

**URI-USAID Gambia-Senegal Sustainable Fisheries Project  
(Ba Nafaa)**

**Year 2: Semi-Annual Report**



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# 1. Introduction

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

This document describes the activities undertaken during the first half of the Year2 workplan year (October 1 2010 - March 30 2011) of the *Gambia-Senegal Sustainable Fisheries Project (Ba Nafaa)*. The document is organized into five main components. First, background information as well as Project goals and key results expected over the life-of-the-project are described. This is followed by a brief summary of Project accomplishments to date and a detailed description of Project activities undertaken during the first half of Year 2. It includes a task implementation schedule as well as expected outputs and results per activity area. In addition, the Project management structure, the monitoring and evaluation strategy, and the corresponding performance and reporting framework are described. Summary budget information is also included. Appendix 1 provides a summary of the performance plan targets and the results to be achieved for each performance indicator.

## 1.1 Background

In West Africa, an estimated 1.5 million tons of fish are harvested annually from the region's waters, with a gross retail value of US\$1.5 billion. In The Gambia and Senegal artisanal fisheries (fishermen operating from small vessels primarily in near shore waters.) make up a majority of the fisheries landings and contribute significantly to income generation and local food security for coastal communities and for many communities inland where fish are traded. Much of the artisanal landings, especially sole and shrimp are also key export earners in the fisheries sector. In both The Gambia and Senegal, most people live within the coastal zone and derive their livelihood, food security, and way-of-life from fishing. Some 200,000 people in the Gambia and 600,000 in Senegal are directly or indirectly employed in the fishing sector. Seafood products are a leading export of the region and generate as much as 20% of the gross value of exports. While the majority of seafood exports are destined for European Union (EU) markets, a growing volume of trade goes to the U.S. and other countries in the region. Fisheries trade results in valuable foreign exchange earnings, revenue for government, and employment opportunities that go well beyond the labor directly involved in harvesting.

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

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

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

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

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

To address these threats, more integrated management approaches are needed at the local and regional scale, including approaches that move toward more sustainable fisheries utilization with less impact on the rich biodiversity of this region. Reducing overfishing through more sustainable harvesting practices will result in a healthier marine ecosystem, including higher

biomass of standing stocks and more balanced species assemblages. In addition, promoting more sustainable use practices will help address the wasteful problem of incidental bycatch and capture of endangered species.

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

## **1.2 The Gambia Fishery Context**

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

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

In the mid 1960s The Gambia witnessed the transformation of the artisanal fishery from paddled canoes with simple fishing techniques to one with modern fish-capturing technologies and larger canoes with outboard engines, which resulted in an increase in fish landings. Decades of growth in the artisanal fishery combined with the activities of the industrial fishery has caused high levels of exploitation, especially of high-value fish, crustaceans and cephalopods. Production in the artisanal fishery has increased from 10,000MT in 1985 to approximately 40,000MT in 2007, while industrial production has been declining. Reports of dwindling catch per unit of effort indicate that high-valued demersal species are under threat from high levels of exploitation. Regular assessments carried out by the Demersal Working Group of the FAO's Committee for Eastern Central Africa Fisheries (CECAF) also indicate that the major demersal fish stocks are either fully or overexploited. Pelagic stocks are also considered to be fully or overexploited.

Industrial fishing primarily targets high-value species such as sole, snappers, shrimp, cuttlefish, and octopus. In 2007, a total number of 32 industrial fishing vessels operated with a license in Gambian waters—15 shrimp trawlers and 17 fish\cephalopod trawlers. All industrial vessels operating in Gambian waters are foreign-owned and foreign fishermen dominate. These vessels land their catches in foreign ports where the fish is processed, packaged and labeled as products originating from those foreign ports. The absence of a deep water port is the reason that the

industrial fleet does not land their catches in The Gambia as is required by fisheries licensing regulations. A deep water landing dock in Banjul is now under construction. This construction project was developed and supported by the Gambia Artisanal Fisheries Development Project supported by the African Development Bank and BADEA (Arab Bank for Economic Development). Completion was scheduled for end of December 2010 but work is still in progress.

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

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

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

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

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

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

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

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

The Fisheries Act empowers the Minister of Fisheries, Water Resources and National Assembly Matters and the Director of Fisheries to declare Special Management Areas for purposes of community-based fisheries management; establish open or closed seasons for specified areas and

fish stocks; define minimum fish size regulations; and impose gear and fishing method restrictions.

### 1.3 Program Goal and Key Results

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

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

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

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

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

#### Project Strategies

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

Within The Gambia, specific objectives are to:

- Strengthen the capacity of Community Fisheries Centers to manage fisheries and engage in more effective enforcement of rules through training and learning-by-doing.

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

Regionally, the Project aims to:

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

**Geographic Scope.** The Project concentrates its activities on the marine and coastal resources and fisheries stocks shared among the Casamance, the Gambia River and Saloum Delta region—an area of regional biodiversity significance (see Figure 1). The majority of on-the-ground activities occur in The Gambia, where *Ba Nafaa* focuses on the artisanal nearshore fisheries along the Atlantic coastline as well as the estuarine- and mangrove-dominated portions of The Gambia River (see Figure 2 below). A sister project in Senegal, called the Wula Nafaa project, is working on fisheries management in the Saloum Delta and Casamance River. Together, these two USAID-supported initiatives are expected to have a significant impact on improved management of this biodiversity-rich area.



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

## ***1.4 Rationale for Piloting Regional Demonstration Activities in The Gambia***

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

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

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

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

## The Legal Basis for Co-Management in The Gambia

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

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

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

## 2. Summary of Achievements to Date

### ***Capacity Building***

- Exchanges on co-management experience undertaken between fishermen and women from The Gambia and Senegal, and with Ghana
- Regional workshop conducted on climate change impacts on fisheries and marine protected areas, and strategies for adaptation actions discussed
- 12 institutions strengthened or created to foster co-management approaches
- 921 stakeholders in the region from government and private sector trained in fisheries management, climate change adaptation and microcredit systems
- 250 persons benefiting economically from assistance packages provided



Meeting of Gambians with fishermen in Senegal to learn about the Kayar co-management model

## ***Tanbi Wetlands and the Oyster Harvesters***

- Co-management planning processes nearing completion in the Tanbi National Park, involving 500 women harvesters
- Co-management plan drafted and under final review
- 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 bi-valve harvesting areas have show that health risks from raw shellfish are minimal and potential for starting a shellfish sanitation program that could open new markets for fresh/raw products
- Election of the Executive Committee and Board of Directors of TRY Association, and inaugural meeting of the Board.
- Establishment of a microcredit and savings scheme for 500 women oyster harvesters



*Tanbi National Park*

## ***The Sole Fishery***

- Co-management processes initiated for the sole fishery with Community Fisheries Centers in 7 landing sites
- Management committees established and actively participating in planning processes
- Agreement with the Marine Stewardship Council on accelerated movement towards international certification of a sustainable Gambian sole fisheries product
- Management plan drafted and under final review
- Data for a stock assessment nearing completion
- Value chain analysis completed and identifies ways to improve incomes in the post-harvest chain



*Locations of actual sole fishing for major landing sites*

### **3. Year Two Activities Undertaken during 1st. and 2nd. Quarters (October 2010-March 2011)**

#### **3.1 Introduction**

The priorities for Year 2 will continue to concentrate on the sole and oyster fisheries because progress on establishing co-management plans has been slower than initially anticipated. Work will continue until co-management plans for the oyster and sole fisheries have been finalized, submitted and approved for implementation by Gambia Government.

It is important to report on two important meetings that have taken place during this reporting period, between the CRC/URI-Ba-Nafaa project and Mr. Robert Buzzard, USAID/West Africa Program. In November 2010, Dr. Jim Tobey of CRC/URI and Mr. Ousman Drammeh, Project Manager Ba-Nafaa, met with Mr. Robert Buzzard in Dakar, Senegal and discussed ways of accelerating some of the regional project activities including vulnerability assessment of the Saloum Delta and Gambia River estuary area. It was agreed that CRC/URI-Ba-Nafaa will submit to USAID West Africa Program a supplemental request for additional funds and task work plan for the regional activities, and budget for a three-year water and sanitation add-on to address water and sanitation issues at fish landing centers and at oyster harvesting locations as well. Both of the add-on requests were submitted in December 2010 along with a modified IEE (Initial Environment Examination) in early January 2011. In March 2011, Dr. Brian Crawford, Director of International Programs CRC/URI and the Ba-Nafaa Project Manager met with Mr. Robert Buzzard in Accra, Ghana during which Mr. Buzzard handed over an IEE template and requested revisions of The Gambia IEE. It is important to mention that the project started the Year 2 activities without receiving the budgetary allocation. During the Ghana mission, Dr. Brian Crawford, Director of International Programs CRC/URI and the Ba-Nafaa Project Manager made a presentation on the Ba-Nafaa project at the USAID West Africa Program office attended by the Director and several staff members.

Also in March 2011, the Ba-Nafaa Project Manager participated in a workshop on the Hen Mpoano project in Takoradi, Western Region of Ghana. The sharing of information and exchanges of experiences and lessons learned were useful for both the Gambia and Ghana projects.

The US Ambassador to The Gambia, Pamela White, visited the TRY Centre in January 2011 and was enthusiastically welcomed by a very large crowd of women, about 100 members of TRY Association representing the 15 member communities. Upon arrival, she was met by Ms. Fatou Janha MBoob, TRY Association Co-ordinator and her support staff, Ba-Nafaa Project Manager and his staff. The Ambassador gave a short speech and expressed happiness at the effort being made by the women to improve their lot, and urged them to work hard to achieve social and economic status well and above the poverty line. The Ambassador promised to lend support to the Association and promised to visit the Centre in 6 months time to gauge progress. Dr. Kathy Castro and Mr. Chris Parkins of CRC/URI were also present.

Several international missions and events were undertaken during the 1<sup>st</sup>. and 2<sup>nd</sup>. Quarters and will be mentioned later in the report under International Missions and Travels.

### **3.2 Sole Fishery Program**

#### **Key issues and Progress to Date**

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

- **Harvest Strategy:** There is a concern that the current system does not include an adequate mechanism for monitoring and control of the status of the stock, nor does it define the points at which management action will be taken, or indeed precisely what form such action would take. This should be written as part of a future management plan and evaluated with respect to likely success in achieving management objectives. Possible controls could include, but not be limited to, agreed effort controls, an export quota for processors within the MSC certification, a minimum size and closed areas and seasons.
- **Stock:** In order for fisheries managers to make informed and timely management decisions, it is necessary to improve the understanding of stock status and to identify reference points to inform the harvest control rule. A reasonable amount of information is available to enable appropriate analysis in the form of landings and effort data (from DoFish) and landings by species and size (from processing plants). This assessment indicated that there was sufficient likelihood that the stock was not overfished.
- **Retained Species:** Landings data provided by Department of Fisheries did not enable retained species to be determined by specific gear type.
- **ETP monitoring:** Improved integration between the various NGOs collecting information to provide a clearer picture of fishery/ETP (Endangered, Threatened and Protected species) interactions. Information must be recorded in gear-specific way.
- **Ecosystem:** Relatively few ecosystem interactions of concern in the fishery. However, there is no place for disposal of waste at landing sites and at sea. A plan that could sensitize fishermen and development of a code of conduct would be helpful.
- **Subsidies:** The report stated that subsidies are available to the artisanal fisheries sector. However, it is the understanding of the *Ba Nafaa* team that this is inaccurate. For instance, fuel mix subsidies were removed many years ago (in 1994), unlike Senegal where such subsidies remain. The plan also needs to ensure that *if* there are subsidies, they do not lead to increased fishing effort.

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

Audit Recommendations included the following:

- **More transparent decision-making.** At the time of the assessment, a regulation on minimum size was being passed. However, it is unclear what the decision-making process was and what information was used to make the rule.
- **Monitoring, Control and Surveillance.** While recognizing that initiatives such as co-management should improve compliance, this has not yet been demonstrated. Landings need to be more consistently monitored.

In addition to the pre-audit findings, there is also a need for more information with which to ascertain whether the sole fishery is impacting on other marine species of importance. In particular, many dead marine turtles wash up on the beaches near some of the landing centers for sole. It is not clear what is causing these mortalities, but it is possible that certain fishing gears could be part of the problem. The MSC pre-audit report suggests that the nets used for sole fishing are unlikely to be causing significant mortalities of marine turtles since they are bottom nets (1 meter in depth). At-sea bycatch data is being collected as part of *Ba Nafaa* activities.

The BaNafaa Project has entered into a MOU with MSC to assist the fishermen; processors and Department of Fisheries address the deficiencies reported in the pre-audit report. The Project has facilitated the setting up of community based sole committees (LACOMS) and a national co-management committee (NASCOM) and a new draft management plan is being prepared. However, additional stakeholder processes are needed before this plan is completed and can be submitted for approval by Government. The original management plan for sole was drafted by the Department of Fisheries with little input of fishermen and processors, so this is a radically different and new planning experience for the Fisheries Department..

Most of the Ba Nafaa activities will continue to concentrate on putting in place a sustainable fishery management plan and other measures and capacity required for The Gambia to obtain the eco-label through MSC certification. However, 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. The Project will continue to assist the Department of Fisheries in implementing the recommendations in the sole pre-audit report. GAMFIDA and NAAFO are partners in this effort. The geographic focal area is the primary sole landing sites of Burfut, Sanyang, Gunjur and Kartong, Tanji, Batukungko, Bakau, Banjul. However in stakeholder meetings it was revealed that there are additional sites where sole is caught and which need to be brought into the planning and management process. These include, Kemoto, Bintang, Tankular, Balingo, and Albreda located along the lower stretches of the river.

Under the 2008 Fisheries Act (Section 15), The Minister of Fisheries can establish Community Fisheries Centers (CFCs) for the purposes of community-based fisheries management, allocate fisheries management areas for which the CFCs are responsible, and prescribe rights and responsibilities of CFCs with respect to the Special Fisheries Management Areas. Under the Act, the Minister (through the 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. Under the Fisheries Regulations of 2008, all fishing vessels must be registered and obtain fishing licenses as well. Therefore, the legal framework for effective management of the fishery, including managed access and/or allocation of property rights, is in place for this fishery. Also, the sole fishery is believed to have few by-catch issues. This combination of factors leaves the Ba-Nafaa Project team optimistic that attaining certification is very likely in the near term. Community meetings concerning requirements for vessel registration have also been started and the registration process will start in the 2<sup>nd</sup> Quarter. The Marine Stewardship Council is being updated on progress being made

### ***Hotspot mapping along the north coast:***

The field work on mapping coastal sole fishing areas, habitat types and fish migrations and spawning areas has been completed for the south coast during Year 1. This has clarified many of the questions regarding red and black sole species behavior along the coast. The field work was planned to continue for the north coast during the 1<sup>st</sup> Quarter of Year 2. Community meetings were held in Barra (a key landing/transit site on the north bank) to plan the mapping exercise in the five fish landing sites along the north coast namely: Barra, Mbangkam, Jinak Kajata, Jinak NiGee and NiGee Koto. During the meetings, it was reported to Ba-Nafaa that there were no fishing activities for sole along the north coast at the time, and as a result there were no sole fishers around who could participate in the mapping exercise. The exercise will be conducted when sole fishing activities resume in the area. Up to the end of March 2011 there were no reports of sole fishing activities along the north coast although sole has started appearing in Gambian waters since January starting from the south in Kartong and moving northwards towards Bakau-Banjul. This south-north migration route has confirmed the accuracy of local knowledge obtained earlier during discussions with fishers.

The information on Hotspot mapping for the south coast has already been compiled into a summary report. When the mapping exercise is conducted for the north coast, a similar summary report will be produced and the two reports will be put together into a comprehensive report; some aspects of the report will be used for the management plan for sole fishery.

### ***Sole by-catch assessment and landing data collection:***

The Project continues to assist in the participatory by-catch assessment and landings data collection of the sole fishery in the major sole fish landing sites of Kartong, Gunjur, Sanyang and Brufut. The Head of the Statistical unit of the Department of Fisheries is coordinating the data collection activities. Enumerators of the Department of Fisheries are collecting the landings data and length frequency measurements, and the Ba-Nafaa staffer Gibril Gabis is supervising the “Informed Fishers” who are collecting and recording the by-catch data. It can be recalled that the fishers were selected with help of the management committees of the Community Fisheries Centres and were trained by the project on how to collect and record the by-catch data. The

activities may also be incorporated as some of the standard information monitoring as part of the sole stock assessment, and built into management plan actions. However, a key issue that is being investigated since the start of the by-catch study is whether there are any by-catch issues with a particular concern for marine turtles and sharks, and the impacts/extent that the gears used in sole fishing may have on these threatened and endangered species. Although by-catch is considered low in this fishery, there is a need to confirm this by conducting an actual survey by gear type over a one-year fishing cycle. Data collected and analyzed since the start of the study reveal that marine turtles and other ETP (Endangered Threatened and Protected) species are not being caught in the sole fishing gears. A catalog of the species that comprise the sole by-catch has been assembled by Ba-Nafaa staffer Gibril Gabis and Peace Corps volunteer Emily Nichols; the catalog will be published following the confirmation of the scientific names of the species during the 3<sup>rd</sup>. Quarter.

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

### ***Vessel registration/licensing***

Vessel registration and licensing is required under the new Fisheries Act and associated regulations. This is a necessary step in understanding the total effort in the sole fishery and ultimately to achieve satisfactory scores for MSC certification. The Project is assisting the Department of Fisheries with registration efforts and will provide all the necessary inputs to conduct the exercise along the north and south coasts. The Department of Fisheries will conduct the exercise in the fish landing sites in estuarine areas and along the river. The Department of Fisheries will be responsible for actual registration processes and collection of registration fees. The registration and licensing exercise is necessary in order to keep track of all fishing vessel arrivals and exits as well as to establish a baseline for an eventual policy to limit entry. Once registration is complete, this will provide a basis for restricting additional access to the fishery (limiting entry), which will be one measure necessary to prevent overfishing. Ultimately, licensing can also pave the way to consider possible establishment of catch shares in this fishery given the fact that sole is only landed in a few centers means that a share system may be feasible. However, the feasibility of a share system and discussions with fishermen concerning interest and willingness to experiment with such a system will be activities in subsequent years of the Project.

Community meetings have been held in all the landing sites along the north and south Atlantic coast and planning meetings for the conduct of the exercise were held with the Department of Fisheries. The registration and licensing was planned to be conducted during the 1<sup>st</sup> Quarter (end November to December 2010) but was postponed because most of the Senegalese fishermen were absent at that time; they were back to Senegal to observe religious events. The registration exercise began during the last week of March 2011 and will be completed by the end of the first week of April 2011. The Statistical Unit of the Department of Fisheries will prepare a report with

collected during the registration exercise; the report will be made available to the Ba-Nafaa project and CRC/URI.

### ***Assessment of the cross border trade in Sole fish***

The value chain assessment for sole fishery identified that an unknown quantity of sole caught and landed in Gambia is transshipped into Senegal and much of this transshipment is not being fully captured by the Department of Fisheries statistics (and distorts Senegal sole capture statistics) and implication on marketing an eco-labeled product is also a concern. Sole caught in Gambia is loaded into trucks coming from the Casamance (Southern Senegal) but reported as caught in Southern Senegal and then transshipped to Senegal for eventual processing and export. This illegal trade can have significant impacts on trying to accurately assess landings of sole caught in Gambian waters as well as have impacts concerning ecolabeling. Ecolabeling may help curtail this trade, but other measures 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.

Two consultants (one Senegalese and one Gambian) have been identified to conduct a Comparative Cost Study of the Gambian Sole Fishery. Ba-Nafaa and CRC/URI staff held discussions with the two consultants in November 2011 and the consultants have agreed in principle to conduct the Study. The Terms of Reference and the Consulting Agreements for the Study were drafted, reviewed and finalized at the end of December 2010. The study was planned to commence in the 2<sup>nd</sup> Quarter but is delayed due to procedural delays to recruit the Gambian consultant. An agreement has now been reached to recruit two Gambian consultants (one of whom is a fisheries economist at the Department of Fisheries) to work with the Senegalese consultant. The study will commence in the 3<sup>rd</sup> Quarter and the findings and recommendations from this study will be discussed at the planned bilateral lesson exchange workshop.

### ***Early actions at the landing sites***

The Project set aside a small amount of funds to address community-driven concerns within the initial targeted fishing areas. Water and sanitation was identified as an issue in almost every landing site. Due to the substantial costs of developing water and sanitary improvements at the existing landing sites, Ba Nafaa resources were not considered sufficient to address this need. A concept paper on this was submitted to USAID/West Africa and reviewed favorably. Therefore a specific request for additional funds and associated work plan addendum was submitted in December 2010 to enable upgrades and improvements to landing site water and sanitary facilities in 6-7 sites. Addressing such needs would lead to improved hygiene and improved quality of the fish supplies that enter the domestic and export markets. It would also be an important step in extending HACCP (Hazard Analysis and Critical Control Point) concerns beyond just the export processing plants and into the landing centers as well. Outputs for this activity will be contingent on whether additional funds will be received or not from USAID/West Africa.

A supplemental request for additional funds and budget for a three-year water and sanitation add-on to address water and sanitation issues at fish landing centers and at oyster harvesting locations was submitted along with a modified IEE (Initial Environment Examination) in early January 2011. In March 2011, Dr. Brian Crawford, Director of International Programs CRC/URI and the Ba-Nafaa Project Manager, Ousman Drammeh met with Mr. Robert Buzzard in Accra, Ghana and the issue was again discussed. Mr. Buzzard recommended that the IEE that was submitted be revised. The revised IEE and the supplemental request for improvements of water and sanitation at the fish and oyster landing/processing sites were resubmitted in March 2011.

### ***Community meetings***

Several community meetings were held during the 1<sup>st</sup> Quarter mainly with the members of LACOMS (Landing Sites Co-management Committees for Sole), Community Fisheries Centers Management Committees, the Executive members of NASCOM (National Sole Fishery Co-Management Committee) and representatives of the Department of Fisheries. The meetings were held in the major sole fish landing sites of Kartong, Gunjur, Sanyang and Brufut. The main focus of the meetings was on the constitutions of LACOMS and NASCOM and their by-laws but other issues such as the registration of fishing vessels, the Janda water phenomenon, and the way forward to the preparation of the Sole Fishery Co-Management Plan were also discussed. The burning issues, yet to be resolved, are the following: areas and periods of closure of the fishery, what to do to earn a living during closure, the impact of the nylon monofilament net on the fish resources, and the determination of the correct/proper mesh size for the sole fishery.

Community meetings continued in the 2<sup>nd</sup> Quarter and significant progress has been made regarding area closures. The overwhelming majority of fishers are in agreement that most fish species (including sole fish) migrate from the deep sea to near shore (shallow water) to spawn. Based on Traditional Ecological Knowledge obtained from the fishers, the spawning areas of sole have been identified and mapped with GPS. There is now general agreement that gill nets ought not to be set close to the shoreline; some communities suggest that nets should be set 1 km from the shoreline, other communities suggest 2 km. The boundaries of the closed areas are to be identified with marker buoys and regularly patrolled by selected fishers. Consensus building is required for final agreement, and hopefully this can be achieved during the next co-management workshop planned for April 2011.

### ***Gill net selectivity study:***

The sole gill net fishing gear selectivity study was started in January 2011 at Sanyang beach. The water was too turbid and visibility was poor for diving and under sea-camera work, however, Chris Parkins and Ba-Nafaa staffer Gibril Gabis went out to sea with fishers and took photos of the sole gill net in operation, to see how the fish is caught. It was interesting to observe 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 has been produced and was discussed in community meetings in Kartong, Gunjur, Sanyang and Brufut. The photos taken from of the study were circulated and reviewed by the fishers. During discussions, it was gathered from the community meetings that the 42mm mesh net is used by all the fishers in the four main sole landing sites. It was unanimously agreed that a

detailed comparative gear selectivity study should be conducted. The study will commence in Brufut (the site with the highest catch of sole) in the 3<sup>rd</sup>. Quarter. A master fisherman has agreed to be a partner in the study. The project will procure gill netting materials and accessories which will 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 two nets will be set alongside each other and studied over a period of one month for selectivity and the differences in how sole is caught in the two nets will be noted. A report on the comparative study will be produced at the end of the study period.

### ***Meetings of NASCOM (National Sole Fishery Co-management Committee)***

Since the inaugural meeting of NASCOM was held on 18 October 2010 in the Conference Room of the Tanji Community Fisheries Centre several meetings were held in the major sole fish landing sites bringing together LACOMS and NASCOM committee members to discuss issues already mentioned in the previous section (Community meetings). In addition, the draft constitutions of LACOMS and NASCOM were read out and translated in local languages during the meetings followed by discussions on the contents of the two constitutions. The joint meetings also discussed the roles and responsibilities of LACOMS and NASCOM, and how to strengthen the two committees to be able to fully respond to the needs and aspirations of the sole fishers and their communities.

The need for NASCOM and LACOMS to have their own funds to support their activities was echoed in all the NASCOM meetings and the idea was well received in each of the communities. The Vision of NASCOM envisages the sustainable exploitation of “***Our Sole, Our Wealth, and Our Lives***”, and its Mission is to combat Illegal, Unreported and Unregulated Fishing (IUU fishing) and to contribute to the sustainable development of the fisheries sector. In pursuit of the Vision, NASCOM will collaborate with fisher folk communities, Department of Fisheries NAAFO and GAMFIDA, National Environment Agency, Department of Water Resources, Ba-Nafaa project, URI/CRC , NGOs and Donors Agencies.



*NASCOM inaugural meeting at the Tanji Fisheries Center Conference Hall.*

### **3.3 Oyster Fishery Program**

#### **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 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 2008, they can be organized into community-based management committees responsible for co-management of the oyster fishery in the Tanbi 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 and cockle fisheries on a small ecosystem scale – for the Tanbi National Park. Once this model is adopted and being implemented successfully, the goal of the Project would be to expand this model to the other mangrove sub-ecosystems in the Gambia River.

The PRAS conducted in Year1 revealed that there are 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 are also emerging over harvesting areas as communities start to implement informal and unilateral rules for harvesting (e.g. closed season, exclusive community use zones). At the start of the project, there were no formal rules legitimized via Government nor are there any formalized committees for managing conflicts or determining rules.

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

### ***Community meetings and workshops***

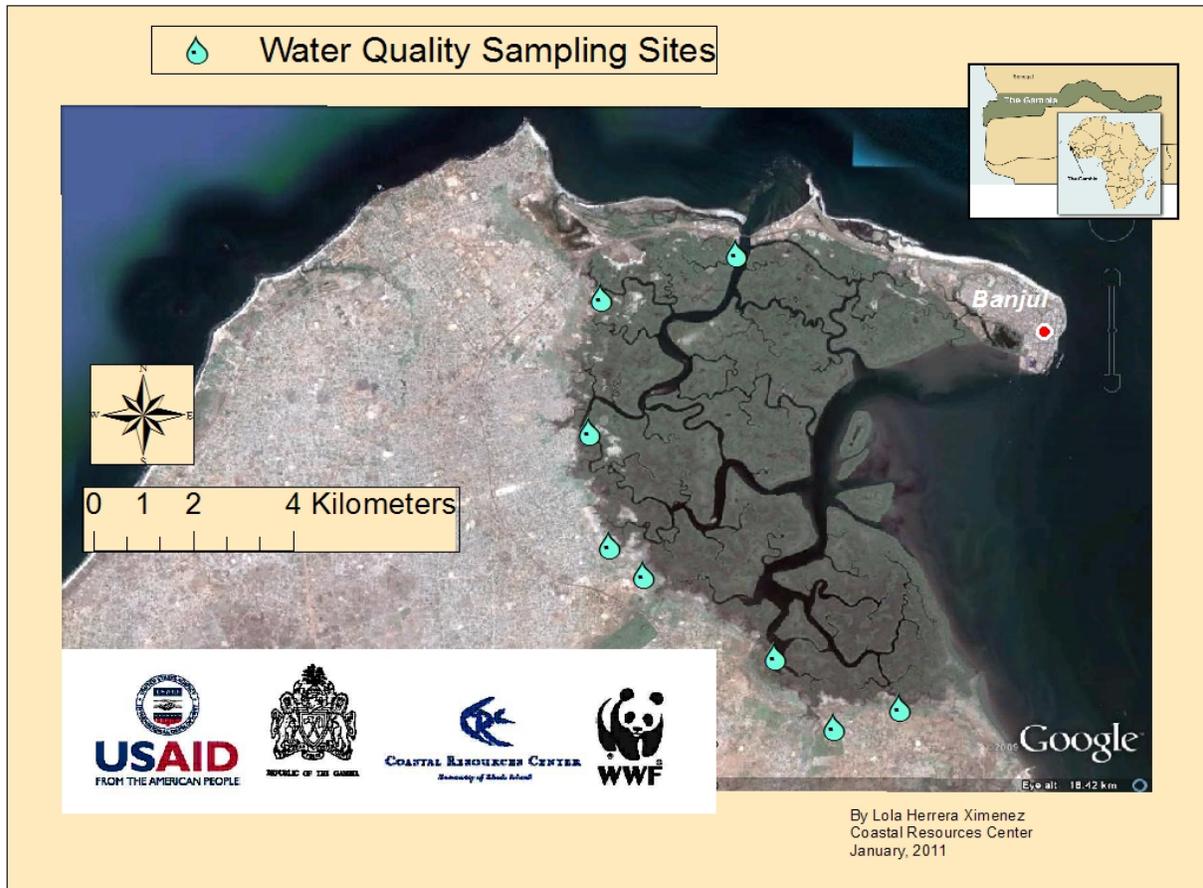
The Project has organized several stakeholder meetings involving representatives from each of the communities harvesting cockles in the Tanbi National Park as well as in other communities in Western Region that are also now TRY Association members. These meetings have also included local leaders (Alkalos),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

The Project also aims to demonstrate an ecosystems-based approach to community-based management of the fishery and adjacent mangroves. The near term goal is to develop a model of a co-management plan that empowers the women harvesters to directly manage the harvesting of the oysters and cockles, and that can be replicated in other mangrove subsystems within the country and region. Community-based co-management committees have been set up in each community and the women have elected an Executive committee for TRY Association to represent all the communities within Tanbi National Park and periphery communities which are now affiliated to the Association.

### ***Water quality study***

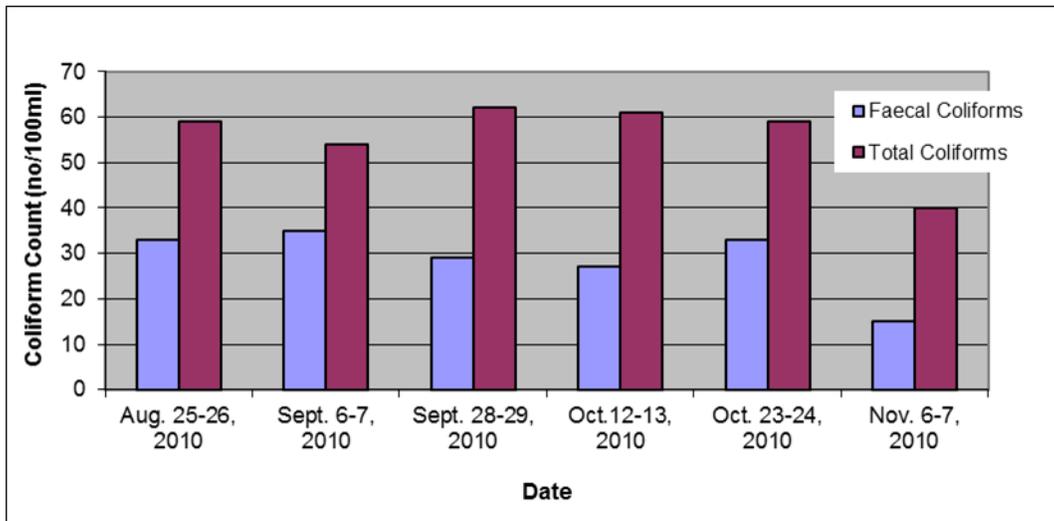
The water quality study purpose is to determine whether there are public health risks from contamination of the harvesting areas (e.g. contamination from *E. coli* bacteria in the water where the oysters are grown). It started during the last two months of Year1 (August 2010) and will be ongoing for at least a 12 month period to assess any seasonal variations in potential health risks.

The water quality study is led by scientists from the Water Quality Control Laboratory of the Department of Water Resources under the Ministry of Fisheries, Water Resources and National Assembly Matters. Water samples are 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 rainy season study show that both total coliform and fecal coliform counts were relatively low in all sample sites. However, slightly elevated coliform counts were found at two locations in the estuary system at Old Jeshwang at a location at which pigs are being raised in pens within the tidal zone, and at Lamin Lodge, the site of a hotel, boat marina, and fishing boat landing. The results are encouraging as these results are among the lowest counts in many tropical oyster growing grounds. For example, in the Dagupan City estuary system in the Philippines, total and fecal coliform counts are routinely one or two orders of magnitude (10 to 100 times) higher than those observed in the study. 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.

Preliminary results from the water quality studies are encouraging 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



*Average Coliform Levels in the 15 Sampling Sites, Tanbi Wetland*

Since the results indicate favorable conditions for marketing raw shellfish, several government staff will be trained in the next quarter regarding shellfish sanitation plans and standards for export to the US. The aim here is to start laying the foundation for a shellfish sanitation program including traceability standards, and in parallel, start investigating potential local market for raw product to local hotels.

### ***Oyster spawning studies and aquaculture trials***

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

It is too early to give definitive results from the study but the results from the analysis of data collected so far reveal the following: The density of oyster settlement was highest in Lamin, followed by Kubuneh and then Old Jeshwang. The highest settlement of spats occurred in October and November in Lamin but insignificant settlement in both Kubuneh and Old Jeshwang even though mature oysters are present on the mangrove prop roots. Salinity is lower towards the

end of the rainy season which favors oyster spawning and eventual settlement. High salinity gradient would not favor oyster spawning but a gradual change could trigger high spat fall in fairly high water temperatures during the rainy season, particularly towards the end of the rainy season. Predators such as crabs, puffer fish and snails could have contributed to the high mortality on the oysters that settled on the experimental tiles. There was a high level of fouling by ascidians and barnacles in Old Jeshwang which prevented or reduced spat collection as they compete with the oysters for food and space. Also at Old Jeshwang, it was found out that the velocity of the water is very high compared to the other sites and this could disrupt spat settlement as spats are swept away by the force of the currents.

There were problems encountered relating to structural damage of the experimental oyster culture racks during the rainy season. Some of the research tiles hung from the racks were broken because of the effect of the strong currents which caused the tiles to hit against the bamboo racks and some tiles were cut loose and got lost; also the data on the tiles was lost as a result.



*Example of an experimental spat collector in the Tanbi Estuary system fouled by solitary ascidians, possibly Mogula sp.*

Bamboo racks for experimental oyster aquaculture were constructed in the 15 oyster harvesting communities (1 per community). During the rainy season, 7 out of the 15 racks had some form of structural damage due to the high velocity of the water currents and probably poor structural design. The affected communities were Old Jeshwang, Ibo Town, Kubuneh, Bafuloto, Mandina Ba, Kembujeh and Kartong. The racks in Old Jeshwang, Kubuneh and Kartong were re-fixed by the Project staff supported by the women of the communities, staffs of the Department of Fisheries and Department of Parks and Wildlife Management during the 1<sup>st</sup> Quarter.

There have been several exchanges of e-mails on the economic viability of oyster aquaculture and whether or not the Project should continue supporting the activity, and that the racks should be handed over to the communities to manage on their own. However, Ba-Nafaa staff maintains that the racks are purely experimental and valuable data on spat collection is being compiled. Furthermore, it is not possible to determine the economic viability of rack aquaculture on the basis of the result of only 1 rack in a given community.

### ***Strengthening of TRY Association***

TRY Association was established in 2007 as a legally registered non-profit community-based organization with the aim and goal to improve the conditions of life and welfare of the women oyster and cockle harvesters who are generally poor and live in marginalized community; the fishery has remained un-noticed since time immemorial. TRY Association has brought Government and public attention to this important fishery that has been neglected for so long. The membership of the Association has grown from 1 community of 40 members in 2007, to 500 members in 15 communities in 2011. The Ba-Nafaa project continues to support the strengthening of TRY Association and significant progress is being made. TRY Association is growing towards becoming a national Association with increasing membership and increased interests from other communities. The Association has expanded from an initial membership of approximately 40 women in one community in 2007, to approximately 500 women in 15 communities in 2011. The Association has a Board of Directors that offer advice and guidance to the Association. TRY Association is presently renting a compound as a temporary Headquarter which is used as an office, meeting place, and skills training centre. Thirty-five (35) young girls, daughters of the women selected from various communities, are currently undergoing training in sewing, knitting, soap making, and cooking as means of livelihoods to support themselves and their families. The overwhelming majority of the girls did not finish their schooling because their mothers (most of who are middle age and widowed) could not continue to pay school fees.

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

The Association has participated in several project related activities during the 1<sup>st</sup>. and 2<sup>nd</sup>. Quarters including the following: participation in the oyster research to study the growth and mortality of the mangrove oyster; participation in the maintenance of the aquaculture racks; meetings to formalize community-based committees and define roles and responsibilities; conflict-resolution meetings in certain communities; skills training of oyster and cockle harvesters in soap making as an alternative livelihood; microfinance training and subsequent establishment of a credit and savings scheme for 500 members.

### ***Enterprise development and microfinance training***

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

Following the training program, the 250 participants were given small loans to start their own businesses as a source of alternative livelihood during the closed oyster harvesting season. This has now expanded to all 500 members. The repayment of loans is satisfactory and there are no cases of defaults. Most importantly, the women have started to save money for the first time in their lives; the women have never developed the culture of putting money aside as savings from their earnings. The introduction of individual deposit boxes (wooden type) given to each loan recipient to keep money (deposits each time they earn money) is a welcome development. Keys to the safe deposit boxes are kept at the TRY office and at the end of each month the women (loan recipients) bring their boxes to the office where the boxes are opened and deposits counted. The women then decide how much to save and how much to pay towards their loans. The women are pleasantly surprised that they can make such amounts of money when their boxes are opened and monies counted. One old woman remarked that someone had put money into her box unbeknown to her; she could not believe that she alone made the deposits.

### ***Other Activities***

TRY women of Lamin community participated in a mangrove re-planting exercise sponsored by the ACC (Adaptation to Climate Change) project through NEA (National Environment Agency). In all, the women planted about 6 hectares of mangroves. In return, they were given 28 boats by the project for their oyster collection activities; this was highly welcomed by the women.

In December 2010, TRY women also participated in a trade fair at the July 22 Square in Banjul which was organized by ASSET in collaboration with the sister organization in Senegal. The Association displayed bottled oyster products and made good sales. This event was a success and the Vice President of The Gambia, who was the guest of honor at the trade fair, expressed happiness with the accomplishments of TRY Association. The participation of the Association was funded by the ICAM (WWF) project as part of the USAID match contributions.

At the TRY Center, there was a soap-making training program that was facilitated by the Department of Community Development in January 2011. Two members from each oyster harvesting community were selected for the training, and in return those two members are to train the rest of their communities. This training was very popular amongst the women since soap is of vital importance to all their households.

**SUCCESS STORY:  
TRY Association Fundraising Event**

The objectives of the Fundraising Event were: to raise awareness of the opening of oyster season and the availability of oysters at our multiple locations of sale; to advertise the activities of TRY Oyster Women's Association; to appeal for help from the Government for the allocation of land to build a permanent Headquarter; to raise funds for the planned programs of the Association; and to celebrate the hard work of TRY Association.

The Event was originally scheduled for March 25, 2011, but after receiving notification from the Office of the President that said date conflicted with the yearly opening of the House of Representatives, it was decided to change the date of the event to April 1, 2011. It was extremely important to TRY Association that the Event be well attended by Government Ministers, politicians, high ranking Government officials and other dignitaries, so the Association decided that it was in its best interest to change the date.

The Event was well attended by many important persons including the Minister of Fisheries, Water Resources and National Assembly Matters; Minister of Basic Education; Minister of Tourism; Permanent Secretary Ministry of Petroleum representing his Minister; Permanent of Fisheries, Water Resources and National Assembly Matters; several Members of Parliament; former Speaker of the House of Representatives; representatives of Banjul and Kanifing Municipalities; Director of Fisheries Department and senior officials;; Director of Department of Parks and Wildlife Conservation and senior officials; WWF-WAMER Country Program Director; Director of Women's Federation, Director of Women's Bureau; Director of FAWEGAM (Foundation for Women Empowerment in The Gambia); Councilors; and the Alkalos of Abuko, Lamin and Kubuneh communities. The United States Ambassador to The Gambia and some Embassy staff, the Director of Peace Corps and several Peace Corps volunteers were also present. The guest turn-out was extremely impressive, estimated at 250 excluding the oyster women who showed up in large numbers wearing colorful outfits to represent their different communities/villages, and they performed cultural dances to the delight of the guests.

Food was offered for sale to the invited guests, buffet-style, and all varieties were oyster-based served with fish and rice. All the food was sold rather quickly and there was positive feedback regarding the food. Frozen oysters in Ziploc bags, bottled oysters in olive oil, bar soaps, powdered soap (detergent) and knit wears (all made by the girls at the Centre) were displayed and some sales made.

Speeches were made by Ms. Fatou Janha Mboob, Coordinator of TRY Association; Ms Fatou Sambou, President of the Executive Committee of TRY Association; the Minister of Fisheries, Water Resources and National Assembly Matters; and the Minister of Basic Education who delivered the keynote speech on behalf of the President of the Republic of The Gambia who was the special guest of honor. One of daughters of the women undergoing the skills training program at TRY Centre gave the vote of thanks.

After a great deal of dancing, eating, and general celebration, the Event was graced by the arrival of His Excellency, the President of The Gambia. His motorcade stopped on the highway as they were driving by, and the women ran out to the road, singing and dancing. The drummers joined them. The President then handed over D100,000 to Ms Fatou Janha Mboob, and D10,000 to the drummers. Needless to say, the women were ecstatic and all full of joy to have such a donation from His Excellency The President. There were other donations including; The Vice President, the Minister of Petroleum and from private businesses and individuals. After deducting Event expenses, there was a remaining cash of D104,000. The Minister of Basic Education also promised 20 scholarships to be awarded to the children of the oyster women. The Association has decided that 15 of the 20 scholarships will be given out in each of the 15 member villages, and the remaining 5 scholarships will be awarded to the most deserving students irrespective of which village they may come from. Regarding the request of the Association for the allocation of land to build a permanent Headquarter, the Government pledged to support the request for allocation of land for building and permanent Centre, and advised the Association to follow normal land allocation application procedures. Land allocation application forms have since been obtained and completed for submission to the relevant Government institution (Ministry of Local Government and Lands).

### **3.4 Climate Change Adaptation**

#### **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 will be held in Senegal in both French and English, and invite several representatives from each of the seven countries of the Commission Sous-Régionale des Pêches (CSRP) that includes Cape Verde, Gambia, Guinea, Guinea Bissau, Mauritania, Senegal and Sierra Leone.

In November 2010, Dr. Arona Soumare of WWF-WAMER, Dr. Jim Tobey of CRC/URI and the Project Manager Ba-Nafaa held a workshop planning meeting in Dakar, Senegal. A similar meeting was held in Banjul with Mat Dia, WWF Country Director. It was agreed that the workshop will be held in March 22-25, 2011 in Senegal. CRC/URI will help in producing background information documents, and WWF-WAMER is responsible for the organization of the workshop.

A four day workshop was convened by the Project and held in Senegal from March 22-25, 2011. Participants (about 40) came from government agencies from each of the 7 member countries of the Sub-Regional Fisheries Commission (Mauritania, Senegal, Cape Verde, The Gambia, Guinea, Guinea Bisau, and Sierra Leone) and from regional initiatives. Government agencies represented included 1) Fisheries, 2) Park and Wildlife, and 3) Environment. 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

A field trip to the communities of Djifere, Palmarin, and Joal showed fishing communities severely affected by erosion, coastal change, salt water intrusion, and over exploitation of fish resources. A recent MPA and reforestation efforts were also viewed and highlighted the importance of participatory approaches. 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.

Across all the member counties common issues are destruction of habitat, coastal erosion, inundation, salinization, and overfishing. All use MPA's as a key strategy for strengthening fisheries and protecting marine habitat. All have been involved in the UNFCCC process and many have completed National Adaptation Plans of Action (NAPA) and formed national climate change committees. However, common needs identified include improved understanding and data on coastal and marine climate change impacts, outreach and awareness raising on climate change negative impacts, mainstreaming climate change in fisheries policies and management plans, capacity building, and more integrated and coordinated efforts.

The primary outcome of the meeting was a recommendation for a process to create a proposal for a regional scale activity that would be submitted to the Adaptation Fund or other donors. Break out groups defined priority areas of focus for a regional activity and they included strengthening MPA networks, mangrove protection and reforestation, training and capacity building in climate change adaptation, stock assessment and sustainable fisheries, building awareness of fisheries stakeholders, and climate change observation systems.

A Workshop Proceedings is being prepared that will elaborate in detail the findings and recommendations emanating from the workshop. A CD of all presentations is also available on request.

## **4. Project Management**

### ***4.1 Challenges, Constraints, and Opportunities***

Many of the activities planned to be implemented during the 1<sup>st</sup>. Quarter were delayed due to problems relating to the release of activity funds by the WWF Dakar Office. An internal WWF-WAMER meeting was held in Banjul in early January 2011 at which issues including per-diem policy for Ba-Nafaa staffs, approval of memos, office hierarchy were discussed and resolved.

Having said the above, it is important to state that the Ba-Nafaa project activities are increasing and with only three staff, the work load is becoming more strenuous and the staffs are becoming overstretched. In addition to the many and varied activities of the Project, there is the issue of the international support staff from CRC/URI. The missions of the international support staff are extremely important in all respects but there is need to consider a better planning and timing of the international missions; it appears overloaded on the part of the Ba-Nafaa staffs who are only three in number; there is need to stagger the missions and avoid the overlapping of missions.

## 4.2 Environmental Monitoring and Compliance

No activities were implemented during this reporting period that required environmental screening or activities where mitigations measures were required. However, at the request of Mr. Robert Buzzard of USAID West Africa Program, the project IEE was revised and submitted in early January 2011 to include the proposed add-on activities for a vulnerability assessment and the water and sanitation activities. Again in March 2011, another revised IEE was resubmitted following a meeting in Accra, Ghana between Mr. Robert Buzzard, Dr. Brian Crawford, Director of International Programs CRC/URI, and Mr. Ousman Drammeh, Ba-Nafaa Project Manager

## 4.3 Branding Strategy Implementation:

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

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

<i>Item</i>	<i>Type of USAID marking</i>	<i>Marking Code</i>	<i>Locations affected/ Explanation for any 'U'</i>
Press materials to announce Project progress and success stories	USAID logo (co-branded as appropriate)	M	Primarily a Gambian audience
Project brief / fact sheet	USAID logo (co-branded as appropriate)	M	Primarily a Gambian audience
PowerPoint presentations at meetings, workshops and trainings	USAID logo (co-branded as appropriate)	M	Primarily a Gambian audience
Technical; reports	USAID logo (co-branded as appropriate)	M	Gambian and USAID audience
Annual Report and Workplan	USAID logo (co-branded as appropriate)	M	Gambian and USAID audience

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

Specific reports produced during this reporting period include:

- Annual Report and Work plan
- Value Chain Assessment Report on the Sole Fishery (FINAL).
- Value Chain Assessment Report on the Shrimp Fishery (FINAL).
- Value Chain Assessment Report on the Oyster Fishery (FINAL).
- First Quarterly Report (October-December 2010).
- Status Report on Bivalve Aquaculture and Water Quality Activities.(Rice, January 2011).

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

#### **4.4 International Travel**

The following international travel was performed during this reporting period. International travel schedule does not include travel between The Gambia and Senegal, which for planning and management purposes is considered local travel. The following list captures all international travel other than within and between The Gambia and Senegal.

- Dr. Jim Tobey (November 2010). Planning for climate change workshop and cross border sole trade study. Governance score cards on sole and oyster fishery. Value chain activities and water and sanitation.
- Barbara Somers (December 2010) – follow-up on co-management plan drafts and stakeholder processes for oyster and sole and review of and analysis of information gathered on sole and oysters.
- Dr. Michael Rice (January 2011)- assessed the progress on the water quality, study of oyster spatfall intensity and timing at various locations in the Tanbi Estuary System; participated in pre-service training of incoming U.S. Peace Corps volunteers with presentation on appropriate technology and small-scale aquaculture; conducted a mini-workshop on method to determine condition index and water content of oyster meats and discussed the usefulness of the index measurement; and observed the fishery for *Anadara senilis* (blood ark) clams in the Kartong estuary of southwestern Gambia and provide recommendations for improving the fishery such as broadcasting cockles from high density to low density areas. In addition, Dr. Rice modified the “Taylor Float” nursery system for use in culturing Gambian oysters. At the request of the Department of Fisheries, Dr. Rice reviewed the Fish and Fishery product regulations for the European Union as a template for developing comparable regulations for The Gambia.
- Dr. Kathy Castro and Mr. Chris Parkins (January 2011) to review work progress in both the oyster and sole fisheries programs; meeting with NASCOM, (National Co-management Committee for the Sole Fishery); started a sole gill net fishing gear selectivity study at Sanyang beach. trained Ba-Nafaa staffer Gibril Gabis and Lamin Sanyang of Atlantic Seafood Company on how to collect Otoliths from sole fish.

- Dr. Erin Wilkinson, Marketing Professor from Rhode Island (February 2011)- worked with TRY Association and Ba-Nafaa to develop marketing and business plans.
- Dr. Brian Crawford, Director of International Programs, CRC/URI (February 2011)- reviewed progress of work of the project, reviewed and updated the PMP and TraiNet portfolios.
- Dr. Virginia Lee (March 2011)- finalized procedures and allocation of responsibilities for drafting of oyster co-management plan. A side activity following Regional Climate Change Workshop in Senegal.

#### **4.5 TraiNet Data on Trainings Conducted during the Reporting Period**

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

<i>Training program</i>	<i>Location</i>	<i>Start date</i>	<i>End date</i>	<i>Participants</i>			<i>Estimated Cost</i>
				<i>Male</i>	<i>Fem</i>	<i>Total</i>	<i>US \$</i>
<b>Oct 09 - March 10</b>							
Study Tour to Sine Saloum	Senegal	12/16/2009	12/18/2009	1	31	32	3,507
Co-management Training on Sole Fishery	The Gambia	1/25/2010	01/26/2010	37	3	40	2,188
Co-management Training on the Oyster Fishery	The Gambia	02/01/2010	02/02/2010	2	51	53	2,373
Aquaculture training	The Gambia	01/12/2010	02/05/2010	60	0	60	2,696
Training on Entrepreneurship (study tour to Baddibu)	Gambia	03/18/2010	03/19/2010	2	11	13	600
Stock assessment training	The Gambia	03/15/2010	03/22/2010	14	5	19	3,144
<b>Total</b>				<b>116</b>	<b>101</b>	<b>217</b>	<b>14,508</b>
<b>April 10 - June 10</b>							
Training on Improved Processing & Packaging	Gambia	30/4/2010	12/4/2010	0	300	300	750
Coastal Adaptation to Climate Change	US	4/6/2010	25/6/2010	2	0	2	26,000
Cayar Study Tour	Senegal	13/6/2010	18/6/2010	11	4	15	4,500
Oyster Aquaculture Training	Gambia	17/6/2010-	28/6/2010	1	36	37	750
Water Quality Assessment Training Workshop	Gambia	23/6/2010	23/6/2010	18	5	23	100

Training program	Location	Start date	End date	Participants			Estimated Cost
				Male	Fem	Total	US \$
<b>Total</b>				<b>32</b>	<b>345</b>	<b>377</b>	<b>32,100</b>
<b>July 10 - Sept 10</b>							
Fisheries Leadership	US	16/8/2010	3/9/2010	3	1	4	32,000
Biostatistics course	Gambia	09/20/2010	09/27/2010	10	2	12	5,832
<b>Total</b>				<b>13</b>	<b>3</b>	<b>16</b>	<b>37,832</b>
<b>Oct 10 - Dec 10</b>							
Micro-credit and enterprise development	Gambia	25/10/2010	2/11/2010.	0	250	250	1,290
<b>Total</b>				<b>0</b>	<b>250</b>	<b>250</b>	
<b>Jan 11 - March 11</b>							
Climate Change workshop	Senegal	3/22/2011	3/25/2011	52	8	60	50,900
Study tour to Tanzania on res. mgt and livelihood development	Tanzania	2/7/2011	2/12/2011	0	1	1	2,145
<b>Total</b>				<b>52</b>	<b>9</b>	<b>61</b>	<b>2,145</b>
<b>GRAND TOTAL</b>				<b>212</b>	<b>708</b>	<b>921</b>	<b>137.490\$</b>
<b>April 11 - June 11 (planned)</b>							
Water quality and shellfish sanitation	USA	5/21/2011	6/5/2011	3	0	3	TBD
Fish stock assessment	USA	5/21/2011	6/12/2011	5	0	5	TBD
<b>Total</b>				<b>8</b>	<b>0</b>	<b>8</b>	<b>TBD</b>

#### 4.6 Estimated Financial Status

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

AMOUNT SUB-OBLIGATED		\$1,579,705
(total federal outlays as of last SF 425/voucher)		
Expenditures		
Period Covered In Last SF 425	Oct-Dec 2010	883,387
Actual	Jan-Feb 2011	113,378
Estimate	March 2011	158,544
<b>TOTAL EXPENDITURES</b>		
(Amt on SF 425 + Recent Expenditure)		<b>\$1,155,309</b>

#### **4.7 Leveraged Funding**

The following table represents estimated funds the project has been able to leverage from non USAID or partner match sources.

<b>Fiscal Year</b>	<b>Leveraging Partner</b>	<b>Donor</b>	<b>Activity</b>	<b>Leveraged Funds</b>
2010-2011	US Peace Corps	US Government	Two Peace Corps Volunteers assigned to the project and working on Sole and oyster fishery activities.	\$82,000 (estimated total cost per volunteer year X2)
2010	Univ. of Maryland	Professional volunteer	Oyster aquaculture training	\$2,000
2010	WWF	ICAM Project	Training on Entrepreneurship	\$600
2010	WWF	ICAM Project	Oyster PRA Validation Workshop	\$200

## **Appendix A. Performance Management and Monitoring Report**

The goal of performance management and evaluation is to encourage adaptive management and learning within the Project and to report results to USAID/West Africa. This requires collecting timely information using indicators selected to provide meaningful information on progress towards stated objectives. In Year 1, the Project developed a Performance Management Plan (PMP), a summary of which is presented below. The PMP includes key results, refined performance targets disaggregated by year, specific monitoring parameters, and source(s) of data for each indicator. Time-bound targets were refined through the work planning process in consultation with local partners and beneficiaries.

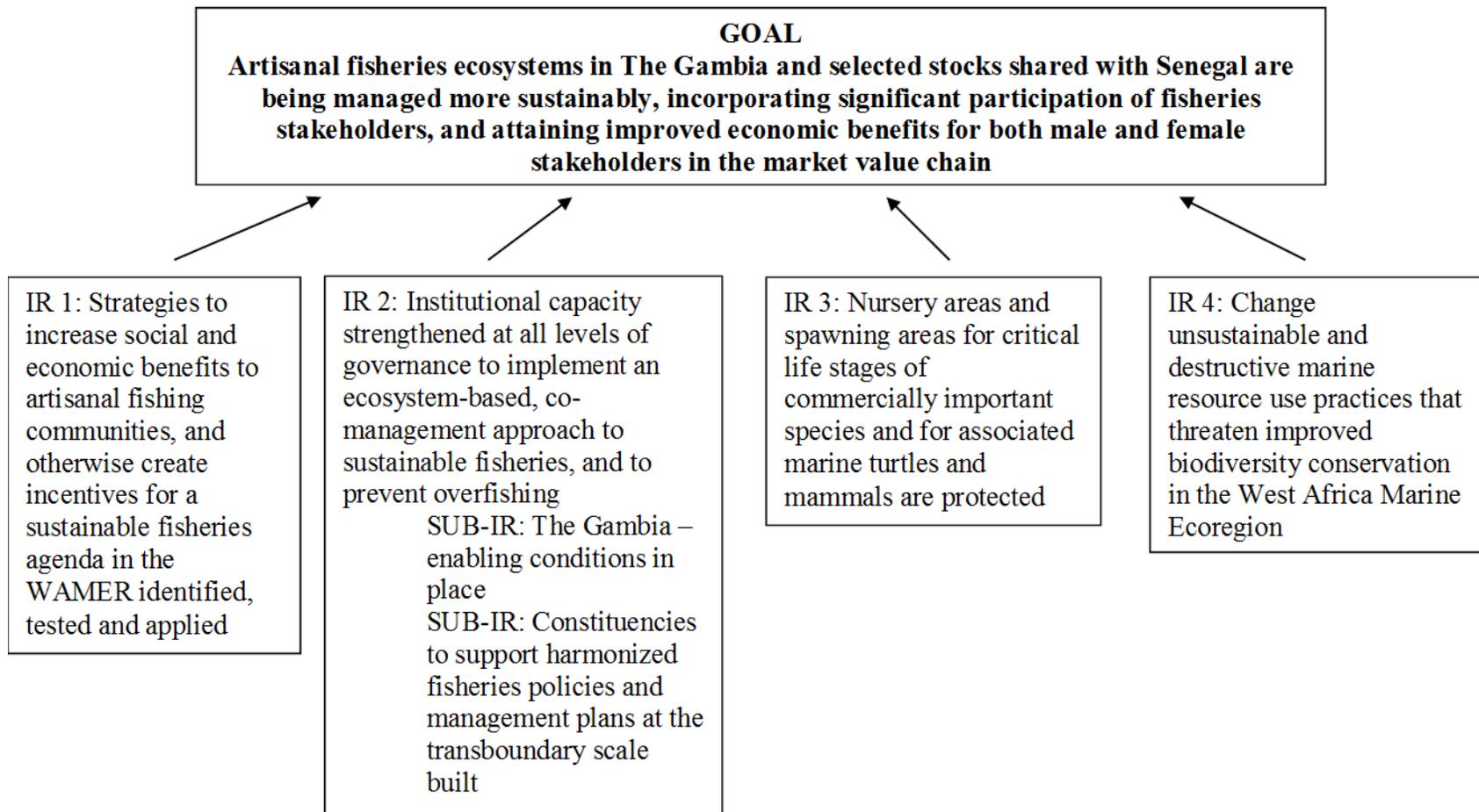
The semi-annual performance monitoring report documents progress on achieving results. The report includes:

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

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

## Results Framework

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



### ***Life-of-Project (LOP) Targets per Indicator***

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

No.	Indicator	LOP Targets
<b>IR 3 &amp; 4</b>		
12	Hectares in areas of biological significance under improved management: <ul style="list-style-type: none"> <li>• Hectares covered by the fisheries management plan defined as the range of fishing fleets targeting these species</li> </ul>	FMP Areas: <ul style="list-style-type: none"> <li>• Sole - (20,000 hct)</li> <li>• Sardinella – same as for sole</li> <li>• Shrimp – Gambia estuary (10,000 hct)</li> </ul>
12	Hectares in areas of biological significance under improved management: <ul style="list-style-type: none"> <li>• Oyster fishery estuarine and mangrove areas designated and allocated as community managed zones, including no-take areas</li> </ul>	Community managed oyster zones <ul style="list-style-type: none"> <li>• Tanbi wetlands 200 hct</li> <li>• Numi 300 hct</li> </ul>
12	Hectares in areas of biological significance under improved management: <ul style="list-style-type: none"> <li>• Area in hectares of any officially designated MPA (Marine Park or fishery no-take reserve)</li> </ul>	<ul style="list-style-type: none"> <li>• Numi National Park MPA – 30 sq. km</li> <li>• Numi no-take area 3X10 km -30sq km</li> </ul>
<b>IR 4</b>		
13	Number of technological innovations (gear or fisher behaviors) developed and/or effort restrictions that reduces bycatch.	At least three innovations and/or 3 effort restrictions (e.g. min. mesh size, size limit)
14	Number of fishing units that adopt by-catch reduction devices	20% of vessels for shrimp and sardinella fisheries
15	Number of processors that reduce fuel wood consumption	At least two reduce wood consumption by at least 20%
16	Number of vessels registered/licensed	100 coastal vessels targeting sardinella and sole
<b>GOAL</b>		
17	Hectares under effective mgt (Key biological reference points in the FMPs for sardinella, shrimp, sole, oyster)	A subset of LOP Targets for previous indicator No targets set but progress towards BRPs or MRPs will be tracked.

## Results to Date

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

N0	Indicator	FY 10 Target	FY 10 Result	FY 11 Target <sup>1</sup>	FY 11 Result through MARCH 2010	LOP Target	Comments
1	Number of businesses economically benefiting	50	50	50 (25)	.250 TRY members	125	Focus on oyster harvesters only in Year2
2	No persons receiving econ. assistance packages (grants, training, etc.)	50	500	50 (50)	.250 TRY members	220	Focus on oyster harvesters only in Year2
3	Number of people with improved access to loan capital		50	50 (25)	250	115	Focus on oyster harvesters only in Year2 Microcredit loans provided to 250 members of TRY
4	Number of govt. agencies or mgt. bodies strengthened or created	3	6	11 (2)	12	8	LACOMS in 7 communities (Gunjur, Brufut, Sanyang, Tanji, Batokunku/Tujereng, Bakau, Banjul), NASCOM, GAMFIDA, NAAFO, TRY Association, 1 Govt. agencies (DoFish)
5	Number of stakeholders trained in resources mgt <sup>2</sup>	60	173 106 males 67 females	9 (40)	311	200	250 in microcredit, 60 in climate change adaptation and 1 in regional exchange to Ghana
6	Improvements on a governance scorecard	Oysters improving		Oysters and sole improving	Oysters and sole improving	improving	Oysters total governance scorecard 10-12 in 2009, score in 2010 - 27-29 Sole total governance scorecard in 2009 - 14. score in 2010 - 31 (see following section for the scorecard questions and detailed comments)

<sup>1</sup> Revised targets for FY 11 based on workplan development. Numbers in ( ) represent original targets set at start of the project.

<sup>2</sup> Does not include persons attending management plan meetings which builds capacity of larger numbers of people in a learning by doing mode. Reduced target reflects focus in Year2 on quality training of select agency technical in core competency areas needed for fisheries mgt goals for oysters and sole and longer-term degree training of select DoFish staff.

N0	Indicator	FY 10 Target	FY 10 Result	FY 11 Target <sup>1</sup>	FY 11 Result through MARCH 2010	LOP Target	Comments
7	Number of fishermen w/ use rights (collective quotas/territorial use rights, saleable license)	450	0	450 (100)	0	600	Collective use rights for each of 9 communities in portions of the Tanbi expected once mgt plan adopted, representing total membership of TRY
8	Number participating in regional meetings and/or exchange visits	55	42	51 (30)	61	130	60 at regional CCA wkshp, 1 exchange trip to Ghana
9	Number of workshops/meetings on policy reform between Senegal and The Gambia	1	0	2 (1)	1	6	GCCA wkshp,
10	Number of reports documenting transboundary issues and solutions	1	0	3 (1)	3	4	Shrimp, Sole and Oyster value chain reports,
11	Number of policy changes made by national govts to harmonize policies		0	0	0	3	
12	Hectares of biol significance under improved mgt: • fisheries mgt plan	20,000 (sole)	0	20,000	0	30,000	Delayed form Year 1, however, while draft management plan developed and mgt committee established this will not be counted until plan is formally approved by government, estimated about June 2011
12	Hectares of biol significance under improved mgt: • Oyster CB-mgt zones	200	6000	6000	0	500	Increase due to revised estimate of size of the Tanbi wetland.
12	Hectares of biol significance under improved mgt: • MPAs or fishery no-take reserves		none	none	0	6,000	
13	Number of tech innovations and/or effort restrictions that reduces bycatch.		none	TBD – sole, TBD-oysters (1)	0	3	Number dependent on mgt measures included in approved mgt plans

<b>N0</b>	<b>Indicator</b>	<b>FY 10 Target</b>	<b>FY 10 Result</b>	<b>FY 11 Target<sup>1</sup></b>	<b>FY 11 Result through MARCH 2010</b>	<b>LOP Target</b>	<b>Comments</b>
14	Number of fishing units that adopt bycatch reduction technologies		none	0 (10%)	0	20%	Not planned at this time. Preliminary studies indicate this is not an issue for sole fishery, so indicator may be dropped.
15	Number of processors that reduce fuel wood consumption		none	TBD (1)	0	2	Initially, this was planned for sardinella fishery, but as this is no longer a focus, of the project, fuelwood reduction activities for oyster harvesters will be started this year, but targets cannot yet be determined until preliminary assessment of and piloting of appropriate technology completed
16	Number of vessels registered/licensed	50	0	50 (30)	0	100	Community sensitization completed along South Coast, registration expected to get underway in first half of Year2. actual number of vessels unknown but estimated at 50-100
17	Hectares under effective mgt (progress towards BRPs) for sole		No target	Baseline established	0	No target but tracked	Reference points to be established as part of the management plan. Baseline will be established based on results of preliminary stock assessment
17	Hectares under effective mgt for oyster		No target	Baseline established	0	No target but tracked	Baseline data started in year1 but will need 1 full year of data to establish baselines
17	Hectares under effective mgt for sardinella		No target		0	No target but tracked	This species will no longer be a focus of project activities and replaced by Catfish
17	Hectares under effective mgt for shrimp		No target		0	No target but tracked	This species will no longer be a focus of project activities in Year 2 and may be dropped completely in favor of other species