI**	**WWF**	**Total**
Sole	58,679	124,182	182,861
Oysters	23,271	107,184	130,455
Catfish	46,220	22,897	69,117
Climate Change	41,830	76,163	117,993
Capacity building	20,872	106,673	127,545
Project management	160,018	68,074	228,092
TOTAL	**350,890**	**505,172**	**856,062**

Appendix A. Results Framework & Life-of-Project (LOP) Targets

The Results Framework below is organized by Project Goal and IR. Each IR has one or more indicators and LoP Targets that are show in the table on the following pages. Targets will be reviewed and adjusted annually.



	Indicator	LOP Targets
IR 1		
1	Number of businesses economically benefiting	50 businesses (gender disaggregated)
2	No persons receiving economic assistance packages (assets, grants, training, etc.) [1]	200 persons
3	Number of people with improved access to loan capital (e.g. benefiting from new or strengthened savings & credit associations)	100 people w/ access to capital (gender disaggregated)
IR 2		
4	Number of govt. agencies or management bodies strengthened or created	4 committees (Gunjur, Burfurt, Sanyang, Tanji),
5	Number of government personnel, community leaders and private sector stakeholders trained in resources mgt	200 people trained (gender disaggregated)
6	Improvements on a governance scorecard covering, goals, constituencies, commitment and capacity dimensions, including measures that legislation and regulations are being implemented and complied with, and budgetary investments by government in fisheries management[2]	Qualitative increases on score card criteria for Gambia EB-fisheries mgt
7	Number of fishermen and women with collective or individual use rights (collective quotas or territorial use rights, saleable licenses)	600 people w/ use rights (gender disaggregated)
8	Number of stakeholders participating in regional meetings and/or exchange visits	100 persons (gender disaggregated)
9	Number of workshops/meetings on policy reform for the artisanal fisheries sector held between Senegal and the Gambia	3 events
10	Number of reports documenting transboundary issues and alternative solutions	4 reports
11	Number of policy changes made by national governments to harmonize policies	3 national policy changes

[1] Business income is difficult and costly to measure so a qualitative definition of benefiting will be used. Benefiting defined as reduced costs or increased prices (e.g. reduced fuel wood used in processing, price premium for MSC certified sole), or facility infrastructure improvements, or improved product quality, packaging or labeling, or training and/or certification in HACCP.

[2] Scorecard based on governance indicators in **UNEP/GPA Ecosystem Based Management Guide**

IR 3 & 4		
12	Hectares in areas of biological significance[3] under improved management: • Hectares covered by the fisheries management plan defined as the range of fishing fleets targeting these species	FMP Areas: • Sole -10km seaward X 20 km coastline (20,000 hct) • Sardinella – same as for sole • Shrimp – Gambia estuary (10,000 hct)

12	Hectares in areas of biological significance under improved management:
	• Oyster fishery estuarine and mangrove areas designated and allocated as community managed zones, including no-take areas
		• Community managed oyster zones
		  • Tanbi wetlands 200 hct
		  • Numi 300 hct

12	Hectares in areas of biological significance under improved management: • Area in hectares of any officially designated MPA (Marine Park or fishery no-take reserve)	• Numi National Park MPA – 30 sq. km (3,000 hct) • Numi no-take area 3X10 km -30sq km (3,000 hct)
IR 4		
13	• Number of technological innovations (gear or fisher behaviors) developed and/or effort restrictions that reduces bycatch.[4] <u>Sardinella</u> • TBD <u>Shrimp</u> • Fishermen not to exceed 400 from current baseline of 225 • Cod end mesh from 18mm present to 25mm <u>Sole</u> • Mesh size of 80 mm <u>Oysters</u> • TBD (i.e. minimum size limit of 7cm., use rights established)	At least three innovations and/or 3 effort restrictions (e.g. min. mesh size, size limit)
14	Number of fishing units that adopt by-catch reduction devices	20% of vessels for shrimp and sardinella fisheries
15	Number of processers that reduce fuel	At least two reduce wood consumption by at

[3] The entire area from the Saloum Delta in Senegal, The Gambia and Casamase rivers, and adjacent marine coastline has been identified as an area of regional bio-diversity significance in the West Africa Marine EcoRegion (WAMER)

[4] Indicators here are behavioral/regulatory target reference points (TRPs) that are put in place to achieve Biological TRPs.

	wood consumption	least 20%
16	Number of vessels registered/licensed[5]	100 coastal vessels targeting sardinella and sole
GOAL		
17	Hectares under effective mgt (Key biological reference points in the FMPs for sardinella, shrimp, sole, oyster)[6] Sardinella Reduction in bycatch from below current 50% (BRP is 5%) Shrimp Carapace length not less than 3.5 mm or 100 indiv/kg from current baseline Bycatch reference points TBD Sole Avg. total length not less than 25 cm from baseline of 28.5 cm. Oysters Minimum size of 7cm., increasing density inside no-take zones	This will be a subset of the LOP Targets for the previous indicator No targets set but progress towards BRPs will be tracked.

The following table shows the indicators and targets for the BaNafaa Project disaggregated by Year.

N0	Indicator	FY 10 Target	FY 10 Result	FY 11 Target[7]	LOP Target	Comments
1	Number of businesses economically benefiting	50	50	50 (25)	125	Focus on oyster harvesters only in Year2
2	No persons receiving econ. assistance packages (grants, training, etc.)	50	500	50 (50)	220	Focus on oyster harvesters only in Year2
3	Number of people with improved access to loan capital		50	50 (25)	115	Focus on oyster harvesters only in Year2
4	Number of govt. agencies or mgt. bodies strengthened or created	3	6	11 (2)	8	4 committees (Gunjur, Burfurt, Sanyang, Tanji), 2 Govt. agencies (DoFish and DPWM) strengthened in FY 10, FY11 target - 10 for sole, 1 for oyster

[5] Vessel registration/ licensing is an important precursor of managed access/limited access. However as vessels are unregistered, exact numbers are estimates only.

[6] Criteria for effective management will be evidence of progress towards Biological Reference Points (BRPs) established in the fisheries management plans and to be collected by The Gambia Dept of Fisheries and Fisheries Management Committees.

[7] Revised targets for FY 11 based on workplan development. Numbers in ( ) represent original targets set at start of the project.

N0	Indicator	FY 10 Target	FY 10 Result	FY 11 Target[7]	LOP Target	Comments
5	Number of stakeholders trained in resources mgt[8]	60	173 106 males 67 females0	9 (40)	200	2-stock assess, 2 water quality, 2 BSc, 1 MPA-PRO, 2 Fish. Inst.
6	Improvements on a governance scorecard	Oysters improving		Oysters and sole improving	improving	
7	Number of fishermen w/ use rights (collective quotas/territorial use rights, saleable license)	450	0	450 (100)	600	Collective use rights for each of 9 communities in portions of the Tanbi expected once mgt plan adopted, representing total member ship of TRY
8	Number participating in regional meetings and/or exchange visits	55	42	51 (30)	130	21 at regional CCA wkshp, 30 bi-lateral wkshp
9	Number of workshops/meetings on policy reform between Senegal and The Gambia	1	0	2 (1)	6	GCCA wkshp, bi-lateral wkshp
10	Number of reports documenting transboundary issues and solutions	1	0	3 (1)	4	Shrimp value chain, catfish value chain, sole cross border trade
11	Number of policy changes made by national govts to harmonize policies		0	0	3	
12	Hectares of biol significance under improved mgt: • fisheries mgt plan	20,000 (sole)	0	20,000	30,000	Delayed form Year 1, however, while draft management plan developed and mgt committee established this will not be counted until plan is formally approved by government, estimated about March 2011
12	Hectares of biol significance under improved mgt: • Oyster CB-mgt zones	200	6000	6000	500	Increase due to revised estimate of size of the Tanbi wetland.
12	Hectares of biol significance under improved mgt: • MPAs or fishery no-take reserves		none	none	6,000	
13	Number of tech innovations and/or effort restrictions that reduces bycatch.		none	TBD – sole, TBD-oysters (1)	3	Number dependent on mgt measures included in approved mgt plans
14	Number of fishing units that adopt bycatch reduction technologies		none	0 (10%)	20%	Not planned at this time. Preliminary studies indicate this is not an issue for sole fishery, so indicator may be dropped.

[8] Does not include persons attending management plan meetings which builds capacity of larger numbers of people in a learning by doing mode. Reduced target reflects focus in Year2 on quality training of select agency technical in core competency areas needed for fisheries mgt goals for oysters and sole and longerterm degree training of select DoFish staff.

N0	Indicator	FY 10 Target	FY 10 Result	FY 11 Target[7]	LOP Target	Comments
15	Number of processers that reduce fuel wood consumption		none	TBD (1)	2	Initially, this was planned for sardinella fishery, but as this is no longer a focus, of the project, fuelwood reduction activities for oyster harvesters will be started this year, but targets cannot yet be determined until preliminary assessment of and piloting of appropriate technology completed
16	Number of vessels registered/licensed	50	0	50 (30)	100	Community sensitization completed along South Coast, registration expected to get underway in first half of Year2. actual number of vessels unknown but estimated at 50-100
17	Hectares under effective mgt (progress towards BRPs) for sole		No target	Baseline established	No target but tracked	Reference points to be established as part of the management plan. Baseline will be established based on results of preliminary stock assessment
17	Hectares under effective mgt for oyster		No target	Baseline established	No target but tracked	Baseline data started in year1 but will need 1 full year of data to establish baselines
17	Hectares under effective mgt for sardinella		No target		No target but tracked	This species will no longer be a focus of project activities and replaced by Catfish
17	Hectares under effective mgt for shrimp		No target		No target but tracked	This species will no longer be a focus of project activities in Year 2 and may be dropped completely in favor of other species