Gambia-Senegal Sustainable Fisheries Project

Annual Report and Year 3 Work Plan

October 1, 2011 – September 30, 2012

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A partnership of:

United States Agency for International Development / West Africa
Coastal Resources Center, University of Rhode Island
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Department of Fisheries
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Table of Contents

Page

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 a regional implementing partner. In Year 3, the University of Rhode Island has also established an office presence in The Gambia and will work directly with local implementing partners, including TRY, NAAFO/GAMFIDA/NASCOM, TAGFC and the Water Resources Laboratory on some activities. At the end of Year 2, WASH and Climate Change funding was awarded in addition to previous fisheries activities under the biodiversity earmark. URI will work directly with local partners TARUD and GAMWORKS to implement WASH activities beginning in Year 3. Implementation of a bilateral Climate Change Vulnerability Assessment will be conducted by WWF in Year 3. 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. The Gambia - Senegal Sustainable Fisheries Project contributes directly and broadly to the achievement of the USAID West Africa Regional Office's Environment & Climate Change Response (ROECCR) Results Framework (see Appendix B). It addresses specifically IRs 1, 3 and 4 and each one of the corresponding 11 sub IRs and sub-sub IRs, as well as future programming IRs 2.1.4 and 2.1.5 and IR 2.3, More Secure Tenure of Land and Water Resources.

This document describes the planned Year 3 (October 1, 2011 – September 30, 2012) work activities of the *Gambia-Senegal Sustainable Fisheries Project (**Ba Nafaa**)*. The contents of this workplan were generated from discussions and outputs developed during meetings with project staff and through consultations with the Department of Fisheries and other key stakeholder groups via meetings and workshop events. The document is organized into five main components. First, background information as well as Project goals and key results expected over the life-of-the-project are described. This is followed by a brief summary of Project accomplishments to date, and a detailed description of Project activities to be implemented in Year 3. It includes a task implementation schedule as well as expected outputs and results per activity area. For each respective activity area, the workplan also identifies the responsible Project staff and participating partners to guide teams involved in implementation. In addition, the Project management structure, the monitoring and evaluation strategy, and the corresponding performance and reporting framework are described. Summary budget information is also included. Appendix A provides a summary of the performance plan targets and the results to be achieved for each performance indicator.

1.1 Background

In West Africa, an estimated 1.5 million tons of fish are harvested annually from the region's waters, with a gross retail value of US$1.5 billion. In The Gambia and Senegal artisanal fisheries (fishermen operating from small vessels primarily in nearshore waters.) make up a

majority of the fisheries landings and contribute significantly to income generation and local food security for coastal communities and for many communities inland where fish are traded. Much of the artisanal landings, especially sole and shrimp are also key export earners in the fisheries sector. In both The Gambia and Senegal, most people live within the coastal zone and derive their livelihood, food security, and way-of-life from fishing. Some 200,000 people in the Gambia and 600,000 in Senegal are directly or indirectly employed in the fishing sector. Seafood products are a leading export of the region and generate as much as 20% of the gross value of exports. While the majority of seafood exports are destined for European Union (EU) markets, a growing volume of trade goes to the U.S. and other countries in the region. Fisheries trade results in valuable foreign exchange earnings, revenue for government, and employment opportunities that go well beyond the labor directly involved in harvesting.

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

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

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

The ecoregion is also known as the Canary Current Large Marine Ecosystem. Fish that spawn in northern nurseries seasonally migrate southwards (as do the fishermen) and provide food for human fishing communities along the way. In addition, recent satellite tracking has confirmed that green turtles lay eggs along the remote beaches of Guinea Bissau and travel northwards through Senegalese and Gambian waters to graze in the rich sea grasses of Mauritania. In short, the unique combination of climate and upwelling supports species and habitats that represent

critical resources locally, nationally, regionally, and globally. Areas of international, regional and local significance within the WAMER are shown in Figure 1. The stretch from the Saloum Delta in Senegal, The Gambia River and the entire coastline of the Gambia, as well as the Casamance river system is one contiguous area that has regional biodiversity significance.

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

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

Climate change is predicted to seriously modify coastal, marine and estuarine ecosystems and their human uses with social, economic and ecological consequences. In the Saloum, Sangomar Point has completely disappeared and the advancing sea is causing the progressive disappearance of mangroves in the Saloum estuary. Infrastructure in both the Saloum and in The Gambia are threatened by coastal erosion, menacing fisheries centers, and landing and processing sites. By one estimate, climate change will cause a reduction of fish catch in Senegal by 2% of GDP beginning in 2020.

It is therefore important to study the vulnerability of these ecosystems and productive human activities to identify appropriate adaptation measures that support sustainable socio-economic development and reduce the vulnerability of local populations. While the natural resources are trans boundary resource management in The Gambia and Senegal is strictly national. An ecosystem-based approach to fisheries resource management and adaptation of fisheries to climate change needs to consider both countries and ensure bilateral cooperation and planning.

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

1.2 The Gambia Fishery Context

The marine fishery of the Gambia is located in the highly productive upwelling zone of the Canary Current Large Marine Ecosystem (CCLME). Seasonal upwellings and the flow of nutrients from the River Gambia (an estuary attracting fish for feeding and spawning) make the

marine waters a highly productive area with rich fishery resources, both pelagic and demersal. The River Gambia and its tributaries are about 2,500 km in total length with 480 km of its length in the Gambia. The upwelling phenomenon starts in Morocco and Mauritania and the northern plateau of Senegal in November moving south and attaining maximum effect on the Senegambia plateau in March/April.

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

In the mid 1960s The Gambia witnessed the transformation of the artisanal fishery from paddled canoes with simple fishing techniques to one with modern fish-capturing technologies and larger canoes with outboard engines, which resulted in an increase in fish landings. Decades of growth in the artisanal fishery combined with the activities of the industrial fishery has caused high levels of exploitation, especially of high-value fish, crustaceans and cephalopods. Production in the artisanal fishery has increased from 10,000MT in 1985 to approximately 40,000MT in 2007, while industrial production has been declining. Reports of dwindling catch per unit of effort indicate that high-valued demersal species are under threat from high levels of exploitation. Regular assessments carried out by the Demersal Working Group of the FAO's Committee for Eastern Central Africa Fisheries (CECAF) also indicate that the major fish demersal fish stocks are either fully or overexploited. Pelagic stocks are also considered to be fully or overexploited regionally, but there are some indications that The Gambian stocks may not be fully exploited.

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

The industrial fisheries sub-sector also includes industrial seafood processing plants that purchase fish from the artisanal fishery and provide permanent and part-time employment to between 1,500 to 2,000 people (mainly women). Presently, there are seven processing plants, three of which export to the EU. Two plants are temporarily closed due to lack of material (fish) and high operating costs. Lack of adequate fish for processing is an annual problem, especially when most Senegalese fishers return to Senegal for Ramadan and Tabaski (Islamic holidays). The Senegalese dominate the coastal fishery, so during these religious holidays the amount of fish from the artisanal fishery that is available for processing drops significantly and the

processing plants close. It is expected that the new deep water port in Banjul will reduce the problem of lack of material and the need to operate below capacity. Processing factories also suffer from unreliable provision and high prices for electricity—electricity represents the greatest cost for processing plants with The Gambia having one of the highest kilowatt hour cost of electricity in Africa. Another problem is the high cost of financing.

The artisanal sector, which is the major supplier of both food fish for the Gambian populace and raw material fish for commercial fish processing plants, provides direct employment to 1,410 head fishermen and 4,694 assistant fishermen. Considering fish buyers, processors, boat builders, fuelwood collectors, and other ancillary activities it is estimated that over 200,000 people are directly or indirectly dependent on artisanal fisheries for their livelihoods. Of the 1,410 head fishermen operating in the artisanal fisheries, 805 are Gambian nationals and 605 foreign. In the coastal area, however, foreign nationals—mainly Senegalese—form the majority with 249 head fishermen compared to 167 Gambians. These foreign nationals also form the vast majority of artisanal shrimp fishermen along the estuary of the River Gambia. The number of canoes and fishermen operating in artisanal fisheries steadily increased from 1983 to 1997, but thereafter and until 2006 declined. The artisanal subsector is highly diverse, incorporating marine, estuarine and freshwater fishing operations. The majority of the communities located along the Atlantic coastline and close to the River Gambia and tributaries engage in some form of artisanal fishing activity. The more prominent fishing communities are located along the Atlantic coast and include the coastal villages of Kartong, Brufut, Tanji, Sanyang, Gunjur and Bakau, and the riverbank villages of Albreda, Bintang, Kemoto and Tendaba.

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

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

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

breams, lobsters) are purchased by industrial seafood processing companies for export abroad. The Ministry of Fisheries and communities at the artisanal fisheries landing sites have indicated that Water and Sanitation are development priorities for the artisanal fisheries sector due to the lack of sanitary facilities and potable water sources at most landing sites. This situation poses a public health threat for users of the site and surrounding communities as well as a threat to the quality of fisheries products handled and processed at the sites.

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

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

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

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

1.3 Program Goal and Key Results

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

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

Ba Nafaa builds on the on-going efforts of the Department of Fisheries in The Gambia, working with several community fisheries centers and their management committees to improve fisherfolk involvement in the management of fisheries resources. More specifically, to further the development and implementation of the draft fisheries management plan for sole and other selected species.. Sole is an important export commodity so this involves partnerships with export processing businesses as well. This is also a shared stock 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. (ROECCR IR3)
- 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. (ROECCR IR1, IR3 & IR4)
- Unsustainable and destructive marine resource use practices, including bycatch of marine turtles and juvenile fishes, are reduced. (ROECCR IR3)
- 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. (ROECCR IR1 & IR3)

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.

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.

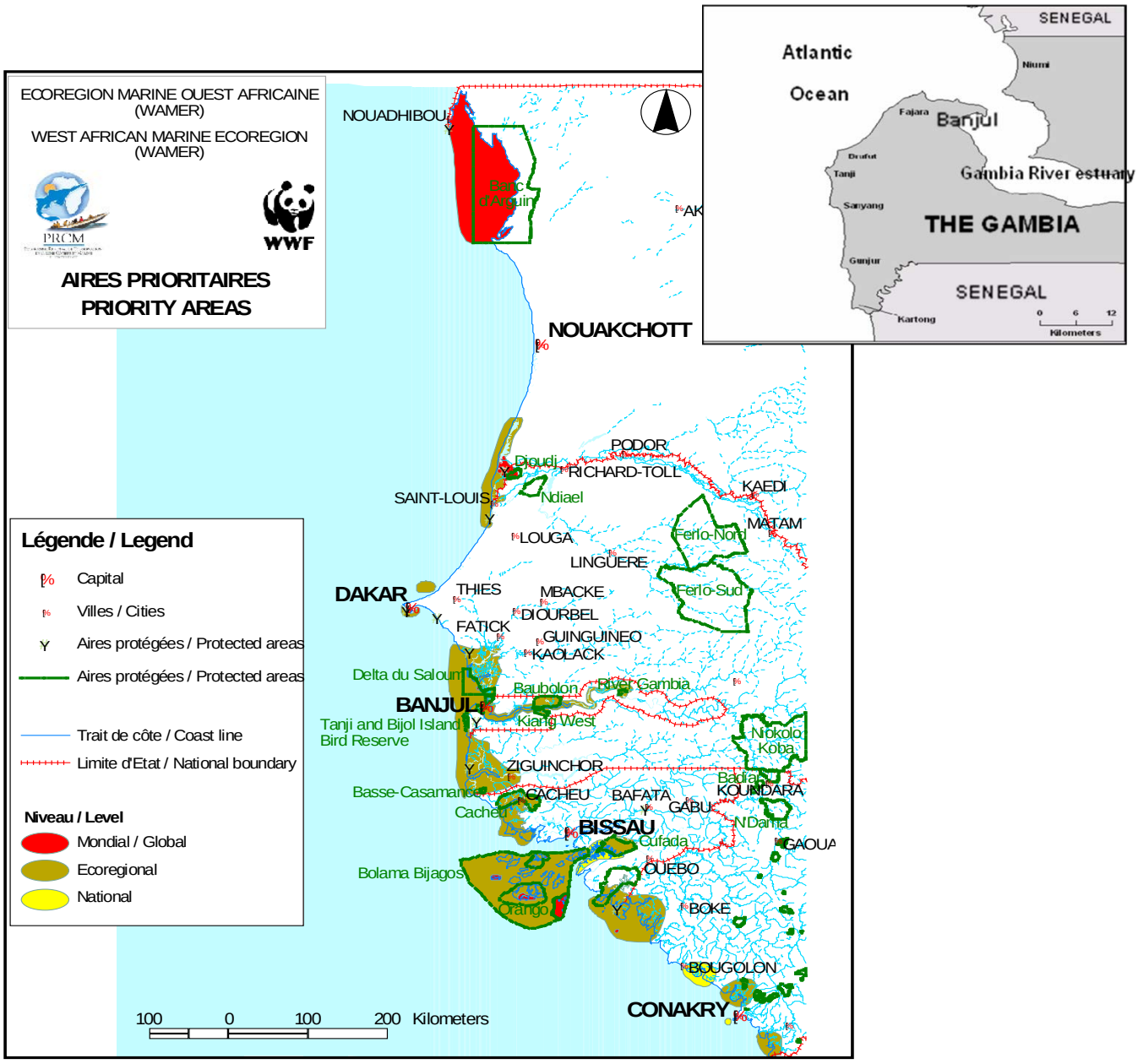


Figure 1. Areas of Biodiversity Significance in the WAMER and The Gambia River Estuary and Atlantic Coast

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 Centers 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. A co-management plan for the sole fishery is expected to be adopted early in Year 3. The sole fishery is also 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 as it is expected to be early in Year 3 of the BaNafaa project, 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, reduce their vulnerability to climate change 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 Accomplishments to Date

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

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 grants 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
- Regional Climate Change awareness raising and strategy workshop in Senegal for representatives from each of the seven countries of the Commission Sous-Régionale des Pêches (CSRP).

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 including the US Ambassador and the President of The Gambia. Raised 100,000 GMD, 20 scholarships for girls and significantly increased awareness of efforts to sustainably manage the oyster fishery.
- Extended closed season resulting in larger sized oysters and improved prices for oysters sold.

Figure 2. Tanbi National Park

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).
- Sole By-Catch species identification guide final and ready for publication.

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

3. Year Three Activities

3.1 Introduction

The priorities for Year 3 will continue to concentrate on the sole and oyster fisheries in The Gambia. Progress on establishing the two co-management plans has been slower than initially anticipated, but official adoption of both plans is expected by December 2011. Although the plans will be adopted, it is important in Year 3 to consolidate this success by supporting strengthened institutional capacity for implementation of the plans by the responsible civil society organizations and government structures. Continued support for the Department of Fisheries to achieve MSC certification for The Gambian sole fishery is also a priority for Year 3. For this reason initial work to expand the sole management plan to a multispecies management plan including catfish, will be started only during the last half of Year 3.

Add-on requests to address water and sanitation issues at fish landing centers and at oyster harvesting locations, and also for a climate change vulnerability assessment of the Saloum Delta and Gambia River estuary area were awarded in July 2011and start-up activities begun. Karen Kent, a new CRC staff initially managing these components will now be the U.S. based BaNafaa Team Leader. A Gambian Water and Sanitation Coordinator, Dr. Bamba Banja was recruited by URI in September 2011 to manage the WASH component and oversee a URI office in The Gambia located at the TRY office in Old Jeshwang. In Year 3, some activities previously implemented by WWF-WAMER will now be managed directly by URI in The Gambia. These activities include water quality work in the Tanbi and development of a Shellfish Sanitation Plan, institutional strengthening for TRY and institutional strengthening for civil society NASCOM members (GAMFIDA/NAAFO/TAGFC).

3.2 Sole

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

Key issues and Progress to Date

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

Co-management Plan and MSC certification readiness: 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), The Association of Gambian Fisheries Companies (TAGFC) and the Department of Fisheries to meet the eligibility criteria for MSC certification. Most of the Ba Nafaa activities during 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. A final draft of the Sole Co-Management Plan was prepared and as of the end of Year 2 is 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. Some of the key performance conditions and recommendations are summarized as follows:

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

- ***Stock***: In order for fisheries managers to make informed and timely management decisions, it is necessary to improve the understanding of stock status and to identify reference points to inform the harvest control rule. A reasonable amount of information is available to enable appropriate analysis in the form of landings and effort data (from DoFish) and landings by species and size (from processing plants). This assessment indicated that there was sufficient likelihood that the stock was not overfished.

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

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

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

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

- ***Research***: It is clear that a useful amount of research is undertaken by DoFish. It is less clear how research is commissioned in a strategic fashion. The development of a research plan that

informs the objectives of the fisheries policy would enable issue- and policy-relevant research to be undertaken when funds are available.

Audit Recommendations included the following:

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

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

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.

Vessel registration and licensing is a necessary step in understanding the total effort in the sole fishery and ultimately to achieve satisfactory scores for MSC certification. In Year 2, the Project assisted DoFish with registration efforts in the key ports for sole fishing and other landing sites along the south and northern coasts. This is necessary in order to keep track of all fishing vessel arrivals and exits as well as to establish a baseline for an eventual policy to limit entry, which may be one measure considered by the management committee to prevent overfishing. Ultimately, licensing can also pave the way to consider possible establishment of catch shares in this fishery. If appropriate information management systems are put in place, and the fact that sole is only landed in a few centers, means that a share system may be feasible. While this may not be part of the initial fisheries management plan for sole, the feasibility of a share system and discussions with fishermen concerning interest and willingness to experiment with such a

system, will be activities in subsequent years of the Project—once other basic fisheries management measures are in place. Since Project resources were not sufficient to conduct vessel licensing and registration throughout the country, Ba Nafaa efforts concentrated on the south and northern coasts and the estuarine landing sites of where the majority of sole catch is landed. Community meetings were held with all the landing sites along the Atlantic coast and project support for printing and distribution of registration forms and materials for marking registration numbers on boats was provided. Registration of approximately 1000 artisanal vessels in target areas was completed in Year 2. Exact numbers will be provided when DoFish's final report is available.

By-catch assessment and landings data. During the first 2 years, the project has also assisted 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. Enumerators of the Department of Fisheries collected the landings data and length frequency measurements, and the Ba-Nafaa staffer Gibril Gabis supervised the "Informed Fishers" in collecting and recording the by-catch data. 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; as of the end of Year 2, the catalog is completed and ready to be published. 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 be overfished which confirms information in the MSC pre-audit.

Project Actions in Year 3

Ba Nafaa activities in Year 3 will continue to concentrate on approval of a sustainable sole fishery co-management plan, necessary conditions for its effective implementation and other measures and capacity required for The Gambia to obtain the eco-label through MSC certification. It should be noted that it is the industry and government responsibility to apply for and obtain the MSC certification, including payment of audit fees. Therefore, project resources are dedicated to helping them obtain a level of capacity and systems that provide a high probability of certification. This will also require DoFish to build new procedures and priorities into their statistics program and budgetary allocations for ongoing costs of data collection and analysis. If certification is achieved, then concentrated efforts to improve marketing opportunities will be pursued. Efforts at market promotion of a certified fish project will be coordinated with the USAID WATH Project. Processors in The Gambia believe that they will be able to obtain better prices through improved market opportunities with an eco-label and ability to sell more products at higher prices directly to retail outlets. While a price premium cannot be assured, ecolabeling will provide opportunities for more market channels, and less risk of being cut out of EU markets in the future if EU sustainability standards are not met. Specific activities and outputs in Year 3 are described below:

Effective Co-Management Plan and Support for MSC Certification Readiness

Official adoption of the Sole Management plan is expected in the first Quarter of Year 3. One final stakeholder consultative/validation meeting is planned and a tentative date of December 15, 2011 has been selected for an official signing ceremony/launch event. The U.S. Ambassador to The Gambia, USAID/WA and each of the Ministers overseeing the Departments of Fisheries, Parks and Wildlife Management and Forestry will be invited. Adoption of the Sole Co-Management Plan will effectively bring an estimated 158,332 ha under improved management. This represents the area 1 nm out from the Atlantic Coast of the Gambia (14,425 ha) restricted during the sole spawning season and the area up to 12 nm under gear restrictions year round.

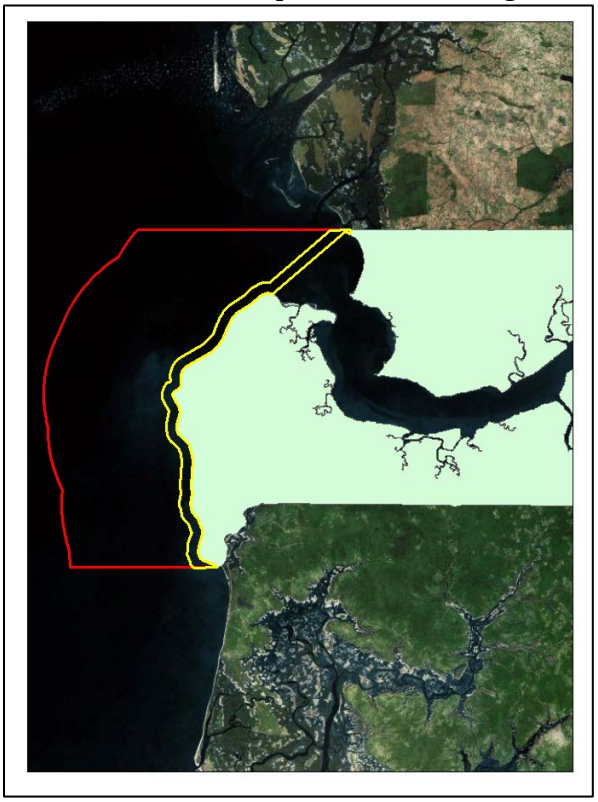


Figure 4. Map of proposed sole special management area and one nautical mile closed zone

With the passage of the sole co-management plan, many new expectations will be in place. They include:

1. A robust co-management process will be in place to re-examine the management plan as new information emerges – the definition of adaptive management.
2. A solid data collection and analysis system is in place at the Department of Fisheries in agreement with their partners.
3. A solid research plan is in place to generate critical new information.
4. Training is available to further assist with co-management, data and stock assessment.
5. A process is in place for discussion and agreement on new management measures if needed.

6. The plan is expanded to include the multi-species complex, starting with high risk catfish species.

For year 3, the BaNaafa Project will assist in the following activities:

1. Finalize management plan for sole
2. Assist with the formal adoption process
3. Assist with compiling information for the full assessment of the MSC label.
4. Support the process to update the management plan
    a. Assist with new stock assessment
    b. Assist with research to augment information
        i. Stock identification: Use local knowledge to gather information on sole migration from Senegal.
        ii. Better distinguish landings characterization of cross border trade issues
        iii. Complete gillnet selectivity study
5. Assist Department of Fisheries in data gathering and analysis protocol and training and infrastructure of statistics unit.
6. Assist in collection of biological information about catfish, *Arius latiscutatus* and collection of local knowledge about spawning.
7. Empower local associations of NAAFO, GAMFIDA and TAGFC to continue to work in co-management.

Activity Implementation Schedule

Activity	FY 2012				Local Implement. Partners	WWF Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
Sole Co-Management Plan, Final Stakeholder consultation/validation meeting					DoFish/NASCOM	Ousman	Castro
Sole Co-Management Plan Signature/Launch event					DoFish/NASCOM	Ousman	Castro
Assist with compiling information for the full assessment of the MSC label for sole.					DoFish	Ousman	DeAlteris
Review criteria and duties assigned under the existing MOU on addressing MSC identified gaps and prepare report.					DoFish	Ousman	DeAlteris
Take new information from 2010-2011 and redo stock assessment as done by MSC					DoFish	Ousman	DeAlteris
Assess local knowledge of fishermen in Senegal on sole species and life history of sole migrating from Senegal.					DoFish/DPM Senegal	WWF-Senegal Ousman	Castro
Conduct cross border trade study to track unreported landings that may be mislabeled as Senegalese caught fish.					Local consultants	Ousman	Tobey
Hold bi-lateral meeting to review study results.					DoFish/DPM/consultants	Ousman	Tobey
Prepare Action Plan to address the findings					DoFish/DPM/consultants	Ousman	Tobey

Conduct gillnet selectivity study for sole and catfish.					DoFish	Ousman, Gibril	Chris Parkins, Castro
Training in new data base management					DoFish	Ousman	DeAlteris, Barbara
Training in data collection, fish biology and stock assessment					DoFish	Ousman	DeAlteris, Barbara
Catfish - Desktop survey of existing knowledge					DoFish	Ousman, Gibril	Castro
Catfish – conduct survey and produce report on local knowledge on spawning.					DoFish	Ousman, Gibril	Castro
Institutional strengthening grants to NASCOM/NAAFO/GAMFIDA/TAGFC for co-management work.					NAAFO/GAMFIDA/TAGFC	Ousman	Castro, Kent
Provide technical and financial support for regular, quarterly NASCOM meetings.					NASCOM, DoFish	Ousman	Castro

Key Outputs and Milestones

- Final, signed Co-Management Plan.
- Report on status of addressing MSC identified areas for improvement specified in the existing MOU between URI and MSC.
- Updated Stock Assessment Report produced and presented to management NASCOM.
- Report on LEK for Sole migration from Northern Senegal
- Cross Border Trade Study, bi-lateral meeting report and Action Plan.
- Gillnet Selectivity Study
- 5 people trained in new database management
- 5 people trained in data collection, fish biology and stock assessment using the two Year 2 URI summer course alumni as resource persons/trainers.
- Study compiling and analyzing existing information on Catfish.
- Report on LEK on spawning for Catfish.

Further detail on some of the Year 3 Sole activities specified above are as follows:

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 in Brufut (the site with the highest catch of sole). A master fisherman agreed to be a partner in the study. 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. In Year 3, the project will procure gill netting materials and accessories to be divided equally between the project and the master fisherman. The master fisherman will mount his nets in the local way as is done nowadays, and the project will mount a conventional gill net.

The 2 nets will be set alongside each other and data collected on 10 different days for selectivity and the differences in how sole is caught in the two nets. The field data will be collected during quarter 3 by Gibril Gabis and Chis Parkins of URI and a report produced.

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

Quarterly Meetings of NASCOM (National Sole Fishery Co-management Committee) The inaugural meeting of NASCOM was in October 2010. 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. After adoption of the Co-Management Plan early in Year 3, the BaNafaa project will provide technical and minimal financial support to ensure that regular quarterly NASCOM meetings are convened.

Institutional Strengthening of NASCOM (NAAFO/GAMFIDA/TAGFC). NASCOM and the associations that are represented on NASCOM play a critical role in bringing together the various civil society actors and individuals involved in and benefiting economically from the sole fishery. Strengthening the capacity of these actors and their members in the areas of management, action research capability/technical knowledge, communication, advocacy and leadership is fundamental to successful implementation of the Co-Management Plan. In Year 3, the BaNafaa project will support one or more of these institutions to build capacity in these areas through small grants administered directly by URI's in-country office.

Catfish. Saltwater Catfish is a stock of importance for local and regional food supply. Very little is known about these stocks. This fish is also caught with bottom set gill nets and long lines and is part of the demersal species assemblages along with sole. Much of the catch is targeted during spawning aggregations outside the mouth of the Gambia river just prior to the rainy season. Hence concerns over this fishing practice and associated risks to sustainability of the stock. Since this fishery is associated with the same nets, landing sites and fishermen as sole, a catfish

management plan along with sole can be easily integrated with work already done on sole and involves the same stakeholder groups. Management responsibilities for this stock could also be added to the charge of the sole management committee. Ultimately, this strategy also allows the project to incrementally build to a multispecies management plan for demersal stocks, primarily targeted by the bottom set gill nets and long lines. This strategy acknowledges that a more complex multispecies management plan can only be considered as capacities for management among fisheries stakeholder groups and DoFish also increase and are demonstrated. By working with the same stakeholder groups, the project can stay more focused and make more rapid progress towards this goal. Work on Catfish will not be started until the second half of Year 3 when the sole management plan is completed, formally adopted and launched so as not to stretch the capabilities of the project on too many work streams at the same time, overextending their capacities. Initial activities include a desktop study on the biology of catfish and a Local Ecological Knowledge study in the field on spawning behavior. Greater investment in Catfish stock assessment and Management Planning will be pursued in Year 4.

Reduce Postharvest LossesThirty-five (35%) of the Gambian catch is reported lost due to improper handling at sea/during processing. This loss is caused by the extreme climatic conditions, choice of fishing gear and fishing areas, time spent at sea and delays in moving product from beach to consumer. In Year 3, the BaNafaa project will support activities that seek to reduce this loss of quality and improve the safety of the fish product. These activities are:

1. Cold Storage Box Pilot. Through a small grant to one of the local organizations involved in the sole co-management plan (NASCOM/NAAFO/GAMFIDA/TAGFC), and working with other partners, a small locally relevant cold storage box will be designed and built. These will be low cost and small enough to fit in canoes and pirogues. It will be field tested in one locale and price differential/loss will be documented for several months. The effectiveness of this method will be evaluated by:
    a. Price of higher quality fish
    b. Reduced loss of product
    c. Adoption by others

2. Seafood quality and safety. Also through the small grant mechanism to local partners involved in the sole co-management plan:
    a. Educational materials for fishermen, buyers, processers and consumers will be prepared
    b. Educational seminars and workshops will be delivered to select audiences

Activity Implementation Schedule

Activity	FY 2012				Local Implement. Partners	WWF Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
Cold box pilot – select community, and design box					NAAFO/GAMFIDA/NASCOM	Ousman	Castro
Collect data					NAAFO/GAMFIDA/NASCOM	Ousman	Castro
Analysis of results					NAAFO/GAMFIDA/NASCOM	Ousman	Castro

Diffusion of findings at quarterly NASCOM meetings					NASCOM	Ousman	DeAlteris
Grantee identifies target audiences and conducts assessment of their knowledge attitudes and practices.					NAAFO/GAMFIDA/NASCOM	Ousman	Castro/ DeAlteris
Designs educational materials and diffusion plan.					NAAFO/GAMFIDA/NASCOM	Ousman	Castro/ DeAlteris
Review and input from URI					NAAFO/GAMFIDA/NASCOM	Ousman	Castro/ DeAlteris
Field tests materials					NAAFO/GAMFIDA/NASCOM	Ousman	Castro/ DeAlteris
Produces materials					NAAFO/GAMFIDA/NASCOM	Ousman	Castro/ DeAlteris
Diffuses materials by radio, workshops etc. according to plan.					NAAFO/GAMFIDA/NASCOM	Ousman	Castro/ DeAlteris
Follow – up evaluation of awareness and uptake by target audiences.					NAAFO/GAMFIDA/NASCOM	Ousman	Castro/ DeAlteris

Key Outputs and Milestones

- Cold Box Study Report.
- NASCOM meeting reports documenting comments and feedback on results and likelihood of widespread adoption.
- Educational materials produced
- Educational messages delivered to target audiences.
- Evaluation report

Fishery Governance

Governance Scorecard. To track and evaluate trends in overall fisheries governance for the sole and oyster fisheries, the BaNafaa project conducted a baseline in 2009 and one annual rating in 2010 of fisheries governance along the parameters of: 1.) Goals, 2.) Constituencies, 3.) Formal Commitment and 4.) Institutional Capacity. The Governance Scorecard is one of the project's PMP indicators. At the end of quarter 1, Year 3, the second annual rating will be conducted.

Fishery Performance Indicators. URI Fisheries Economist Chris Anderson is working with the World Bank to build a global database on fisheries performance and wealth. So far it has been applied to 15 countries/fisheries management areas. This method will be applied to the Sole and Oyster fisheries in The Gambia to baseline and track performance of these fisheries over the life of the project. It is not a way to measure project impact, but will provide insight on the fishery, where there are relative strengths and weaknesses, how it is evolving, and how it compares with other countries (such as Senegal, where URI would also like to apply this under the COMFISH Project). Important features include: It is a rapid assessment indicator, designed to be completed by an expert or two (in consultation with an FPI head) in a week with no primary data collection (it is not surveying people about their happiness); there are measures of wealth (some of which it is expected need to be refined for developing countries) and measures of things conjectured to be inputs, allowing for later testing of the conjectures as hypotheses, once there are ~100 case studies.

Activity Implementation Schedule

Activity	FY 2012				Local Implement. Partners	WWF Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
Governance Scorecard ratings consultation.					NASCOM, TRY	Ousman	Tobey
Plan and conduct in-country Fishery Indicators session and site visits for sole and oyster fisheries.					DoFish/NASCOM/ TRY	Ousman	Anderson, Castro
Produce report.					DoFish/NASCOM/ TRY	Ousman	Anderson, Castro
Sharing of results at a regular Sole and Oyster Management Committee meeting that can be scheduled to coincide with the study's end.					DoFish/NASCOM/ TRY	Ousman	Anderson, Castro

Key Outputs and Milestones

- Governance Scorecard Ratings Conducted for sole and oyster fisheries.
- Fishery Performance Indicators Report for the Sole and Oyster Fisheries in The Gambia.

Key Results

No.	Indicator	Year 3 Target
4	# of agencies or management bodies strengthened or created	1 additional TAGFC
5	# of personnel trained in resources management	7 (5 stock assessment, 2 URI fisheries course)
6	Improvements on a governance scorecard	# is increasing
7	# of fishers with use rights	310 Co-Management Plan
10	No of reports documenting transboundary issues	2 (cross border trade in sole, LEK on Sole from Senegal)
12	Hectares in areas under improved management and covered by the sole fisheries mgt plan	158,332 hectares
16	# of vessels registered/licensed	1000
17	Hectares under effective mgt.	Baseline established on target reference point or other biological indicators and based on stock assessment results

3.3 Oysters

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

Key issues and Progress to Date

The oyster fishery is somewhat unique as it is dominated by women gatherers. Women also dominate the processing and marketing of oysters. There is very little information on this fishery and official fisheries statistics do not include it in the annual landing statistics. On the South Bank of The Gambia River and in the vicinity of the capital of Banjul, nine communities make up the majority of harvesters in this sector with harvesting concentrated in the Tanbi 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 Oyster Women's 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. *The Project also aims to demonstrate an ecosystems-based approach to community-based management of the oyster and cockle fishery and adjacent mangroves.* The project's near term goal is to develop a model of a co-management plan that empowers the women harvesters to directly manage the harvesting of the oysters and cockles, and that can be replicated in other mangrove subsystems within the country and region. TRY is planning on eventually expanding its membership further to other areas and the management planning process can be replicated to new areas as TRY membership also grows towards becoming a national association.

In Year 2, the TRY Women's Oyster Association The Department of Fisheries, The Department of Forestry and the Department of Parks and Wildlife Management developed an Oyster and Cockle Co-management Plan that is almost final. TRY was also provided a grant to establish a microcredit scheme for the women, develop a business plan, develop a fundraising strategy and support temporarily an association meeting center. The association has also expanded from an initial membership of approximately 50 women, to 500 women representing all the communities exploiting the Tanbi wetland as well as the Kartung estuary area. 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. At the end of Year 2 in September 2011, TRY's Board of Directors met and a General Assembly of the membership was held.

Research on oyster biology and pilot aquaculture activities were also conducted in Year 2 in order to inform management planning. A spat settlement study is now completed. As a result of the data on spawning density and seasonality, a decision was made to extend closure of the oyster harvesting season until March each year. Aquaculture pilot studies on racks were costly in terms of materials and time and will not continue to be supported with BaNafaa funds. TRY has been awarded a GEF grant to expand oyster aquaculture racks.

Project Actions in Year 3

Ba Nafaa activities in Year 3 will continue to concentrate on approval of a sustainable Oyster and Cockle Co-Management Plan and necessary conditions for its effective implementation, including:

1. Continued water quality monitoring (coliforms, temperature, salinity, DO)
2. Completion of a full shoreline sanitation survey of the Tanbi.
3. A draft Shellfish Sanitation Plan
4. Continued Pilot Aquaculture research
5. Kartong Management Plan integrated.
6. Strengthened capacity of TRY
7. Improved livelihoods of TRY members and their families

Effective Co-Management Plan

Official adoption of the Sole Management plan is expected in the first Quarter of Year 3. One final stakeholder consultative/validation meeting is planned and a tentative date of December 15, 2011 has been selected for an official signing ceremony/launch event. The U.S. Ambassador to The Gambia, USAID/WA and Ministers overseeing the Departments of Fisheries, Parks and Wildlife Management and Forestry will be invited. Adoption of the Oyster and Cockle Co-Management Plan will effectively bring 6000 ha under improved management (the entire Tanbi National Park). The plan designates exclusive use zones for each community, an extended closed season to allow oysters to grow to a larger size before harvesting and gear restrictions to reduce damage to mangroves during harvesting.

Activity Implementation Schedule

Activity	FY 2012				Local Implement. Partners	BaNafaa Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
Oyster and Cockle Co-Management Plan, Final Stakeholder consultation/validation meeting.					TRY,DoFish, DoF, DPWM	Ousman	Crawford
Signing ceremony and/or launch event					TRY, DoFish, DoF, DPWM	Ousman	Crawford
Quarterly Management Committee Meeting					TRY,DoFish, DoF,	Ousman	Kent, Dr. Rice

					DPWM		
Continue water quality study for another year (Year 3)					Water Resources Lab. Fodeh Conteh	Ousman, Bambanding	Dr. Rice
In-country working session/refresher training for shoreline survey resource persons.					Water Resources Lab. DoFish, Dept. of Public Health, NEA	Babanding Ousman	Dr. Rice
Conduct Shoreline Survey throughout the Tanbi.					Water Resources Lab. DoFish, Dept. of Public Health, NEA	Babanding Ousman	Dr. Rice
Action Planning for Shellfish Sanitation Plan development.					Water Resources Lab. DoFish, Dept. of Public Health, NEA	Babanding Ousman	Dr. Rice
Interagency agreement or other legislative foundation for collaboration among agencies to institutionalize Shellfish Sanitation Work					Water Resources Lab. DoFish, Dept. of Public Health, NEA	Babanding Ousman	Dr. Rice
Conduct Oyster basket culture study for 1 year					TRY,DoFish	Emily Babanding Ousman	Dr, Rice
Conduct cockle redistribution study in Kartong for one additional year					TRY,DoFish	PCV Babanding Ousman	Dr. Rice
Community meetings to develop Kartong Cockle Management Plan					TRY,DoFish	PCV Babanding, Ousman	Dr. Rice
TRY Grant #2 (Equipment, audit, architect, microfinance training, literacy/numeracy training, stove demo)					TRY	Babanding Ousman	Kent, Lee
TRY Grant #3					TRY,	Babanding Ousman	Kent, Lee
TRY SOP manual development					TRY, consultant	Ousman	Kent, Lee

Key Outputs and Milestones

- Management plan reviewed by all stakeholders, approved by DoFish, DPWM, and Forestry and the Minister of Fisheries
- Approved management plan printed and distributed to all stakeholders.
- Implementation started. Quarterly Management Committee Meeting Reports.
- Water Quality Report
- Shoreline Sanitation Survey covering the Tanbi.

- Draft Shellfish Sanitation Plan
- A peer reviewed published paper summarizing the results of research conducted on oyster and cockle fisheries in the Tanbi.
- Cockle Redistribution report
- Basket Aquaculture Report
- Draft Kartong Management Plan
- TRY Audit Report
- TRY Architectural Plan for Center
- 50% of TRY microfinance recipients graduate to become NAACUG clients.
- TRY local tourist market survey for Oyster and Cockle potential sales to Hotels.
- TRY SOP Manual

Further detail on some of the Year 3 Oyster and Cockle activities specified above are as follows:

Water Quality The purpose of 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 was initially conducted for one year to assess any seasonal variations in potential health risks. Water samples were 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, a seasonal elevation of coliforms during the rainy season is suggested by the data and 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.

Water quality data is to be collected and analyzed for at least 3 consecutive years, until July 2013. In Year 3, URI will contract directly with the Water Resources Laboratory for collection of the coliform, temperature, salinity and DO data rather than through the WWF sub-contract.

Shellfish Sanitation Plan. During their training in Rhode Island, 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. As this activity involves multiple agencies, the institutionalization of interagency cooperation and commitment of human resources and budgets to this work is essential. An interagency agreement or other appropriate mechanism will be facilitated by the BaNafaa Project. Although initial water quality results are favorable, the marketing of raw oysters to be eaten raw by the consumer is not a realistic goal for Year 3. Funds for investigation of the potential local market for raw, smoked or otherwise processed oyster and cockle products to local hotels will be provided under the TRY institutional strengthening grant.

Shoreline Sanitation Survey. In addition to water quality testing and the use of resulting data to manage the oyster fishery, shoreline sanitation survey techniques enable decision makers to identify areas of critical threat to shellfish sanitation. In Year 2, Dr. Michael Rice provided hands on training to one BaNafaa staff, Babanding Kanyi, in shoreline sanitation survey techniques. A Shoreline Sanitation survey of the Bund Road in Banjul was conducted as a pilot activity during this training. In Year 3, the project will support the Water Resources Laboratory to conduct a full shoreline sanitation survey of the Tanbi National Park. In conjunction with

water quality data, the results of this survey will provide the Oyster and Cockle Management Committee with critical information for ensuring the quality of harvested shellfish.

Pilot Aquaculture: Hanging Baskets. In Year 3, experiments with the "floating basket" technique as a way to conserve juvenile oyster usually discarded during harvesting practices will be pursued at one experimental site, due to the labor intensive nature of the work. It requires cleaning the basket of fouling twice a month for a year.

Kartong Management Planning and Cockle Redistribution . The trial at Kartong involving the redistribution of cockles from high density areas to lower density areas initiated in the 3rd Quarter of Year 2 will continue in Year 3 for 12 months. 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. Results will feed into decision making for a Kartong Co-Management Plan.

As TRY member ship has expanded, more oyster harvesters have taken an interest in the management planning activities now focusing in the Tanbi National Park. The project's long term goal is tohave a few good models of co-mgt for oysters and cockles that can be replicated in other estuarine areas of the country. However, the project does not want to start the processes in other areas until the Tanbi National Park planning process and formal adoption is complete. However, TRY membership includes representatives from Kartong, which harvest oysters in a different estuary than the Tanbi area, located near the southern border of the country. The project expects that the Tanbi plan will be completed in December 2011, which will free up some staff time to start working in another estuary. Since Kartong representatives of TRY have already been attending meetings concerning the Tanbi, as well as in other project events, including participation in PRAs, this area is the next logical place to start additional area level community-based planning. Kartong will be less complicated than the Tanbi area as it involves only one community. Therefore, this management plan or special fishery management area, will involve negotiations within only one community. This work will also engage a Peace Corps Volunteer stationed in Kartong. Peace Corps expects that the outgoing volunteer will be replaced.

Figure 5. 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

Institutional Strengthening of TRY. TRY has made significant progress over the last year consolidating its membership, building trust and regular communications with officers, members and the Board of Directors and raising the visibility of the organization. TRY has been quite successful at fundraising for such a young organization, has been able to start new activities benefitting its members and is about to be signatory to a groundbreaking Oyster and Cockle Co-Management Plan, entitling its members to exclusive user rights to natural resources of economic value. In Year 3, BaNafaa's assistance to TRY will support the establishment of organizational systems and procedures. TRY will be audited by a local auditor and a consultant will work with TRY to develop a Standard Operating Procedures Manual. BaNafaa's support will also provide training for programs that benefit members and build their capacity, literacy and numeracy training and microfinance training. By the end of Year 3, TRY will begin graduating its strongest microfinance clients out to an established Gambian microfinance institution. This will enable TRY to gradually phase out its microfinance activities over time. While the program has been successful and has increased members' understanding of financial management, it is labor intensive for TRY and carries significant risk.

Finally, BaNafaa will support physical and equipment investments that will enable TRY to increase its revenues and reduce its operating costs over the longer term. This includes fees for an architect to design the TRY Center permanent building. TRY has already received a response to its request to the Government for land, asking for further information and documentation. It

will also cover the purchase of chairs and the installation of a demonstration stove from Tanzania for smoking Oysters.

Key Results

No.	Indicator	Year 3 Target
1	# of businesses and persons economically benefiting	250
2	# receiving assistance packages	250
3	# of people with improved access to loan capital	250
4	# of agencies or mgt bodies strengthened or created	No new
5	# of personnel trained in resources mgt	250
6	Improvements on a governance scorecard	Yes
7	# of harvesters with use rights	500
12	# hectares in areas under improved management: • Oyster mangrove area as community-based management zones	6000 hectares
17	Hectares under effective management	Not tracked this year

3.4 Climate Change Adaptation

WWF Lead: Dia
CRC Lead: Kent
Cooperating Partners: N/A

Key issues and Progress to Date

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.

Project Actions in Year 3

In the 3rd. quarter of Year 2 the Ba-Nafaa project received approval for a US$155,440 add-on component for a bilateral fisheries climate change 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. Prioritized climate change adaptation activities will provide the basis for the development of a request for additional funds to implement selected activities under the BaNafaa project.

In Year 3, the project will look at the possibility of engaging local journalists in the diffusion of results from the bilateral climate change vulnerability assessment through an educational workshop for journalists. The project has been approached by the African Network of Environment Journalists-Gambia (ANEJ-Gambia) and will explore the feasibility of a small grant to this group for that purpose.

Activity Implementation Schedule

Activity	FY12 Q1	FY12 Q2	FY12 Q3	FY12 Q4	Local Implem. Partners	WWF Person
Draft Vulnerability Assessment TOR					**CSE**	
Harmonization workshop					Cons.	Mat Dia
Draft Contracts					Cons.	Mat Dia
Organize baseline GIS database						
Inundation mapping					Cons.	Arona
Review of existing socio-economic characterization of local communities					Soukeye	Mat Dia

Field work to fill gaps on community vulnerability to climate change					Soukeye	Mat Dia
Community vulnerability report					Soukeye	Mat Dia
Review of Community vulnerability report and GIS Report					URI/WWF	Mat/Arona
Mangrove studies					CSE, Cons.	Arona/ Mat
Fish studies					Cons.	Mat Dia
Review of Inundation, mangrove studies and fish reports					URI/WWF	Karen/ Mat
Compilation of full and summary report					Mat	Mat/Arona
Internal review of compiled report					URI/WWF	Karen/ Arona
Workshop to validate findings, and develop recommended climate change actions					URI/WWF	Arona/ Mat/Karen
Journalist's workshop					URI/WWF	Arona/ Mat/Karen

Key Outputs and Milestones

- Detailed Terms of Reference for GIS, inundation mapping, community vulnerability assessment, mangrove habitat assessment, salinity analysis, impacts on fish species submitted to Karen Kent for review and comment by CRC. TORs to include a common framework/format for the collection, analysis and presentation of information in keeping with USAID/CRC-URI and WWF conceptual frameworks for Climate Change Vulnerability Assessments[1].
- Orientation meeting to harmonize approach and agree on final outcomes Draft Reports on each of above components submitted to Karen Kent for CRC review and comment.
- Final reports on each component, including data files for CSE work.
- Draft consolidated report for CRC review and comment
- Final consolidated report
- Presentations for workshop
- Workshop proceedings, including recommendations for bilateral climate change adaptation measures.
- Journalist's workshop (TBD)

Key Results

No.	Indicator	Year 3 Target
8	# on individuals participating in regional meetings and/or exchanges	30
CC1	Number of climate vulnerability assessments conducted as a result of USG assistance	1

[1] See Page 28, text box, "Adapting to Coastal Climate Change: A Guidebook for Development Planners" USAID, May 2009. Also USAID PowerPoint "USAID Senegal GCC Briefing June 2011" slides #16 and 18 in particular. Also WWF Draft Manual "Methodology for Climate Change Vulnerability Assessment in Mangrove Systems", page 5.

CC2	Number of stakeholders using climate information in their decision making as a result of USG assistance	30
CC3	Number of institutions with improved capacity to address climate change issues as a result of USG assistance	8

3.5 Water and Sanitation

WWF Lead: Dr. Bamba Banja
CRC Lead: Kent
Cooperating Partners: TARUD, GAMWORKS, CFCs, DoFish

Project Actions in Year 3

In quarter 3 of Year 2, the BaNafaa Project was awarded a Water and Sanitation add-on for $759,126 for 3 years. support needed water and sanitation activities linked to the artisanal fishery and Community Fishery Centers (CFCs). These centers are fish landing and public fish market sites where fish is taken from boats, washed and iced, sold, and in some cases, smoked in adjacent processing facilities. Some catch is sold and transported to export processing plants. There are seven CFCs located along the South Atlantic coast and 11 CFCs in the major inland fishing villages along both banks of the River Gambia. The Ministry of Fisheries and specific CFCs have indicated that Water and Sanitation are development priorities for the artisanal fisheries sector and have expressed their interest in having the *Ba Nafaa* project provide assistance in this area. The *Ba Nafaa* Project is not working in all of these landing sites, but mainly those along the Atlantic coast and the Gambia River estuary involved in the sole fishery. In addition, the project is working with women oyster harvesters in nine communities where sanitary facilities at oyster processing and sales points are also lacking. Improvements in these locations will also be considered.

The objectives of these WatSan activities are to improve water supply and sanitation at approximately seven public fisheries landing/processing facilities. This will provide direct benefit to the thousands of fishermen, oyster harvesters, women fish venders, small scale fish processers and other laborers that utilize these facilities daily. An added benefit is that clean water supply and sanitary facilities at these sites will also result in improved sanitary handling of seafood supply and result in safer and healthier seafood product that enters both the local food chain as well as processing centers for export. In addition, 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[2].

As of the end of Year 2, URI has established its in-country office at the TRY Center, has recruited a WASH Coordinator, Dr. Bamba Banja, and has begun the contracting process with local implementing partners. TARUD will conduct a needs assessment to identify 6 or 7 priority sites and will be responsible for the training and management planning components of the WASH activities. GAMWORKS will be responsible for the design, sub-contracting and

[2] Mills, D., et al. 2009. Vulnerability in small-scale African fishing communities. J. Int. Dev. DOI: 10.1002/jid.

oversight/quality control of infrastructure construction. Contracts with these partners will be signed in Quarter 1 of Year 3. The first infrastructures will not be completed until early in Year 4.

Activity Implementation Schedule

Activity	FY 2012				Local Implement. Partners	BaNafaa Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
Needs assessment					TARUD	Bamba	Kent
Workshop to validate selection of 6-7 sites.					TARUD, GAMWORKS, DoFish,	Bamba	Kent
Environmental Examination and USAID approval.					TARUD, GAMWORKS, NEA	Bamba	Kent
PHAST Training					TARUD	Bamba	Kent
Community awareness raising and outreach					TARUD	Bamba	Kent
Management planning					TARUD	Bamba	Kent
Construction of infrastructure					GAMWORKS	Bamba	Kent

Key Outputs and Milestones

- Needs Assessment Report
- Selection of 7 priority sites
- Environmental Screening Report
- PHAST Training modules
- 7 communities trained
- 2 Management Plans (note that the first infrastructure will not be handed over until February 2013 due to time elapsing for completion of the needs assessment before sites are selected and construction can begin.

Key Results

No.	Indicator	Year 3 Target
W1	Improved access to water and sanitation facilities	0
W2	Number of persons receiving public health and sanitation training (PHAST)	280
W3	Number of persons receiving training and outreach messages on hygiene promotion	1000
W4	Community water and sanitation committees established and trained with program assistance	2

3.6 Capacity Building, Communications, Outreach and Coordination

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

Regional Co-Management Best Practices meeting with PARTAGE. BaNaffa and IUCN's PARTAGE project will host and co-finance a Regional meeting in The Gambia in January 2012 to share best practices on fisherman based management plans that cross borders. The meeting will bring fishermen together from Morocco, Mauritania, Senegal Gambia and Ghana. One of the outputs will be to engage working groups of fisherman on how they might work together on a regional plan for at least one fishery.

Degree training for DoFish staff: Another strategy of the *Ba Nafaa* Project is to develop the capacity of staff within the Department of Fisheries. One approach will be to provide degree training for mid-career staff within DoFish. There is a strong cadre of approximately one dozen mid-career professionals who cannot be advanced through promotion within the civil service system as they lack the appropriate degree qualifications, in spite of the fact that they have ample experience and competencies. This creates a morale problem and is typically a problem for retaining highly skilled people within the Department. Most of these individuals have completed two-year diploma programs, but require a four-year degree to be promoted. Such degrees in fisheries are not available in The Gambia and require training outside the country. Individuals from DoFish with two years of study already completed have been selected to continue degree training to a four year level (i.e., the Project will provide support for an additional two years of education). Degree training at Nigerian universities is very cost effective. Two individuals have been nominated for these degree scholarships and have been accepted for admission in 2011. These individuals will complete their continued education in Year 3.

MPA Pro certification. The Western Indian Ocean Marine Science Association (WIOMSA) has established a professional certification program for Marine Protected Area (MPA) professionals. This program assesses individuals against a set of standard competencies developed by MPA experts as the minimum standards required of MPA managers. The program certifies those who meet the standards and helps those who do not meet the standards to develop personalized learning plans for addressing deficiencies found. West Africa currently has no individuals that can serve as certifiers of MPA professionals in this region. Therefore one MPA expert from the region was trained in assessment methodologies so that in subsequent years, West Africa MPA managers can avail of this certification program. There are no additional activities on this task planned for Year 3.

URI Fisheries and Coastal Institute. In Year1, four individuals attended this URI based three-week event. The Director of Fisheries, the Project Manager, the Executive Director of TRY and the President of the National Association of Artisanal Fishermen (NAAFO). This experience

helped develop a strong core team of leaders working in key aspects of the project that have a common vision of key ingredients and processes needed for effective collaborative fisheries management initiatives that integrate an eco-systems based approach. In Year 2, five people attended for stock assessment and three for Water Quality and shellfish sanitation. In Year 3, two will attend for Fisheries Management and two for the Coastal Institute focusing this coming year on Population, Health and Environment linkages, especially appropriate given the water and sanitation add on recently provided.

Communications and outreach. The Project will produce several outreach and communications products in Year 3. This will include preparing outputs of many of the technical studies conducted as "technical reports" and made available via the CRC website. The workplan, periodic project highlights and success stories and management plans will also be made publically available via the CRC website and the DEC clearinghouse. The project will also work with the communications officer at USAID/West Africa to inform them of events that may be of interest to have USAID staff attend, review of press releases and provide them with success stories.

Activity Implementation Schedule

Activity	FY 2012				Local Implement. Partners	WWF Person	CRC Point of Contact
	Q1	Q2	Q3	Q4			
Regional Co-Management Best practices meeting					NASCOM, TRY, DoFish	Ousman	Castro/ Najih
DoFish staff attend degree training					DoFish	Ousman	Crawford
URI Fisheries Institute, URI PHE					DoFish, Private sector assns., TARUD	Ousman	Castro Elin
Stories as part of quarterly reports					N/A	Ousman	Kent
Technical reports "published"					N/A	Ousman	Crawford/ Kaine

Key Outputs and Milestones

- Report on Regional Co-Management Best Practices Meeting with PARTAGE, including recommendations for joint programs.
- 2 DoFish staff continue degree training to BSc level
- 4 stakeholders attend URI Fisheries and Coastal Institute
- Story provided to USAID/West Africa on a quarterly basis
- Technical reports published on CRC web and sent to DEC clearinghouse including sole and shrimp value chains, oyster PRAs, and sole and Tanbi estuary fishery management plans.

Key Results

No.	Indicator	Target
5	# of personnel trained in resources mgt	6 (2-Degree training, 2 Fish. Inst., 2 Coastal Inst.)

4. Project Management

4.1 Strategic Partners

Since this Project is an Associate Award under the Leader with Associates Cooperative Agreement for *Sustainable Coastal Communities and Ecosystems* (SUCCESS) Program, the Coastal Resources Center (CRC) at the University of Rhode Island (URI) is the lead institution responsible for overall Project management and implementation including programmatic and financial reporting to the USAID/West Africa Regional Office. The World Wide Fund (WWF) West Africa regional office and its program located in Dakar, Senegal with a field office in The Gambia is the primary regional and in-country implementation partner for the fisheries and now the additional climate change activities to be implemented in Year 3. Some of the fisheries work with local partners will, however, now be managed directly by the URI in-country office. These include TRY, NAAFO/GAMFIDA/NASCOM, TAGFC and the Water Resources Laboratory activities. The new Water and Sanitation component that starts in Year 3 will be implemented by local partners TARUD and GAMWORKS contracting directly with URI.

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

4.2 Operational Staffing and Lines of Authority

CRC and the WWF West Africa regional office are the primary Project management and implementation partners. CRC will supervise WWF in their role in the Project. The in-country Project Manager (PM) is a full time position contracted by and housed in the WWF field office in The Gambia. He is the primary liaison with the USAID/West Africa Regional Office in Accra, Ghana. The PM develops detailed terms of reference, contracts and supervises local consultants and other local partners contracted to provide Project services. Other full time local staffs are contracted by WWF. Both WWF and CRC provide short-term foreign technical assistance and consultants as needed. The PM directs and supervises in-country field staff and activities, and is responsible for day-to-day field operations in The Gambia. CRC/URI has also now established its own in-country office in The Gambia, primarily to manage the WASH component that begins in Year 3, but also to implement directly some of the fisheries work with local partners previously managed under the WWF sub-contract. A WASH Coordinator, Dr. Bamba Banja started on September 1, 2011. An administration and Finance Assistant will be recruited early in

Year 3. The WASH Coordinator is supervised by the BaNafaa Project Manager and provided oversight by the U.S. based BaNafaa lead.

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

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

Program Areas	Local Implementing Partners	WWF Person	CRC Point of Contact
Project Management			
PMP reporting	WWF, TARUD, GAMWORKS, TRY	Ousman	Kaine
TraiNet	WWF, TARUD, TRY	Ousman	Kaine
Quarterly financial reporting	WWF, TARUD, GAMWORKS, TRY	Gaye, Bamba, Ousman	Kaine
Quarterly program reporting	WWF, TARUD, GAMWORKS, TRY	Ousman	Kent
Annual work planning	WWF, TARUD, GAMWORKS, TRY	Ousman	Kent

4.3 Performance Management and Reporting

The goal of performance management and evaluation is to encourage adaptive management and learning within the Project and to report results to USAID/West Africa. The Gambia - Senegal Sustainable Fisheries Project contributes directly to USAID West Africa ROECCR Results Framework, specifically IRs 1, 3 and 4 (see Appendix B). Effective performance management and reporting requires collecting timely information using indicators selected to provide meaningful information on progress towards stated objectives. In Year 1, the Project developed a Performance Management Plan (PMP), a summary of which is presented in Appendix 1. The PMP includes key results, refined performance targets disaggregated by year, specific monitoring parameters, and source(s) of data for each indicator. Time-bound targets were refined through the work planning process in consultation with local partners and beneficiaries. These targets will be reviewed annually and adjusted as necessary based on Project progress, experience and lessons learned. USAID standard indicators for Biodiversity, Climate Change and WASH are included in the PMP and are tagged for easy reference in Appendix A.

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

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

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

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

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

Management and Administration Activity Implementation Schedule

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

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

4.5 International Travel Schedule

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

First Quarter

- Castro and Barbara: database, stock assessment training, finish management plan. Oct 15 – 31.
- Brian for Management Plans signing event Dec 15.
- Jim Tobey add on from Senegal for validation workshop on cross border trade and governance scorecard. 3-2 days November.

Second Quarter

- Mike Rice: shellfish sanitation January, 2012
- Castro/Najih PARTAGE Regional Workshop, January 2012
- Chris Anderson: Jan. (10 days) – Sole & Oyster economic scorecard WB model.

- Karen Kent + Hilary February/March CC workshop in Senegal, Karen on to Gambia for WASH site selection validation workshop.

Third Quarter

- Joe DeAlteris/Chris Parkins – stock assessment and Gill Net Study
- PHE – 2 participants to URI
- Kim Kaine: April, Review office operations and financial systems.

Fourth Quarter

- Kent and Castro (August) Project review and FY 2013 work planning
- Fisheries URI June course 3 participants to URI
- WWF budget
- PM to URI for workplanning.
- 1 trip WWF/PM to Ghana

4.6 Environmental Monitoring and Compliance

Based on the revised initial environmental evaluation (IEE) approved earlier this year for the project , monitoring and mitigation schemes are in place to ensure no significant environmental impacts are occurring for those actions identified in the IEE with a negative determination subject to conditions. Several activities being conducted this year that have conditions and that will require monitoring and/or mitigation plans include:

- Fisheries management plans
- Water and sanitation improvements at landing sites

Status on these activities will be included in the annual Environmental Monitoring and Mitigation Report submitted to USAID.

4.7 Branding

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

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

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

Item	*Type of USAID marking*	*Marking Code*	*Locations affected/ Explanation for any 'U'*
WWF			

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

5. Budget

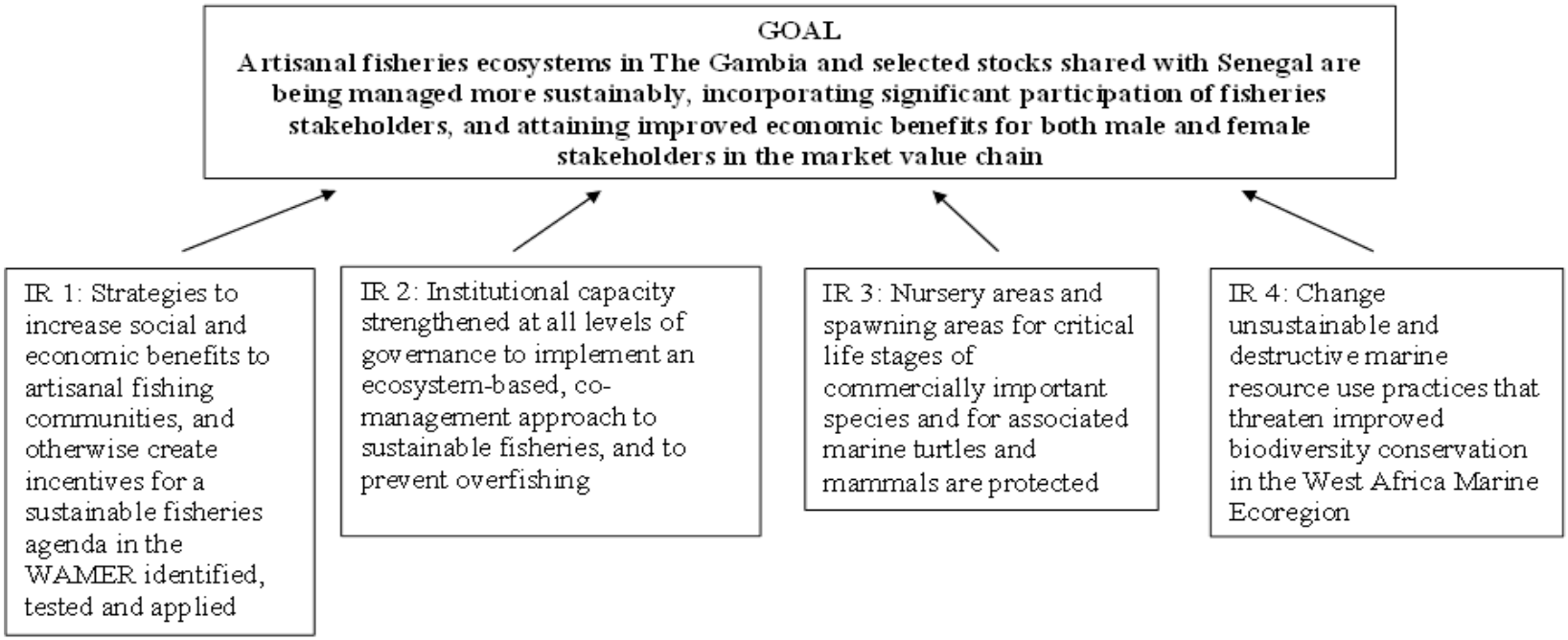
The Year 3 summary budget of USAID funds is shown below by: (1) major accounting (object class) line items, and (2) estimates of funds allocated by major activity category. Cost share is not included. Year 3 budget assumes balance of obligated bio-diversity funds remaining of approximately $ 255,377, plus additional WASH and climate change add-on funds provided in Year2 for a grant total of budgeted activities for Year3 of $1,136, 217.

By object class category	Biodiversity	WASH	CC	Total
Personnel	127,290	48,869	15,964	192,123
Fringe	43,086	10,041	7,223	60,350
Consultants	0	0	0	0
Sub-Contracts	330,825	52,119	95,807	478,751
Other Direct Costs	110,670	53,925	500	165,095
Travel	55,900	14,388	23,638	93,926
Indirect Costs	87,606	46,057	12,305	145,968
TOTAL	**755,377**	**225,400**	**155,440**	**1,136,217**

By activity	Biodiversity	WASH	CC	Total
Sole	240,499			240,499
Oysters	71,502			71,502
Catfish	100,518			100,518
Capacity building	11,340	46,629	3,966	61,935
Climate Change	113,285		151,474	264,759
WASH	120,936	115,413		236,349
Project management	97,297	63,358		160,655
TOTAL	**755,377**	**225,400**	**155,440**	**1,136,217**

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

The Project Results Framework below is organized by Project Goal and IR. The Gambia - Senegal Sustainable Fisheries Project contributes directly to USAID West Africa Regional Office's Environment & Climate Change Response (ROECCR) Results Framework, specifically IRs 1 and 3 as per the May 2011 draft below. Each IR in the Gambia - Senegal Sustainable Fisheries Project Results Framework has one or more indicators and LoP Targets that are shown in the table on the following pages. Indicators that are standard USAID indicators for Biodiversity, WASH and Climate Change, which are the three sources of funding for Project activities, are tagged for reference. Annual review and adjustment of targets was conducted.. The LOP summary table below indicates where adjustments have been made.



	Indicator	Adjusted LOP Targets	Previous LOP Targets
IR 1			
1	Number of businesses economically benefiting	125 businesses (gender disaggregated)	50
2	No persons receiving economic assistance packages (assets, grants, training, etc.) [3]	220 persons	200
3	Number of people with improved access to loan capital (e.g. benefiting from new or strengthened savings & credit associations)	115 people w/ access to capital (gender disaggregated)	100
W1	Improved access to water and sanitation facilities	56,000 persons	
W2	Number of persons receiving Participatory Hygiene and Sanitation Transformation (PHAST) Training.	280 persons	
W3	Number of persons receiving training and outreach messages on hygiene promotion	1000 persons	
W4	Community water and sanitation committees established and trained with program assistance	7 committees	
IR 2			
4	Number of govt. agencies or management bodies strengthened or created	13	4
5	USAID EG 8.1 Number of government personnel, community leaders and private sector stakeholders trained in natural resources mgt	200 people trained (gender disaggregated)	
6	Improvements on a governance scorecard covering, goals, constituencies, commitment and capacity dimensions, including	Qualitative increases on score card criteria for Gambia EB-fisheries mgt	

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

	measures that legislation and regulations are being implemented and complied with, and budgetary investments by government in fisheries management[4]		
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	130 persons (gender disaggregated)	100
9	Number of workshops/meetings on policy reform for the artisanal fisheries sector held between Senegal and the Gambia	6 events	3
10	Number of reports documenting transboundary issues and alternative solutions	4 reports	
11	USAID EG 8.1 = Number of policies laws, agreements or regulations promoting sustainable natural resource management and conservation that are implemented as a result of USG assistance.	2	Previous Wording: Number of policy changes made by national governments to harmonize policies
CC 1	Number of climate vulnerability assessments conducted as a result of USG assistance	1	
CC 2	Number of stakeholders using climate information in their decision making as a result of USG assistance	30	
CC 3	Number of institutions with improved capacity to address climate change issues as a result of USG assistance	8	
IR 3 & 4			
12	USAID EG 8.1 Hectares in areas of biological significance[5] under improved management: • Hectares covered by the fisheries management plan defined as the range of fishing fleets targeting these species • Oyster fishery estuarine and mangrove areas designated and	FMP Areas: • Sole = 12nm seaward = 158,332 ha Community managed oyster zones: • Tanbi wetlands 6000 ha	Sole -10km seaward X 20 km coastline (20,000 hct) Sardinella – same as sole

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

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

	allocated as community managed zones, including no-take areas		Shrimp – Gambia estuary (10,000hct) Community managed oyster zones: Tanbi wetlands 200hct Numi 300hct Numi National Park MPA – 30 sq km (3000hct) Numi no-take area 3X10 km – 30sq km (3000hct)
IR 4			
13		Eliminated this indicator: Number of technological innovations (gear or fisher behaviors) developed and/or effort restrictions that reduces bycatch.[6]	
14		Eliminated this indicator: Number of fishing units that adopt by-catch reduction technologies. 20% of vessels for catfish	
15		Eliminated this indicator: Number of processers that reduce fuel wood consumption Target: At least two reduce wood consumption by at least 20%	
16	Number of vessels registered/licensed[7]	1000 artisanal vessels targeting sole	100 coastal vessels targeting sardinella and sole
GOAL			

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

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

17	USAID EG 8.1 Hectares under effective mgt (Key biological reference points in the FMPs for, sole, oyster)[8]	No targets set but progress towards BRPs will be tracked.	

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

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

Results to Date

N0	Indicator	FY11 Result	FY12 Target	Results cumulative to date	LOP Target	Comments
1	Number of businesses economically benefiting	250 TRY	250 TRY	250	125	
2	No persons receiving econ. assistance packages (grants, training, etc.)	250	260	250	220	TRY oyster harvesters receive additional training each year. In Year 3 and estimated 10 sole fishing boats will pilot cold boxes.
3	Number of people with improved access to loan capital	250	250	250	115	A second cycle of Microcredit loans provided to 250 members of TRY
W1	Improved access to water and sanitation facilities	NA	0	NA	56,000 persons	First infrastructures not completed until early FY13.
W2	Number of persons receiving Participatory Hygiene and Sanitation Transformation (PHAST) Training.	NA	280	NA	280 persons	
W3	Number of persons receiving training and outreach messages on hygiene promotion	NA	1000	NA	1000 persons	
W4	Community water and sanitation committees established and trained with program assistance	NA	2	NA	7 committees	
4	Number of govt. agencies or mgt. bodies strengthened or created	12	1	12	13	Previous = LACOMS in 7 communities (Gunjur, Brufut, Sanyang, Tanji, Batokunku/Tujereng, Bakau, Banjul), NASCOM, GAMFIDA, NAAFO,TRY, DoFish) FY12 = TAGFC
5	Number of stakeholders trained in resources mgt[2]	311	260	484	200	Previous = 250 in microcredit, 60 in climate change adaptation, 1 in regional exchange to Ghana, 1 in

N0	Indicator	FY11 Result	FY12 Target	Results cumulative to date	LOP Target	Comments
						MPA-PRO certification Mombasa, 8 URI summer course 2011. FY12 = 250 TRY additional training in microcredit, 4 in-country stock assessment, 4 URI summer course, 2 BSc
6	Improvements on a governance scorecard	Oysters and sole 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)	0	810	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 FY12 all TRY member + all sole fisherman = 500 + (75 x 2 + 100 +20 boats * 3/boat) gross conservative estimate = 810.
8	Number participating in regional meetings and/or exchange visits	65	60	107	130	FY 11 = 60 at regional CCA wkshp, 1 exchange trip to Ghana, 4 TRY to Senegal FY12= 30 Regional PARTAGE meeting, 30 in CC vulnerability assessment meeting.
9	Number of workshops/meetings on policy reform between Senegal and The Gambia	1	3	1	6	FY11 = Climate change workshop FY12 = PARTAGE Co-Management BMP, work with Gambian delegation to regular bi-lateral meeting on the convention on reciprocal marine fishing to present vessel registration and Sole Co-management Plan, Cross-border trade validation meeting.
10	Number of reports documenting transboundary issues and	3	1	3	4	FY11=Shrimp, Sole and Oyster value chain reports

N0	Indicator	FY11 Result	FY12 Target	Results cumulative to date	LOP Target	Comments
	solutions					FY12 = Cross-Border trade report
11	Number of policies laws, agreements or regulations promoting sustainable natural resource management and conservation that are implemented as a result of USG assistance.	0	2	0	2	FY12 = Sole and Oyster Management Plans,
CC1	Number of climate vulnerability assessments conducted as a result of USG assistance	NA	1	NA	1	
CC2	Number of stakeholders using climate information in their decision making as a result of USG assistance	NA	30	NA	30	
CC3	Number of institutions with improved capacity to address climate change issues as a result of USG assistance	NA	8	NA	8	
12	USAID EG 8.1 Hectares in areas of biological significance[9] under improved management: • Hectares covered by the fisheries management plan defined as the range of fishing fleets targeting these species Oyster fishery estuarine and mangrove areas designated and allocated as community managed zones, including	0	Sole = 158,332ha Oyster = 6000ha	0 0	FMP Areas: - Sole = 12nm seaward = 158,332 ha Community managed oyster zones: - Tanbi wetlands 6000 ha	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,

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

N0	Indicator	FY11 Result	FY12 Target	Results cumulative to date	LOP Target	Comments
	no-take areas					
16	Number of vessels registered/licensed	1000 registered	0	1000	1000	Registration completed April 2011, DoFish report not yet received.
17	Hectares under effective mgt (progress towards BRPs) for sole and oysters				No target but tracked	Reference points for sole to be established as part of the management plan. Baseline will be established based on results of preliminary stock assessment Baseline data for oysters collected in year1 PRA

Appendix B. USAID ROECCR Results Framework