Gambia-Senegal Sustainable Fisheries Project

(*BaNafaa*)

Year 2: Third Quarter Report

1 April 2011 – 30 June 2011

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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 activities undertaken during the third quarter (1 April 2011-30 June 2011) of Year 2 of the *Gambia-Senegal Sustainable Fisheries Project (**Ba Nafaa**)*. 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 description of Project activities undertaken during the first and second quarters of Year 2 (1 October 2010-31 March 2011); the activities undertaken during the 3rd. Quarter are also described as most of them are continuation of activities started in the 1st and 2nd Quarters. It includes a task implementation schedule as well as expected outputs and results per activity area. 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 near shore 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 dynamite fishing, 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 work plan 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 demersal fish stocks are either fully or overexploited. Pelagic stocks are also considered to be fully or overexploited.

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 was scheduled for end of December 2010 but work is still in progress.

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 raw 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 raw 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 costs 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, 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 croakers, 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 home consumption or 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 and 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 structures 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 2007 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 fishing 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 fisherfolk 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 conservation.

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.

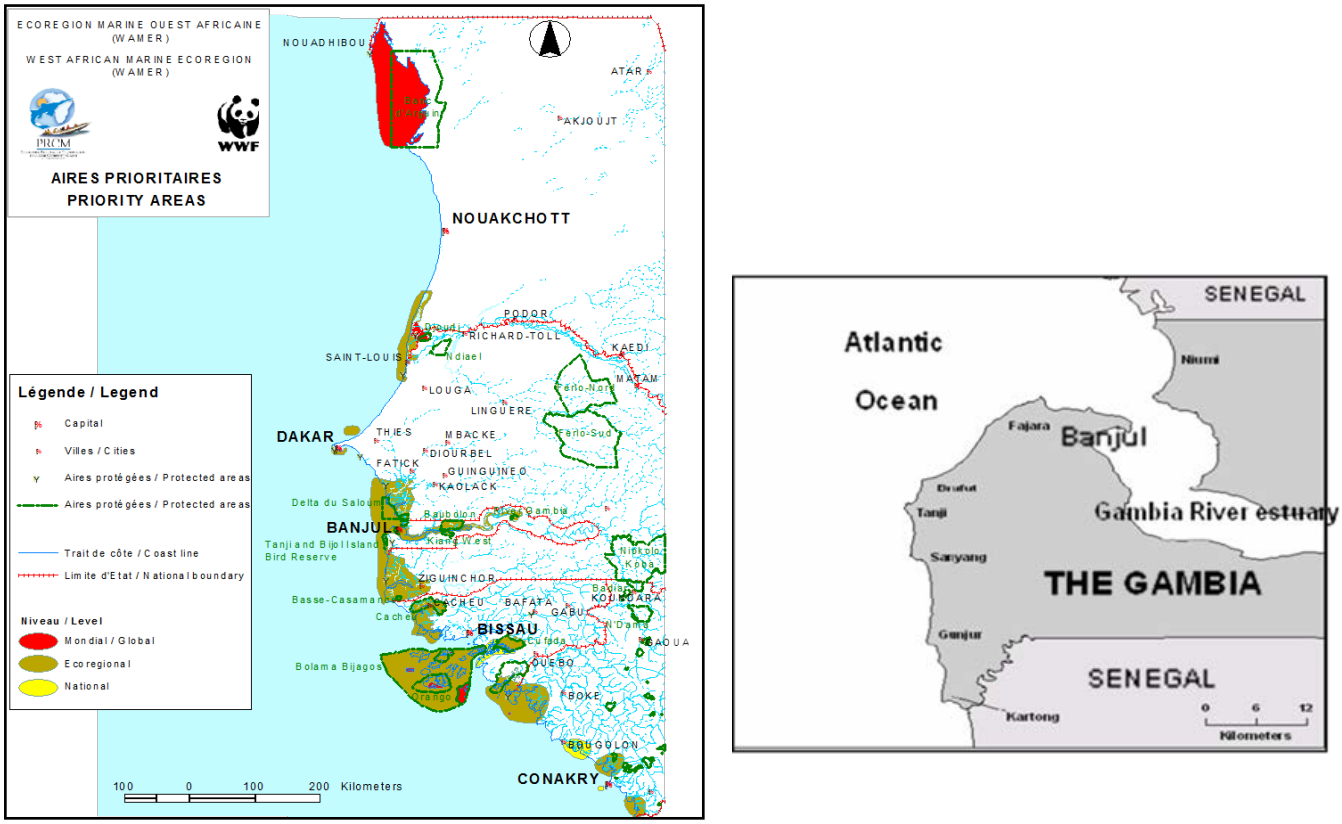


Figure 1. Areas of Biodiversity Significance in the WAMER and The Gambia River Estuary and Atlantic Coast

1.4 Rationale for Piloting Regional Demonstration Activities in The Gambia

The Gambia is the only country in West Africa that has enacted a fisheries legislation that makes it possible to adopt and implement a fisheries co-management plan under the Ecosystem-Based Fisheries Management (EBFM) approach. The Fisheries Act of 2007 is comprehensive legislation that addresses national as well as international fisheries issues in a holistic manner incorporating the FAO Code of Conduct for Responsible Fisheries and other relevant international fisheries conventions and protocols to which the country is a member or has assented to. Therefore a strong legal basis for the implementation of a co-management regime is already in place. The top-down approach to fisheries management is a thing of the past; nowadays the fisherfolk and their communities are fully participating in all aspects of fisheries management including decision-making. Community Fisheries Centres have been established in in major fish landing sites in The Gambia and are operating under a co-management arrangement with Government and other stakeholders. However, the institutions to co-manage the fisheries resources need to be strengthened in areas in which the Ba-Nafaa project has been providing the requisite leadership, financial and technical support. Much has been achieved yet more work is needed to be done to achieve success and sustainability of a co-management approach that can serve as a model for other nations in the region.

The small size of the country and comprehensive fisheries legislation offer the unique opportunity to introduce the EBFM approach as a pilot and if successful the approach can be adapted in other countries where USAID is supporting sustainable fisheries development programs (Ghana and Senegal). The Gambia is a good model for fisheries co-management in West Africa and other regions with open access fisheries.

The Ba-Nafaa project focus in the first 2 years of project implementation has been on the oyster and sole fisheries. The sole fishery is now close to meeting the sustainability criteria for certification by the Marine Stewardship Council, and likely to be the first fishery in sub-Saharan Africa to get an Eco-label. Other countries in West Africa including Morocco, Mauritania and Senegal are interested in the work being done under this project and eager to learn from this experience. The oyster fishery activities are uniquely focused on women harvesters which are typically neglected in fisheries development planning. The draft management plan for the oyster fishery proposes to give exclusive rights to the oyster fishery in the Tanbi wetland area to these women oyster harvesters who have now been organized into an area wide producer organization. Exclusive use rights to a fishery resource are rare in West Africa, let alone to women harvesters. If this plan is adopted with these provisions, it will be the first case in sub-Saharan Africa where exclusive fishery harvest rights have been legally given to women harvesters.

Valuable lessons can be learnt from the implementation of the Ba-Nafaa project, lessons that can guide the implementation of current and pipeline USAID Fisheries projects in the region. West African countries may also decide to revisit their fisheries legislations and make amendments incorporating provisions that will create a stronger enabling environment for the introduction of co-management and EBFM approach to fisheries that can protect important

marine bio-diversity assets and strengthen fish product food security through well managed resources.

The Legal Basis for Co-Management in The Gambia

Section 11 of the Fisheries Act gives power to the Minister of Fisheries to determine participatory rights in a fishery, such as allocations of the total allowable catch or of the total allowable level of fishing and this may include restrictions as to vessel type, gear type, seasons of operations, and areas in which fishing can take place; and any other restriction relevant to fisheries conservation, management and development.

Under Section 14, the Minister of Fisheries may, in the interest of conservation, management and sustainable utilization of fisheries resources, by Notice in the Gazette, declare any area of the fisheries waters and corresponding adjacent areas, including marine protected areas or reserves established under any other laws, to be Special Management Areas for purposes of community-based fisheries management, and the application of certain conservation and management measures and artisanal or subsistence fishing operations or any combination of the foregoing purposes or other specified purpose. The Notice published may specify the specified Special Management Area: the persons or groups of persons or types or classes of vessels that may be allowed to fish; the methods of fishing that may be used, the terms and conditions of fishing; and any other conservation and management measure that apply.

Section 15 stipulates that the Minister of Fisheries may, in consultation with the Local Authorities and where applicable, in accordance with the Local Government Act and other laws of The Gambia, establish a Community Fisheries Centre for the purposes of community-based fisheries management and may allocate the Management Areas or parts of them for which a Community Fisheries Centre shall be responsible under this Act and describe the rights and responsibilities of a Community Fisheries Centre in respect of the Special Management Areas or parts of them, taking into account the concerns of communities living within the immediate environs of the area to be declared as a Special Management Area.

2. Summary of Achievements to Date

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 business and fundraising strategies
- Over 921stakeholders in government and private sector trained in fisheries management, leadership, stock assessment and fishery biology, water quality, and microcredit systems
- Over 250 persons benefiting economically from assistance packages provided
- 250 women oyster harvesters participating in a Micro-Credit Scheme

Tanbi Wetlands and the Oyster Harvesters

- Co-management planning processes in the Tanbi mangrove protected area, involving 500 women harvesters and several government agencies has produced a final co-management plan ready for approval by the Government and TRY.

- 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.
- Water quality monitoring of the Tanbi wetlands and bivalve harvesting areas has determined health risks are low and within international standards, which provides potential for starting a shellfish sanitation program that could open new markets for fresh/raw products.
- Establishment of a TRY Centre as Headquarter.
- TRY Business Plan prepared.
- TRY Association awarded a GEF Grant for mangrove rehabilitation and nourishment.
- TRY fundraising event attended by more than 250 non-TRY participants. Raised 100,000 GMD and 20 scholarships for girls.
- Extended closed season resulting in larger sized oysters and improved prices for oysters sold.

Tanbi Wetland protected area

The Sole Fishery

- Management committees established and actively participating in planning processes (LACOMS and NASCOM).
- Agreement with the Marine Stewardship Council on accelerated movement towards international certification of a sustainable Gambian sole fisheries product
- Draft Sole Fishery Co-management Plan near final form and shortly ready for approval.
- Value chain analysis completed to identify ways to improve incomes in the post-harvest chain.
- Data for stock assessment completed and a reassessment of the sole fishery shows that the fishery is not overfished
- Sole Hotspots mapped, linking LEK (Local Ecological Knowledge) and SK (Scientific Knowledge).

3. Year 2 Activities Undertaken during 3rd Quarter (April 2011-June 2011)

3.1 Introduction

Progress on establishing co-management plans for the oyster and sole fisheries has been slower than initially anticipated. Work continued to develop the co-management plans and to finalize and submit them to Government for approval and implementation by the end of the third quarter, but the process is still on-going. Final edits are underway based on extensive review and comments by government agencies and stakeholders. The formal adoption of the management plans will be ready by the end of the 4th Quarter with a formal signing and launch event scheduled in the first quarter of Year3.

In November 2010, Dr. Jim Tobey of CRC/URI and Mr. Ousman Drammeh, Project Manager Ba-Nafaa, met with Mr. Robert Buzzard in Dakar, Senegal and discussed ways of accelerating some of the national and regional project activities including add-on requests for water and sanitation to address water and sanitation issues at fish landing centers and at oyster harvesting locations, and also for vulnerability assessment of the Saloum Delta and Gambia River estuary area. In the last week of the 3rd Quarter, the two add-ons were approved by USAID/WA. Karen Kent, a new CRC staff will be the U.S. based lead for these components. A Gambian Water and Sanitation Coordinator will be recruited in the 4th Quarter and will be based in The Gambia.

In April 2011, the U.S. Ambassador to The Gambia, Pamela White, attended the TRY Association's fundraising event where His Excellency the President of The Gambia also made an appearance and gave his support.

3.2 Sole Fishery Program

3.2.1 Key issues and progress to date:

The goal of the Ba-Nafaa project in terms of the sole fishery is to assist the fishing industry associations, the Gambia Artisanal Fisheries Development Agency (GAMFIDA), the National Association of Artisanal Fisheries Operators (NAAFO), and the Department of Fisheries to meet the eligibility criteria for MSC certification. Most of the Ba Nafaa activities during the first and second quarters of year 2 concentrated on putting in place a sustainable fishery co-management plan and other measures and capacity required for The Gambia to obtain the eco-label through MSC (Marine Stewardship Council) certification. The activities continued in the 3rd. Quarter and a final draft was prepared and is currently under review.

It should be recalled that the MSC conducted an audit of the sole fishery in 2007 and the audit report identified very specific areas for improvement in order to meet eligibility criteria.

The BaNafaa Project entered into a Memorandum of Understanding (MOU) with MSC to assist the Gambian stakeholders address the deficiencies outlined in the pre-audit report. The Project facilitated the setting up of community based sole committees (LACOMS) and a national co-management committee (NASCOM) and started work with stakeholders in the drafting of a new co- management plan. The original management plan for the sole fishery was drafted by the Department of Fisheries with little input of fishermen and processors.

It is important to state that project resources are dedicated to helping the fishing industry and Government obtain a level of capacity and systems that provide a high probability of certification. It is the responsibility of the fishing industry and Government to apply for and obtain the MSC certification, including payment of audit fees.

The legal framework for effective management of the sole fishery, including managed access and/or allocation of property rights, is in place. Under Section 15 of the 2007 Fisheries Act, 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 Department of Fisheries) 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. The Fisheries Regulations of 2008, mandates that all fishing vessels must be registered and obtain fishing licenses as well.

3.2.2 Hotspot mapping along the north coast:

The field work on mapping coastal sole fishing areas, habitat types and fish migrations and spawning areas has been completed for the south coast during Year 1. This has clarified many of the questions regarding red and black sole species behavior along the coast. The field work was planned to continue for the north coast during the 1st Quarter of Year 2 but up to the end of the 3rd Quarter there has not been any sole fishing activity along the north coast.

The mapping exercise was a participatory activity involving local fishers and Ba-Nafaa staff. The information on Hotspot mapping has already been compiled into a comprehensive report entitled "The Use of Local Knowledge-Application to the Management of the Sole Fishery in The Gambia"-April 2011.

3.2.3 Sole by-catch assessment and landing data collection:

The Project continued to assist in the participatory by-catch assessment and landings data collection of the sole fishery in the major sole fish landing sites of Kartong, Gunjur, Sanyang and Brufut during the first and second quarters. Enumerators of the Department of Fisheries collected the landings data and length frequency measurements, and the Ba-Nafaa staffer Gibril Gabis continued to supervise the "Informed Fishers" in collecting and recording the by-catch data.

However, a key issue that was being investigated since the start of the by-catch study is whether there are any by-catch issues with a particular concern for marine turtles and sharks, and the impacts/extent that the gears used in sole fishing may have on these threatened and endangered species. Data collected and analyzed since the start of the study reveal that marine turtles and other ETP (Endangered Threatened and Protected) species are not being caught in the sole fishing gears.

A catalog of the species that comprise the sole by-catch has been assembled by Ba-Nafaa staffer Gibril Gabis and Peace Corps volunteer Emily Nichols; the catalog will be published following the confirmation of the scientific names of the species in the Fourth Quarter.

In January 2011, Dr. Kathy Castro and Chris Parkins of URI, collected otolith samples of red and black sole fish species from the field and from the factory of the Atlantic Seafood Company. The otoliths of the black sole were examined at the University of Rhode Island and found to be between 3-5 years which seem to suggest that mature black sole fish are being caught and the stock may not overfished as assumed by the MSC pre-audit. The otoliths of the red sole are yet to be examined.

3.2.4 Vessel registration/licensing

Vessel registration and licensing is required under the Fisheries Act 2007 and associated regulations. This is a necessary step in understanding the total effort in the sole fishery and ultimately to achieve satisfactory scores for MSC certification. The registration and licensing exercise 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 which will be one measure necessary to prevent overfishing. Ultimately, licensing can also pave the way to consider possible establishment of catch shares in this fishery given the fact that sole is only landed in a few centers means that a share system may be feasible. However, 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.

The Project assisted the Department of Fisheries with the registration efforts and provided all the necessary inputs to conduct the exercise along the north and south coasts. The registration exercise started in the latter part of the 2nd. Quarter and was completed in the 3rd. Quarter. The Statistical Unit of the Department of Fisheries will prepare a report on the registration exercise and make it available to the Ba-Nafaa project and CRC/URI.

3.2.5 Assessment of the cross border trade in Sole fish

The value chain assessment for sole fishery identified that an unknown quantity of sole caught and landed in Gambia is transshipped into Senegal and much of this transshipment is not being fully captured by the Department of Fisheries statistics (and distorts Senegal sole capture statistics) and implication on marketing an eco-labeled product is also a concern. Sole caught in Gambia is loaded into trucks coming from the Casamance (Southern Senegal) but reported as caught in Southern 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. 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.

Two consultants (one Senegalese and one Gambian) have been identified to conduct a Comparative Cost Study of the Gambian Sole Fishery. The study was planned to commence in the 2nd Quarter but is delayed due to procedural matters to recruit the Gambian consultant. The study is rescheduled to start in the 4rd. Quarter.

3.2.6 Early actions at the landing sites / water and sanitation improvements

A supplemental request for additional funds and budget for a three-year water and sanitation add-on to address water and sanitation issues at fish landing centers and at oyster harvesting locations was submitted along with a modified IEE (Initial Environment Examination) in early January

2011. The revised IEE and the supplemental request for improvements of water and sanitation at the fish and oyster landing/processing sites were resubmitted in March 2011.

The request for additional funds and budget of $759,126 for water and sanitation was approved at the end of June by USAID and will be implemented directly by URI through sub-contracts with Gambian partners GAMWORKS and TARUD. Recent research on small-scale African fisheries suggests that addressing high priority fisher household vulnerabilities such as water, sanitation and health issues are likely to increase incentives for fishermen to engage in more sustainable fisheries management practices.

3.2.7 Community meetings/Co-management plan

Several community meetings were held during the 1st , 2nd and 3rd Quarters. The meetings were held in the major sole fish landing sites of Kartong, Gunjur, Sanyang and Brufut. The main focus of the meetings during the 1st. Quarter was on the constitutions of LACOMS and NASCOM and their by-laws but other important issues were also discussed including: the registration of fishing vessels, areas and periods of closure of the fishery, what to do to earn a living during closure, and the determination of the correct/proper mesh size for the sole fishery, and the way forward to the preparation of the Sole Fishery Co-Management Plan.

Significant progress was made on the the issues of area closures and periods of closure in the community meetings held in the 2nd and 3rd Quarters. The overwhelming majority of fishers are in agreement that most fish species (including sole fish) migrate from the deep sea to near shore (shallow water) to spawn. There is now general agreement that gill nets ought not to be set close to the shoreline; some communities suggested that nets should be set 1 km from the shoreline, other communities suggested 2 km. The boundaries of the closed areas are to be identified with marker buoys and regularly patrolled by selected fishers.

3.2.8 Gill net selectivity study

The sole gill net fishing gear selectivity study was started in January 2011 at Sanyang beach to find out how the sole fish is caught. Chris Parkins of URI and Ba-Nafaa staffer Gibril Gabis went out to sea with fishers and took photos of the sole gill net in operation and the photos revealed that most of the fish caught by the net were not gilled but were entangled, making it difficult to classify the Gambian sole fish net as a true gill net. The fact that the net entangles more fish than it gills fish, makes it difficult to introduce a mesh size regulation for sole fish. A report on the gear selectivity study was produced and discussed in community meetings. During discussions, it was agreed that a detailed comparative gear selectivity study should be conducted. It was also agreed to carry out the study during the 3rd Quarter in Brufut (the site with the highest catch of sole). A master fisherman agreed to be a partner in the study. The project procured gill netting materials and accessories which was divided equally between the project and the master fisherman. The master fisherman was to mount his nets in the local way as is done nowadays, and the project was to mount a conventional gill net. When the mounting of the 2 nets is completed, the 2 nets will be set alongside each other and studied over a period of one month for selectivity and the differences in how sole is caught in the two nets will be noted. The mounting of the conventional gill net took longer than expected because of error in calculation of hanging

ratios and the depth of the net. The study was suspended when Mr. Gibril Gabis (Ba-Nafaa overseeing the sole program) went on a month's training at URI in June 2011. The study will now commence in the 4th Quarter and a report on the comparative study will be produced at the end of the study period.

3.2.9 Meetings of NASCOM (National Sole Fishery Co-management Committee) and LACOMS (Landing site Co-management Committee)

Since the inaugural meeting of NASCOM on 18 October 2010 in the Conference Room of the Tanji Community Fisheries Centre, several meetings were held in the major sole fish landing sites bringing together LACOMS and NASCOM committee members to discuss issues already mentioned in the previous section (Community meetings). In addition, the draft constitutions of LACOMS and NASCOM were read out and translated in local languages during the meetings followed by discussions on the contents of the two constitutions. The joint meetings also discussed the roles and responsibilities of LACOMS and NASCOM, and how to strengthen the two committees to be able to fully respond to the needs and aspirations of the sole fishers and their communities. The meetings also addressed issues included the co-management plan; it can be said that the members of LACOMS and NASCOM have good knowledge of the co-management plan and its contents. The Ba-Nafaa project team encourages the committees to meet on their own and not wait for the project to request them to convene meetings.

3.3 Oyster Fishery Program

3.3.1 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 Wetlands National 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 2007, they can be organized into community-based management committees responsible for co-management of the oyster fishery in the Tanbi Wetlands National Park, 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. The main aim of the Project is to develop a model of a community based approach to management of the oyster fishery on a small ecosystem scale – for the Tanbi Wetlands 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.

The PRAs conducted in Year1 revealed that there were significant concerns about over harvesting as women have to travel longer and farther, take more time to gather oysters and are collecting smaller size oysters. Conflicts between communities also emerged over harvesting

areas as communities started to implement informal and unilateral rules for harvesting (e.g. closed season, exclusive community use zones). At the start of the project, there were no formal rules legitimized via Government nor were there any formalized committees for managing conflicts or determining rules.

A key strategy for the management of the oyster fishery adopted by the project was to team up with TRY Association and build on what the Association was already doing with the oyster and cockle harvesters. Building the capacity of the Association to serve members needs and uplift their quality of life was, and is still, the key long term goal.

3.3.2 Community meetings / Oyster and Cockle Co-Management Plan

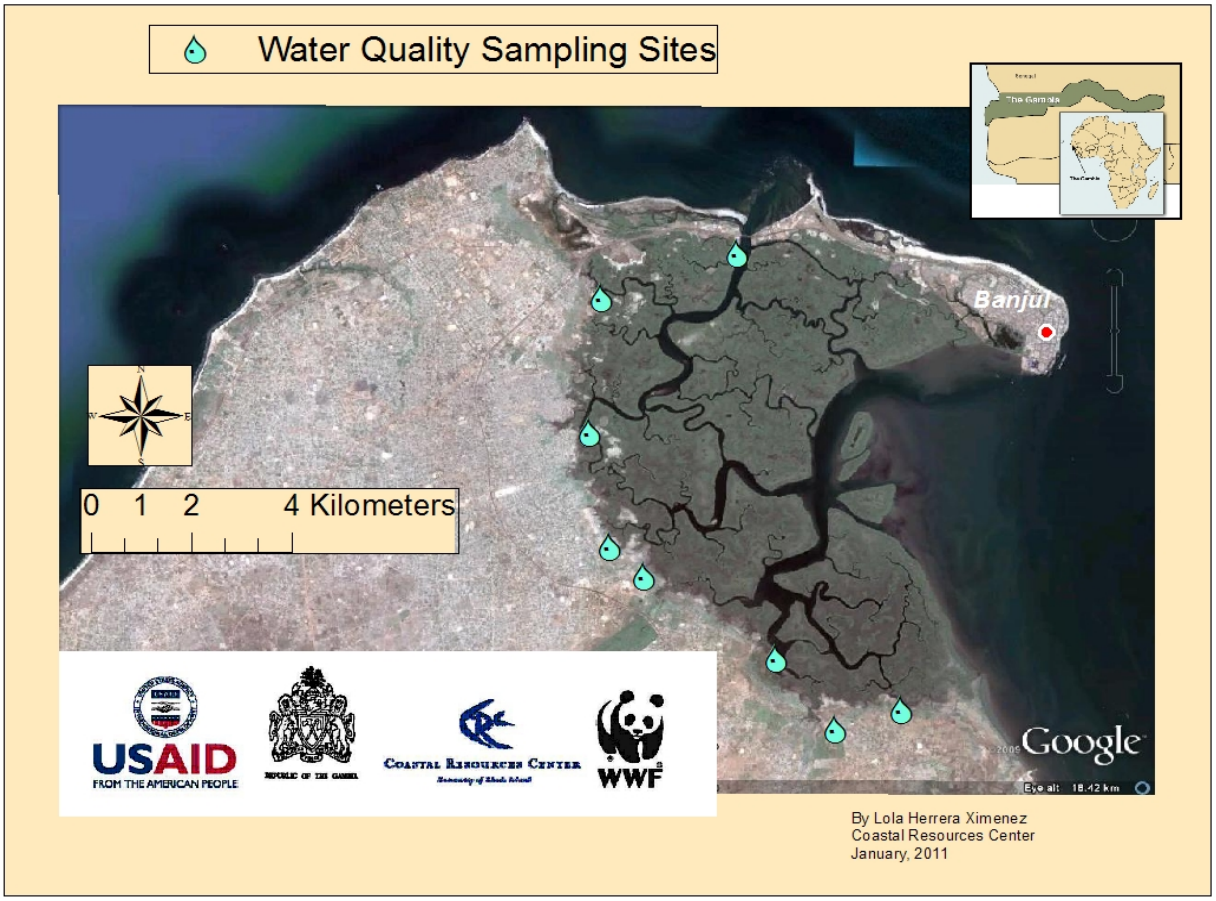
The Project organized several stakeholder meetings involving representatives from each of the communities harvesting cockles in the Tanbi National Park as well as from other communities in Western Region that are also TRY Association members. The meetings also included local leaders (Alkalos), legislative representatives and key Government agencies including Department of Fisheries, Department of Parks and Wildlife Management, and National Environment Agency. The meetings and workshops started to build understanding of the management issues and the need for an improved co-management approach as well as map out a framework for a co-management plan. Importantly, all the stakeholders became supportive of the project approach and aware of the forthcoming process for developing consensus and approval of a co-management plan. The institutional framework for community-based management that would include community based committees for each harvesting village as well as a Tanbi ecosystem wide management committee has been mapped out. Training workshops to discuss co-management concepts were also initiated to prepare the women with basic knowledge to start the co-management planning process.

The Project also aims to demonstrate an ecosystems-based approach to community-based management of the fishery and adjacent mangroves. The 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. Community-based co-management committees have been set up in each community and the women have elected an Executive committee for TRY Association to represent all the communities within Tanbi Wetlands National Park and periphery communities which are now affiliated to the Association. As of the end of the 3rd Quarter, a draft Co-Management Plan is developed and the final comments from TRY members and Government of The Gambia Ministries are being incorporated before it is jointly validated and signed.

3.3.3 Water quality study

The purpose of the water quality study is to determine 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). It started during the last two months of Year1 (August 2010) and will be ongoing for at least a 12 month period to assess any seasonal variations in potential health risks.

Water samples are being collected from the 15 oyster harvesting communities within Tanbi Wetlands and Western Region on a fortnightly basis and analyzed at the laboratory in Abuko. Total and fecal coliforms were determined by use of the membrane filtration method, using standard TC and FC media. Coliform counts were done using 25 mL of filtrate and reported as colony counts per 100mL of sample as is routinely reported in shellfish sanitary water quality literature (e.g. Graybow et al, 1981).



The results of the study, so far, show that both total coliform and fecal coliform counts were relatively low in all sample sites. However, slightly elevated coliform counts were found at two locations in the estuary system at Old Jeshwang at a location at which pigs are being raised in pens within the tidal zone, and at Lamin Lodge, the site of a hotel, boat marina, and fishing boat landing. The results are encouraging as these results are among the lowest counts in many tropical oyster growing grounds and suggest that a shellfish sanitation program could allow for safe harvest of live oysters for a raw oyster market to tourist hotels or an eventual export may be feasible. The data from the Tanbi sites appears to be reasonably clean in comparison to NSSP Total Coliform water sanitation standards. However, it is important to closely monitor the Old Jeshwang and Lamin Lodge sites to see if coliform and fecal coliform counts are on the increase and to consider closure of these sites if increases beyond acceptable levels are confirmed.

Since the results indicate favorable conditions for marketing raw shellfish, three government staff from the quality control laboratories of the Department of Water Resources, Department of Fisheries and the National Environment Agency underwent training in water quality assessment and enforcement at the central water quality control laboratory in Providence, Rhode Island in June 2011. During their training, the three government staff prepared a National Shellfish Sanitation Plan for The Gambia which they jointly presented at an interagency meeting in the conference room of the Ministry of Fisheries, Water Resources and National Assembly Matters. The meeting was attended by the US Ambassador and 3 representatives of the Agriculture Committee of the House of Representatives of The Gambia. Dr. Michael Rice of URI, the coordinator of study tour was also present. The aim is to start laying the foundation for a shellfish sanitation program including traceability standards, and in parallel, start investigating the potential local market for raw product to local hotels.

3.3.4 Oyster spawning study and cockle redistribution trials

The oyster research study started in May 2010 will continue to be conducted over a 12 month period and ended in April 2011. The purpose of the research was to determine the seasonal pattern of variation in settlement of the oyster in the creeks in the Tanbi Wetlands National Park, as a function of month, location and height off the bottom. The relative abundance and distribution of oyster spat will allow the determination of spawning times, as well determining the best sites for grow-out of oysters. This information is useful to have for purposes of management and development of the fishery. Three sample sites were selected: Old Jeshwang, Lamin and Kubuneh based on salinity gradient. In addition to the settlement study, the environmental parameters such as salinity, temperature and Dissolved Oxygen of the surface and bottom columns of the water were taken every month.

Initial analysis of data collected revealed the following: The density of oyster settlement was highest in Lamin, followed by Kubuneh and then Old Jeshwang. The highest settlement of spats occurred in October and November in Lamin but insignificant settlement in both Kubuneh and Old Jeshwang even though mature oysters were present on the mangrove prop roots. Salinity was lower towards the end of the rainy season which favors oyster spawning and eventual settlement. High salinity gradient would not favor oyster spawning but a gradual change could trigger high spat fall in fairly high water temperatures during the rainy season, particularly towards the end of the rainy season. Predators such as crabs, puffer fish and snails could have contributed to the high mortality on the oysters that settled on the experimental tiles. There was a high level of fouling by ascidians and barnacles in Old Jeshwang which prevented or reduced spat collection as they compete with the oysters for food and space. Also at Old Jeshwang, it was found out that the velocity of the water was very high compared to the other sites and this could disrupt spat settlement as spats were swept away by the force of the currents. A final report is being prepared and will be published in the 4th Quarter. The results of this research led the TRY Association members to delay opening of the oyster harvesting season in December 2010 to 1 March 2011 in order to allow oysters more time to grow, thus increasing oyster size and consequently market value. Preliminary results from this experience are positive. The size of harvested oysters increased and the market value was increased from 15 GMD per cup to 20 GMD per cup as a result. The co-management plan will now incorporate a March oyster harvesting season opening date.

A trial involving the redistribution of cockles from high density areas to lower density areas was initiated in the 3rd Quarter. This trial is taking place at one site in Kartong, involving TRY Association members and District Fisheries staff. Various distribution densities and growth of redistributed cockles will be tracked over the season, as well as mortality rates.

Gambian cockle fisher women and the Gambian fisheries extension personnel on the seeded cockle aquaculture test site in Kartong. Seeded cockles are visible on the surface of the sand flat

3.3.5 Strengthening of TRY Association

TRY Association was established in 2007 as a legally registered non-profit community-based organization with the aim and goal to improve the conditions of life and welfare of the women oyster and cockle harvesters who are generally poor and live in marginalized community; the fishery has remained un-noticed since time immemorial. TRY Association has brought Government and public attention to this important fishery that has been neglected for so long. The membership of the Association has grown from 1 community of 40 members in 2007, to 500 members in 15 communities in 2011. The Ba-Nafaa project continues to support the strengthening of TRY Association and significant progress is being made. TRY Association is growing towards becoming a national Association with increasing membership and increased interests from other communities. The Association has a Board of Directors that offer advice and guidance to the Association. TRY Association is presently renting a compound as a temporary Headquarter which is used as an office, meeting place, and skills training centre. Thirty-five (35) young girls, daughters of the women selected from various communities, are currently

undergoing training in sewing, knitting, soap making, and cooking as means of livelihoods to support themselves and their families. The overwhelming majority of the girls did not finish their schooling because their mothers (most of who are middle age and widowed) could not continue to pay school fees.

With Ba-Nafaa funding, some members of TRY Association benefited from a study tour to the Senegal and were trained in improved processing methods for oysters and cockles and 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 Association has also benefited from a grant by the Project to establish a microcredit scheme for the women, to develop business and marketing plans, and to develop a fundraising strategy to raise funds to establish a permanent Headquarter which will have an office, meeting hall and skills training centre. The Kanifing Municipal Council has also allocated a physical market point for the oyster and cockle sellers in the Serekunda Central Market. The Association has also received support from the Women's Bureau, the BANESTO Foundation of Spain through ASSET (Association of Small Scale Enterprises in Tourism) and the Department of Community Development.

The Association has participated in several project related activities during the 1st. and 2nd. Quarters including the following: participation in the oyster research to study the growth and mortality of the mangrove oyster; participation in the maintenance of the aquaculture racks; meetings to formalize community-based committees and define roles and responsibilities; conflict-resolution meetings in certain communities; skills training of oyster and cockle harvesters in soap making as an alternative livelihood; microfinance training and subsequent establishment of a credit and savings scheme for 500 members. In the 3rd Quarter, the Association was awarded US$20,000 from GEF (Global Environment Facility) for mangrove rehabilitation and refurbishing; however the money has not yet been received. The business plan for the TRY Association has been prepared. A successful fundraising event held in April resulted in a donation of 100,000 GMD from his Excellency the President of The Gambia and 20 girls' scholarships.

3.3.6 Enterprise development and microfinance training

The Project supported the 8-day training program that was held at the TRY Association Center in Old Jeshwang in the first quarter. The training was conducted by NACCUG (National Association of Co-operative Credit Unions in The Gambia), which is the apex body of all credit unions in the country. A total number of 250 members of TRY Association from the 15 oyster communities benefited from the training program. One of the objectives of the training program was to encourage a well defined organizational set-up for TRY Association and to build the capacity of the participants to enhance their leadership and managerial skills. Cognizant of the fact that the participants were all adults, various learning approaches considered appropriate for adults were used and consideration was given to ensure effective participation from all participants.

Following the training program, the 250 participants were given small loans to start their own businesses as a source of alternative livelihood during the closed oyster harvesting season. The loans were to be repaid in 6 months and ended on 30 June 2011. Loan repayment was

satisfactory and there are no cases of defaults. Most importantly, the women have started to save money for the first time in their lives; the women have never developed the culture of putting money aside as savings from their earnings. Some women have saved in excess of D10,000. A decision is to be made by the Association whether to give back the savings to the women or help them open accounts in the banks of their choice. It is important to mention that the culture of savings is still not strong as most of the women were more concerned about payment the loans than in the actual saving scheme which was part of the training they received.

3.3.7 TRY Association Business Plan

During the 3rd Quarter, Professor Erin Wilkinson was contracted under the Ba-Nafaa Project to assist TRY Association in developing a business plan.

The business plan describes the mission, objectives, and opportunities of the TRY Association in terms of developing business opportunities in an eco-friendly and sustainable manner. It also describes the institutional structure, marketing communications, assets, financial projections and future direction for the Association. Other sections of the plan include Enterprise Sustainability, Market Segmentation, Health and Insurance, and Financial Analysis.

It is vital the Association generate revenue over time in order to make the Association sustainable. The business plan takes into account that TRY Association is a fairly new enterprise and cannot be expected to generate net revenues right away and it will take time to develop the TRY oyster brand, alternative livelihoods, client base and program activities that can pay for fixed and variable operating costs. Operating costs of the Association are known with much greater certainty than revenues. Future income generation options for the women and their daughters include sewing and commercial cooking classes, jewelry and soap making workshops, and eventually strategies that TRY Association will promote for diversified livelihoods. The business plan concentrates on the first and second year of Centre rental and operation, including long term planning to acquire donated land and to raise GDM 1,400,000 for an eco-friendly building construction for years 3 and 4 and then operating it through creative programming, marketing, oyster and alternative product sales, and fundraising.

3.3.8 Preliminary Shoreline Shellfish Sanitary Survey near Banjul, Gambia

On 18 June 2011, Dr. Michael Rice of URI and Babanding Kanyi (Ba-Nafaa staffer) conducted a preliminary Shoreline Shellfish Sanitary Survey along the Bund Road levee and the Banjul-Serekunda Highway in the northern Tanbi Wetlands oyster harvesting area in the metropolitan Banjul area. The shoreline survey is important to the work of the Ba-Nafaa project under the Oyster program. The project is supporting the women oyster harvesters of the the Tanbi Wetlands National Park to sustainably harvest oysters, improve product quality and value addition and expand markets potentially to Europe and the United States of America . If raw (uncooked) Gambian oysters are to be exported to the United States of America, the Gambia must conform to the regulations of the NSSP (National Shellfish Sanitation Program) of the United States which governs the production, harvest, shipment and sales of uncooked molluscan shellfish in all of the shellfish-producing states and in foreign countries wishing to conduct sales of shellfish into the United States markets. According to the NSSP, sanitary quality begins with

periodic shoreline surveys to identify potential sources of contamination, and that shoreline surveys form the foundational basis for water quality classification. The preliminary survey conducted by Dr. Rice and Mr. Kanyi was designed as a training exercise for Gambian officials who will be assuming responsibility for future shoreline surveys in the Gambia.

The survey identified key areas of concern including the Banjul fish landing area on Bund Road utilized by a number of artisanal fishers; an over-water toilet facility for fishers near the fish landing site; evidence of illegal waste and rubbish dumping along Bund Road; an inoperable floodgate and flood control pumping station allowing sewage and runoff waters from Banjul without treatment to flow unchecked into the Tanbi Wetlands National Park; and a large rubbish dump located in the northern end of the Tanbi Wetlands National Park likely to be a source of considerable contamination.

A new National Assembly Building (which according to sources will cost US$23 million) is currently under construction is in low-lying land at the northern edge of the Tanbi Wetlands Complex that is drained by the canal system feeding the floodgate-pumping station on Bund Road. The report recommends that attention to improvements to the Bund Road Levee and its associated pumping station be given a high priority especially in the light of the location of the new National Assembly Building and the likelihood of sea level rise and greater flood potential in Banjul. The floodgate and levee were constructed in 1957 following the 1947 flooding of the capital city, Banjul that claimed many lives. The levee has sunken and during periods of high tide sea water from the estuary flow over the road and into the canal system.

Satellite imagery of Banjul showing the Bund Road Levee and associated drainage area in metropolitan Banjul.

4.0 Climate Change Adaptation

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 convened a regional workshop in Senegal 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 was held in Senegal from 22-25 March 2011 and was attended by 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. The objectives of the workshop included:

- Consolidate information on regional climate change initiatives in coastal areas and marine ecosystems
- Assess climate change issues in fishing communities and marine ecosystems and actions taken to date across each of the CSRP countries. Identify similarities of key issues and responses across the countries.
- Identify needs and opportunities for mainstreaming adaptation considerations and actions into national, sub-national and local level strategies and initiatives
- Define a plan of action for follow-up to the workshop

The take home message was that coastal and marine areas are already affected by multiple stressors with climate change becoming a more serious threat when coupled with these other anthropogenic impacts. Coastal erosion, deforestation and habitat fragmentation become even more serious problems in coastal locations and fishing communities when coupled with the projected impacts of climate change. Non-sustainable resource use, including over fishing, reduces the adaptive capacity of natural systems and thus decreases the resilience to respond to climatic changes. Sand mining, alteration of waterways, population pressure and improper siting of infrastructure leave both the communities and the environment with increased vulnerability to climate change. It was concluded that anticipatory adaptation to accelerated negative environmental changes does not need to wait for specific climate scenarios, but is more reliant on the examination of current vulnerabilities and the range of possible no-regret strategies. Workshop proceedings were produced and shared with participants in the 3rd Quarter.

In the 3rd. quarter the Ba-Nafaa project received approval for a US$155,440 add-on component for a bilateral fisheries vulnerability assessment of the Saloum Delta and Gambia River estuary area. The assessment will consolidate existing information and collect new data where gaps exist. An interdisciplinary science team will conduct the vulnerability assessment. The team will comprise expertise on marine and wetland ecology and conservation, GIS, fisheries biology, and community development over a 6 – 12 month period. A consolidated report will be prepared and will be the basis of discussion for a stakeholder workshop to review the findings and identify and prioritize climate change adaptation activities. The study will be led by Dr. Arona Soumare,

Director of Conservation WWF-WAMER. and Mr. Mat Dia WWF Country Program Coordinator, Gambia.

5.0 Biodiversity Conservation

5.1 Dolphin Survey

The Gambia's inter-coastal area possesses an extremely rich biodiversity of national, regional, and international ecological significance. In addition to the ecologically significant species found in The Gambia there are a variety of habitat types that host numerous threatened and endangered species. These species include dolphins, hippopotamus, marine turtles , migratory birds, sharks, and the West African manatee, to name a few.

Biodiversity within the inter-coastal area of The Gambia is under increasing pressure from a number of anthropogenic actions, including development, habitat loss and fragmentation, subsistence practices, and pollution. Climate change is also having a significant effect on biodiversity. In addition, there is a lack of reliable and up-to-date data on the scope of the pressures and their overall effect on biodiversity. Therefore, monitoring programs need to be developed and implemented to gain an understanding of the factors affecting biodiversity and to create appropriate conservation and management plans.

In cooperation with the World Wide Fund for Nature (WWF), the Department of Parks and Wildlife Management (DPWM) has implemented the Integrated Coastal and Marine Biodiversity Management Project (ICAM) for the long term conservation and protection of the coastal area and its biodiversity. The objectives of this project are to ensure a functioning and efficient protected area network; conserve critical species and habitats; implement an integrated management program; and promote major stakeholder understanding of management programs in coastal areas within national policies. These activities are part of the cost share contributions to the BaNafaa project.

To understand the diversity, abundance, and distribution of The Gambia's cetacean population, a long-term assessment of dolphin and whale species and the threats they face has been established. During the initial phases of the assessment valuable information regarding cetacean species in The Gambia was collected through questionnaire surveys of people at landing sites and within local fishing communities. The information then guided the development of the assessment objectives and sampling design. The objectives of the assessment are to collect baseline data, identify critical habitats, design appropriate monitoring systems, develop and implement a cetacean action plan, and build the capacity of DPWM staff to assess and conserve biodiversity. To achieve these objectives the following actions have been or will be implemented: regular boat-based surveys of coastal waters and the river; coastal beach surveys; data collection of cetacean strandings and by-catch; the evaluation and analysis of baseline data; and the establishment of outreach programs for schools and communities.

A 22 page report on Assessment of Cetaceans in the Gambia has been produced by the ICAM project following surveys conducted between January and April 2011. The report describes the project and study area, existing information, monitoring methods, the data collected, interpretation of the data, difficulties encountered during monitoring, evaluation of methods, and recommendations for the assessment. The report concludes that the Bottlenose Dolphins (Tursiops truncates) are currently the most abundantly found species in the river waters. Information from phase 1 and 2 indicate that cetacean sightings occur more often in the coastal waters with a variety of species being sighted. A total of 5 species have been documented: Atlantic Humpback Dolphin (Soura tenszii), Bottleneck Dolphin (Tirsiops truncates), Clymene Dolphin (Stenella clymene), Long-Beaked Common Dolphin (Delphinus capensis) and the Short-Finned Pilot whale (Globicephala macrorhynclus).

A colony of Dolphins in coastal waters.

5.2 West Indian Ocean-Certification of Marine Protected Area Professionals.

Mr Alagie Manjang, Assistant Director at the Department of Parks and Wildlife Management was funded by the Ba-Nafaa Project to participate, as an observer, in the level two certification program offered by the Western Indian Ocean Marine Science Association (WIOMSA) to West Indian Ocean Marine Protected Area professionals in Mombasa Kenya in June, 2011. This program is targeted at MPA site level professionals with supervisory responsibilities, similar to MPA Managers, Wardens and Section Leaders, to assess competences and practices essential to perform effective management of Marine Protected Areas. The goal of the certification program is to establish a professional association that provides a framework to promote competence, professionalism, leadership and ethical conduct in MPA management.

The program was attended by 5 participants. Each of the five candidates had before the event prepared and submitted a case study on one of the core competences assessed such as Policy,

Legislation and Compliance; MPA Concepts and Establishment; Communication and Stakeholder Engagement; Financial Management and Fundraising; Management Operations; Biophysical and Social Environment Context and Leadership and Ethics. Candidates had the choice to select and decide around which competence they can prepare written submission of the case study and prepare power point presentation. Preparation of the case studies was guided through pre-prepared guidelines on both the content and structure of the case study.

The assessment provides to a candidate, opportunity to demonstrate and or identify his/her level of expertise, performance, practice and experience gained in Marine Protected Area Management. It is the candidate's ability to provide evidences of practical experience, application and testing of the knowledge and skills gained through formal trainings. The assessment process involved giving scores to candidates from his/her written case studies, evidences contained in the portfolios, written assessment, interview and face to face discussion with the assessors.

In his back to office report, Mr. Manjang concluded that candidates who had the opportunity to undertake the assessment event and are certificated are true professionals who deserve to be MPA managers. Mr. Manjang learnt 2 important lessons: i) a certified level of competence is required to become an effective and efficient MPA manager and ii). it is important for MPA managers to document their field achievements to help in identifying areas of competence and for the authorities to determine what kind of capacity development training is required by the manager. Mr. Manjang recommends that the Regional Program for the Conservation of Marine and Coastal Areas of West Africa program (PRCM) should consider adopting the program to the needs of MPA managers in the sub-region.

6.0 Project Management

6.1 Challenges, Constraints, and Opportunities

It is important to state that the Ba-Nafaa project activities are increasing and with only three staffs, the work load is becoming more strenuous and the staffs are becoming overstretched. In addition to the many and varied activities of the Project, there is the issue of the international support staff from CRC/URI. The missions of the international support staff are extremely important in all respects but there is need to consider a better planning and timing of the international missions. As part of the upcoming work plannning process in the subsequent quarter, the issue of matching effort levels and staff capacity will be addressed.

6.2 Environmental Monitoring and Compliance

No activities were implemented during the 1st. 2nd and 3rd. Quarters that required environmental screening or activities where mitigations measures were required. However, at the request of Mr. Robert Buzzard of USAID West Africa Program, the project IEE was revised and submitted to include the proposed add-on activities for a vulnerability assessment and the water and

6.3 Branding Strategy Implementation

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.

Communication items produced during the reporting period that are affected by USAID marking/banding regulations (ADS 320/AAPD 05-11) are provided in the following Table.

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
Technical; reports	USAID logo (co-branded as appropriate)	M	Gambian and USAID audience
Annual Report and Workplan	USAID logo (co-branded as appropriate)	M	Gambian and USAID audience

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

Specific reports produced during the third quarter reporting period:

- Regional Climate Change Meeting Report (March – April 2011).
- "The Use of Local Knowledge-Application to the Management of the Sole Fishery in The Gambia"-April 2011.
- Report on Preliminary Shoreline Shellfish Sanitary Study near Banjul (June 2011).
- TRY Association Business Plan (June 2011)

The Project has received a good deal of media coverage via TV and in printed media.

6.4 International Travel

The following international travel was performed during this reporting period. 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 during the 3rd Quarter.

- Dr. Kathy Castro and Mr. Chris Parkins (May 2011)- updates on sole co-management plan and gill net study; meeting with NASCOM Executive Committee on finalizing the sole co-management plan; brief Gambian officials travelling to URI on training course on fish stock assessment and fish biology on training course agenda and expectations; and courtesy call on US Ambassador.

- Dr. Michael Rice (June 2011)-review work on cockle farming project in Kartong; discuss water quality spreadsheets and make outline for publication of water quality study in regional environmental journal; conduct preliminary shoreline shellfish sanitary study around the southern edge of Banjul.

6.5 TraiNet Data on Trainings Conducted during the Reporting Period

The Ba Nafaa Project Office compiles information on all training events as required by USAID, This information is submitted to CRC where the data is entered into the TraiNet electronic reporting system. A summary of trainings conducted to date and planned in next quarter are provided in the following table.

Training program	*Location*	*Start date*	*End date*	*Participants*			*Estimated Cost*
				Male	**Fem**	**Total**	***US $***
Oct 09 - March 10							
Study Tour to Sine Saloum	Senegal	12/16/2009	12/18/2009	1	31	32	3,507
Co-management Training on Sole Fishery	The Gambia	1/25/2010	01/26/2010	37	3	40	2,188
Co-management Training on the Oyster Fishery	The Gambia	02/01/2010	02/02/2010	2	51	53	2,373
Aquaculture training	The Gambia	01/12/2010	02/05/2010	60	0	60	2,696
Training on Entrepreneurship (study tour to Baddibu)	Gambia	03/18/2010	03/19/2010	2	11	13	600
Stock assessment training	The Gambia	03/15/2010	03/22/2010	14	5	19	3,144
Total				***116***	***101***	***217***	***14,508***
April 10 - June 10							
Training on Improved	Gambia	30/4/2010	12/4/2010	0	300	300	750

Training program	*Location*	*Start date*	*End date*	*Participants*			*Estimated Cost*
				Male	**Fem**	**Total**	***US $***
Processing & Packaging							
Coastal Adaptation to Climate Change	US	4/6/2010	25/6/2010	2	0	2	26,000
Cayar Study Tour	Senegal	13/6/2010	18/6/2010	11	4	15	4,500
Oyster Aquaculture Training	Gambia	17/6/2010-	28/6/2010	1	36	37	750
Water Quality Assessment Training Workshop	Gambia	23/6/2010	23/6/2010	18	5	23	100
Total				***32***	***345***	***377***	***32,100***
July 10 - Sept 10							
Fisheries Leadership	US	16/8/2010	3/9/2010	3	1	4	32,000
Biostatistics course	Gambia	09/20/2010	09/27/2010	10	2	12	5,832
Total				***13***	***3***	***16***	***37,832***
Oct 10 - Dec 10							
Micro-credit and enterprise development	Gambia	25/10/2010	2/11/2010.	0	250	250	1,290
Total				***0***	***250***	***250***	
Jan 11 - March 11							
Climate Change workshop	Senegal	3/22/2011	3/25/2011	52	8	60	50,900
Study tour to Tanzania on res. mgt and livelihood development	Tanzania	2/7/2011	2/12/2011	0	1	1	2,145
Total				***52***	***9***	***61***	***2,145***
GRAND TOTAL				***212***	***708***	***921***	***137.490$***
April 11 - June 11							
Water quality and shellfish sanitation	USA	5/21/2011	6/5/2011	3	0	3	15,910
Fish stock assessment	USA	5/21/2011	6/12/2011	3	2	5	34,387
MPA-PRO Certification Training	Kenya	13/6/2011	17/6/2011	1		1	3,000
BS Degree Training – Fisheries technology	Nigeria	2011	On going	1		1	10.000
Total				***8***	***2***	***10***	***63,297***

6.6 Estimated Financial Status

The following table shows a pipeline analysis of actual and anticipated expenditures in relation to obligations through June 2010.

AMOUNT SUB-OBLIGATED		$1,579,705
(total federal outlays as of last SF 425/voucher)		
Expenditures		
Period Covered In Last SF 425	Jan - Mar 2011	968,241
Actual	April -May 2011	63,458
Estimate	Estimate June 2011	97,902
Encumbered as of June (unliquidated obligations)		242,419
TOTAL EXPENDITURES (Amt on SF 425 + Recent Expenditure)		$1,372,021
BALANCE OF SUB-OBLIGATED FUNDS REMAINING		$207,684

Appendix A. Performance Management and Monitoring Report.

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 below. 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.

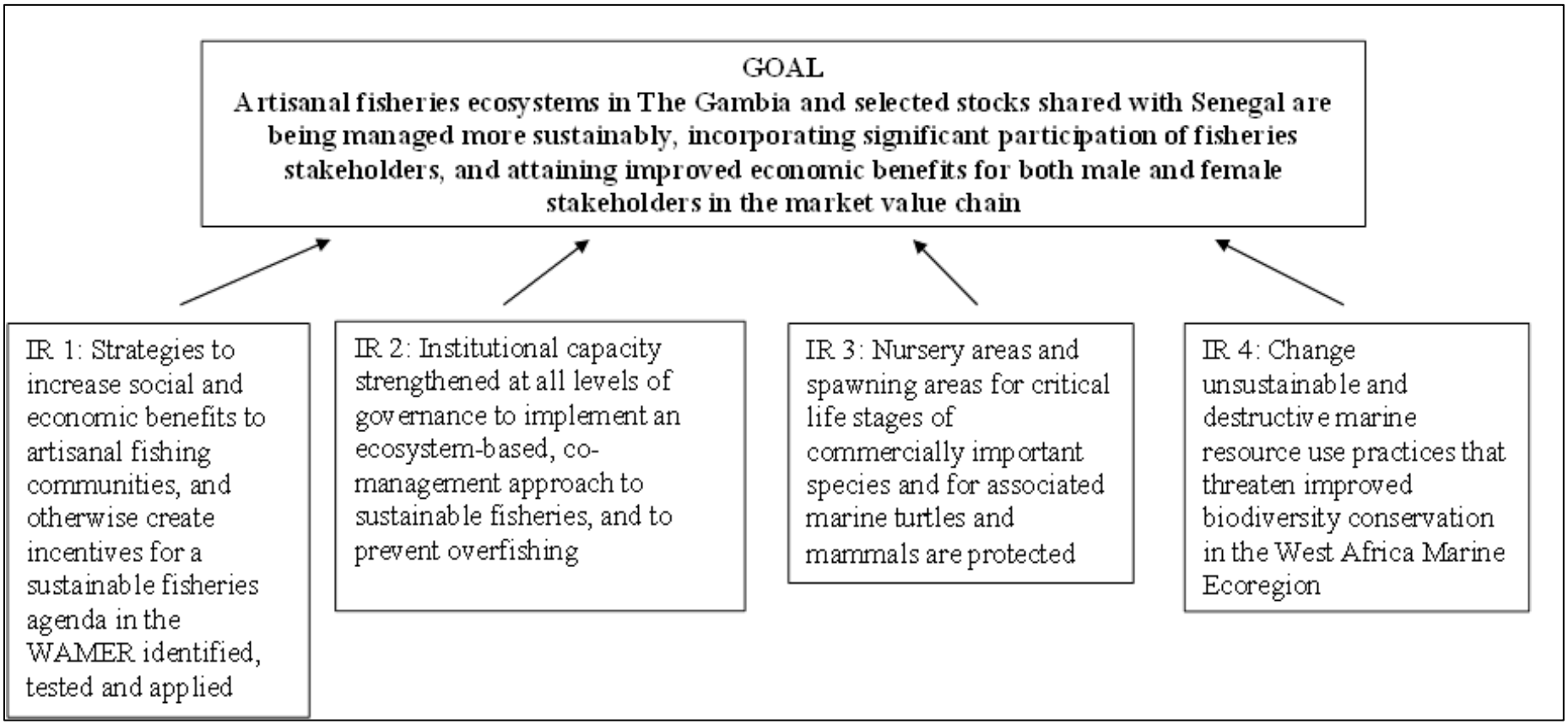
The semi-annual performance monitoring report documents progress on achieving results. The report includes:

- A comparison of actual accomplishments against the targets established for each indicator for the reporting period and cumulatively for the project (in tables below);
- An explanation of quantifiable outputs generated by Project activities and reasons why goals were or were not met, provided in the text narrative prior to this appendix;

This data is supported by evidence collected and filed by the Project Manager, or his designee, who serves as the in-country PMP coordinator. The CRC provides quality control measures to ensure the PMP system is properly implemented.

Results Framework

The Results Framework below is organized by Project Goal and Intermediate Result (IR). Each IR has one or more indicators and LoP targets that are shown in the table on the following pages. Indicators and targets are reviewed and adjusted annually.



Life-of-Project (LOP) Targets per Indicator

No.	Indicator	LOP Targets
IR 1		
1	Number of businesses economically benefiting	50 businesses (gender disaggregated)
2	No persons receiving economic assistance packages	200 persons
3	Number of people with improved access to loan capital	100 people w/ access to capital (gender disaggregated)
IR 2		
4	Number of govt. agencies or management bodies strengthened or created	4 committees (Gunjur, Burfut, 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	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
IR 3 & 4		
12	Hectares in areas of biological significance under improved management: • Hectares covered by the fisheries management plan defined as the range of fishing fleets targeting these species	FMP Areas: • Sole - (20,000 hct)

No.	Indicator	LOP Targets
		• 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 • Numi no-take area 3X10 km -30sq km
IR 4		
13	Number of technological innovations (gear or fisher behaviors) developed and/or effort restrictions that reduces bycatch.	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 wood consumption	At least two reduce wood consumption by at least 20%
16	Number of vessels registered/licensed	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)	A subset of LOP Targets for previous indicator No targets set but progress towards BRPs or MRPs will be tracked.

Results to Date

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[1]	FY 11 Result through June 2011	LOP Target	Comments
1	Number of businesses economically benefiting	50	50	50 (25)	250 TRY members	125	Focus on oyster harvesters only in Year2
2	No persons receiving econ. assistance packages (grants, training, etc.)	50	500	50 (50)	250 TRY members	220	Focus on oyster harvesters only in Year2
3	Number of people with improved access to loan capital		50	50 (25)	250	115	Focus on oyster harvesters only in Year2 Microcredit loans provided to 250 members of TRY
4	Number of govt. agencies or mgt. bodies strengthened or created	3	6	11 (2)	12	8	LACOMS in 7 communities (Gunjur, Brufut, Sanyang, Tanji, Batokunku/Tujereng, Bakau, Banjul), NASCOM, GAMFIDA, NAAFO,TRY Association, 1 Govt. agencies (DoFish) target - 10 for sole, 1 for oyster
5	Number of stakeholders trained in resources mgt[2]	60	173 106 males 67 females	9 (40)	311	200	250 in microcredit, 60 in climate change adaptation and 1 in regional exchange to Ghana.
6	Improvements on a governance scorecard	Oysters improving		Oysters and sole improving	Oysters and sole improving	improving	Oysters total governance scorecard 10-12 in 2009, score in 2010 - 27-29 Sole total governance scorecard in 2009 - 14. score in 2010 – 31 (see following section for the scorecard questions and detailed comments)
7	Number of fishermen w/ use rights (collective quotas/territorial use rights, saleable license)	450	0	450 (100)	0	600	Collective use rights for each of 9 communities in portions of the Tanbi expected once oyster mgt plan adopted, representing total member ship of TRY, Use rights are also established in the draft sole management plan so final numbers likely to exceed target
8	Number participating in regional meetings and/or exchange visits	55	42	51 (30)	61	130	60 at regional CCA wkshp, 1 exchange trip to Ghana

N0	Indicator	FY 10 Target	FY 10 Result	FY 11 Target[1]	FY 11 Result through June 2011	LOP Target	Comments
9	Number of workshops/meetings on policy reform between Senegal and The Gambia	1	0	2 (1)	1	6	Climate change workshop
10	Number of reports documenting transboundary issues and solutions	1	0	3 (1)	3	4	Shrimp, Sole and Oyster value chain reports
11	Number of policy changes made by national govts to harmonize policies		0	0	0	3	
12	Hectares of biol significance under improved mgt: • fisheries mgt plan	20,000 (sole)	0	20,000	0	30,000	Delayed, however, while draft management plan developed and mgt committee established this will not be counted until plan is formally approved by government, estimated about first quarter of Year 3,
12	Hectares of biol significance under improved mgt: • Oyster CB-mgt zones	200	6000	6000	0	500	Increase due to revised estimate of size of the Tanbi wetland. Oyster CB-Mgt Plan will be finally approved about first quarter of Year 3
12	Hectares of biol significance under improved mgt: • MPAs or fishery no-take reserves		none	none	0	6,000	The Sole Mgt Plan will include 1 MPA (Allahein River Estuary((mouth) and closed area of 0-1 nautical mile and will exceed target estimates. Oyster mgt plan also has smaller scale channel closures planned.
13	Number of tech innovations and/or effort restrictions that reduces by catch.		none	TBD – sole, TBD-oysters (1)	0	3	Number dependent on mgt measures included in approved mgt plans, Comparative gear selectivity study commenced in May 2011
14	Number of fishing units that adopt by catch reduction technologies		none	0 (10%)	0	20%	Not planned at this time. Preliminary studies indicate this is not an issue for sole fishery, so indicator may be dropped.
15	Number of processers that reduce fuel wood consumption		none	TBD (1)	0	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

N0	Indicator	FY 10 Target	FY 10 Result	FY 11 Target[1]	FY 11 Result through June 2011	LOP Target	Comments
16	Number of vessels registered/licensed	50	0	50 (30)	0	100	Community sensitization completed along South Coast. Registration completed in April 2011. Statisticasl report not yet received to specify the exact number - estimated at 50-100,
17	Hectares under effective mgt (progress towards BRPs) for sole		No target	Baseline established	0	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	0	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		0	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		0	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

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

[2] 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 longer-term degree training of select DoFish staff.