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SUSTAINABLE COASTAL COMMUNITIES AND ECOSYSTEMS (SUCCESS) PROGRAM

2004-2014

FINAL REPORT

DECEMBER 2014

THE UNIVERSITY OF RHODE ISLAND GRADUATE SCHOOL OF OCEANOGRAPHY
COASTAL RESOURCES CENTER
UNIVERSITY OF HAWAI'I HILO
WIOMSA
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FINAL REPORT

Sustainable Coastal Communities and Ecosystems Program (SUCCESS) 2004 – 2014

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ACRONYMS

CCA	Climate Change Adaptation
CCLME	Canary Current Large Marine Ecosystem
CCRC	Climate Change Resilient Development
CFA	Franc, Senegal Currency
CIDEA	Center for Ecosystem Research in Nicaragua
CLPA	Local Artisanal Fishing Councils, Senegal
CMAC	Climate Change and Coastal Adaptation Concepts, Marshall Islands
COMFISH	Collaborative Management for a Sustainable Fisheries Future in Senegal
CRC	Coastal Resources Center
CRMP	Coastal Resources Management Program
CSRP	Sub-Regional Fisheries Commission, Senegal
CTI	Coral Triangle Initiative
DoFish	Department of Fisheries, The Gambia
DPM	Direction des Pêches Maritimes, Senegal
DPSP	Direction of Fisheries Surveillance, Senegal
ECOWAS	Economic Community of West African States
EGAT//NRM	Economic Growth Agriculture and Trade/Natural Resources Management
GEF	Global Environment Facility
GLOWS	Global Water for Sustainability
GNSSP	Gambia National Shellfish Sanitation Plan
GSO	Graduate School of Oceanography
ICC	Coordination and Advisory Bodies, Senegal
ICFG	Integrated Coastal and Fisheries Governance
ICM	Integrated Coastal management
IUU	Illegal, Undeclared and Unregulated fishing
IMACS	Indonesia Marine and Climate Support
IMCAFS	Integrated Management of Coastal and Freshwater Systems
IMS	Institute of Marine Science, Zanzibar
IUCN	International Union for the Conservation of Nature
IWRM	Integrated Water Resources Management
JDPA	Joint Development Planning Area, Ghana
LWA	Leader with Associates Cooperative Agreement
MBCA	Menai Bay Conservation Area
MPA PRO	Marine Protected Area Professional
NAP	National Adaptation Planning
NASCOM	National Sole Fishery Co-management Committee
NDPC	National Development Planning Commission, Ghana
NGO	Nongovernmental Organization
NRM	Natural Resources Management

PACRC/UHH	Pacific Aquaculture/Coastal Resources Center at the University of Hawaii
RMI	Republic of the Marshall Islands
SAMP	Special Area Management Plan
SCL	Sustainable Coastal Livelihoods
SIDA	Swedish International Development Corporation
SIDS	Small Island Developing States
SUCCESS	Sustainable Coastal Communities and Ecosystems
TCMP	Tanzania Coastal Management Partnership
TNC	The Nature Conservancy
TRY	TRY Oyster Women's Association, The Gambia
UCA	University of Central America in Nicaragua
UNDP	United Nations Development Program
UNFCC	United Nations Framework Convention on Climate Change
URI	University of Rhode Island
USAID	United States Agency for International Development
WARFP	West Africa Regional Fisheries Program
WCPA	World Commission on Protected Areas
WIO-COMPAS	Western Indian Ocean Certification, Marine Protected Area Professionals
WIOMSA	Western Indian Ocean Marine Science Association

TABLE OF CONTENTS

EXECUTIVE SUMMARY

USAID launched the Sustainable Coastal Communities and Ecosystems Program (SUCCESS) in 2004 as a five-year integrated coastal management, fisheries and aquaculture initiative. The Coastal Resources Center (CRC) at the University of Rhode Island's Graduate School of Oceanography led a core group of partners in implementing this global program, and in 2009, USAID awarded SUCCESS a five-year extension, with CRC continuing as lead implementer.

Initially, SUCCESS conducted field projects in Nicaragua, Ecuador and Tanzania. During this phase, the program worked with its partners to promote healthy ecosystems and sustainable natural resource management and resiliency in the face of climate change impacts, lack of good governance, weak capacity and poverty in the developing world. Employing good governance initiatives, sustainable livelihoods enterprises, capacity development, low-impact aquaculture ventures, and responsible conservation and management of near-shore fisheries and marine areas, SUCCESS pursued its objectives of protecting biodiversity, building climate change resilience and imparting skills and knowledge necessary for people to better manage their natural resources and their future.

These efforts were tailored to best suit the diverse conditions, opportunities, challenges and needs of the communities served. In Ecuador, SUCCESS tackled accelerating threats to biodiversity of the Cojimíes estuary and surrounding watershed. In Nicaragua, SUCCESS activities focused on protecting the biodiversity and ecosystem integrity of the Estero Real and Padro Ramos estuaries, watersheds and forests. In Tanzania, sustainable livelihoods and biodiversity conservation activities came together in Zanzibar, where women cockle collectors learned to create shellcraft jewelry from cultured pearls, and no-take zones were established in the Menai Bay Conservation Area (MBCA).

As SUCCESS evolved, the focus would shift from fieldwork to global leadership in capacity development, knowledge management and learning in biodiversity, climate change, fisheries and livelihoods. For example, SUCCESS would pioneer a model of capacity development through certification of Marine Protected Area (MPA) professionals through the creation of the Western Indian Ocean-Certification of Marine Protected Area Professionals (WIO-COMPAS) program. Climate change adaptation and resilience work gained greater focus in the second phase of the program and with the increasing importance of National Adaptation Planning globally, culminated in a regional West Africa workshop in Ghana in 2013 and a resulting policy brief for government decision-makers. Knowledge sharing was a robust component across all SUCCESS thematic areas. This took many forms, including workshops, conference presentations, videos, papers and publications, including guidebooks for practitioners and USAID staff and a publication that provided a global index of coastal risks by nation with proposed environmental solutions.

Throughout the SUCCESS Program, Associate Awards expanded the reach of activities and achievements, with projects in Asia-Pacific and Africa. These projects addressed coastal resilience, sustainable livelihoods, gender equity, fisheries use rights and co-management plans and capacity development. Notably, the fisheries and governance work of the Associate Award in Ghana will continue and expand through the CRC-led Cooperative Agreement, the USAID/Ghana Sustainable Fisheries Management Project 2014-2019 (SFMP).

The impacts of the many components and activities of SUCCESS have been extensive. Below are just some of the quantifiable results:

- Approximately 220,000 hectares of marine and terrestrial biologically significant areas under improved management
- Over 14,000 hectares in areas of biological significance showing improved biophysical conditions for selected parameters
- Eleven policies, laws, agreements, or regulations promoting sustainable natural resource management and conservation implemented
- Leveraged over $US 2.2 million in additional funding to support project activities
- 4,359 persons participated in coastal resources and conservation planning initiatives (45 % women)
- Approximately 500 people with increased economic benefits derived from sustainable natural resource management and conservation (64% women).
- In the first five years, 752 people were trained (40% women) over 36 courses on natural resources management. During the second phase, the project provided 3,974 person hours of training (2,558 for men and 1,416 for women) in natural resources management and/or biodiversity conservation. This included 1,252 hours of training in climate change adaptation (908 for men and 344 for women).
- Forty-eight individuals trained by SUCCESS are implementing projects or providing training or technical assistance to others on climate change, conservation-based enterprise development or MPA certification.
- Developed 31 tools/guides/curricula, of which 14 are related to climate change. The tools include the "*Coasts at Risk*" report, "*Adapting to Coastal Climate Change Guide"* and associated curricula and worksheets, the "*MPA PRO Handbook and Assessor Guide*," *"Sustainable Fisheries and Responsible Aquaculture: A Guide for USAID Staff and Partners",* and the *"Enterprise Strategies for Coastal and Marine Conservation: A Review of Best Practices and Lessons Learned"* and four videos showcasing best practices in climate change adaptation.
- Produced/presented 61 success stories and research papers. This includes featuring SUCCESS at the United Nations Climate Change Conference held in Copenhagen in 2009; at the Global Oceans and Coasts Conference in Paris; at a SUCCESS Harvest Seminar in Washington, DC; in a special issue of the Coastal Management Journal; in the World Conservation Union and WIOMSA publications; and in the final issue of the Basins & Coasts E-newsletter
- Sixty-one institutions have improved capacity to address climate change issues.

However, achievements do not come without challenges and setbacks. Among the lessons learned are:

- There is no substitute for face-to-face contact in the generation and transmission of knowledge that is most relevant to leaders working in the unique circumstances of every coastal ecosystem.

- Alternative or diversified livelihoods can be effective only when coupled with efforts to manage the respective fishery, and livelihood projects that contribute to a more regular and diversified income with access to microcredit help reduce peoples' vulnerability and improve livelihood security.
- The certification process adds an important dimension to capacity building by raising professional standards, expectations and impacts, especially when tied to rewards and consequences based on explicit criteria.
- When working on climate change adaptation planning and other behavior change projects, recognize that communities want to take action, and be prepared to follow-up on a few key actions right away.
- Women play an important role in fisheries value chains through buying, processing and related small businesses as well as play significant roles as harvesters of resources in the intertidal coastal zone. The role of women in fisheries needs much greater attention.

The way forward

The Cooperative Agreement: Leader with Associate Awards structure allowed the SUCCESS team to make broad and lasting gains across a sweeping geographic area and among varying conditions and populations. Future gains depend on the continuance of mechanisms that afford a lengthy timeline for relationships to be forged, gains made, skills and capacities transferred and sustainability strengthened. Continuing the progress of SUCCESS and programs like it requires a global coastal/marine strategy, something USAID currently lacks. The significant challenges in addressing the increasingly urgent issues affecting oceans and coastal communities become even steeper without a global strategy and holistic program, such as SUCCESS. Those who have worked on SUCCESS, as well as other USAID global Cooperative Agreements dating back to the 1980s, cannot stress strongly enough the need to develop a strategic oceans and coastal strategy with dedicated program and funding mechanisms. Otherwise, the achievements made and lessons learned during SUCCESS could be lost to the future.

INTRODUCTION

In 2004, the United States Agency for International Development (USAID) awarded the University of Rhode Island (URI) a Leader with Associates (LWA) Cooperative Agreement in Coastal Management, Fisheries and Aquaculture. This was the Sustainable Coastal Communities and Ecosystems (SUCCESS) Program, a five-year initiative with annual funding of $750,000 and a $4,035,000 ceiling. In 2009, USAID awarded a five-year extension (2009-2014) with core annual funding of $300,000 for the extension period and a revised ceiling of $5,600,000.

The goal of this 10-year initiative was to provide global leadership in integrated coastal management (ICM) in biologically significant areas through a participatory, issue-driven and results-oriented process that:

- Promoted the sustainable use of marine resources
- Conserved marine biodiversity
- Improved food and income security
- Enhanced adaptive capacity and resiliency through improved governance

In the Program's first five years, it worked with partners—the Pacific Aquaculture and Coastal Resources Center at the University of Hawaii (PACRC/UHH); the Western Indian Ocean Marine Science Association (WIOMSA) based in Zanzibar, Tanzania; the Center for Ecosystem Research/CIDEA at the University of Central America (UCA) in Nicaragua; and EcoCostas, a nongovernmental organization (NGO) based in Ecuador—largely through field applications to make progress in four major areas:

- Achieving Tangible On-the-Ground Results
- Increasing Capacity through Certification Initiatives and On-the-Ground Training
- Establishing Regional Learning Networks Supported by Knowledge Management
- Applying Science to Management and Good Governance

The first phase of SUCCESS emphasized on-the-ground results at selected field sites in three countries (Ecuador, Nicaragua and Tanzania) along with regional and global scale activities. However, field and regional activities with CIDEA and EcoCostas were phased out at the request of USAID in years four and five while the Project's scope was revised to focus more on providing global leadership, rather than field interventions.

The centrally funded activities in Phase 2 were directed at global and regional leadership initiatives with a focus on sustaining activities that address major issues posed by coastal change and coastal governance at global and regional scales. Focal themes for Phase 2 were:

- Increase capacity for MPA professionals through certification
- Apply a climate lens to coastal policy, management, and practice
- Capture and disseminate key learning about livelihoods development

A second major difference between Phase 1 and 2 was the funding level. The annual investment in Phase 2 of the SUCCESS Program was less than half of that invested in Phase 1 ($4 million in Phase 1 versus $1.5 million in Phase 2). During Phase 1, there was one Associate Award in Thailand and a small add-on from the Department of State to the Leader Award for climate change work in the Republic of the Marshall Islands. In Phase 2, the Program was enriched by several additional Associate Awards funded by USAID Missions in West Africa. At the end of Year 5, three Associate Awards were negotiated for activities in the Gambia, Ghana and Senegal for a combined total of $24.9 million. These Associate Awards provided many opportunities for applying the methods developed in Phase 1 and further developing them for applications elsewhere. The Senegal Award is on-going will continue for several years beyond the life of the Leader Award.

Background

The SUCCESS Project drew upon CRC's 30 years of overall experience and on eighteen years of Cooperative Agreements with USAID through the Coastal Resources Management Program I and II and the many important lessons that have been generated through that successful pioneering program (see "*Crafting Coastal Governance in a Changing World*" available at www.crc.uri.edu/publications for more information on experience and lessons learned from those Programs). The CRC was formed in 1971 at the University of Rhode Island's Graduate School of Oceanography. Its founding was a response to a recommendation in the famous Stratton Commission Report (1969) that called for "coastal laboratories" that would provide the nexus between knowledge on how coastal ecosystems function and change and the planning and policy making of coastal management programs. CRC's first challenge was to work with the newly formed Rhode Island Coastal Resources Management Council to successfully negotiate federal approval of one of the first state Coastal Zone Management Plans pursuant to federal legislation approved in 1972. The CRC then developed what became a national model for ecosystem-based Special Area Management Plans (SAMPs) for the coastal lagoons along the state's south shore.

In 1985, the CRC was selected to lead the first Coastal Resources Management Program (CRMP) funded by USAID. This sponsored pioneering programs at the national scale in Ecuador, Sri Lanka and Thailand. These programs adopted a "two track approach" whereby policy reform and collaborative action within central government was closely linked to highly participatory, issue-driven initiatives at the local level modeled on our experience at the SAMP scale in New England. CRMP I results strongly influenced the approach taken in Chapter 17 of Agenda 21, the 1992 Earth Summit. The successes of CRMP I led to extending the program through 1994 and then to the design of CRMP II. This was also implemented by the CRC and ended in September of 2003. CRMP II designed and implemented a second set of sustained programs in Indonesia, Tanzania, and Mexico and expanded upon its training and global leadership activities – the major vehicles for disseminating the results and lessons learned about the practice of ICM in developing nations. Throughout this period, CRC remained an active player in coastal management in New England and the U.S. and the interchanges between experience and lessons learned continue to benefit all parties. The total value of CRMP I and II was approximately $49 million in USAID funds, with matching funds provided by the University of Rhode Island and the governments of the countries assisted.

After almost twenty years of CRM I and II, CRC submitted a successful application to USAID for a new Coastal/Fisheries Leader With Associates award, which became the Sustainable Coastal Communities and Ecosystems Project. The SUCCESS project, formed part of USAID's strategic objective (SO) to "increase the sustainable management of natural resources", and more specifically in Economic Growth Agriculture and Trade/Natural Resource Management's (EGAT/NRM now E3/W) intermediate result (IR) to "increase conservation and sustainable use of freshwater and coastal resources".

The original request for applications "Coastal and Water Resources Management Worldwide" envisioned two separate LWA agreements: one for Coastal/Fisheries and one for integrated water resource management (IWRM). USAID's goal for the Coastal/Fisheries and Integrated Water Resources Management Agreements was to improve the sustainable use and conservation of coastal ecosystems, fisheries, and freshwater and related aquatic resources in river basins and adjacent coastal ecosystems in developing countries through the application of integrated coastal management, sustainable fisheries and aquaculture management, and/or integrated water resources management principles. A secondary goal was to advance the economic and social wellbeing of the people within targeted areas in a manner that ensures the ecological and socioeconomic diversity, productivity, and sustainability of the targeted areas. The two awards—SUCCESS, implemented by CRC/URI, and the Global Waters for Sustainability (GLOWS), implemented by Florida International University—together formed the Integrated Management of Coastal and Freshwater Systems (IMCAFS) Program.

The original agreement placed a strong emphasis on the design, implementation, and performance monitoring of "early actions" that achieve quantifiable environmental, economic, and social development impacts at the local scale. With a requirement of three country field initiatives as a requirement of the application, SUCCESS selected three field sites in Ecuador, Nicaragua, and Tanzania where the LWA provided an opportunity for piloting innovative concepts and cross-site learning.

Key Principles and Approaches for Sustaining Effective ICM Initiatives

(Lessons from CRMP I & II)

- The ***values that underpin coastal governance***—participation, transparency, accountability, equity and the involvement of marginalized groups—are essential to building vigorous constituencies.
- ***Government commitment***, including provision of human and financial resources, is essential to successful, long-term coastal governance in any place.
- ***Pilot projects*** can catalyze the enabling conditions and behavioral changes that, when sustained, can produce a harvest of improved societal and environmental conditions.
- Successful programs ***set clear, unambiguous goals*** for the social and environmental outcomes that the Program is working to achieve.
- ***Individual and institutional capacity*** is the foundation for translating the principles of coastal stewardship and participatory democracy into an operational reality.
- ***Good practices***—refined and adapted to the needs of the place—must guide the actions, and linkages among actions, that bridge planning and implementation.
- ***Improved human well***b***eing*** is inextricably linked to the sustained health of coastal ecosystems.
- A ***nested governance system***—where management power and responsibility is shared across scales and throughout a hierarchy of management institutions to address the cross-scale nature and complexity of management issues—is essential to success.
- ICM must address ***social and environmental change in ecosystems*** and link the impacts of watershed activities to processes in estuaries and along the coastlines.
- It is time to ***codify how best to achieve the changes in values and behaviors*** that are essential to the practice of coastal stewardship.

YEAR 1-5 SUMMARY

In its first five years (2004-2009), SUCCESS focused on field initiatives. It recognized the people and institutions of the countries where it worked as its primary partners and sought to improve their well-being by promoting healthy coastal ecosystems and sustainable resource management through good governance. While these field interventions focused on making tangible differences for local stakeholders in specific coastal areas and estuaries, as a global program, SUCCESS also took a leadership role in developing best practices for responding to the needs of regional and international audiences.

The first phase of SUCCESS was designed around four mutually reinforcing components that connected community-based demonstrations of successful natural resources governance to supporting policies at the provincial, national, and regional scales. The first component—referred to as "On-the-Ground Results—focused on testing the transferability of successful practices from one area or country to another. This component had four thrusts. It implemented field activities—in Tanzania, Nicaragua, Ecuador, and Thailand (as an Associate Award) —with biodiversity conservation and poverty reduction as overarching themes. In Thailand, the Associate Award was a response to the Asia Tsunami and added coastal disaster assistance and hazards preparedness themes. The coastal hazards theme grew in importance with climate change as a new and emerging issue in Phase 2 of the program. In addition, it focused on maintaining healthy ecosystems and sustainable resource management; developing sustainable enterprises; and promoting ecosystem-based, low-impact aquaculture. The SUCCESS Program design was influenced by two things. First, by key lessons and principles that had emerged from the successful ICM initiatives of the previous Coastal Resources Management Program/CRMP (see box). Second, by a number of ongoing, new and emerging issues of global concern at the turn of the 21st century—issues that spawned a set of new development premises for ICM and described below:

1. Poverty is a major threat to biodiversity conservation and poverty must be addressed by supporting improvements across a triple bottom line (i.e., improving people's economic, social, and environmental assets). This three-pronged approach creates a more stable foundation for sustainable improvements in biodiversity conservation than does an approach that addresses these assets in isolation.
2. Engaging local communities in dialogue about their future is essential—crafting a shared view for how to best improve the triple bottom line. Social impediments such as stigma, lack of assets, and a lack of or poor support systems often block the participation of women and youth in socioeconomic and environmental affairs. By acknowledging and removing these impediments, coastal management programs can assume a critical role in empowering women and youth— something that can pay dividends well beyond the reach of a given project.
3. Climate change impacts will add new pressures and there is an urgent need for coastal communities to understand and adapt to these. This includes the likelihood that climate changes will exacerbate situations of conflict and disaster, and risks to food security, especially for resource-dependent communities. Meanwhile, the wise use and conservation of natural resources and ecosystems can help minimize these impacts and lay the foundation for greater community resiliency to these adversities.

4. It is important to take an incremental, deliberate, culturally sensitive, and learning-based approach to research and development of new livelihood activities, best management practices, policy/regulatory instruments, and other supporting services (e.g. extension, processing, marketing, etc.).

Field Implementation in Tanzania, Nicaragua, and Ecuador

Natural Resources Management, Nearshore Fisheries, Small-Scale Aquaculture

SUCCESS improved management of nearshore fisheries (emphasis on estuaries and their watersheds)—a sector ignored in the recent past and critical to ecosystem health and biodiversity. SUCCESS improved the management of 221,301 hectares of the world's coastal zone (150,804 Marine and 70,497 Terrestrial)—including biologically significant areas in or surrounding designated protected areas. Site-specific examples follow.

In Tanzania, SUCCESS and its partners worked in Zanzibar's Menai Bay Conservation Area (MBCA)—rich in biodiversity of fishes, coral reefs, and mollusks—to assist local bivalve collectors (mostly women) in addressing the threat of a depleted bivalve population due to over-harvesting. It introduced community-managed, designated "no-take" zones to ensure bivalves are harvested in a sustainable way. It also worked with harvesters to develop alternative income generating activities to help reduce their dependence on wild harvests. Four community based intertidal "no-take zones"—areas where no extractive activities are allowed were established. No-take zoning fit well with the MBCA framework, which allows for community-based management within the conservation area. To guide implementation, the villages have in hand management plans for the no-take zones to ensure that the resources of Menai Bay are managed sustainably. The plans delineate tasks and responsibilities of the key stakeholders in the villages, allowing for variations in approach by the unique groups to help them build on their successes. Analyzing monitoring data collected over the past eight years (first by SUCCESS and later by the USAID Tanzania supported Pwani Project) shows that three out of four no take zones have either stabilized or are showing improvements in biophysical conditions (i.e. increase in abundance and size of bivalves) inside and outside the reserves.

> **Reflections from the field:** "We need to maintain a good stock of oysters that can produce spat for our half-pearl farms. We benefit from the no-take zones, because of spill-over. Now we are seeing more oysters, fish, and octopus adjacent to the closed areas in the Bweleo village." *Ali Makame Matake*

In Ecuador, SUCCESS worked with farmers to improve agroforestry practices that generate more income while having fewer negative impacts on the watershed. It assisted with reforestation to protect freshwater supplies and further encroachment in one of the last remaining intact Pacific tropical coastal forests in the Mache-Chindul Reserve. Also, it worked with communities to develop eco-tourism businesses that help preserve and protect the natural biodiversity of the area.

In Nicaragua, SUCCESS demonstrated co-management methods for molluscan fisheries, focusing on the black cockle (*Anadara* sp). These fisheries are a food and income mainstay for poor coastal communities, and have national and regional importance—transported within the country and exported (illegally) to other Central American countries. The goal was to develop feasible co-management methods for the black cockle species that can provide a model for other Latin American countries.

Reflections from the Field: The co-management system in Asseradores has been in place for eight years now. Over that time, research projects have been carried out, and shellfish depuration center has been constructed using solar photovoltaic energy. Negotiations are underway with an export company that has markets for packed shellfish in El Salvador. *Juan Ramon Bravo Moreno*

Low-impact Mariculture and Biodiversity Conservation

By 2030, aquaculture will overtake capture fisheries as the world's major source of seafood—creating both a major threat and economic opportunity. SUCCESS promoted low-impact, sustainable mariculture (emphasis on native indigenous species) and promoted best practices that reduce mariculture impacts on biodiversity in coastal areas.

In Tanzania, SUCCESS worked to reduce chances the community will turn to more resource/biodiversity-destructive enterprises to generate income and produce their food. SUCCESS demonstrated the economic potential of farming milkfish—a native species that can be cultured in ponds in low biodiversity salt pan areas behind mangrove forests—as an alternative to using these areas to produce salt, an activity that generates only low levels of income. While milkfish farming has the potential to generate US$2,000/hectare in annual revenues, it can also threaten biodiverse estuarine areas if not properly conducted. Hence, SUCCESS trained farmers in best practices. On these fronts, SUCCESS also worked with Tanzanian national agencies on policies and zoning schemes that will allow these industries to grow and prosper—contributing significantly to employment, income generation, and food production in coastal communities—but, in a sustainable manner that ensures adoption of responsible mariculture practices that limit negative impacts on the environment and biodiversity.

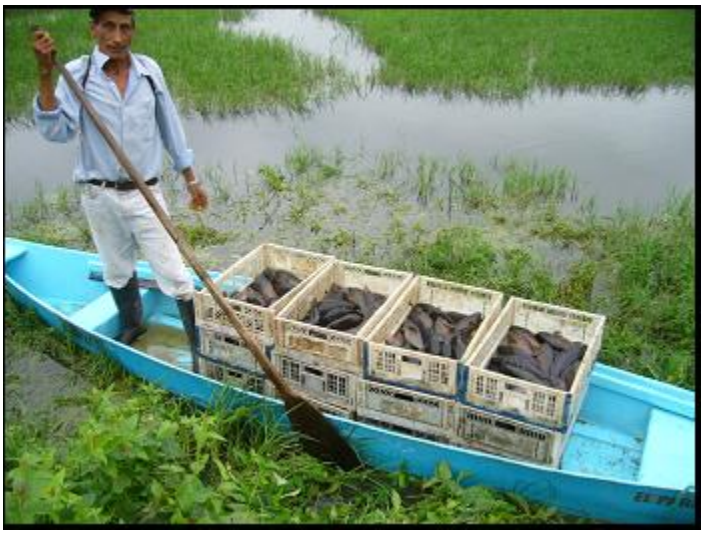
In Nicaragua, the majority of shrimp production takes place legally in protected areas. SUCCESS worked with small scale shrimp farmers to adopt best management practices that can reduce farming impacts on surrounding mangroves and adjacent estuarine water bodies.

Impact story: *Chame* aquaculture in the Cojimies Estuary

In early 2005, EcoCostas began piloting *chame* aquaculture in the Cojimies estuary. The first step was signing an agreement with the Association of El Carmen (later called AsoMache) to jointly promote the cultivation of *chame* in the area. The goal was to promote an economically viable livelihood with low environmental impact. According to the agreement, AsoMache promised to construct the necessary infrastructure and capture, transport, and stock the ponds

with fingerlings. They also agreed to reinvest some of the profits, allowing the enterprises to grow over time. EcoCostas provided technical assistance on monitoring the growth of fish and pond safety.

AsoMache began growing *Chame* in a 2.6 hectare pool near the river Mache, a river with constant flow into the estuary. After stocking the pond with 33,000 fingerlings, the group was diligent about monitoring the fish growth and maintaining the pond. Successful harvests increased the interest in *Chame* cultivation and by the end of 2008, cultivation had expanded to ten additional locations and sixteen new farmers had been added to the group.



AsoMache member with chame harvest (photo credit Rafael Elao).

A 2011 assessment found the association to be well organized with a commission in charge of *chame* cultivation—conducting periodic surveillance, monitoring harvests, and maintaining the ponds. The assessment identified three factors contributing to the sustainability of the AsoMache Association:

1. The short and simple agreement between the association and EcoCostas helped reduce expectations (by stating what materials and supplies would be provided by EcoCostas) and outlined what was expected from AsoMache.
2. Piloting and documenting the process of cultivating and harvesting *chame* in a manual allowed EcoCostas to train new farmers (and avoid past mistakes).
3. During the first three to four years, the EcoCostas extension staff worked closely with the group, advising and assisting in action planning, pond preparation, acquisition, mobilization and stocking of fingerlings, monitoring crop, harvesting and marketing. The association began working on its own only once it was ready to take the lead on its own.

Livelihoods Linked to Natural Resource Management and Biodiversity Conservation

Before people will act as responsible stewards of their natural resources, they must first be able to earn a living. SUCCESS helped 499 individuals living in local communities do just this by introducing them to diversified livelihoods that use natural resources in a more ecologically sustainable way.

In Ecuador, SUCCESS worked with local partners to develop much-needed economic opportunities for communities using approaches that 1) increase the community's capacity to produce, utilize, and market agricultural products, 2) are cost effective, 3) are environmentally sustainable, and 4) encourage the biodiversity needed to keep healthy the ecosystems on which these income generation enterprises depend.

The upper watershed of the Cojimíes estuary, a designated protected area, is biodiversity-rich and comprises significant amounts of primary coastal forests. It is also one of the few remaining areas where *Chame*—a locally cultured and native species of food fish—breeds and where wild fingerlings can be found. However, the estuary's health suffers from human-induced conditions: 1) the collapse of lagoonal shell fisheries and, 2) the exploitation of coastal timber resources from excessive cutting and the resultant sedimentation that changes the estuary's hydrology, pulsing, and water quality. SUCCESS worked to reverse this situation. It assisted shrimp producers to adopt a code of practice to reduce impacts on estuarine water quality, suspected as a major cause of the decline of the wild shellfishery. It also introduced eco-friendly and diversified livelihoods such as culture of the *Chame*, home gardening, beekeeping/honey production and ecotourism. It worked with local communities to create a long term vision for their place—one that conserves the estuary's remaining resources and biodiversity, restores what is possible, and ensures the Cojimies provides food, income and biodiversity today and into the future.

In Nicaragua, the communities in the Padre Ramos Estuary—a designated natural reserve—rely heavily on fishing and cockle collection. However, restrictions on harvests negatively impacted their ability to earn a livable income from this activity. Meanwhile, the site had several under-exploited economic opportunities that could relieve pressure on the estuarine resources and thus the biodiversity of the estuary. Combined with improving current management practices of the cockle fisheries, SUCCESS introduced best management practices among existing shrimp farmers in the protected area as a way to reduce environmental impacts as well as improve business profitability, and introduced ecotourism, and other alternative income-generating enterprises such as bread-making.

Reflections from the Field: The Rosita aquaculture farm which was a family operated 'collective' has continued activities and has been incrementally expanding. They now have three tourism guides, are providing services more regularly and also they have been protected by state institutions. Initially, they had one pond. With production improvements they have gone from 102 kg/ha, to 909 kg/ha. More employment has been generated in the community. They originally had one permanent employee, now there are 7. *Juan Ramon Bavaro Moreno*

On Zanzibar Tanzania, SUCCESS introduced half-pearl culture as a means of alternative, non-resource extractive enterprise. Extension services trained women in how to implant, monitor, and harvest these half-pearls and then market and sell them unembellished and/or in a value-added form by crafting them into fine jewelry settings such as necklaces, broaches, and other jewelry pieces. This "technical" training was supplemented with training in small business skills ranging from identifying and tapping into markets, to selling techniques, to bookkeeping and financing.

Impact Story: Adding Value to Existing Income Sources Motivates Women in Menai Bay, Zanzibar

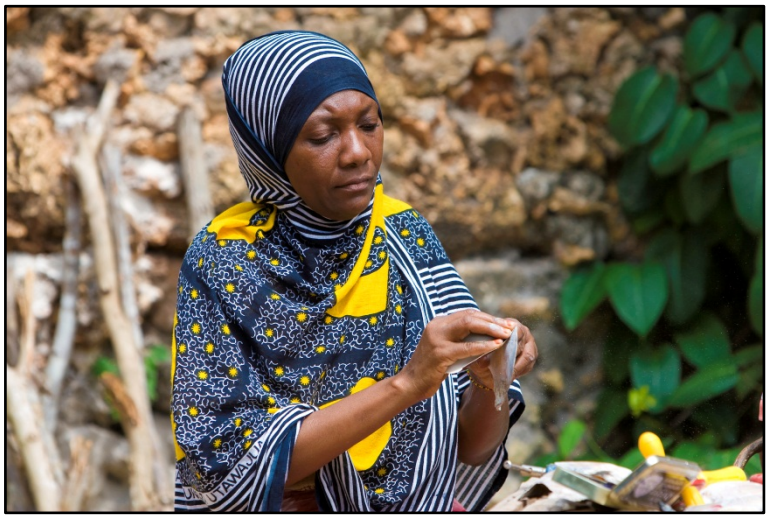
The women of Fumba Peninsula, Zanzibar have always depended on oysters and other bivalves for food and protein. For ages, women have gleaned them from the shallow waters around the

Menai Bay Conservation Area. Over time, however, an open access regime and uncontrolled harvesting have sent stocks into decline. In an effort to rebuild the resource, in 2003, scientists from the Institute of Marine Science (IMS) in Zanzibar town began training women from the coastal villages how to build artisanal impoundment pens on the reef flats, place the bivalves they collected in these pens, and grow them out to a larger size before harvesting. While results were initially mixed and many bivalves died because they needed deeper water to thrive, the women were encouraged by the experiment. It was the first time they had participated in conservation-based enterprise development and their interest was piqued.

Initiative

A technical assistance team from the SUCCESS project comprised of team members from URI-CRC, UHH and IMS worked with the Fumba communities to pilot a new strategy—promoting community-based marine conservation by "adding value" to the Menai Bay natural resources, including pearl oysters.

When not harvested for food, the Bay's black-lip pearl oysters can be used for half-pearl *(mabe)* culture and shellcraft jewelry-making. To be successful in the long-term, it would be necessary to have a stable source of black-lip pearl oysters. This meant there needed to be a community- and ecosystem-based approach to biodiversity conservation. This became the second component of the pilot initiative. Menai Bay stakeholders established four "no-take zones"—areas where no extractive activities are allowed. These no-take zones are co-managed by the communities through an approved management plan and village bylaws.



A cut, polished and finished *mabe* sells for US$10-$40 and a polished shell jewelry piece for US$2-$10, with price determined by the quality and setting of the piece. In a place where few individuals earn more than US$50 per month—and women earn on average US $15-20 dollars per month—producing and selling *mabe* or jewelry pieces could significantly improve income levels. Yet, communities realized they needed to conserve the resources if they were to increase the number of oysters available over the longer term to use in their *mabe* culture and shell jewelry-making.

Results

Research on the impact of combining entrepreneurship and conservation revealed that individuals involved in *mabe* farming and shellcraft jewelry-making have been sufficiently motivated by the successful sales of the product to assume stewardship of the inter-tidal resources. For the women engaged in shellcraft jewelry-making, their earnings have tripled to on

average US$60 per month and during peak sales events, even up to US$70 in one day alone. Two particularly successful women, Bi Rahma (shell jewelry-maker) and Bi Safia (jewelry-maker and half-pearl farmer) are now earning hundreds of dollars every month. The money these women earn goes straight to household needs such as paying for food, electrical bills, and school fees. Some of the women who have been able to save larger amounts from big sales and events have even bought land and started building houses.

Women have been empowered by this approach of combined black-lip pearl and shell jewelry-making and marine conservation efforts. "Before I started making jewelry, I did nothing. I just stayed at home after finishing school" says Ikiwa Abdalla Ali, a shellcraft jewelry-maker. For Ikiwa, it is not just learning about jewelry-making that is important. Equally important, she has learned to be an entrepreneur and gained business skills such as how to add value to her products and how to market and price them. "I've learned how to recognize a customer and how to negotiate a good price." The jewelry-making need not be a full time job. Since it is a high profit undertaking, women can combine it with other income generating activities or household chores. For many women, turning entrepreneur has brought them personal growth. "When we started, I was very shy and would never talk in a group. Now I am confident—I speak with my customers and even educate and train others in jewelry-making," says Ikiwa. Unlike in the past—when only men worked to support the family—today in Tanzania it is not uncommon to find men and women sharing responsibility for earning money. "The money I bring in makes a difference to the family. I support my brothers with school fees. Now, my stature in the family has changed," Ikiwa reflects. That said, some women continue to be culturally inhibited from becoming full-fledged entrepreneurs. While it may be culturally acceptable for women to make shellcraft jewelry, many are reluctant to leave the village to market their products in the main town or in tourist resorts. As a result, some women produce few pieces of jewelry per year (because their sales are low) and others choose to sell their jewelry through the women who are willing to venture outside the villages.

Since 2005, over 200 individuals, of which approximately 90% are women, have been trained in shellcraft jewelry-making. Of these, 37 are active entrepreneurs whose businesses are likely to be sustained and grow. A smaller subset of about 10 women have become para-extension officers, providing training and technical assistance to aspiring entrepreneurs in other coastal communities on Zanzibar and on the mainland. When asked for key messages to share with aspiring entrepreneurs, Ikiwa says "Don't be afraid to take risks, don't be scared, and overcome your shyness!"

Global Leadership – Certification, Knowledge Management, and Learning

SUCCESS worked to develop increased capacity in ICM, as a lack of such capacity continues to be viewed as a key constraint to effective ICM in developing countries[1]. The SUCCESS

[1] See the National Research Council report: *Increasing capacity for coastal stewardship of oceans and coasts: A priority for the 21st Century*. 2008. The National Academies Press, Washington D.C. 141p.

Program sought to pioneer a new approach to capacity building—one that expanded beyond the more traditional model of fragmented and ad hoc coastal management short course offerings. The Program did this by establishing certification programs that codified good practices and set explicit standards that ICM professionals must meet. Based on needs assessments conducted in Latin America and the Western Indian Ocean Region, two certification programs were tailored to the specific features and needs of the two regions. In Latin America, a regional network of coastal management professionals identified a regional need for a certification program focused on ecosystem governance. Key features of the LAC program included: 1) active mentoring systems among peers within and across the regions; 2) building upon locally tailored ICM curricula offered by universities and partners instead of offering one-off short courses; and, 3) increasing in-country extension capabilities on key ICM topics.

The certification initiative in the Western Indian Ocean took a different approach—one that addresses the need to improve marine protected area (MPA) effectiveness through a tailored certification of professionals working at different levels that span policy-making to management and administration of MPAs. The so called Western Indian Ocean Certification of Marine Protected Area Professionals (WIO-COMPAS) Program was designed with three levels, each targeted to those working at different levels of responsibility within an MPA. By the end of the first phase of SUCCESS, WIO-COMPAS had:

- Developed a full program content and administrative framework as a model for replication
- Graduated two classes of level 2 certified MPA professionals and one class of level 1
- Developed a "How To" guide outlining the process for establishing a certification program

SUCCESS also established regional learning networks for effective knowledge management. This was accomplished by sharing information, technical expertise, experience and ideas on priority topics within and between the field sites. SUCCESS facilitated learning between coastal management professionals through regional networks related to mariculture and ecosystem governance in the Western Indian Ocean and Latin America Regions. These networks aimed to improve south-south and north-south cooperation and to encourage field practitioners and applied researchers to better integrate their work. As part of the regional learning activities, the project prepared governance baselines for each of the field sites. The baselines mapped out the recent history of management and the status of the enabling conditions for ICM in the six field sites. Building upon the governance baselines, biodiversity threats assessments were prepared for each SUCCESS country/site as part of a mid-term program review. The assessments identified existing and anticipated direct and indirect threats to biodiversity in each site. They also described local biodiversity conservation efforts that address these threats. The assessments recommended conservation goals and targets, suggested activities to address priority threats, and as necessary, recommended adaptations to the current SUCCESS goals and activities in each site.

SUCCESS applied science to management and good governance by increasing understanding of the relationships between human activities and the condition of coastal environments and resources; and applying methods for monitoring societal and ecosystem change at a range of

spatial scales. Within this component, SUCCESS sought to provide global leadership on priority topics, including climate change and fisheries—topics for which USAID guides were developed starting in the first phase of SUCCESS

The learning strategy also included a cross-site research component. A primary premise of the SUCCESS Program was that tangible benefits to quality of life through a livelihoods approach are a necessary (but not alone sufficient) condition to sustained success of ICM programs. Unfortunately, there is a growing body of anecdotal evidence suggesting many livelihood activities are not increasing household income in coastal communities, or reducing pressure on coastal and marine resources. For this reason, SUCCESS selected this topic as the main theme for a cross-portfolio global learning agenda. Since all three field sites (and the associate award site in Thailand) had significant livelihood components, they provided living laboratories for this learning agenda, and local partners involved in their implementation were clients for the learning outputs. The microenterprises and beneficiaries in Thailand, Tanzania, and Nicaragua were studied with quantitative surveys conducted in 2007 and 2008. The results were written up and published in the Coastal Management Journal.

Summary of Phase 1 Results (2004-2009)

- Approximately 220,000 hectares of marine and terrestrial biologically significant areas under improved management
- Over 14,000 hectares in areas of biological significance showing improved biophysical conditions for selected parameters
- Eleven policies, laws, agreements, or regulations promoting sustainable natural resource management and conservation implemented
- Leveraged over $US 1.6 million in additional funding supporting project activities
- 4,359 persons participating in coastal resources and conservation planning initiatives (45 % women)
- Approximately 500 people with increased economic benefits derived from sustainable natural resource management and conservation (64% women).
- 752 people trained (40% women) from 36 courses implemented on natural resources management
- 87 persons actively participating in web-based regional learning networks
- 38 Publications produced documenting impacts of best practices

YEAR 6-10 SUMMARY

As mentioned in the introduction, the second phase of SUCCESS implemented a number of global and regional leadership initiatives with a focus on completing and sustaining activities that address major issues posed by coastal change and coastal governance at global and regional scales. Focal themes for Phase 2 were MPA certification, climate change adaptation, and learning on livelihoods and fisheries.

The second phase of the SUCCESS Project strived to contribute to USAID strategic goals and priority interests, especially to "Governing Justly and Democratically" (focus on good governance, consensus-building, and civil society), "Investing in People" (focus on issues of health, and education services especially for vulnerable populations), and "Promoting Economic Growth and Prosperity" (focus on the environment and biodiversity conservation). SUCCESS also placed an emphasis on:

Food security by promoting reform in the policy and practice of nearshore fisheries upon which so many coastal communities in developing countries depend, but which unless better managed are in rapid decline as a food source; and by introducing alternative food sources such as low-impact mariculture options—topics covered in the earlier mentioned "*Sustainable Fisheries and Responsible Aquaculture"* guide.

Prosperity by helping identify and share lessons learned about livelihoods strategies that can help reduce poverty in communities—by providing food and income—but through an approach that also sustains and promotes the health of the biodiversity-rich resources upon which this very food and income depends.

Management and conservation of natural resources—by promoting through guidebooks and training on proven best practices, tools and approaches for managing coastal resources within the context of such pressures as those resulting from climate change—approaches that marry short term needs with longer term vision; and through recognition that human quality of life and environmental health are intertwined and it is possible to take actions that consider the needs of both.

Unsound/contradictory/nonexistent policies—by promoting best practices that "support" policies that should be in place, whether those are policies and laws focused on a reformed sustainable fisheries and/or policies that recognize and mainstream considerations of the impacts from climate change.

Local capacity development by finalizing development of a long-term capacity-building strategy for MPA management that certifies professionals meet established standards of competence in skill areas needed for effective MPA management, which is one tool that can contribute to biodiversity conservation.

Inequality by promoting—in its guidebooks, piloting of new and innovative models for capacity building, or its learning approach—the important role of stakeholder involvement, especially of the disenfranchised, including women.

Local and global health crises of HIV/AIDS—by disseminating what has been learned about alternative income-generating activities that acknowledge victims' loss of stamina for energy-demanding jobs. This includes the research that individuals with HIV/AIDS are often "driven" to destructive use of marine/coastal resources by the belief this is the only way to reduce the time required to secure their food or income through more traditional means.

Biodiversity as it is linked to all of the issues above—i.e., people who are physically healthy, who have sufficient income and food, who have a voice in the governance of their place, and who are supported by wise policies are more likely to protect and conserve the biodiversity of their marine/coastal resources.

MPA Pro

The MPA PRO model was first developed and tested in the Western Indian Ocean region through the highly successful Western Indian Ocean Certification of Marine Protected Area Professionals (WIO-COMPAS) Program (http://www.wio-compas.org/). 2012 culminated in implementation of all three certification levels and the convening of a meeting to reflect on lessons with a strategy for the next generation. The focus for the last year was on institutionalizing WIO-COMPAS into national protected area management organizations.

Strategy and outcomes

The aim of WIO-COMPAS was never to certify every MPA staff member in the region because we knew there was a significant capacity gap. Rather it has always been about recognizing the professionals and raising the standards for others to follow. The table below summarizes the number of applicants and final certified MPA PROs to date. Of the 159 applications (impressive for a rigorous voluntary program!) 89 (56 percent) were selected to attend an Assessment Event where 65 (41 percent) achieved certification. Of the 78 candidates selected to attend Assessment Events, 65 (73 percent) achieved certification with four still pending.

Recognizing the effort, cost and reputations associated with certification we allocate significant attention and energy to the application stage. This ensures that candidates have the appropriate background to enable them to score across all competence areas. We are now approaching the stage where most of the leaders at all levels who are proficient across the WIO-COMPAS competence areas have been assessed. This means that most of the remaining 90 percent of staff have not worked long enough to meet the entrance requirements, do not have the broad skills to be a professional, are not interested in applying or simply are not proficient in their job. Our country assessors know of only a few competent individuals who have chosen not to apply. Considering that WIO-COMPAS is a voluntary program that is gaining a strong reputation, there should be opportunities to continue certifying individuals at a steady pace over the coming decade. The focus for WIO-COMPAS can now turn to addressing competency gaps and new methods for building capacity beyond the traditional training course model. What this information reveals is that there is a tremendous need still to improve competencies of the existing MPA staff in the region at all three professional levels.

Summary of Certification Events and Outcomes (as of October 2014)

TOTAL MPA PROs (with percentages of overall staff estimated at that level within the region)			
Total Level 1 36 (8%)	Total Level 2 24 (17%)	Total Level 3 5 (7%)	Total MPA-Pros 65 (10% of total MPA staffing in WIO region)
Estimated number 440	Estimated number 140	Estimated number 70	Total estimated number across all levels 650

Based on the achievements and recognition of WIO-COMPAS, CRC partnered with IUCN WCPA to share the MPA PRO model globally. Significant progress was made in 2013 when CRC was appointed a leading role in the IUCN WCPA Capacity Building Program that is now developing guidelines for a performance assessment and certification program that will be part of a larger comprehensive capacity development system, much like the WIO-COMPAS program is modeling.

Additional funding has been provided by other donors in combination with protected area management organizations to continue the WIO-COMPAS program post SUCCESS support. Certification Assessment Events are continuing across the region and equally valuable is the institutionalization of the model into management organizations. Leading the trend is Kenya Wildlife Service and CapeNature in South Africa. Each organization is making policy and process changes to incorporate competence-based capacity development systems that link to WIO-COMPAS certification.

The MPA PRO model is unique in its focus on proven on-the-job performance as evidence of competence rather than on what is learned in one-off training events. While it offers a combination of professional development, networking, ethics and certification, the focus to date has been on the latter. A key message from the experience is that if management agencies are to adopt the MPA PRO model, then certification cannot stand on its own. It needs to be integrated into agency human resource and management systems and linked to other aspects of capacity development, including training and other professional development initiatives. That said, while the MPA PRO model is helping promote a paradigm shift in traditional capacity development strategies for protected area management, and many natural resource professionals are very interested in the concept, they want to see the impacts of this program before they commit to adopting it. Key lessons include:

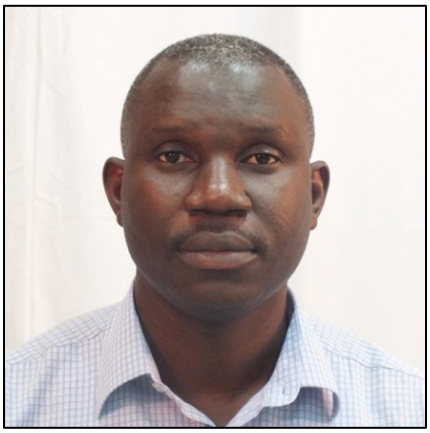
A Key Learning from the MPA-PRO Initiative

….if management agencies are to adopt the MPA PRO model, then certification cannot stand on its own. It needs to be integrated into agency human resource and management systems and linked to other aspects of capacity development, including training and other professional development initiatives.

- Developing capacity and competences must be built into an institution's systems
- Training alone cannot accomplish lasting capability

- Program standards should be rigorous, results measurable, feedback continuous
- Investing in staff competence development will result in a productive and motivated workforce

Impact Story: Arthur Tuda MPA Pro and Assessor



Wildlife-oriented tourism is critical to the economic well-being of Kenya, a nation of 44 million people. Tourism is the second-largest sector of the economy, accounting for 12 percent of Kenya's GDP, the largest in East and Central Africa. That's one reason why it is important for Kenya to have experienced and competent conservation leaders. Arthur Tuda, with more than a decade of experience in marine conservation, is one of those leaders. Tuda, Assistant Director, Coast Conservation Area, Kenya Wildlife Service, is in charge of five marine- protected areas (MPAs) and six terrestrial parks. He oversees a staff of more than 350 people. That sort of responsibility is not given lightly. Tuda has earned it, proving his leadership abilities and job capabilities in part through certification as an MPA PRO (Marine Protected Area-Professional).

Tuda credits his MPA-PRO experience with building his confidence and competency. In 2008, then a site manager, he was the first Kenyan to achieve Level 2 Site Management Certification. "Getting certified was a rewarding experience," he said. "At the end of the assessment I felt humbled and ready to learn more about MPA management." He remained an active leader with MPA-PRO by becoming an assessor. He appraised the capacity of other East African professionals hoping to get certified at Levels 1 and 2. In 2012 he proved his commitment to the value of the program by attaining Level 3 Strategy, Policy and Planning Certification. In early 2013 he was promoted to the assistant directorship he now holds. Today, as Tuda oversees more than 2,500 square kilometers of critical habitat, he uses what he has learned as an MPA-PRO to take on the challenges of managing expansive conservation areas with limited resources and personnel.

Climate Change

For decades, CRC has used an approach to ICM that has anticipated the far-reaching and long-lasting impacts of global climate change on coastal areas. Adaptation measures that draw on the USAID and CRC portfolio of experience and tools—including those of SUCCESS—helped coastal communities prepare for the changes of today and the future. This included measures such as:

- Planning that anticipates sea level rise, including adjusted building codes
- Training in good practices that reduce impacts of climate change and variability
- Encouraging MPA development as refuges and habitat for fish

- Ecosystem-based fisheries management plans that integrate climate change vulnerability assessment and adaptation into the fishery research agenda and sustainable management decision-making process.
- Community-based disaster management planning
- Constructing water tanks and recommending policy to address potable water needs

These measures have built-in, long-term uses that can help coastal communities cope with not just short-term, piecemeal problems, but that form a natural, adaptive and coherent strategy for addressing the chronic and increasing impacts and pressures brought to bear on coastal residents, economies and ecosystems by global climate change.

Strategy and Outcomes

In its second phase, SUCCESS has supported a USAID leadership role in coastal climate change by providing USAID programs and partners with information, tools and techniques to mainstream adaptation to coastal climate change in various facets of their work. The SUCCESS *Adapting to Coastal Climate Change: A Guidebook for Development Planners* published in 2009 helped programmers and practitioners mainstream adaptation strategies into development program designs and government and community coastal development initiatives. In efforts to advance learning and field capacity for adaptation, CRC has worked to mainstream climate change within its coastal programs through SUCCESS Associate Awards and other USAID programs. These include efforts in Ghana, Tanzania, The Gambia, Senegal, the Coral Triangle Initiative and the Indonesia Marine and Climate Support (IMACS). In 2012, the UNDP's Equator Initiative recognized the work of two Community Based organizations supported by CRC under SUCCESS through Equator Prize awards. UNDP case studies on The Namdrik Atoll Local Resources Committee, The Marshall Islands and the TRY Oyster Women's Association, The Gambia acknowledge the contributions of USAID and are shared globally as models for resilient communities' best practices. In the final years of SUCCESS, CRC continued this leadership role, with a greater emphasis on learning across regions to advance appropriate local adaptation, and to develop information and materials geared to a senior policy-maker advocacy strategy. Key initiatives and outcomes of these more recent efforts include:

1. Outreach videos showcasing best practices in climate change adaptation. The four videos condense the lessons learned from CRC's and the SUCCESS Project's work around the world on Climate Change Adaptation. Posted on U-Tube, linked on relevant climate change and coastal planning websites, hyperlinked in published documents posted on-line and referenced in printed outreach materials, the videos make the information accessible to a broad audience in a compelling and user friendly format. The videos have already been viewed a collective total of more than 3950 times.
    a. *Climate Change Adaptation for Tanzania's Coastal Villages*
    b. *Climate Change Adaptation for the Coastal Communities of Ghana's Western Region*
    c. *From Vulnerability Assessment to Adaptation Success*
    d. *The Landowner's Guide to Coastal Protection*

2. Coastal Countries: National Adaptation Planning. SUCCESS supported two workshops in 2013 to help countries reflect on the UNFCCC's national adaptation planning (NAP) process with a focus on development strategies and plans affecting the coast. They were conducted in Tanzania in collaboration with the USAID/Pawni Project and in West Africa for 11 coastal ECOWAS countries in an unprecedented collaboration with ECOWAS, 4 USAID offices (the West Africa Mission, GCC, E3/Water and the Africa Bureau) and the Climate Change Resilient Development (CCRD) Project. Participants emerged with new insights and actionable next steps to more effectively use the NAP process to mainstream climate change adaptation into national development strategies and plans in their countries. Workshop learning was applied immediately in most cases as the participants included UNFCCC National Focal Points and other key national actors who were initiating their NAP processes leading up to the UNFCCC COP 19 in November 2013. To facilitate the application of workshop recommendations, an ECOWAS Policy Brief aimed at the national and regional leadership level was produced based on the West Africa Workshop findings. ECOWAS used the Brief to prepare National Focal Points for COP 20 in December 2014. The U.S. Government has referenced the workshop and the Policy Brief in its official communications to the UNFCCC about U.S. support for the NAP process. Two examples are: the May 5, 2014 Submission by the United States of America on Experience with the Application of the Initial Guidelines for Formulation of National Adaptation Plans; and an August 2014 presentation on USAID Support to National Adaptation Planning Processes at the NAP Expo in Bonn, Germany.
3. Coasts at Risk: An Assessment of Coastal Risks and the Role of Environmental Solutions. This report published and launched in July 2014, was a collaborative effort led by CRC under the SUCCESS Project with The Nature Conservancy (TNC) and The United Nations University Institute for Environment and Human Security. It builds on The World Risk Report (produced by UNU together with partners including TNC). The team of authors for Coasts at Risk finalized a set of indicators including fisheries, mangroves and coral reef vulnerability, food and nutrition, coastal livelihoods, infrastructures and potential impacts from floods, storm surges and rise in sea level that were applied to coastal countries to derive scores for exposure, vulnerability and risk. Coastal countries were then ranked and mapped based on the Coasts at Risk Index. The report and Index contributes to a broader effort to make the compelling case for why coastal countries need to be proactive.

Reflections from the Field: "What's different here is that the evidence isn't limited to a few case studies or examples, however compelling they may be. The new index allows comparison across 139 countries and examines both built and natural capital. When policy makers are seeking solutions to the new and expanded risks that many nations will face in a changing climate, the data presented here will help them to consider improvements to reefs, forests and fisheries alongside breakwaters, dikes, reservoirs, and emergency food aid." *Cool Green Science, The Science Blog of TNC.*

Impact Story: Climate impacts on the management of regional fish stocks

In Senegal, two species of sardines account for more than 70% of artisanal fisheries landings. The USAID/COMFISH Project is supporting stakeholders to develop participatory, ecosystem-based management plans for this fishery. In 2012, the project commissioned a study of the population dynamics of sardinella that included analysis of the sensitivity of the species concerned to the effects of climate change.[2] The purpose of the research was to provide evidence to decision-makers so that they could take climate change adaptation into consideration in the fisheries management planning process.

The study documented the presence of spawning areas close to the coast of Senegal and Mauritania and the annual south to north migration of adults along the Senegal-Mauritania coast during the hot season, following the colder water of the Canary Current upwelling. It also documented that adults greater than 24 cm are not largely found in Senegal while in Mauritania the average size is 32 cm. Quoting from the report, "These studies have also shown that the condition (or weight per individual) is maximum when the upwelling of the year is the most intense, supporting the hypothesis of a Climate Action (through the abundance of food) on the condition factor." Wind plays a major role in the upwelling dynamics with stronger winds driving greater upwelling. Air temperatures affect wind. Coastal air temperatures measured at Saint Louis, Dakar and Zinguinchor show upward trends of 1 – 2 degrees Celsius over the last 50 years. A general decrease in wind speed has also been documented at these meteorological stations from 1951-2004. Sea surface temperatures at these coastal points are also trending upwards since the 1980's and the salinity of coastal seawater is increasing along the Senegal coast. The study notes that, "despite the scarcity of in-depth studies on the Senegalese coastal ecosystems, examples of investigations around the world have revealed that changes in climate, especially warmer waters, cause changes in the distribution of species including a shift of tropical species to temperate waters (Glantz, 1992; Sharp, 2004). Thus, species of the tropics are observed more frequently and in greater numbers in higher latitudes (Houdart (2004). Sardines have a limited range of tolerance to variation in both temperature and salinity, thus variations in temperature and salinity often cause displacement of the species (Freon, 1988)." The authors conclude that "Faced with these multiple environmental hazards, any prospect of integrated fisheries management must reasonably consider the potential effects of hydroclimatic changes in coastal ecosystems."

This finding was shared broadly with stakeholders and was applied immediately and directly in the fisheries management planning process supported by the USAID/COMFISH Project. It enabled more evidence-based and forward looking decision-making for sustainable management of the Sardinella fishery in Senegal and internationally in the Canary Current Large Marine Ecosystem (CCLME) and by the Sub-Regional Fisheries Commission (CSRP). Also, because of the northward shift of the stock, more sardinella is being caught on the North coast of Senegal, especially Saint Louis, by the border with Mauritania. As a result The North coast was added in FY14 to the locations where USAID/COMFISH intervenes in co-management governance

[2] Deme, M.,Thiao, D., Fambaye, N.S., Sarre, A. and H.D. Diadhiou. 2012 Dynamique des Populations de Sardinelles en Afrique du Nord-Ouest : Contraintes Environnementales, Biologiques et Socio Economiques. USAID/COMFISH project, Senegal, University of Rhode Island, Narragansett, RI 125 pp. http://www.crc.uri.edu/download/Sardinella-Rapport_FR_508.pdf

capacity building and management planning and implementation. The Northward shift of sardinella stocks will likely be exacerbated by climate change and has implications for regional management, with less fish available locally to Senegalese fishermen.

Learning on Livelihoods

Building on the experience and lessons learned from the field sites that were included in the first five years of SUCCESS, the objective for years 6-10 was to synthesize the livelihoods knowledge, incorporating where possible the experience from other development projects. The learning team developed a document entitled, *Enterprise Strategies for Coastal and Marine Conservation: A Review of Best Practices and Lessons Learned.* The Review, which was prepared under guidance from an expert advisory group, includes seven case studies from Africa, Latin America, and the Pacific. Two of the case studies (from Zanzibar and Ecuador) stem from conservation-based microenterprise development started during the first phase of the SUCCESS Project. Case studies from Ghana and the Gambia describe conservation-enterprise work related to current Associate Awards. The Enterprise Review was accompanied by a shorter summary document and a two-day training curriculum. The documents and training curriculum aim to assist coastal practitioners and local government officials interested in developing conservation enterprises as a component of broader coastal and fisheries management strategies. The training curriculum was used at several international training workshops in the U.S. and South East Asia. The summary of the lessons and tools and associated training materials were also translated into Indonesian for one training workshop implemented through the USAID/Indonesia IMACS Project.

Strategy and Outcomes

The SUCCESS team used the knowledge gained through the cross-project learning on livelihoods to improve the design and implementation of livelihoods activities that were part of associate awards and other coastal management projects. For example, the team provided more entrepreneurship training and working with individuals connected with sales unions or other cooperatives that allow individual entrepreneurs to collaborate. We learned that when designed to fit the coastal context, micro-finance is often more cost effective and yields higher impacts than traditional livelihoods extension—and as a result, we worked to increase access to microfinance in all of our field projects. Through the SUCCESS associate awards' strategy of broadening livelihood options for households, families have become more resilient, can adjust to parameters placed on a fishery and see the economic benefits of pursuing more sustainable occupations.

Through the enterprise review and associated training modules, the team also disseminated lessons learned to colleagues around the world. Interacting with workshop participants charged with developing coastal livelihoods and conservation enterprises in the Philippines and Malaysia, we found that using the conservation-enterprise training modules—especially in combination with modules related to fisheries management—were effective in helping people think through 1) the appropriateness of different livelihood options, both from a business and conservation perspective, 2) how the livelihood options fit in with overarching coastal/fisheries management objectives, and 3) what it takes in terms of resources and extension support to fully implement a livelihood program. In one of the trainings, we saw participants transformed from being set on

the idea that providing fishing gears is a good livelihood strategy to seeing the longer term negative conservation and economic implications of such an intervention.

Impact Story: Implementing Livelihoods as part of the Senegal COMFISH project

In Senegal there are an estimated 60,000 fishermen, and the small-scale fishery employs directly and indirectly an estimated 600,000 people. There are an estimated 6,623 people in small-scale processing of marine fish, 5,963 are women. Each processing unit employs an average of 5 people for transporting fish, smoking, cleaning, etc. In addition, others are involved in the sale of salt and packaging. So, it is estimated that 40,000 people are in one way or another employed in processing.

The small scale processing sector in Senegal, and no doubt around the world, loses significant revenue due to poor sanitation and hygiene, storage, processing equipment, and processing skills. Underlying reasons (at least in Senegal) are that women are disempowered in fisheries, there is a high level of illiteracy, education levels are low, fisheries institutions pay little attention to women processors, so they receive little training, and much value added is lost by selling to middlemen rather than to wholesale or retail buyers directly.

Holistic actions are needed to fix the situation: organize women into processing cooperatives (or economic interest groups); improve handling and processing to improve product quality; better packaging and labeling; and market the product directly to wholesalers. If the women processors are empowered and organized, they can agree to Codes of Conduct that include not processing immature or juvenile fish or other best practices (e.g. not buying/processing fish that are spawning).

Working with an economic interest group of about 200 women processors in Cayar, Senegal a local group has successfully been leading a range of activities that include:

- Training in women in leadership in fisheries
- Creation of a consensual “Code of Conduct” which includes the good practice of not processing juvenile fish
- Creation of a Cayar label and improved packaging material and storage conditions
- New and improved processing facility and official launch with the Minister of Fisheries attending
- Literacy training
- Development of trade agreements with wholesalers
- Introduce a revolving credit scheme managed by the Economic Interest Group. The scheme was supported with an initial $1 million CFA ($10,000). Repayment has been 100% and fees on borrowing are reinvested into the fund.

Through organization and confidence building the women processors have obtained a voice in the fisheries management dialogue. The women processers now follow a code of conduct and refuse to buy under sized fish—putting pressure on fishermen to follow management rules. The Cayar label and the quality improvement have led to an increase in smoked fish and the price of

smoked fish per kilo has increased from 300 CFA to 1,200 CFA (US$1 = 500 CFA). Contracts were developed with wholesalers inland in Senegal where fish is in high demand, but is undersupplied. This allowed the women to obtain a higher percentage of value added.

Learning on Fisheries

Over the past decade, USAID has increased its investment in sustainable fisheries projects in various parts of the world, driven mainly by increasing concerns about over-fishing and the impacts on economic growth, poverty alleviation, food security and marine biodiversity. Most of the USAID initiatives are focused on tropical, small-scale or artisanal fisheries that have different characteristics than large scale or commercial fisheries in Northern countries. Considerable research and global reviews have been published recently on factors leading to successful management of fisheries systems (e.g. Hilborn 2007, Beddington et al. 2007, Costello et al. 2008, Mora et al. 2009, Worm et al. 2009, Gutierrez et al. 2010). The confluence of USAID increasing interest in sustainable fisheries and the mounting documentation of successful approaches in fisheries management raised the issue of how USAID fisheries projects should be designed and monitored for progress.

Strategy and Outcomes

The SUCCESS project contributed to addressing this programming issue by developing the document entitled: "*Sustainable Fisheries and Responsible Aquaculture: A Guide for USAID Staff and Partners."* This guide was designed to encourage USAID Missions to invest in these sectors as they can contribute significantly to USAID's objectives for food security and economic growth, and there is an emerging body of tools and approaches that can work in small-scale developing country contexts to achieve sustainable fisheries. The guide provided a basis for an online fisheries course designed for USAID staff (by the G-Fish Project) which CRC helped develop, and has been used at several international training courses, including the URI Fisheries Institute and a G-FISH training course for USAID staff. The lessons and approaches incorporated in this guide were also applied in the Associate Awards where fisheries was a major component, including the USAID/Senegal COMFISH Project, the USAID/West Africa BaNafaa Project and the USAID/Ghana Integrated Coastal and Fisheries Governance Project. While not associate awards, CRC has used this synthesis of promising approaches (and lessons learned from SUCCESS Associate Awards) as part of its work a under a grant to assist the Rockefeller Foundation in its development of an Oceans and Fisheries Program as well as in a new generation of mission funded USAID Projects in Ghana (The Sustainable Fisheries Management Project and the Malawi FISH Project.

Impact Story: Fisheries Co-Management in the Gambia

Sole fish is one of the most important commercial species caught year round in Gambian waters by artisanal fishers. They are found in both maritime and brackish riverine waters. The sole fishery in The Gambia occurs along the entire coast of the country and in the River Gambia. Sole is harvested using mainly bottom gill nets. Once harvested, sole is mainly supplied to fish processing plants that transform the catch into value-added products, such as fillets, which are exported primarily to EU markets.

In 2009, at the request of The Gambian Department of Fisheries (DoFish), the CRC-led, USAID-funded, *Ba Nafaa* Project incorporated a component on improving the management of the sole fishery and implementing co-management provisions of the recently amended Fisheries Act and associated regulations. The fisheries legislation of The Gambia (Fisheries Act 2007) provides the legal basis for co-management of artisanal fisheries.

Ba Nafaa built capacity of the department of fisheries to conduct stock assessments, develop and adopt a co-management plan for the sole fishery and set up the co-management structure necessary for a more sustainably managed sole fishery. The project also helped establish the National Sole Fishery Co-management Committee (NASCOM). The Fishery Co-management Plan for The Gambia Sole Complex with a focus on the artisanal fishery was signed on Jan.17, 2012. Enforcement of the 1 nm closed area was implemented in 2013 even before the plan was officially gazetted (given weight of law), which occurred in early 2014. The Co-Management Plan provides NASCOM with exclusive use rights to the sole fishery out to nine nautical miles.

The sole fishery management actions have broad support in The Gambia, and the progress is encouraging. The management plan is in place and stocks are routinely monitored. However, the last stock assessment showed that stocks are still over-exploited and the fishing mortality is greater than both the growth and recruitment overfishing reference points. Too many juveniles are caught, and NASCOM recently approved an increase in the allowed mesh size to address this issue (from 80 mm to 92 mm stretch length). Together with an area closure, scientific opinion suggests this may be sufficient at this time to control the current over-fishing problem. NASCOM has also been discussing a potential managed-access program that would charge access fees to Senegalese fishermen and boats fishing in Gambian waters for sole (there are a significant number of Senegalese fishermen engaged in this fishery in The Gambia), modeled after a similar access fee which Mauritania charges to Senegalese fishermen that are fishing in Mauritanian waters.

The sole fishery management became a multi-species management plan when it was adapted to include catfish, which are considered a “by-catch” in the sole fishery. This revised plan to include catfish (and an increased mesh size) was approved by NASCOM, DoFish and signed by the Minister on Dec. 17, 2013. This action followed an annual plan review meeting in December during which new information was provided to the committee on catfish by-catch issues, including results of a revised stock assessment that indicated overfishing was still occurring and results of several studies on proposed gill net modifications. Catfish is actually caught in similar volume and may be of more value when sold locally and regionally (smoked) than the sole caught in the same nets. Catfish is important to the local and West Africa market and for local food security. Therefore, the evolution of a sole plan into a multi-species plan benefits other fish stocks that are not an important South-North export commodity.

Reflections from the Field: After the project ended, there was the implementation of the management plan, research undertaken, impact assessment on the closure (before and after closure, in May and Nov) and continuous consultation with the Department of Fisheries. By doing our part, we could tell the government to do their part. Meetings of the committee continued and were held monthly. There was sensitization over the radio and TV. People admired this because it has never happened in the Gambia. Scale up was sustained because the message and the importance of our own benefit was stressed. They are doing it voluntary because it interests us and the interest is there to do it. *Dawda Saine*

Kaufland Seafood, based in Germany, recently made a 100,000 Euro commitment to help implement the sole fishery management plan: 50,000 Euros were given to NASCOM to strengthen enforcement capacity (purchase of a patrol boat and engine); while the other 50,000 Euro has been set aside for payment of a formal assessment that may result in certification, once The Gambia is ready to undertake the certification process. Under advisement by MSC, the next step is to conduct a second pre-assessment to determine whether the fishery is ready to enter the formal MSC "fishery in assessment" process. CRC/URI has secured a grant from the Resources Legacy Fund/Sustainable Fisheries Fund to contract with an MSC accredited firm to conduct this pre-assessment scheduled for January 2015.

Summary of Phase 2 Results (2010-2014)

- Provided 3,974 person hours of training (2,558 for men and 1,416 for women) in natural resources management and/or biodiversity conservation. This included 1,252 hours of training in climate change adaptation (908 for men and 344 for women)
- Leveraged US $680,000 for project activities related to MPA certification, climate change and learning
- Developed 31 tools/guides/curricula, of which 14 are related to climate change. The tools include the "*Coasts at Risk*" report, "*Adapting to Coastal Climate Change Guide"* and associated curricula and worksheets, the "*MPA PRO Handbook and Assessor Guide*," *"Sustainable Fisheries and Responsible Aquaculture: A Guide for USAID Staff and Partners",* and the *"Enterprise Strategies for Coastal and Marine Conservation: A Review of Best Practices and Lessons Learned"* and four videos showcasing best practices in climate change adaptation.
- Produced/presented 61 success stories and research papers. This includes featuring SUCCESS at the United Nations Climate Change Conference held in Copenhagen in 2009; at the Global Oceans and Coasts Conference in Paris; at a SUCCESS Harvest Seminar in Washington, DC; in a special issue of the Coastal Management Journal; in the World Conservation Union and WIOMSA publications; and in the final issue of the Basins & Coasts E-newsletter
- Provided 32 technical support interventions on climate change adaptation, conservation-based microenterprise development and MPA certification to organizations in Africa, South East Asia and the Pacific

- Forty eight individuals trained by SUCCESS are now implementing projects or providing training or technical assistance to others on climate change, conservation-based enterprise development or MPA certification
- Twenty seven local universities, government units, and NGOs in Africa, Latin America and the region of the Coral Triangle Initiative (CTI) are incorporating SUCCESS tools into their work
- Sixty one institutions have improved capacity to address climate change issues as a result of the SUCCESS Project

ASSOCIATE AWARDS

The SUCCESS Leader Award generated four Associate Awards (Thailand, Ghana, West Africa/The Gambia, Senegal). An associate activity to help member organizations of the Republic of Marshall Island's Coastal Management Advisory Committee (CMAC) demonstrate a replicable process for linking climate change and biodiversity conservation planning, with application at the national and local scales. The work implemented through the associate awards responded to the programmatic priorities of the funding Mission and the coastal issues of the country/place, while its also furthered the overarching SUCCESS mission and goals and drew upon much of the experience, tools and opportunities first begun or developed under the Leader Award.

Thailand Post-Tsunami Sustainable Coastal Livelihoods Program

(Associate Award: $2 million; March 14, 2005-March 31, 2008)

The tsunami of December 24, 2004 was one of the deadliest natural disasters in history, killing more than 225,000 people in eleven countries. It resulted in billions of dollars in property and infrastructure lost and damaged, and millions of livelihoods disrupted. The USAID Regional Development Mission/Asia responded to the disaster with the creation of the Post-Tsunami Sustainable Coastal Livelihoods (SCL) project.

The project was designed as a field demonstration with a regional lessons learned component conducted with the countries most severely affected: India, Maldives, Indonesia, Thailand and Sri Lanka. The field demonstration targeted five tsunami-affected villages in Ranong Province. Located within Laem Son National Park, these villages at that time had a population of approximately 5,000 and are primarily dependent on fishing and agriculture for their livelihoods. Both the field demonstration and regional exchange were grounded on the tenet of building back better through a holistic approach to community resilience. The holistic approach involved an inclusive and on-going process with communities and local authorities to strengthen ecosystem stewardship, local leadership and social capital, livelihood development, and disaster preparedness.

The project's major accomplishments were in the areas of capacity building, microfinance and livelihood development, community based disaster risk reduction, regional exchange and lesson drawing, and the construction and operational development of the Kamphuan Community Learning Center. The Center survives the project as a demonstration of green technology, as well as a venue for training, education, meetings and community activities related to community resilience to future natural disasters, livelihoods, microfinance, and computer technologies. A tsunami museum and innovative informational kiosk with inspirational first-hand survivor stories was installed at the Learning Center.

Key results included:

- 235 businesses restarted and 44 new businesses created
- Over $250,000 in loans dispersed to 367 small-scale enterprises
- 904 small business operators receive training

- 82 buildings repaired and 21 rebuilt
- Over 1,400 persons trained in disaster preparedness
- 36 agencies received technical support and capacity development assistance
- Thousands of community members gained heightened environmental awareness

The work in village banking demonstrated that community-owned savings and credit mechanisms can be a successful and important element to post-disaster recovery in rural communities in southern Thailand. The five village banks created by the project helped to restart 235 family livelihoods and create dozens of new livelihoods. The microfinance project element is also one of the demonstrations of sustainability. One of the village banks was converted to a Cooperative Savings and Loan institution under the Cooperative Union League of Thailand. This Cooperative holds its office at the Learning Center. Trust in local leadership in village banking were key factors of success.

Reflections from the Field: "I continue to be impressed with the value of the experiences we brought away. I learned lessons from my experiences that I continue to share with those in other regions of the world. For example, the ready acceptance of the Buddy System in the villages is now being presented as a readily-adaptable component to tsunami readiness for any community. The experience in Ranong is being used as an example by the COMET Program (a U.S. and international university education and outreach effort). From my perspective, the work executed has produced some of the best prepared communities anywhere in the Indian Ocean region. I am constantly lauding the accomplishments of the program to any and all who will listen." *Walter Dudley, tsunami education and outreach expert, University of Hawaii at Hilo*

The regional lessons learned component included a Study Tour and Exchange Program (STEP) designed to identify effective post-tsunami practices with the potential for transfer between countries. Five study tours were organized in Thailand, Indonesia and the Maldives. Afterwards, participants from India, Sri Lanka, Maldives and Indonesia (Banda Aceh) were provided with small grants to help them replicate and promote the best practices learned in their own communities.

Another element of the regional lessons learned program was the design and execution of two regional workshops that brought together tsunami rehabilitation and coastal management professionals to discuss lessons learned and best practices.

Impact story: Microfinance for Resilience in Thailand

The tsunami of December 2004 devastated Thailand's entire Andaman coast. A total of 392 villages and some 54,500 people were affected by the tsunami, with more than 5,000 deaths recorded and many others missing. The disaster devastated the local economy by crushing fishing boats, along with engines and gear. Destroyed too were homes, public buildings, and coastal infrastructure, including roads and bridges. The tsunami had its greatest impacts on rural

coastal communities, many of which were already poor and economically vulnerable with few livelihood options. Recovery is especially difficult because many of those that survived lost the ability to practice their livelihoods.

The USAID Regional Development Mission/Asia responded with the Post-Tsunami Sustainable Coastal Livelihoods (SCL) demonstration project in five villages in the Province of Ranong. The project helped coastal communities of Southern Thailand rehabilitate livelihoods, become more resilient to future natural disasters, and adopt livelihood practices that used natural resources more sustainably. Instead of just building back the way it was, the project strived to build it back better.

In September 2005 the SCL Program established micro-finance revolving funds in five communities to provide capital for community members to restart and diversify their livelihoods. Each village established 10 groups consisting of five members in each group. Each solidarity group consisted of individuals of the same occupational category. Each member of the solidarity group guaranteed the repayment of all members and each was represented on the village lending committee. Membership in the microfinance groups was voluntary and all members received training in: business planning, accounting, marketing, and entrepreneurship.

Under the terms of the revolving fund, low-interest loans were released to tsunami affected micro-entrepreneurs. As loans were repaid, more capital became available for additional micro-enterprises to borrow from, ensuring the availability of loans to a larger number of tsunami affected families. All of the villages maintained an emergency fund for any individual in need. The funds provided between 3,000 to 10,000 Baht (about $923-$3,100). Some villages charged a fee for using the emergency fund.

The SCL program's microfinance initiative provided loans to 416 families. By the end of the project, loans worth 7.8 million baht ($~240,000 USD) had been released to restart and diversify livelihoods. As these are Muslim communities, rather than "interest," Islamic banking principles were used. Members contributed a small amount as a fee. In most villages, the fee was 300 Baht per 10,000 Baht borrowed

The Integrated Coastal and Fisheries Governance Initiative in Ghana

(Associate Award: $10 million; September 15, 2009-January 13, 2014)

The Integrated Coastal and Fisheries Governance (ICFG) Program in the Western Region of Ghana was aimed at supporting the government of Ghana in achieving its development objectives of poverty reduction, food security, sustainable fisheries management and biodiversity conservation. It began in September 2009 and officially closed on January 14, 2014 after a 4 month no-cost extension. The ICFG Program was largely funded through Feed the Future along with a portion of biodiversity conservation funding. ICFG's central objective was to assemble the necessary pre-conditions for a fresh approach to a formally constituted coastal and fisheries governance program that could serve as a model for Ghana, initially focusing on the Western Region coast.

During the first 18 months, coastal and fisheries issues were profiled at the regional and local levels, focusing on 5 of the 6 coastal districts in the Western Region, as well as at the national level in terms of fisheries and coastal governance. The primary concerns included:

- Overfishing and food insecurity
- Competition among the fleets
- Ineffective enforcement
- Climate Change
- Loss in environmental goods and services
- Threats to coastal biodiversity
- Expanding population
- Oil and Gas development
- Weak ecosystem governance
- Dysfunctional nested systems of governance

These issues set the path for the subsequent three years of project activities which were categorized into the five components as follows:

- Develop and formalize a nested governance system for the coastal zone including coastal and fisheries resources
- Improve governance of the landscape
- Improve governance of the seascape
- Capacity building of stakeholders
- Monitoring and evaluation

Within the Western Region, the ICFG emphasized work in in three smaller bio-geographic units: Shama District, Greater Cape Three Points within Ahanta West, and Greater Amanzule wetlands, shared by Jomoro and Ellembelle districts. The focal area concept identified priorities for both biodiversity and food security as well as for developing models for integrated coastal zone planning, improved social conditions and livelihoods of the coastal population. The concept demonstrated the ecosystem approach to coastal resources management based on the differences and similarities of coastal issues in the focal districts within areas small enough so that a concentrated effort could succeed in advancing ICFG goals. Accomplishments in the three focal areas broadly covered:

- Improved capacity and commitment for fresh approaches to managing coastal landscapes.
- Strengthened capacity of district planners and their respective assemblies to address land use issues and steer the development process towards desired outcomes.
- Improved capacity and ability to engage in cross-district coordination and learning.

Another important output of this effort was the first of its kind in the country Integrated Coastal Management Toolkit – a compendia of information products packaged for five of the coastal districts that can be mainstreamed into existing district plans.

During the ICFG, 1,225 individuals received short term training and 20 received long term training, 163 persons were trained in child health and nutrition and at least 588 individuals from producer and community based organizations received USG assistance. At least 79 institutions were strengthened, 51 public-private partnerships were forged and 48 community-based and producer organizations received USG assistance.

Seven (7) climate change adaptive capacity and vulnerability assessments were completed (four District reports plus two village assessments within Ahanta West district). Shama district moved ahead the most quickly to incorporate hazards and adaptation planning into bylaws as well as Medium Term and Spatial Development Plans. A total of 33,720 Ha of areas of biological significance were put under improved management as a result of USG assistance.

The implementation of the ICFG Initiative generated over 80 publications available at the CRC website: http://www.crc.uri.edu/projects_page/the-integrated-coastal-and-fisheries-governance-icfg-initiative-for-the-western-region-of-ghana/ The flagship radio drama serial nicknamed ‘‘Biribireba” aired on 3 radio stations in coastal western Region, reached over 500,000 people in fishing communities.

The mid-term evaluation of the ICFG Initiative conducted in 2012 made specific recommendations that were carried out in the final year including fisheries and coastal governance proposals.

The first of these, ‘Solving the Fisheries Crises in Ghana: A Proposal for a Fresh Approach to Collaborative Fisheries Management’ served as a basis for USAID/Ghana’s $24 million follow-up investment, the “Sustainable Fisheries Management Project” announced in June, 2014, which was designed to be highly complementary to the ongoing World Bank funded West Africa Regional Fisheries Program (WARFP). Other follow-up investments include the USAID funded US Forest Service (Coastal Sustainable Landscape Program) and a strengthening program for the University of Cape Coast Department of Fisheries and Aquatic Sciences and its Center for Coastal Management.

The second proposal, ‘Joint Development Planning Area (JDPA)’ to carry out ICM in the Western Region was completed, and received broad based support. The proposal derives from the authority of the existing National Development Planning Commission (NDPC) and Local Government laws of Ghana and is widely accepted and supported by stakeholders. The JDPA represents an important step forward in activating existing law that authorizes joint planning, however the ICFG’s proposal remain compatible with an incremental approach to improving inter-regional governance. The initial idea is to carry out joint development planning and management under a mandate that embraces fisheries and coastal management in the frontline districts that are directly impacted by the emerging oil and gas sector. However, in the waning days of the ICFG, it encountered a setback whereby top leaders of the Western Regional Administration chose not to endorse the Memorandum of Understanding (MoU) accompanying the proposal.

Gambia-Senegal Sustainable Fisheries Project

(Associate Award: $3.4 million; May 1, 2009 – April 30, 2014)

This project, locally known as USAID/BaNafaa, developed and promoted models of fisheries co-management in the West African region especially through examples developed in The Gambia. In January 2012, two fisheries co-management plans were approved. Thereafter, the project focused on strengthening the capacity of co-management institutions and the Department of Fisheries to implement and achieve the plans' biological, economic, social and ecological objectives. The project ended on April 30, 2014.

Key achievements of the Ba Nafaa project include:

Two participatory eco-system-based fisheries co-management plans approved, gazetted and implemented: the Fishery Co-Management Plan for the Gambia Sole Complex along the entire Atlantic coast of The Gambia out to 9 nautical miles and the Cockle and Oyster Fishery Co-Management Plan for the Tanbi Wetlands National Park. Exclusive use rights to these fisheries in these areas were granted by the Government of The Gambia to fisheries co-management institutions; The National Sole Co-Management Committee (NASCOM) for the sole fishery and the TRY Oyster Women's Association (TRY) for the oyster and cockle fishery in the Tanbi. **This is the first case in Sub-Saharan Africa of a women's association being granted exclusive use fisheries rights by a national government.** As a result of the two co-management plans, over 127,500 hectares in areas of biological significance came under improved natural resource management.

> **Reflections from the Field:** The local communities have an improved understanding of the biology of oyster production, how to increase yield and income and the risks of poor techniques to their livelihoods and the ecosystem. They understand that forming an association gives them power to negotiate with policy makers/decision makers. Women are aware of their rights and of the impact of their activity on the environment. They are familiar with banking transactions and are financially literate. Appreciating the value that oyster harvesting brings, the families are now empowered to police the mangroves against illegal use and abuse. *Fatou Jana, TRY Oyster Association*

Adaptive Management: Fostering an adaptive management approach, the project supported research, review, and stakeholder meetings that improved management decision making. For example, two years after the Sole Co-Management Plan was approved, new research findings inspired amending the plan to add marine catfish and increase the minimum allowable mesh size.

Capacity development of co-management institutions and individuals: More than 1,962 people were trained in natural resources management, biodiversity conservation and climate change. The project also contributed to 1,330 people with increased economic benefits derived from sustainable natural resources management and conservation.

Reflection from the Field: Personally, my capacity was developed very quickly. The training at URI helped me a lot—that is why I was able to handle this project professionally. It was so intense it helped me a lot. I had never had that kind of capacity development. I had training in internationally accepted and applied standards at URI. It gave me courage. I can use those tools anywhere I go because they are internationally known. There are broader partnerships, links with MSC and link with retailers. Publications also helped. *Dawda Saine*

Private sector engagement: German retailer Kaufland conducted a consumer campaign and donated 100,000 Euros to NASCOM for activities to support management of the Gambian sole fishery at a standard that will meet Marine Stewardship Council (MSC) certification requirements.

Improvements in water and sanitation: The project improved access to sanitation and water facilities for 23,175 and 11,663 people respectively at 6 fisheries landing/oyster harvesting sites. Eight community WASH committees were established and trained to promote sanitation and hygiene behavior change and to sustainably manage WASH activities through WASH management plans based on banning open defecation and collecting user fees.

A Gambia National Shellfish Sanitation Plan (GNSSP) was developed, including mapping of water quality zones based on three years of water quality data and shoreline sanitation surveys at more than 15 shellfish harvesting sites. Finalizing and implementing a GNSSP would make The Gambia second to only one other country in Sub-Saharan Africa that has such a plan – South Africa. It can serve as a point of reference and an important case study for developing countries striving to sustainably manage their shellfisheries by improving the quality and the value of their product.

Participatory engagement in transboundary fisheries management issues: Two consecutive Annual Bi-lateral (Gambia-Senegal) Sustainable Fisheries Co-management Meetings were conducted in 2012 and 2013. A Comparative Cost Study of the Sole Fishery (Gambia-Senegal) and initiation of a joint transboundary oyster and cockle co-management planning process in the shared Allahein River estuary (southern Gambia border with southern Senegal) are examples of transboundary issues that the project began to address.

Demand from fishing communities for expansion of participatory, ecosystem-based co-management. More than nine additional oyster and cockle harvesting communities in The Gambia River estuary have requested to be members of TRY and to participate in shellfish management planning processes modeled after the Tanbi communities' work.

At the USAID/BaNafaa Project close-out workshop in March 2014, Eliman Sarr, President of NASCOM shared feedback from fishermen in Barra on the north bank of the mouth of the Gambia River, where the closed area designated under the Sole Co-Management Plan does not reach. They have seen the size of lobsters and other fish harvested this year after the 6 months 1 nautical mile closed area was implemented and enforced. They too want to have their area included in the closure and implement the other management measures in the plan. This feedback demonstrates the value of the ecosystem approach, as the measures implemented for

the sole fishery are perceived by fisherfolk to have visible, positive impact on a range of species of value and on the ecosystem as a whole.

Collaborative Management for a Sustainable Fisheries Future in Senegal (COMFISH)

(Associate Award - 11.5 million; February 14, 2011 – September 30, 2016)

The USAID/COMFISH project supports the Ministry of Fisheries and Marine Affairs through its various Departments, but in particular the Department of Marine Fisheries to implement the National Fisheries Sectoral Policy Letter (Lettre Politique Sectorial - LPS) that gives policy guidance for achieving sustainable management of marine fisheries.

The primary strategy in support of the LPS is to develop plans for the participatory and ecosystem-based management of targeted priority stocks using Local Artisanal Fishing Councils (CLPA) as the co-management entry point. CLPAs are the main local fishery management and governance bodies as defined by the 1998 Fishing Code. Inclusive and participatory processes, and capacity building are key elements in the development of management plans with stakeholders and partners.

The USAID/COMFISH overall is designed to ensure that fisheries in Senegal are no longer over-exploited in the long-term, that marine biodiversity is conserved, that resilience to climate change is improved, and that the social and economic well-being of the fishing sector is enhanced. As this project progressed, the importance of climate change impacts on marine fisheries and shore infrastructure at landing sites became increasingly evident. Activities related to climate change adaptation are included in all project components:

- Institutional and stakeholder capacity strengthened at all levels to implement sustainable fisheries taking into account climate change impacts in the fisheries sector
- Governance strategies, policies and best practices identified, tested and applied for sustainable fisheries and conservation taking into account climate change impacts
- Vulnerability assessed and national/local institutional capacity strengthened to adapt to the impacts of climate variability and change
- IR4: Increased climate change resilience from enhanced social and economic benefits to artisanal fishing communities

Key achievements of the USAID/COMFISH project to date include:

Capacity developed in nine key CLPAs. COMFISH works with partners and stakeholders in 9 CLPAs that cover the entire coast where there are important landing sites of the priority species selected for management planning. Most of the CLPAs were not fully functional, so many meetings and trainings have been hosted to form operational committees, define roles and responsibilities, train leaders on facilitation methods, and identify sustainable sources of funding. As a result, the CLPAs are better structured and revitalized to organize meetings between their members and serve as forums where local stakeholders discuss and reflect on sustainable fisheries management problems in these zones. These frameworks for dialogue and consultation

among stakeholders were used to advance Local Agreements (Convention Local, in French), and develop a sardinella management plan, promote good practices, and strengthen CLPA governance structures. Thousands of people have participated in these dialogues. The number of people that have benefited from training is currently 3,357.

Seven Local Agreements approved, 2 others in development. CLPA Local Agreements define the status of marine fisheries overall, and management goals, and actions. They have force of law once they are approved by the CLPA leadership and Divisional and sub-Divisional authorities. Seven Local Agreements have been approved and are being implemented, and two others will soon be completed.

The Local Agreement process involves signing Memoranda of Understanding with the CLPAs, identifying stakeholders, organizing focus groups to set rules of access to fisheries resources, and then developing and getting validation and formal approval for the Agreements from the competent authorities. The project organized many training and outreach sessions during the capacity building of CLPAs, and development of Local Agreements and sardinella management plan, and also demonstrated good practices to encourage them to adopt responsible behavior for improved management of fisheries. In addition, members of the Coordination and Advisory Bodies (ICC) have been trained and Committees established for them to effectively implement the Local Agreements.

> **Reflections from the Field:** Thanks to the project, the CLPAs (local councils for artisanal fisheries) now have functional bodies and are equipped with an office and computers. Besides, a code of conduct governing fisheries activities is also now in place – consensual local measures approved by relevant administrative authorities. *Frédéric Bambara, COMFISH project*

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

Improved capacity and coordination among key fisheries research institutions: The project provided support to help strengthen the fisheries data collection and analysis systems at 5 national University and government research institutions. Five students received their Master's degree in fisheries with COMFISH support, with theses in support of research linked to data collection and analysis for improved fisheries management.

Empowerment of women in the fisheries sector: To give women stronger ability to protect their interests and have a voice in decision-making in the fisheries sector, a strategy and a plan of action for the empowerment of women were developed, which was submitted and endorsed by DPM and other partners.

In Cayar, the project with a local NGO initiated a training program on leadership (with DPM's gender unit), literacy, computer skills, fish product hygiene and quality, smoking and drying, packaging, labeling, and marketing with a women's sardinella processing group of about 200 members. Action plans were designed after each training exercise. Synergies were built with other donors, projects and programs to implement these action plans. A modern artisanal processing facility was completed and a Code of Conduct for processing was developed and approved by the group. The Code of Conduct includes the agreement not to purchase and process juvenile fish. Also, a revolving credit scheme was introduced and to date has experienced a 100% payback rate.

Innovative approaches for strengthening women's ability to participate were applied. They include educational tools like singing and dance, and images and documents in Wolof language to help them understand the presentations given by consultants and to create a friendly atmosphere for women to engage in discussions.

Fisheries research and extension strategy formulation: Senegal's experience in fisheries extension was reviewed, a study tour to the U.S. was supported, and this was followed by the preparation of a strategy for collaboration among fisheries and research institutions to strengthen extension in marine fisheries in Senegal. A national workshop will be hosted to review and validate the strategy.

Local knowledge and scientific knowledge to inform fisheries management. To inform management plans on these species, biological, ecological and socio-economic knowledge was produced on both species using a collaborative approach among multiple research institutions and stakeholders for collecting, sharing and communicating scientific information. Reports, GIS data bases, and maps improved understanding of:

- Population dynamics and key environmental factors influencing population dynamics
- Space and time variability of the resource in the West African coastal environment
- Stock distribution and fishing areas
- Fishing capacity and fishing stocks' biological status
- Socio-economics of the fisheries
- Fishing effort and landings from Senegalese boats fishing outside Senegalese waters

In addition, a new software and approach for stock assessment was developed in partnership with the University of British Columbia entitled "ELEFAN in C." It was tested and applied to sardinella, grouper, and shad to inform management of these species.

Illegal, Undeclared and Unregulated (IUU) fishing. An assessment of foreign IUU on marine resources provided estimates of the resulting economic loss to the artisanal fisheries in Senegal. The study was followed by establishing a formal Technical Committee (TC) of experts in 2013 representing various interested government agencies, industries, and stockholders. Through a series of efforts by the TC, supported by USAID/COMFISH, the Direction of Fisheries Surveillance (DPSP) in the Ministry of Fisheries prepared and validated the national strategic plan entitled "Strategy to fight IUU in Senegal" followed by a 5-year action plan. The action plan went into effect in early 2014 by the DPSP in coordination with others Ministries, the National Navy, Air Force, Department of Customs, and the major fishing organizations.

Participatory eco-system-based fisheries co-management plans. At the beginning of the project, meetings were held in key CLPAs and a national workshop was convened in July 2011 to discuss and select priority fish stocks for the project to focus on. The meetings and workshop determined priority species based on the economic and social importance of the fishery for the local and national economy. Sardinella and Shad (spp. ethlamose, and locally termed Bonga or Cobo) were selected. The habitat of shad is along the coasts and in brackish water of coastal lagoons and rivers. It is very important in West African coastal and lagoon fishing communities and it is an important food source in West and Central Africa. It is usually processed by drying with smoke. Sardinella is the most important marine fish stock in Senegal in terms of landings, smoke-dried processing and food security. It is a species that is low in the food chain (feeds on phytoplankton that are abundant from the cold water upwelling system of the Canary Current). Sardinella is an important forage species for high value species (e.g. tuna and swordfish) and is thus critical to the marine ecosystem food balance.

Reflections from the Field: Through the various awareness-raising activities conducted by USAID/COMFISH Project in conjunction with FENAGIE, targeted fishing communities are better informed on management measures that need to be taken. As a result, the fisheries actors have developed their own management rules through the local agreements which are easier to implement by local councils for artisanal fisheries than the rules and measures set out in the fisheries code. They feel they are listened to and supported in their efforts to eliminate bad fishing practices and implement measures for sustainable fisheries. *Frédéric Bambara, COMFISH project*

Fisheries management planning for sardinella was launched in 2012 in parallel with the formulation of Local Agreements and building on the local and scientific knowledge that had been collected and validated. The process involves a series of consultations, modifications, and approvals with three geographically clustered groups of the 9 CLPAs. The plans, approved by the CLPAs were presented and approved by a Technical Working Group of the Department of Marine Fisheries in August 2014. The documents will then be transmitted for approval to the National Committee on Small Pelagics, and then to the Minister of Fisheries for signature. The effort to elaborate on a participatory management plan for shad was launched in the Sine Saloum estuarine region through coordination and outreach with key stakeholders and leaders in this fishery.

Good fishing practices: Meetings and workshops on good fishing practices were held in several of the largest landing sites. The goal was to encourage exchange of innovative ideas among fisheries stakeholders and, by doing so, encourage ethical behavior in fishery resource harvesting and management. A selection process on good practices was implemented and the best two rewarded.

Biodiversity conservation: Activities were undertaken to support the action plan of the National Strategy on MPAs. They include the placement of buoys to mark MPA boundaries, assistance in promoting eco-tourism and, support to establish information desks.

Climate change vulnerability assessment and adaptation. A national, governmental collaboration body to discuss mainstreaming climate change adaptation in fisheries and marine policy and to prepare a plan of action that addresses better mainstreaming climate change in fisheries decision making was established.

At the local level, 3 vulnerability assessments and adaptation plans were prepared. They are in the implementation phase. To facilitate the assessments and adaptation plans, mapping of land use, infrastructure, and land cover was conducted.

Climate change training and awareness continues. Forty-six workshops were organized with 1,233 stakeholders participating. Community radio programs also engage listeners on topics of fisheries, climate change impacts and climate change adaptation.

Improved value chain for sardinella: processing, packaging, and marketing. In 2011, the USAID/COMFISH project started working with a women fish processing group in the landing site of Cayar to pioneer eco-friendly fish processing methods and boost their incomes. A new, modern fish smoking/drying facility was constructed and formally launched in April 2014. The Minister of Fisheries and the Director of USAID/Senegal were the guests of honor. The improved practices, higher quality products, and improved packaging and marketing led to more than a 2 fold increase in product price per kilo.

In eight other fish processing locations, charters, comprised of a set of rules, have been formulated with stakeholders on fish processing fish processing hygiene and cleanliness, product quality and sustainable fisheries.

Integrating Coastal Adaptation to Climate Change into Community-Based Management Plans: A pilot project to apply methodology and techniques in the Republic of the Marshall Islands

(Associate Add-on Activity US $ 83,217, implemented between 2008 and 2012)

The RMI pilot project was implemented to test and validate the concepts and practices laid out in the Coastal Climate Change Adaptation Guidebook. The goal of the pilot was to demonstrate the utility of the guidebook by working with the RMI to identify vulnerabilities to climatic and other stressors, identify adaptation options and prepare an implementation plan. The Department of State's Bureau of East Asian and Pacific Affairs provided funding for the activity.

The RMI pilot project aimed to mainstream adaptation through a national entry point (Reimaanlok, the National Conservation Strategy, which means "looking to the future, together" in Marshallese), with its direct application at the local atoll level where it is implemented. SUCCESS Program efforts in the RMI introduced climate change and coastal adaptation concepts to the CMAC (interagency and nongovernmental organization council) as a tool to complement community-based resource management planning. As a result of SUCCESS efforts, a climate change lens was adopted into the Reimaanlok process. Climate mainstreaming was first exercised on the Namdrik atoll in September 2009, where it became apparent that the community is suffering from coastal erosion partly due to climate change impacts. This is of great concern to

the community and resource managers. As part of the Reimaanlok process, the CMAC determined that it was critical to include adaptation to shoreline erosion within its management strategy to protect the community's natural resources and infrastructure. SUCCESS supported CMAC as it conducted community consultations to help Namdrik address erosion problems that will likely be exacerbated by accelerated sea level rise and increased storms. The result was an assessment of erosion issues and a set of options to address these concerns, so that community and CMAC begin to leverage implementation through various conduits (e.g., the Pacific Island GEF adaptation grant program).

In addition, the team defined a methodology that can be used by CMAC and other practitioners facing the increasing challenges of climate-induced erosion. This complements the Coastal Guidebook's adaptation measures and provides the basis for the first detailed "how to" guidance. The end results was a Facilitator's Guide for Community Based Management (Reimaanlok), a series of shoreline protection technical briefs, printed for distribution within the region, and a lessons learned video.

The shoreline protection technical briefs provide landowners and resource managers with important information on different shoreline management/protection techniques, and the relative costs and benefits associated with each. Resource managers can use this information to assist communities and land owners in deciding potential options to explore given current problems and the potential for increased problems that will result from future climate change conditions. A summary matrix of alternatives and their relative costs, benefits, impacts and the conditions under which each alternative is most appropriate will help decision-makers as they select options.

LESSONS LEARNED

As is the case for most projects and programs, not all SUCCESS activities were as successful as hoped. That said, they all started from broad based hypotheses, concepts and ideas and evolved into increasingly refined approaches. This process of evolution generated a vast amount of important learning—learning, which if disseminated and adopted more broadly, can have a meaningful impact on ICM initiatives worldwide. This type of global, learning-based approach promotes creativity; accepts the value in a certain level of strategic risk; and accepts failure—all as part of a process of adaptive management. The SUCCESS Program, with the support of USAID and the commitment of Program partners, had the advantage of practicing this learning-based, adaptive approach—an opportunity not shared by all development assistance programs.

Phase 1 Lessons Learned

The SUCCESS Program's first five years includes a number of lessons learned. This phase reinforced long-held and widely recognized lessons such as the need for stakeholder participation at all stages of development work; the importance of commitment from decision-makers at all scales from local to national level; that coastal governance only works if you have the enabling conditions in place, including the capacity to implement, and the reality that the goal of seeking the health of natural resources (environment) must be balanced with the goal of improving people's social and economic quality of life. Lessons learned during this first phase of SUCCESS, however, go beyond these to include new thinking on the difficult realities of making small scale livelihoods enterprises prove to be profitable and sustainable; on the challenges of "translating" the thinking and knowledge about climate change impacts into prompt action on the ground, articulated in concrete ways that help communities not only to mitigate those impacts, but rather to build their resilience to deal with them in the long-term; and on the cost of research and development of a new model for capacity building. Lessons from the first five years of SUCCESS are:

- The good practices of planning as well as the cross-section of coastal management measures, apply equally to climate change as they do to other coastal issues. However, some new and important considerations that enter into planning on climate change is emphasizing nature-based coastal protection strategies and measures; acknowledging that issues of uncertainty are more pronounced; taking a longer planning horizon; and including opportunities to mitigate the sources of climate change with adaptation measures into the decision-making equation.

- Aquaculture research and development can be a useful tool or strategy for resource management initiatives and provide tangible positive outcomes, including increased stakeholder participation and cooperation, offering alternatives to resource extraction and use in otherwise difficult or intransigent resource management conflicts. However, when considering aquaculture as an activity to include in coastal management or NRM programs, caution should be exercised to assess both its feasibility and potential impacts. Clearly little is gained if aquaculture causes greater impacts than those practitioners wish to avoid. Trade-offs need to be considered and accepted.

- Organizations and professionals working in coastal and ocean management, in developed as well as developing countries, feel a strong need to communicate with, learn from, and join together with their peers to advocate for conservation and sustainable use. Networks of practice are emerging to take advantage of information technology, with the notion that virtual communities might be a low cost way to share information and overcome some of the barriers to good governance and sustainable development by enabling leaders to become more effective. However, there is no substitute for face to face contact in the generation and transmission of knowledge that is most relevant to leaders working in the unique circumstances of every coastal ecosystem.

- Livelihood projects that contribute to a more regular and diversified income and access to microcredit help reduce peoples' vulnerability and improve livelihood security. This is particularly important for households living at or below poverty levels. Livelihood security and risk reduction may be a more important initial goal in the minds of those households and may be more essential than income improvements, especially if income improvements involve more risk, as is often the case with new enterprise ventures.

- It is often difficult to get a quick impact or result from pilot initiatives even within a four to five year time frame, especially if the project is attempting to build the extension capacity of local institutions while at the same time trying to show impact on the ground. Time is needed for results to emerge, especially in dealing with new ideas and approaches. Scaling-up efforts are critical for larger scale impact in the long term, but are likely to take additional time after the pilot initiatives start to show results, often beyond the life of a donor initiative.
- The certification process adds an important dimension to capacity building in that it: defines the competences required for a person to be certified; establishes standards within each of these competency areas that "set the bar" for what can be expected from a coastal governance or MPA professional; raise understanding of the profession by explicitly defining what professionals need to do and how they should do it; reduces the reliance upon on-the-job training; and assures employers that they are hiring appropriately qualified individuals committed to carrying out their work in an ethical manner. An additional benefit of certification programs is that they set explicit criteria that can be applied when making a capacity building needs assessment for an individual and a program. The standards also provide a common reference point when comparing across practitioners, programs and other initiatives that work to apply the ecosystem approach.

Phase 2 Lessons Learned

Climate Change Adaptation

During the first phase of the SUCCESS program, CRC applied its 40 years of experience in coastal management to the challenge of climate change adaptation in collaboration with USAID's Global Climate Change Team. The resulting guidebook "Adapting to Coastal Climate Change A Guidebook for Development Planners" was widely disseminated and served as the basis for field level application in The Gambia, Senegal, Ghana and the Marshall Islands as well as international training courses carried out during the second phase of SUCCESS. Although not

an associate award, the change adaptation activities implemented in Tanzania also became part of the SUCCESS project's learning laboratory—piloting SUCCESS tools and feeding back lessons learned. The field level applications generated a number of lessons:

Make the commitment and take enough time to prepare an adaptation plan that most everyone supports. It takes time to do a good vulnerability assessment and help communities think through adaptation actions that can be effective and feasible. Communities need to be ready and willing to engage and may find additional benefits by becoming an early adopter. It is also essential to conduct a screening exercise before selecting pilot communities. For example, in Ghana a screening process evaluated risk and readiness of 77 communities before three fish-landing sites were chosen for local level assessments. In Tanzania's Pangani District, six villages were compared to help local leaders choose two locations that were ready to start the process. A basic assessment and planning process was implemented in all sites. It consisted of the following steps:

- Recognizing Climate threats
- Identifying Local assets exposed to climate and non-climate stresses
- Determining the Sensitivity of these assets to climate impacts
- Evaluating the community's ability to adapt
- Drawing conclusions about vulnerability
- Proposing and testing "No regrets" Adaption actions
- Incorporating climate adaptation into local and regional development plans

It is not always practical to have climate change specialists lead assessments on the ground. However, local technical staff, who are not climate change "experts", can work well because they stay engaged long enough to complete the assessment process and help communities deliberate on the actions it wants to pursue. It is also critical to engage long time local residents, who often have deep knowledge of local environmental conditions and are able to identify climate related changes and impacts. Vulnerability assessments prepared for Paje and Jambiani villages on Zanzibar's eastern shore involved experts from the Institute of Marine Sciences. Village residents expressed a number of concerns including shoreline erosion, sea temperature rise, rainfall pattern changes, increased storminess and the effects on livelihoods such as seaweed farming.

Communities want to take action, so be prepared to follow-up on a few key actions right away. All communities that CRC worked in wanted to take action right. We learned to work with locals to get organized, act and learn what will work out best for them, while experiencing tangible benefits from their early actions. A dramatic example of this comes from the Republic of the Marshall Islands. The people of Namdrik Atoll were among 25 winners of the 2012 Equator prize, and then honored as the best community adaptation effort, and deservedly so.

The successful effort of the residents of Namdrik Atoll in the Republic of the Marshall Islands was supported in part through its participation in a national conservation strategy called Reimaanlok. The Namdrik Atoll Local Resources Committee drafted its Local Resource

Management Plan in 2011 with climate impacts clearly in mind. It included tangible early actions to increase community resilience.

- Traditional garden crops, such as breadfruit and taro, protect and restore soil, and improve food security
- A hatchery to cultivate the black-lipped pearl provides jobs and provides a revenue stream to fund community development projects in education and health
- Rainwater harvesting provides the community with access to safe drinking water
- Solar technology provides a source of renewable energy for households, the elementary school and telecommunications
- Ban sand mining for construction from the lagoon-side shore where homes and infrastructure are located.

Reflections from the Field: "Serious coastal erosion caused by sea level rise is already occurring in all of our atolls,…We cannot afford to wait so community engagement is very important*." Namdrik Atoll Mayor Clarence Luther*

Adaptation actions face barriers that need broad support from beyond the community to overcome. The process of selecting coastal communities to work with along Ghana's Western Region generated some eye-opening results. The USAID Funded - Hen Mpoano "Our Coast" project worked with local leaders to design and conduct a rapid assessment which rated the ability of 77 communities in four Districts to adapt to natural hazards and climate change. Scores in most communities turned out to be low. The degree of emergency preparedness and its impacts on marginal groups was rated extremely low throughout the region. No community felt as if they were prepared for flood hazards or other emergencies. Many settlements and fish landing sites suffer from coastal Ghana's declining rural economy.

The ICFG project helped the District of Shama to adopt climate adaptation tools in its development plan. The Hen Mpoano project also worked in vulnerable coastal fishing communities including in the District of Ahanta West to engage local villages to assess risk and incorporate actions within their development plans.

Local adaptation plans need to become part of the mainstream in coastal development planning and hazard management. The Revolutionary Government of Zanzibar has taken a number of recent steps in collaboration with donors such as the United Kingdom, Finland and the United Nations Development Program. It is working to address climate adaptation in a more coordinated way, which will help coastal settlements work with key agencies when development decisions are made. Ghana's National Development Planning Commission recently required all Districts to include hazards and climate adaptation in their mid-term development plans.

The coastal communities we work with have volunteered to become pioneers in climate adaptation, breaking new ground that needs to be shared with their neighbors. Sharing the results of vulnerability assessments and adaptation plans with neighboring communities can encourage them to act. In addition, making sure district, regional and even national leaders become aware of

community needs and priorities can help insure that community-level climate adaptation is a centerpiece of every country's climate change policy—inspiring national scale support and action to bring climate change adaptation into the mainstream.

Climate change adaptation "national and regional scale" lessons

The SUCCESS Project supported workshops to help countries reflect on the UNFCCC's National Adaptation Plan (NAP) process with a focus on coastal development planning. Participants in Tanzania and in the 11 coastal ECOWAS countries in West Africa highlighted lessons learned:

1. The NAP process presents an opportunity to integrate climate considerations into coastal development and sectoral planning at national and subnational levels. Mainstreaming enables a more coherent, systematic approach to climate-resilient coastal planning, rather than a fragmented approach that centers on a collection of siloed adaptation activities. This helps to ensure that adaptation efforts support countries' broader long-term development goals.
2. By integrating climate considerations into the mandates of a wider set of institutions that work on coastal issues, mainstreaming also helps to illuminate cross-sectoral impacts of and responses to climate change, both within coastal zones as well as between coastal zones and inland areas.
3. Rather than developing a separate parallel process, a mainstreamed approach allows countries to build on, leverage, and improve existing coastal planning and policy processes and resources.
4. Because the NAP is about mainstreaming climate change, it is important that diverse stakeholders are involved throughout the process, and that the NAP process is not confined to one ministry or agency. This will entail bringing together different sectors as well as different groups, such as national planning commissions, finance ministers, researchers, technicians, local community members, and the private sector.
5. Developing systems that enable continuity at the leadership level can help to ensure that information is shared, accessible, maintained within the process, and not lost as individuals leave. This can help to promote linkages between past and future activities, and ensure that the NAP process continues uninterrupted.
6. In order for a NAP to move beyond the strategy stage, it is necessary to consider implementation from the outset. An important aspect of this is identifying needed resources (e.g., funding, capacity) and means to secure them. Another critical aspect is developing a transparent and accountable monitoring and reporting platform to gauge progress, and inform policy and make program adjustments based on new information and conditions.
7. A number of regional institutions have the capacity to support specific aspects of the NAP process. Tapping into this capacity requires that countries understand what capacity exists and how it can help them in their NAP processes. A mapping of regional capacity and initiatives that is current and periodically updated is needed for countries to identify regional organizations that can help them meet their NAP needs.

8. Coordinating research and sharing data and information among the coastal countries can facilitate identifying and filling of regional gaps in understanding transboundary impacts as well as country-to-country learning in addressing similar climate change impacts. This can also help to promote more targeted use of limited resources regionally. However, this may require establishing regionally applicable protocols for data collection, distribution, and maintenance.
9. Many coastal countries face similar climate change impacts. In some cases, the same impacts can have transboundary consequences. Regional coordination of high-level leadership (e.g., Ministries of Finance) and harmonization of policies can help to avoid maladaptation and promote coordinated adaptation actions that support a shared vision of long-term regional development.

Climate change adaptation "global scale" lessons

Through the development of the climate guidebook and the Coasts at Risk (C@R) report, the SUCCESS Project generated a number of higher level lessons learned related to climate change adaptation:

1. The nations' most at risk overall are tropical and Small Island Developing States (SIDS). Across all countries and hazards (e.g., earth- quakes, floods, sea level rise, storms and drought); coastal countries are consistently at the greatest risk
2. Environmental degradation increases vulnerability and exposure. There is a need to increase risk prevention measures and opportunities for better post-disaster development choices. Leaders need to demand more cost-effective solutions and recognize opportunities to create sustainable investments in natural infrastructure
3. Environmental conservation and restoration can reduce exposure and improve social vulnerability. Habitat restoration can contribute to risk reduction, and opportunities exist to focus these restoration efforts.
4. It is highly likely that future coastal risks will increase with climate change, population growth and further coastal development. Targeted research is needed on environmental risk reduction services to create better opportunities for investment. Fisheries management and research need to improve and recognize opportunities to reduce social vulnerability.

Capacity Development

While much of SUCCESS employed a variety of capacity development strategies one innovative area was focused on developing certification programs to focus on performance. Two initiatives were launched early in the SUCCESS project – certification of marine protected area (MPA) professionals in Eastern Africa and certification of coastal management professionals in Latin America.

There Are No Short Cuts

Research and development initiatives usually involve more time, effort and money than initially conceived. WIO-COMPAS was no exception. At each step of the way the principals reflected to ask: "Is this step in the process achieving what it meant to achieve?" "Is it as efficient as possible?" "Do we need changes, and if 'yes' then what changes and how?" The return on investment of such an iterative approach, however, is a well thought out and vetted program that is ready-to-go when adopted by other regions around the world. Such a reflective approach continues to be pursued with detailed evaluations of each event.

Focus is Critical

Initially, the plan was to launch the program on all three levels. It soon became clear that it was preferable to focus on completing and adjusting *all* aspects of *one* level before turning to another. Level 2 was selected as the first and most-critical level. This approach allowed for the testing and adaption of a microcosm of the larger program. Lessons learned and the resulting adaptations to the process, materials or design could then be applied to the next level(s). In the end, this strategy enabled a far earlier launch of the program than would have been possible had development of all three levels been attempted in parallel.

All Levels Are Not Created Equal

Each program level shared some common elements, and also had unique aspects. Level 1 targeted predominantly hands-on professionals engaged with the day-to-day practicalities of MPA operations. As they would be unlikely to produce many written documents in the normal course of their work, less focus was placed on written evidence of their competence. Instead, their assessments included practical demonstrations (or simulations) and discussions. In contrast, candidates in Level 2 and Level 3 work at the managerial level and the policy level respectively, and more likely would be required to produce many written documents. Thus, their assessments include a greater emphasis on written evidence, presentations and interviews with no practical demonstrations.

Collaboration: Essential, Slow and Worth It

In retrospect, it is highly unlikely that a single organisation could have developed WIO-COMPAS. The collective of individuals and organisations supporting the certification idea — whether initially or more recently — is at the very heart of the program's success. This collective brought to the program more experience, expertise, skills and networks than any one organisation ever could. Collaboration, however, slows the process. Issues around ownership or feelings that not all viewpoints are adequately considered might occur. Yet, when collaborators trust one another, these hurdles can be reconciled.

Financing the Program: Thinking Creatively

There are ways to help reduce costs until management agencies have the political will and the budget to more fully support the program. In-kind contributions of services, venues, local

transportation, etc., are often available when requested. Travel costs are being minimized by offering more events at the country or sub-regional level. Developing local assessors is a core strategy of controlling costs. Moving forward, assessors could be encouraged, as leaders in their profession, to volunteer some of their time, which many government-employed assessors do. Events can be timed to piggy-back with other conferences, workshops, etc., so travel costs are paid by a donor, project or organisation/agency. However, it is unlikely agencies will ever pay the full program fee, making it likely that the program will always need some external funding.

The Challenge of Promoting the New

After years of marketing WIO-COMPAS as a certification program rather than a training program, the difference is most clearly understood by those directly involved, especially the MPA PROs. While their roles as program ambassadors are important, the MPA PROs' supervisors and those at the highest levels of MPA management need to be convinced of the merits of certification. However, reaching those decision makers might come only when there is a critical mass of MPA PROs, especially those at Levels 2 and 3, who can demonstrate that the program clearly strengthens MPA management.

MPA PROs Helping Others

A pattern is emerging of MPA PROs recruiting colleagues to apply to WIO-COMPAS and tutoring them in how to improve their applications and materials. The result is a marked improvement in the completeness and quality of the applications. What is now an informal process of helping could potentially be formalized by matching up an applicant with an MPA PRO who serves as a mentor.

Leadership

Initially, the program's definition of leadership was unclear, and candidates were uncertain how they were being assessed on this competence. Because the conventional business model of leadership did not fit well, the program developed four leadership elements relevant for MPA professionals:

- Leading by example
- Self-motivation
- Ethical approach (see below)
- Innovation.

Having these four focuses has enabled greater rigor and consistency in assessing this competence. The scoring weight of this competence also was increased from 4 at Level 1 to 8 at Levels 2 and 3.

Certification of Coastal Management Professionals in Latin America

For the Latin America Certification of Coastal Management Professionals there were several lessons. Practitioners need to trace the steps that link planning to implementation and evaluation. The 1996 GESAMP framework aids in this because it is based on the learning cycle, and examines the different contribution of the sciences to each step in a program's evolution. This

cycle has proved to be a powerful framework that provides valuable insights to certified practitioners when examining the implications of changing the sequence of the steps or eliminating some of the associated "essential actions." The reality for many coastal management programs is that they consist only of fragments of unconnected cycles, the result of being initiatives designed only as short-term, stand-alone "projects."

The examination of the experience of the members of the EcoCostas network revealed that even when the processes of coastal management initiatives are well designed and well executed the desired outcomes often still do not emerge as anticipated. Many projects fail to make the transition from issue analysis and planning to the sustained implementation of a plan of action.

Thus the design and initial application of a certification program in the governance of coastal ecosystems needs to provide an additional strategy for building the capacities required to make the ecosystem approach operational in coastal settings.

An important benefit of the certification program was that they set explicit criteria that can be applied when making a capacity building needs assessment for an individual and a program.

Sustainable Fisheries

It is increasing clear that small-scale fisheries are in crisis around the world, particularly in developing countries, threatening ecosystems, people's livelihoods and food security. IUU (Illegal, Unreported and Unregulated) fishing is adding a new dimension to this challenge. This crisis is driven by poor governance and the open access nature of most small-scale fisheries in developing countries. Increasingly however,, solutions to the small-scale fisheries management challenges in developing countries are emerging. Successful community-based approaches pioneered in the Philippines and the Western Pacific has demonstrated their applicability in other regions of the world. IN Phase 1, SUCCESS successfully adapted this approach to estuarine fisheries in Nicaragua and on reef flats in Zanzibar, and documented tangible biophysical improvements resulting from these interventions. Such approaches must be tailored to the specific fishery and "owned" by a broad base of stakeholders. The participatory theme as a success factor has played out over and over again in many different contexts as a ubiquitous success measure.

In Phase 2, SUCCESS innovated co-management at different scales and applying a nested governance approach. In the Gambia, while a community-based approach was also applied in estuarine cockle fisheries and for the artisanal sole fisheries, community based committees were also organized into larger institutions at the ecosystem scale. The women's cockle fishery in a 6000 hct marine park brought together a dozen community groups to formulate a mangrove system wide management plan covering the entire women's oyster harvesters association throughout the wetland. The artisanal sole fishery also developed a national co-management committee with representation of community-based committees at over a dozen landing sites. In both these cases, use rights were also granted and biological monitoring of the stocks have demonstrated that both the co-management and user rights approaches have resulted in tangible gains on improved fish stocks. An important lesson as to why this approach succeeded in the Gambia was that there were strong legal enabling conditions that allowed for and promoted co-management and rights based approaches.

In Senegal, where the government has promoted community-based approaches as well, a similar evolution is occurring whereby the COMFISH Project is taking a bottom-up approach to the formulation of a national plan for management of the wide ranging small pelagic Sardinella fisheries. In Ghana, a solely community-based management approach from ten years past failed as each landing site could not control overall fishing effort for the most important small pelagic fisheries and the highly migratory fishers. A different form of co-management, at a national institutional scale has been suggested and likely to be instituted as part of the new USAID Sustainable Fisheries Management Project just getting underway. A key message here is that co-management arrangements need to be tailored to the socio-economic and ecological context of the fisheries to be managed, it may be community-based, or in some instances, co-management arrangements at larger scales as well.

In Ghana, lessons also emerged that weak law enforcement that contributes to high levels of non-compliance with fisheries management measures can be improved in several ways; (1) via communications strategies that aim to strengthen fishers moral attitudes on the need and importance for fisheries laws to be obeyed – promoting voluntary compliance, and at the same time (2) via strengthening of the fisheries prosecutorial chain through improved coordination and education of law enforcement officers, prosecutors and judges. In the USAID ICFG Project, arrests and convictions in the Western Region of the country went from zero arrests and convictions as a baseline at the beginning to 37 arrests and 34 convictions by the end of the project.

Reflections from the Field: When Hɛn Mpoano (ICFG) started, we all knew that the fishing industry in the country was going down. For the past few years, fishermen were losing hope in the practice and in the chief fishermen. But when Hɛn Mpoano came, they started to ask us what we thought and gave us respect by including the Chief Fishermen. We were given the opportunity to describe this situation through a series of meetings/sensitizations in various fora. We also transferred these meetings to our artisanal fishermen, and then they started to get hope and interest in us, the Chief Fishermen, again. Now, we have started to educate the fishers in our villages as a result of the training that were given to us. *Nana Kojo Konduah IV, a member of the Advisory Council of the Hɛn Mpoano (ICFG) Initiative, Chief Fisherman in Aboasi in Shama District and Chairman of the Ghana National Canoe Fisherman's Council of the Western Region, describes a change for fishers in the Western Region:*

Another important lesson that emerged from the SUCCESS Project concerns the often misconceived notion of alternative livelihoods for fishermen. Alternative livelihoods strategies will only address overcapacity when coupled with managed access, otherwise for every fisher exiting the fishery another will enter if it remains open access. Additionally, we know that fishermen often like the occupation of fishing and do not want to leave the occupation. In this regard, a better strategy may be to promote diversified livelihoods where fishers can still fish, just less, and still survive with other sources of income supplementing what may be small returns from fishing. Lastly, we also have learned that finding livelihood options of the scale needed to potentially impact thousands if not tens of thousands of fishermen are few and far between. The livelihoods section of this report also looks at challenges to developing successful livelihood options for coastal and fishing households.

Sustainable Livelihoods

When we began the livelihoods learning component, we knew that livelihoods had been introduced in many nations worldwide with limited success. We learned that the lack of success can be attributed in part to poor execution, but also to the daily realities of small-scale fisheries. Fisher folks rely on a short-term survival strategy in which they need to earn wages on a daily basis and many who try alternative livelihoods eventually return to fishing. Open-access conditions are equally problematic. If several fishermen give up fishing, profits increase for those who remain. This attracts more people, eventually spreading profits thin with wages falling to earlier levels. We learned that alternative or diversified livelihoods can be effective only when coupled with efforts to manage the fishery, such as gear restrictions, catch limits and quotas.

We have learned that when successful, a diversified livelihoods approach can be used as a conservation incentive, rewarding communities that create marine protected areas, enforce no-fishing rules or halt destructive fishing practices and then enforce these measures in their community. Good practices related to livelihood development have emerged through the SUCCESS project's cross portfolio learning:

Planning a livelihoods strategy, one has to explore what types of livelihoods are feasible and the casual theory that links those enterprises with the resolution of biodiversity threats, conservation, and quality of life goals. Understanding the context, including people's existing livelihoods, is helpful in gauging people's likely reactions to new opportunities. It is equally important to assess the business context—evaluating existing economic activity and livelihoods in the target areas and analyzing potential livelihood opportunities based on the availability of skills and resources. A common mistake when selecting conservation enterprises is failing to determine whether or not there are markets for the goods and services that will be produced — or failing to properly train the entrepreneurs in marketing and sales. It is easier to develop enterprises for which there is already an established but not too competitive market.

For community members to continue supporting conservation and stick with the new livelihood, it is important that the enterprises produce some tangible benefit(s), at least within the first year. Many community members become impatient if they do not see benefits in the short term, especially if they are used to fishing, which provide them with a daily income. For many poor fishing households, experimenting with entrepreneurship can be intimidating, especially if they stand to lose time or money in the process and/or if benefits are slow in coming. At the same time, it is essential to be clear about the roles and responsibilities of all involved—and set up realistic expectations of the time and effort it will take to develop and reap the benefits of the conservation enterprise. If the expectations are too high, the enterprises will fail.

It makes most sense to work with households and their portfolio of livelihoods and assets, rather than individuals. However, organizing the entrepreneurs into cooperatives might be helpful. Experience has shown that group enterprises, i.e., where entrepreneurs manage production as a team, often fail because some entrepreneurs end up working more while others become "free riders." This leads to demoralization and failure of the enterprise. However, organizing the entrepreneurs into marketing groups, where each member is responsible for their own production but other business management-related activities are conducted jointly, has proven to be a successful model. Providing vocational training might help youth develop a "career path" that is

not fisheries related, which in turn may reduce new entries into fisheries. Focusing on women on the other hand strengthens household resilience and reduces the overall household's reliance on fisheries for sustenance and income.

Building conservation enterprises requires leveraging strategic partnerships with enterprise enablers: leaders/decision-makers, service providers, and outside technical assistants (including peer organizations that can facilitate peer-to-peer learning and transfer of knowledge). For example, service providers often provide access to expertise that is not available in rural communities—expertise related to production or service, marketing and sales, resource conservation and environmental management, and legal or policy issues. The challenge is to identify appropriate partners in a position to contribute to the development of a sustainable enterprise and engage in potential strategic partnerships with government, universities, the private sector, technical support providers, credit and financial institutions, and buyers. Working with partner groups –either through training or direct implementation of livelihoods activities – we have learned that environmental NGOs are not necessarily the best implementing partners when it comes to livelihoods. They usually work on small scale projects and they do not necessarily have the expertise necessary to provide adequate livelihoods and/or microfinance extension services. However, they are critical to ensuring that biodiversity conservation goals and objectives are maintained. Although outside partners can be very helpful, we have learned that long-term success and sustainability lies with the successful organization and engagement of local stakeholders and beneficiaries. Heavily subsidized livelihoods run the risk of failing once the subsidy is removed!

Gender

Gender mainstreaming brings women and men into a position where they participate as equals in the adaptation process. Good gender mainstreaming focus on both women and men — integrating the voices of men, women, young, and old in decision making. However, in some instances, where there are inequities in opportunities and vulnerability, woman-centered efforts can make a difference. It means reducing dominance of men, meeting and learning from women at times that is convenient to them. One also has to be sensitive to the social diversity and complexity among women. Not all women are the same: some are rich some are poor, some are young and some are old, some are single and some are married – their roles are different. When mainstreaming gender, conflict might be inevitable, and the facilitator has to be a good mediator, resolving differences and nurturing relationships between the women

Gender Equality Issues

- Women and men tend to do different work.
- Women tend to have less access than men to formal decision-making authorities and are less involved in local decision-making structures.
- Women and men have different access to, and control over land and water in general.
- Women and men often use different landscape spaces.
- Women and men often have different spheres of traditional knowledge.
- Women and men often have different coping strategies for drought and disasters.
- Women and men tend to have different domestic responsibilities, including financial expenditures.

and men involved.

Men and women are affected differently by the effects of climate change and climate vulnerability. It is clear that world-wide, women are more vulnerable because of their social roles, inequalities in the access and control of resources, lower education, poorer health, and their low participation in decision-making. Climate change magnifies existing inequities. Women are not only the primary victims of climate change, but they can also be effective change agents, managing both mitigation and adaptation. Women have extensive knowledge and expertise around whom and what in a community are at risk, what adaptation measures are needed – and are often capable of mobilizing communities in risk management.

During Phase 1, the SUCCESS project showed that women's role in a community can be strengthened through implementing livelihoods that are connected to conservation. Women on Zanzibar were empowered through participating in savings and credit cooperatives and conservation-based livelihoods (e.g. shell craft making combined with no-take zoning). Obtaining new technical skills were important. However, equally important, was learning to be an entrepreneur and gaining business skills such as how to add value to current products and how to market and price them. For many women, turning entrepreneur has brought them personal growth. We saw women, who previously would not speak up in a group, become more active. Many became breadwinners for their household. Through entrepreneurship women became more involved in environmental management and village affairs.

Through the West Africa Associate Awards, we have learned that women play an important role in fisheries value chains through buying, processing and related small businesses—and it is an area that needs much greater attention. In Ghana, women fish mongers have key responsibilities but little voice in fisheries management decisions, and their economic contributions are hampered by bottlenecks in the availability of credit to expand, the ability to assure buyers of the safety and wholesomeness of their products, the low efficiency of available technology for fish smoking and handling and the vulnerability of their beach-side operations to environmental hazards such as flooding and erosion, and economic threats such as displacement by other types of development such as ports, urbanization and tourism.

Reflection from the Field: The bottom up approach is better in community development projects. The women should be involved in all decision making regarding matters that affect their lives and livelihoods. Women debating amongst themselves about some members' desire to revert back to longer open season - which led to the slogan WE HAVE REACHED GRADE TWELVE AND WE WILL NOT GO BACK TO GRADE ONE. *Fatou Jana, TRY Oyster Association*

Biodiversity

SUCCESS fell under the Congressional biodiversity earmark secondary code—i.e., programs and activities with biodiversity conservation as an explicit, but not primary, objective. To meet its goal of helping improve both human quality of life and biodiversity through good governance,

SUCCESS focused on activities that supported biodiversity conservation-related actions and policies at the local, national, regional and even global scales—with an emphasis on establishing, disseminating and helping others apply models, tools and approaches that contributed to biodiversity conservation. One example was the Program's innovative new model for certifying the competences of MPA professionals.

One lesson learned is that engaging women in biodiversity conservation is a double win, because it increases women's participation in conservation and has the potential to bring about positive environmental impacts. In Tanzania, Nicaragua, and the Gambia, the SUCCESS project worked with women bivalve harvesters to conserve the intertidal and mangrove areas where they collect mussels, cockles, and oysters. In Tanzania, women decided to adopt the Fiji-style method of designating small scale no-take areas as the main conservation and management approach to rebuild stocks, enhance recruitment into open collection areas and improve harvests. By the end of the SUCCESS project, three out of four no-take areas showed positive biophysical results. In Senegal women fish buyers and fish processors are indirectly involved in biodiversity conservation. Refusing to buy undersized fish, they are putting pressure on fishermen to comply with fisheries management rules.

Stakeholders in sustainable use and conservation efforts must realize tangible benefits if these efforts are to be effective and sustainable beyond the life of USAID investments. When poverty is rampant in a community and there are few alternatives for livelihood opportunities, citizens often engage in destructive marine resource extraction activities. Hence, making enterprise development became a critical part of the fisheries and conservation oriented activities implemented in Latin America, Tanzania, Thailand, and West Africa.

Disaster Assistance

Carefully assess the fishery context before deciding whether to provide direct support for replacement of fishing vessels and gear as part of disaster relief and reconstruction efforts. After the 2004 Tsunami, the Thai government and other donors replaced so many boats that the fishing fleet was larger than it was before the tsunami. This was unfortunate. As stewards of the Earth's coastal zone, the combined efforts of all donors undermined the health and resilience of the marine environment. The Andaman Sea was heavily overfished before the tsunami, and an opportunity was lost to avoid or reduce overfishing after the tsunami. A lesson learned is not to support boat replacement initiatives unless there are carefully designed and coordinated strategies to reduce overall effort and ensure that even more economically and environmentally damaging overfishing does not occur. Initiatives to rebuild livelihoods should also offer opportunities and sustained support (grants, training, follow-up extension) for fishers willing to exit the fishery.

No one can predict exactly when or where, but it is certain that another natural disaster will strike the coastal zone of the world sometime in the future. Global climate change is increasing the frequency and severity of natural disasters. These are all good reasons for USAID to continue supporting disaster risk reduction, preparedness and coastal adaptation to moderate potential damages or to benefit from opportunities associated with climate change. This includes supporting human resource development in a variety of topics related to disaster preparedness and management, improved coastal development planning and community resilience. In the long

term, these up front investments will result in reduced economic costs and expenditures on future disaster relief and reconstruction.

In the Thailand Post-Tsunami Sustainable Livelihoods Project, poor donor coordination locally and at the national level was counterproductive to fully achieving all of the results expected at the demonstration site. In future disaster situations, USAID needs to show leadership in advising and supporting effective donor coordination mechanisms by the governments concerned.

RECOMMENDATIONS FOR A FUTURE USAID OCEANS AND COASTS AGENDA

As the SUCCESS Project has come to an end, it is of great concern to many of us that have worked on this program that USAID has no overarching global coastal/marine strategy, and will unlikely continue to support any global marine and coastal program such as the SUCCESS cooperative agreement and previous global initiatives such as CMRP I and II. This is particularly of concern since the post-2015 United Nations Development Agenda places high priority on marine/coastal environment and climate change issues for development. The World Bank is also supporting the Global Partnership for the Oceans, where the core strategy recommendations of this group on sustainable fisheries, marine habitat protection and pollution abatement will likely guide its future investment portfolio of hundreds of millions of dollars to address these issues. The GEF International Waters Program is projecting investments of several billion dollars in the governance of Large Marine Ecosystems around the world. USAID has long invested in its valuable commitment to marine/coastal issues, and this investment has reaped real returns for stakeholders. At this time of accelerating change in marine and coastal environments, USAID should not back away from its commitment but should embrace its role as a leader in the field.

While the United States has many ocean and coastal-related strategic interests, we lack a clear international ocean and coastal strategy. Most notably our frontline institution responsible for international development—the U.S. Agency for International Development (USAID) —has no articulated strategy or policy for working with our friends overseas to address critical marine issues of our time: overfishing, marine pollution, habitat degradation or the impacts of climate change in coastal communities.

Quite laudably, USAID has long supported coastal and ocean management initiatives—through an unprecedented three decades of cooperative agreements funded by USAID and implemented by the University of Rhode Island (URI). This successful USAID-URI partnership has an unrivaled wealth of experience and expertise that can inform global strategies for addressing the pressing problems facing the world's oceans and coasts—experience and expertise that can and have positioned the U.S. as a global leader in this arena. Yet currently, oceans, coasts and fisheries issues within USAID are instead orphaned activities—forced to fit under other agency earmarks such as biodiversity or food security, which, while important, always hark back to effective coastal management as the driving force behind solving the problems that are faced. This dilutes any coherent integrated strategy and underplays the importance of the oceans to the sustainable development of coastal nations. USAID recently decided to discontinue its several decades of globally focused cooperative agreements in coastal management, which signals to the

world that the agency and the U.S. do not give these issues a high priority, and therefore, have minor influence in the global dialogue.

A key message that those of us who have worked on USAID global cooperative agreements, not only SUCCESS but on a succession of cooperative agreements in coastal management dating back to the 1980s, call upon USAID to develop a strategic oceans and coastal agenda and dedicate funding for its implementation. U.S. universities in particular, can continue to play an important role in helping implement this strategy. Drawing on the strengths of our Land Grant and Sea Grant traditions, Universities can help bring the best science to bear on understanding these issues and helping coastal people around the world to make informed choices that sustain benefits for human well-being. But first, the U.S. needs to have a clear strategy that we will invest in a healthy future for our oceans and coasts and assist the people of the world who depend on these systems.

Why the U.S. Needs an International Oceans and Coasts Strategy

Today, many international groups are investing heavily in implementing an integrated ocean and coastal strategy to address the pressing needs facing us in the 21st century:

- The UNDP/GEF international global waters program invested over $2 billion in ecosystems based management of the world's large marine ecosystems, likely to double by 2020.
- The World Bank is investing hundreds of millions in sustainable fisheries, pollution control and biodiversity protection and coastal climate change adaptation—an investment sure to be influenced heavily by a strategy being developed by the Global Ocean Partnership, a voluntary consortia of nongovernmental organizations as well as public and private sector groups.

It will be difficult for the U.S. have a credible voice or influence the strategic directions of these investments when the U.S. Department of State and its premier domestic oceans agency (NOAA) and premier international development agency (USAID) have no coherent strategic global agenda. The urgency for such a strategy is paramount as a significant amount of economic benefits the world receives from our oceans is at risk. Consider that:

- Fisheries and aquaculture employ over 100 million people globally, mostly small-scale, poorest-of-the-poor fishers and their families in developing countries.
- Annual marine fish production globally is valued at over $ 80 billion with secondary benefits totaling up to $ 240 billion, but the World Banks reports that another $50 billion is lost annually from poor management of wild fish stocks. Helping nations recoup these lost benefits is precisely where USAID can play an important role.
- Annual coastal and marine tourism is valued at over $ 160 billion and employs millions, again, with USAID at the forefront if it pursues an effective role in coastal governance that helps protect the natural coastal and marine assets that in large part generate these benefits.
- Oceans and living marine ecosystems such as mangroves are substantial carbon sinks, and USAID can play a lead role in developing appropriate tools and methods for these systems so

that coastal communities can obtain REDD+ and voluntary carbon offset funds for that protect these carbon sinks.

- Sea level rise will result in the displacement of tens if not hundreds of millions of people living in coastal areas, and the disappearance of several nations below the waves. This creates a national security risk—a context ripe for increasing social and political conflicts around the world. USAID can assist these vulnerable nations develop effective coastal adaptation strategies that will minimize such risks.

All of the above becomes even more at risk when you consider that more the half the world's people live within 50 miles of the coast, many in highly vulnerable areas and depend on healthy oceans and coasts for food, income and a host of other goods and services—a reality that is threatened not only by the usual anthropogenic issues of overfishing, pollution, habitat destruction, but increasingly from climate change impacts of sea level rise, sea surface temperature increases and ocean acidification.

ANNEXES

PMP Results Summary Years 1-5

PMP Results Summary Years 6-10

List of SUCCESS Publications

List of Selected Associate Award Publications

List of Leveraged Funding

Success Stories

PMP Summary for Years 1-5

Indicator	Targets Year 1-5	Final Results Year 1-5	% over/under completed
1. Number of biologically significant hectares	240,173	221,301	-8%
Marine hectares	183,286	150,804	-18%
Terrestrial hectares	56,888	70,497	24%
2. Number of hectares in areas of biological significance showing improved biophysical conditions for selected parameter(s)	no target	14,162	no target
3. Number of policies, laws, agreements, or regulations promoting sustainable natural resource management and conservation implemented	6	11	83%
4a. Leveraged funding (site level)	no target	936,115	no target
4b. Leveraged funding (regional)	*no target*	*687,102*	no target
5. Number of persons participating in coastal resources and conservation planning initiatives	1356	4,359	222%
6. Number of people with increased economic benefits derived from sustainable natural resource management and conservation.	674	499	-26%
7. Number of new or improved enterprises developed	182	193	6%
8. Monetary value generated from sustainable natural resources or conservation initiatives (USD or equivalent)	x	70,254	no target
9. Number of people trained	500	752	50%
10. Number of training courses implemented	22	38	64%
11. Number of active participants in web-based regional networks	48	87	81%
12. Publications documenting impacts of best practices	no target	38	no target
13. Number of American volunteers	10	11	10%
14. Volunteer person days	120	257	114%
15. Value of volunteer time ($)	18,166	47,728	163%

Indicator	Targets Year 1-5	Final Results Year 1-5	% over/under completed
16. % females participating in coastal resources and conservation planning initiatives	42%	45%	on target
17. % females with increased economic benefits derived from sustainable natural resource management and conservation.	27%	64%	over target
18. % females trained	30%	40%	over target
19. Number of female participants in web-based regional networks	38%	38%	on target
% female American volunteers (Ind 13)	50%	36%	under target

PMP Summary for Years 6-10

INDICATOR	FY 10 Target	FY 10 Result	FY 11 Target	FY 11 Result	FY 12 Target	FY 12 Result	FY 13 Target	FY 13 Result	FY 14 Target	FY 14 Result	LOP Result
1. Number of person hours of training in natural resources management and/or biodiversity conservation supported by USG assistance-men.	Not measured until FY 12				2560	440	1060	1632	196	486	**2,558**
1.b. Person hours of training completed in climate change supported by USG assistance- adaptation (men)	Not measured until FY 12				No target	0	384	908	0	0	**908**
2. Number of person hours of training in natural resources management and/or biodiversity conservation supported by USG assistance-women	Not measured until FY 12				1,240	427	660	881	84	108	**1,416**
2.b Person hours of training completed in climate change supported by USG assistance- adaptation (women)	Not measured until FY 12				No target	0	96	344	0	0	**344**
3. Dollar value of funds leveraged from USAID Missions and non-USG sources	No target	84,428	No target	,390,085	No target	60734	10,000	121,223	No target	24,096	**680,566**
4. Tools, protocols,	1	7	7	7	10	9	4	3	4	5	**31**

INDICATOR	FY 10 Target	FY 10 Result	FY 11 Target	FY 11 Result	FY 12 Target	FY 12 Result	FY 13 Target	FY 13 Result	FY 14 Target	FY 14 Result	LOP Result
procedures, systems, methodologies, guides, curricula, or indices developed or adapted for country and/or thematic contexts											
4b. Number of climate change mitigation and/or adaptation tools, technologies and methodologies developed, tested, and/or adopted as a result of USG assistance		4		5	2	4	2	2	3	4	**19**
5. Success stories, peer review articles, conference papers, research studies documenting key actionable findings and lessons learned related to SUCCESS	9	17	10	6	7	5	4	12	5	21	**61**
6. Technical support interventions provided by SUCCESS to other partners and programs on toolkits and guidebooks developed by SUCCESS	1	4	3	5	No target	7	4	7	1	9	**32**
7. Recipients of SUCCESS training and/or mentoring subsequently implementing projects	0	11	10	11	No target	18	5	2		6	**48**

INDICATOR	FY 10 Target	FY 10 Result	FY 11 Target	FY 11 Result	FY 12 Target	FY 12 Result	FY 13 Target	FY 13 Result	FY 14 Target	FY 14 Result	LOP Result
or providing training or technical assistance in these topics to others											
8. Number of institutions with improved capacity to address climate change issues as a result of USG assistance - adaptation capabilities		1		15	No target	1	8	44	1	1	**62**
9. Target organizations incorporating SUCCESS tools etc. into their work	0	6	3	12	No target	2	2	4		3	**27**
10. Hectares in areas of biological significance under improved management	0	0	0	0	0	0	0	0	0	0	**0**
11. Policies, laws, agreements, or regulations promoting sustainable natural resource management and conservation implemented	0	0	0	0	0	0	0	0	0	0	**0**

List of SUCCESS publications

All of the following documents are available on CRC's website: http://www.crc.uri.edu/publications/ as well as on USAID's Development Experience Clearinghouse https://dec.usaid.gov/dec/home/Default.aspx . The videos can be found on CRC's Youtube Channel: https://www.youtube.com/user/URICRC

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List of Selected Associate Award Publications

All of the following Associate Award documents are available on CRC's website: http://www.crc.uri.edu/publications/ as well as on USAID's Development Experience Clearinghouse https://dec.usaid.gov/dec/home/Default.aspx.

USAID/Asia Post-Tsunami Sustainable Coastal Livelihoods Project (Thailand):

Coastal Resources Center (2008). Community Based Disaster Risk Management: Empowering the People to Prepare, Theme Paper. 8 pp.

Coastal Resources Center (2008). Kamphuan Community Learning Center: Where Traditional Culture Meets the Global Community, Theme Paper. 8 pp.

Coastal Resources Center (2008). Learning from Tragedy: Working Together to Build Safer, More Resilient Communities, Theme Paper. 8 pp.

Coastal Resources Center (2008). Microfinance and Micro-enterprise: Teaming Up to Restart and Diversify Livelihoods in the Post-disaster Context, Theme Paper. 8 pp.

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Leveraged Funding

The SUCCESS project leveraged over $2,309,082 million over the 10-year period of the project. Details of the leveraged funding are provided below.

Phase I (2004-2009)

Fiscal Year	Leveraging Partner	Donor	Activity	Leveraged Funds
LATIN AMERICA REGION				
2006	EcoCostas	AVINA	Support for EcoCostas Director to launch on the ground projects and develop regional network	39,500
2007	EcoCostas	AVINA	Business and Communications Plan	32,000
2007	EcoCostas	AVINA	ICM Certification training module	15,900
2007	EcoCostas	LOICZ	ICM Certification ToT	34,561
2008	EcoCostas	LOICZ	Governance baseline publication, governance manual finalization	32,235
2008	EcoCostas	AVINA	certification standards good practices	7,852
2008	EcoCostas	AVINA	Business plan	13,000
2008	EcoCostas	AVINA	Consolidate the Ecocostas network	47,628
ECUADOR				
2005	EcoCostas	USAID Ecuador	Watershed characterization in the reserve and estuary	30,000
2006	EcoCostas	USAID	Chame Extension	5,000
2006	EcoCostas	PMRC	Design training program for Chame culture	4,000
2006	EcoCostas	URI WILD	Support for Ecuadorian participation in Summer Institute in Coastal Management	5,000
2006	EcoCostas	InWent	Eco Clubs	1,716
2007	EcoCostas	USAID Ecuador	Construct nursery	2,000
2007	EcoCostas	PMRC	Water quality survey Cojimies Estuary	20,000
2008	EcoCostas	PMRC	Fondos procedentes del Programa de Manejo de Recursos Costeros	6,000
2008	EcoCostas	USAID Ecuador	Construct nursery	500
2008	EcoCostas	USAID CRSP	Mexico Chame Aquaculture Research visit to Cojimies	5,000
NICARAGUA				
2006	CIDEA	OIKOS	Funding that complements training on aquaculture and integrated management	8,072
2006	CIDEA	Japan	Development of best management practices, training and materials	7,831
2006	CIDEA	UCRECEP	Cockle aquaculture development	3,384
2006	CIDEA	Japan	Economist for shellfish economic and marketing study	1,128

2007	CIDEA	OIKOS	Post Larvae collection training in Manzano and BMP FINCAMAR	2,400
2007	UHH	CRSP	Shellfish Sanitation Monitoring in Nicaragua	37,000
2007	CIDEA	contribution from other departments	Tourism - aquatic trail development and eco-tourism training	7,196
2007	CIDEA	contribution from other departments	Bread Production Business Plan and Extension (Business School)	1,207
2007	CIDEA	Japan	Water quality microbiology analysis and cockle HepA analysis	2,497
2008	CIDEA	Lorrnica foundation	Support for development of bakeries in Puerto Morazan and El Realejo	3,593
2008	CIDEA	CIDEA	Support to ICM training	1,000
2008	CIDEA	CRSP	Este aporte es en U$ corresponde a fondos para la investigaciòn microbilogica, mercado de bilvabos en Aserradores.Primer Año.	8,103
2009	CIDEA	Lorrnica foundation	Support for development of bakeries in Puerto Morazan and El Realejo	225
2009	CIDEA	CRSP	Este aporte es en U$ corresponde a fondos para la investigaciòn microbilogica, mercado de bilvabos en Aserradores.Primer Año.	4,020
2009	CIDEA	Lorrnica foundation	Este aporte es en U$ correponde a fondos para apoyar los eventos de Higiene y mantenimiento del Horno de Panaderia en P. Morazan	250
2009	CIDEA	CRSP	Este aporte es en U$ corresponde a fondos para la investigaciòn microbilogica, mercado de bilvabos en Aserradores.Primer Año.	1,651
2009	CIDEA	EU	Este aporte en en U$ corresponde a fondos para ejecutar las actividades de certificaciòn de moluscos cofinanciado por la UE	12,268
2009	CIDEA	CRSP	investigaciòn microbilogica, mercado de bilvabos en Aserradores.Primer Año.	3,000
2009	CIDEA	EU	fondos para ejecutar las actividades de certificaciòn de moluscos cofinanciado por la UE	6,000
EAST AFRICA REGION				
2005	WIOMSA	WIOMSA	WIOMSA Director Salary for time on SUCCESS	12,000
2005	WIOMSA	ACDI VOCI	Training Support	250
2005	WIOMSA	IMS	Training Support	600
2005	WIOMSA	CRSP	Training Support	2,600

2005	WIOMSA	WIOMSA	Training support	12,636
2006	WIOMSA	WIOMSA	WIOMSA Director Salary for time on SUCCESS	24,000
2006	WIOMSA	ACDI VOCI	Training Support	250
2006	WIOMSA	IMS	Training Support	500
2006	WIOMSA	WIOMSA	Training Support	800
2006	WIOMSA	Commission for Science and Technology	Training support	500
2007	WIOMSA	WIOMSA	WIOMSA Director Salary for time on SUCCESS	24,000
2007	WIOMSA	Sida	Certification Workshop	35,000
2007	WIOMSA	Sida	KM - IT systems upgrade	15,500
2008	WIOMSA	RecoMap	WIO-COMPASS	86,011
2008	WIOMSA	WIOMSA	WIOMSA Director Salary for time on SUCCESS	24,000
2009	WIOMSA	WIOMSA	WIOMSA Director Salary for time on SUCCESS	12,000
TANZANIA				
2006	WIOMSA	School of International Training	Undergrad working with women in Fumba	600
2006	WIOMSA	Sida/SAREC	Two MARG 1 grants to study water quality and its suitability for shellfish farming and consumption on the Fumba peninsula and research on milkfish fingerlings in Bagamoyo and Mkuranga	12,000
2006	WIOMSA	Private source	Donation of half-pearls to Fumba micro-industry	900
2007	CRC	URI-IGERT	Fellow for economics analysis of seaweed farming	6,500
2007	CRC	URI-IGERT	Fellow for No-Take Reserve Monitoring	6,500
2007	UHH	Amer. Pearls	Half Pearl donation for jewelry business development	1,000
2007	UHH	Packard	Summer MBA Interns for developing marketing manual	3,000
2007	UHH	Packard	Support for review of marketing manual	1,000
2007	WIOMSA	Sida/SAREC	MARG2 contract -milkfish research	5,800
2007	WIOMSA	Sida/SAREC	Master's scholarship for half-pearl research	8,562
2007	WIOMSA	Parliamentary Committee Social Welfare	Project support	200
2007	WIOMSA	UDSM; College of Engineers	Project support	200
2007	WIOMSA	WWF	Agency supported participant for milkfish training course	1,200

2007	WIOMSA	IUCN	Agency supported participant for milkfish training course	1,200
2007	WIOMSA	UNEP	Agency supported participant for milkfish training course	1,200
2007	WIOMSA	RecoMap	Agency supported participant for milkfish training course	1,200
2007	WIOMSA	Sida	Milkfish manual preparation/printing	3,000
2007	WIOMSA	U.S. Embassador to Tanzania	Grant in support of Mlingotini Seaweed	23,000
2007	WIOMSA	WIOMSA	Assessment of ongoing mariculture along the coast	3,700
2008	IMS	McKnight Foundation	establish small-scale shellfish farming activities involving women residents of coastal villages on the island of Unguja, Zanzibar, in Tanzania	151,000
2008	WIOMSA	IMS	travel to international trade fair in Dar + for aquarium	4,041
2008	WIOMSA	SME competititveness facility	Seaweed cluster grant agreement	18,000
2008	WIOMSA	RecoMap	Halfpearl farming and jewelry making scale up	36,463
2008	WIOMSA	RecoMap	Milkfish farming expansion	134,555
2008	IMS	US State Department	Half Pearl production, jewelry making and marketing	305,077
2008	WIOMSA	Sida	study the effect of the floating line seaweed farming	6,000
2008	WIOMSA	Sida	study the availability and seasonality of milkfish fry and fingerlings in the neighborhood of the growing finfish ponds	6,000
2009	WIOMSA	Sida	Publication of Milkfish Farming Guide	4,176
GLOBAL				
2009	CRC	EU German Life Web	Pacific Climate Change adaptation pilot project RMI	34,000
2009	CRC	IRG/USAID	Funding to participate in planning for change in the Coastal and Marine Environment Training in Hue, Vietnam	5,515
2009	NOAA	Danida	Training in Hue, Vietnam, Philippines, and Galapagos	150,000
2009	CRC	IRG/USAID	Panama workshop Mainstreaming Climate Change into IWRM projects in Central America and the Caribbean	19,264
2009	CRC	CI	Training in the Philippines and Galapagos	6,000
2009	CRC	MARVIVA	Costa Rica regional MPA meeting	1,800

2009	CRC	Micronesia Conservation Trust, and the Marine and Environmental Research Institute of Pohnpei	Climate Change Vulnerability and Adaptation: Training-of-Trainers (TOT)	2,500
			LEVERAGED FUNDING (2004-2009) TOTAL $	**1,628,517**

Phase 2 (20010-2014)

Fiscal Year	Leveraging Partner	Donor	Activity	Leveraged Funds
2010	CRC	Marviva	MPA PRO	1,800
2010	CRC	individual experts	Livelihoods learning	5,322
2010	CRC	CRC	Reception at 3/24 meeting	2,212
2010	CRC	CIDEA	Juan Ramon Travel	859
2010	CRC	NOAA	To develop 3 climate change adaptation modules	20,280
2010	CRC	USAID Tanzania	CEEST subcontract to use adaptation to climate change guide in Tanzania	12,835
2010	CRC	UH Seagrant	Seagrant staff contributing to RMI coastal assessment	2,002
2010	CRC	LOICZ	Stephen participation in India meeting.	504
2010	CRC	LOICZ	Stephen participation in Paris meeting	2,133
2010	WIOMSA	Sida	Expert meeting for WIOCOMPASS	15,200
2011	WIOMSA	WIOMSA match	South Africa certification event	3,180
2011	WIOMSA	WWF S.A. and South African Parks Governments	South Africa certification event	10,900
2011	WIOMSA	USAID Tanzania	Kenya certification event	4,000
2011	WIOMSA	Employer candidate fees	Kenya certification event	3,200
2011	WIOMSA	ReCoMap	updating MPA training manual	25,000
2011	WIOMSA	Sida	Conducting MPA training course	20,000
2011	WIOMSA	ReCoMap	Conducting MPA training course	55,000
2011	CRC	CTI	Climate change cases, courses, and training of trainers	58,423
2011	UH Seagrant	UNDP	development of shore management guide for the Marshall Islands	6,000
2011	CRC	USAID	IMACS Indonesia Project, year 1 climate change funds implemented by CRC	183,303
2011	CRC	IOC and URI (training account)	Climate change related fellowship at CRC for three individuals from Ghana, the Gambia, and Mozambique	20,550
2011	WIOMSA	Sida	Level 2 certification event in Kenya	3,209
2011	WIOMSA	WWF S.A.	Level 2 certification event in Kenya	1,600

2012	CRC	UH Seagrant	salary and funding for fact sheets	12,000
2012	WIOMSA	WWF TZ		5,000
2012	WIOMSA	SIDA	MPA PRO assessor training	19,091
2012	CRC	TNC	Pam Rubinoff to participate in workshop on Natural Coastal Protection,	1,600
2012	CRC	CRC/BALANCED	Elin and Brian's travel to the Philippines	6,170
2012	WIOMSA	EU	Printing of assessors handbook	2,500
2012	CRC	IUCN	travel to Denmark	1,600
2012	WIOMSA	Various	Level 3 assessment event	4,000
2013	WIOMSA	Sida	Learning meeting in Nairobi	25,773
2013	WIOMSA	Sida	Level 1 assessment on Mafia	12,510
2013	WIOMSA	WIOMSA match	Madagascar assessment	7,478
2013	WIOMSA	WCS Madagascar	Madagascar assessment	13,000
2013	CRC	Manonmaniam Sundaranar University	Brian's trip to India	2,466
2013	CRC	Pwani/USAID Tanzania	NAP workshop	12,401
2013	CRC	WWF Malaysia	Cons enterprise and fisheries training	12,057
2013	CRC	COMFISH	Glenn's trip to Senegal and his time. MPA PRO for West Africa	11,311
2013	CRC	Engility	West Africa NAP workshop	50,000*
2013	CRC	IUCN	Travel to Germany for the IUCN BIOPAMA project	1,800
2014	CRC	IUCN	Travel to Mexico for a meeting to identify MPA pro opportunities	565
2014	WIOMSA	Sida	Level 1 assessment in SA	9,731
2014	WIOMSA	Sida	Funding for South African assessors	12,000
			LEVERAGED FUNDING (2010-2014) TOTAL $	**680,565**

Success Stories

The following success stories are a selection of highlighted achievements of the SUCCESS project and its associate awards.

USAID | THE GAMBIA
FROM THE AMERICAN PEOPLE

SUCCESS STORY
Oyster Harvesters Gain Exclusive Rights

West African women's shellfish collective makes history and changes lives

TRY photo

Members of the TRY Oyster Women's Association vote to uphold the closure of their fishery in June 2013. Exclusive use rights and decisions on fishery closure periods were granted to the Association by The Gambian government in 2012.

The story of the TRY Oyster Women's Association is one of empowerment, education, and ecosystems. And that story gets written anew every day by this once-disenfranchised group of women as they continue to improve their lives and the lives of their families.

The arduous work of shellfish harvesting in the tiny West African nation of The Gambia traditionally has been left to uneducated women in small villages who eke out a living harvesting, processing, and selling this crucial food source. In 2007 fellow Gambian Fatou Janha helped organize a group of 40 women into a collective, the TRY Oyster Women's Association, with the goal of improving their livelihoods and lives.

Today, that collective has succeeded on many fronts. Much of that progress came after the Coastal Resources Center (CRC) at the University of Rhode Island's Graduate School of Oceanography began working with TRY as part of the five-year Gambia-Senegal Sustainable Fisheries Project funded by USAID's West Africa Mission. That project was an associate award under the Sustainable Coastal Communities and Ecosystems Program (SUCCESS). TRY's achievements include:

- In 2012, the government of The Gambia granted TRY exclusive use rights through a fisheries co-management plan for cockle and oyster grounds in the Tanbi wetlands.
- TRY is the first women's group in sub-Saharan Africa to be granted such rights by a national government. Those rights include responsibility for sustainable management, which includes an eight-month closure of the shellfishing grounds to prevent overfishing and to protect the critical mangrove habitats.
- TRY won an Equator Prize at the 2012 Rio+20 Summit. More than 125 projects had competed for the UNDP prizes.
- TRY membership now numbers more than 500 women (and a few men) in 15 communities.
- In June 2013, the women voted to uphold the fishery closure period despite pressure to change the timing and reduce its duration.

During the fishery closure, from July through February, the women remain busy. They sell peanuts, catfish or other commodities, gather for TRY educational workshops, and plant mangroves. As those mangroves are taking firm root, so are changes in the women. They now make decisions that affect their communities, speak with confidence in public, vote for what they believe in, and take charge of their bodies and their health with the inclusion of population and women's health initiatives through TRY.

USAID | THE GAMBIA

FROM THE AMERICAN PEOPLE

SUCCESS STORY
Protecting a Fishery Before It Is in Crisis

A co-management plan for the sole fishery is put in place before overfishing takes hold

CRC photo

A fisherman carries his gear along the shoreline in The Gambia.

Tapping into the knowledge of local fisherfolk and involving them at the start of the process helped ensure that the fisheries management plan addressed the specific needs of the fishery and the community.

Before managed access came to The Gambia's sole fishery, 1,500 metric tons were harvested annually. And pressure was increasing to land more sole, an important food security source and export product for the nation. But controls to protect this critical fishery are in place with the historic adoption of the Sole Fishery Co-Management Plan in 2012. The government granted exclusive use rights to a fleet of artisanal fishermen harvesting sole in 500-800 boats along The Gambia's Atlantic coast. The granting of such rights is unique in this part of the world, and notably, the measure came before the species had become overfished, heading off potential crisis in the sector.

The Gambian sole co-management plan—or collaborative management plan—was built from a consultative process with actors at all levels in the artisanal fishery, and its success is due in part to the work of the USAID-funded Gambia Senegal Sustainable Fisheries initiative, an associate award under the Sustainable Coastal Communities and Ecosystems program (SUCCESS). The project was implemented by the Coastal Resources Center (CRC) at the University of Rhode Island's Graduate School of Oceanography.

The existence of a legal framework on which to base a plan was essential. The Gambia Fisheries Act of 2007 provided that basis. It grants authority for the Minister of Fisheries, Water Resources, and National Assembly Matters to designate special management areas for the purpose of community-based co-management in the interest of conservation, management, and sustainable use of fisheries resources. The Sole Fishery Co-Management Plan created a special management area for the sustainability of the sole fishery on The Gambia's Atlantic coast and granted The National Sole Fishery Committee (NASCOM) and Landing Sites Co-management Committees (LACOMS) exclusive use rights within that area. Limits on fishery access help sustain the species. An important knowledge base for the plan came from local fishermen and industries, confirmed through collaborative research techniques. The plan is an adaptive one, designed to evolve as data become available and conditions change. The co-management plan also is pivotal to the fishery's pursuit of the coveted Marine Stewardship Council (MSC) label, designating it a sustainable fishery. That effort got a boost in 2013 when German grocery retailer Kaufland awarded $100,000 to help advance plan objectives and move the fishery closer to meeting labeling requirements, which could improve the product's market value abroad.

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FROM THE AMERICAN PEOPLE

SUCCESS STORY
Resilience Through Diverse Livelihoods

Women fishmongers gain dressmaking and hairstyling skills and the confidence to succeed

Hen Mpoano photo

One of the fishmongers in Anlo Beach who learned dressmaking skills through a sustainable livelihoods initiative.

In the small community of Anlo Beach, 30 women received vocational training in dressmaking and hairdressing, helping them to successfully establish their own small businesses and to earn incomes from their new skills. These new livelihoods also helped to reduce pressure on the already-stressed fisheries sector in Ghana.

A diverse livelihoods component of the USAID-funded Integrated Coastal and Fisheries Governance (ICFG) initiative (known locally as Hen Mpoano) helped women fishmongers in a tiny village in Ghana's Western Region gain new skills and confidence that can empower them for a lifetime.

Anlo Beach is a small migrant-fishing community in the coast district of Shama. The village is highly rich in biodiversity but its inhabitants face a precarious future arising from their vulnerability to sea erosion, flooding, and climate change impacts. The community floods every rainy season, usually resulting in loss of life and property. In addition, fisheries, the major driver of the local economy, is at the point of near collapse and has left many residents jobless and poverty stricken. As a component of the ICFG initiative, a livelihoods baseline survey was conducted in Anlo Beach; identifying needs for skills training to diversify household income. Overall goals were to reduce over-dependence on the marine fishery, promote sustainable fishing and build coastal community resilience and improved socio-economic well-being of residents.

After six months of intensive training, half of the women became skilled in bridal make-up, nail care and hairdressing skills while the other half gained sewing abilities and are able to make dresses and traditional wear (kaba and slit) for women. The vocational institute Opportunities Industrialization Centre (OIC Ghana) conducted the training. ICFG donated sewing machines and hairdressing kits, which the beneficiaries have paid for in installments into the community's coffers for the purpose of future community development projects.

Prior to the intervention, according to village Chief Torgbui Terkple Garikor, the women in the village never took part in any community meetings and always relied on the men to take decisions for them, even those that would affect their interests."Our women never attend meetings when we call for community gathering but thanks to Hen Mpoano, our women now have a voice, are organized and are now making their own decisions," Torgbui said.

ICFG was implemented as a USAID-funded associate award under the Sustainable Coastal Communities and Ecosystems Program (SUCCESS) and concluded in January 2014. Hen Mpoano has since established itself as a local NGO.

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FROM THE AMERICAN PEOPLE

SUCCESS STORY
Bringing Behavior Change Through Entertainment

A gripping radio drama connects the public with pressing coastal and fisheries issues

Hen Mpoano photo

Actors perform the radio drama "Biribireba," which brought messages of sustainability, coastal resilience, and fisheries governance through storylines spiced with romance and corruption to a broad audience in Ghana.

The radio drama series "Biribireba" was one of the tools that the ICFG initiative successfully used to communicate program goals and win the support of local people. ICFG, a four-year program that concluded in January 2014, was implemented by the Coastal Resources Center (CRC) at the University of Rhode Island's Graduate School of Oceanography.

People everywhere like a good story, with plenty of action and drama told in a convincing way. And telling stories is the oldest form of education and information sharing we have, one that has not lost its power to entertain and persuade even in this age of technology. That certainly was the case with the Ghana radio drama series titled "Biribireba," a tool the USAID-funded Integrated Coastal and Fisheries Governance (ICFG) initiative successfully used to communicate program goals and win local support. This support translated to behavior change as more and more people identified with the values and goals of ICFG, known locally as Hen Mpoano (Our Coast), and an associate award of USAID's Sustainable Coastal Communities and Ecosystems Program (SUCCESS). Biribireba means "something is coming" in the Ghanaian local dialect, and the phrase served as the name of the fictional coastal fishing village where the drama was set. "People were glued to their radios every Tuesday," said Kofi Agbogah, Executive Director of Hen Mpoano. The 52-episode show reached an estimated 2.5 million Ghanaians and was produced by PCI Media Impact,

In this village natural resources abound, but the residents misuse them through illegal, corrupt, and negligent means until resources start declining and the community starts facing insurmountable challenges. The residents harvest tilapia, crabs, mudfish, and other species of fish but do not see the importance of these resources and the need to conserve them. The village finally embraces positive change when some community members realize that "something is really going to come (happen)" if attitudes do not change. "Biribireba" was filled with intrigue, corruption, temptation, chaos, suspense, and love. But unlike other dramas, it was infused with important messages. After the 15-minute episodes, a magazine show featured community leaders, fisheries, and other natural resource experts in panel discussions relative to the issues raised in the show. Phone-in sessions gave the listening audience the opportunity to discuss characters and plot and for education and communication to continue. Hen Mpoano gathered evidence of changes in behavior through phone-in sessions, as well as pre-drama and post drama surveys. Some community members called in to confess their ignorance of the issues. As new converts to the importance of coastal and fisheries management, some volunteered to be panel members and to educate their peers. "Biribireba" also created a platform for stakeholders in the fisheries and coastal zone and fostered effective communication among resource users and policy-makers.

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SUCCESS STORY
Making Big Gains in Fisheries Enforcement

The Western Region of Ghana is a national model on enforcement and prosecution

ICFG photo

Fisheries violations are adjudicated in Ghana's Western Region. By the end of the ICFG enforcement initiative, authorities had successfully prosecuted 34 out of 37 cases of violations.

A strengthened prosecution chain was built on strong local stakeholder involvement, proper training of officials and public outreach and education throughout the local communities. This process helped change perceptions, attitudes and eventually behavior.

The Western Region of Ghana, where biological diversity and natural resources abound, has drawn attention recently not only for those riches, but for a surge in oil exploitation activities and the ensuing opportunities, challenges, and threats. Food security in the fisheries sector is among those challenges. Enforcement of fisheries violations had been lax and was seen as a threat to that security.

The Integrated Coastal and Fisheries Governance initiative (ICFG), a USAID associate award through the Sustainable Coastal Communities and Ecosystems Program (SUCCESS), worked to address food security and related issues in the coastal region. Known locally as Hen Mpoano (Our Coast), the program was implemented by the Coastal Resources Center at the University of Rhode Island's Graduate School of Oceanography.

Prompted by a September 2010 case in which Ghana's Western Naval Command was unable to prosecute several violators, the Government committed itself to enforcing the powers of its Fisheries Act and establishing a platform for prosecutions. Weak enforcement and compliance to fisheries laws were significant causes of the declining fisheries economy and were attributed to ignorance of the institutions in the prosecution chain, lack of collaboration and coordination among institutions, and inadequate knowledge of the ecological bases of the fisheries laws.

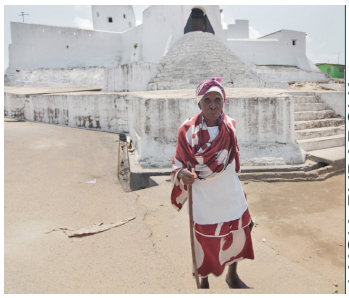
To address these issues, ICFG spearheaded training in March 2011 for those parties responsible for prosecutions, including the Attorney General's Department of the Western Regional Coordinating Directorate, the Regional Police Command, the Fisheries Commission, Circuit Court judges, the Western Naval Command, and the Environmental Protection Agency. With project-led studies as corroboration, the fisheries prosecution chain in the Western Region became a robust mechanism of enforcement. By September 2012, 18 cases had been successfully tried with 15 convictions and three acquittals. The Western Region continues to be a model for the other coastal regions, with 34 of 37 successful convictions by January 2014.

Stakeholders continue to meet and learn from one another, improving and strengthening the prosecution chain in the sector. All these efforts lead to improved food security for the people of Ghana.

USAID | GHANA
FROM THE AMERICAN PEOPLE

SUCCESS STORY
ICM Toolkits Have a Lasting Impact

Local people drive creation of practical tools that have become national models



LUCIA RYBAROVA

A villager in Fort San Sebastian, Shama District, Western Region, Ghana—one of the small communities that played a big role in the creation of the coastal management toolkits.

The toolkit creation began when stakeholders from all walks of life came together to map out the issues confronting their community and determining ways to address them. The toolkits include local information, source material, case studies, and technical information and suggestions for projects incorporating integrated coastal management in District Assembly planning and practices.

It would be hard to find a more tangible and practical indicator of the accomplishments of the Integrated Coastal and Fisheries Governance (ICFG) Initiative in Ghana than the district toolkits produced for the nation's Western Region. ICFG, known locally as Hen Mpoano (Our Coast), was a four-year initiative implemented by the Coastal Resources Center at the Graduate School of Oceanography at the University of Rhode Island as an associate award to the Sustainable Coastal Communities and Ecosystems Program (SUCCESS).

The toolkits serve as a catalog summarizing each district's marine and coastal information. The project produced five toolkits, one for each of the Western Region Districts. "That was one of the highlights of our project closeout," said Don Robadue, CRC Project Manager for Ghana. "Everybody was very excited to get their hands on them."

That excitement was part of the endeavor from the start thanks to the early and active involvement of local people in the creation of the toolkits. The idea for them developed from participatory mapping work that began in the Western Region's Shama District. Participatory mapping brings together a broad group of stakeholders from all walks of society to literally write down on large plastic overlays what they see as the critical issues confronting their community and recommending the best ways to address them. The process helps project leaders and local people learn while honing both the process and the outcomes for successful integrated coastal management that is tailored to the local environment and conditions. Recognizing cultural traditions, the mapping sessions were separated by gender: only men in one group and only women and youths in another.

This bottom-up approach was successfully applied throughout the initiative. In the case of the toolkits, the sessions led directly to the crafting of the nation's first floodplain ordinance in the Shama District and to the mapping of wetlands in the Ahanta West District. Such pioneering work made the districts and the toolkits national models that are driving the inclusion of coastal management in plans at the national government level. And their format and design makes the toolkits replicable in coastal communities far beyond Ghana's Western Region.

USAID | GHANA
FROM THE AMERICAN PEOPLE

SUCCESS STORY
Training, Trust Empower Marine Police

Building the capacity of the officers, reaching out to communities bring success to region

ICFG photo

Marine Police officers and Ghana navy personnel talk with fishermen along the waterfront in Ghana's Western Region.

After the newly reconstituted marine police unit received training and support, arrests and convictions for fisheries violations rose significantly, as did the morale of the unit and its reputation within local communities.

The once self-sufficient fisheries sector in Ghana has been in crisis and in danger of collapse due to overfishing in an unregulated or "open-access" environment. To address the situation, in 2010 Ghana strengthened its Fisheries Act and re-established the Ghana Police Service Marine Unit to enforce the new regulations. The re-launch of the inadequately trained police force did not go well, and unhappy fishermen took to the streets to protest.

Things began to change when the Integrated Coastal and Fisheries Governance (ICFG) initiative (known locally as Hen Mpoano) partnered with the Fisheries Commission and the Ghana Police Service to support the training of the new MPU officers, partly based on the ecological mandates of the nation's Fisheries Regulations. ICFG was an associate award made under the Sustainable Coastal Communities and Ecosystems Program (SUCCESS).

First and foremost, the officers needed support and training to gain the skills and knowledge to do their jobs effectively and help change the culture and attitudes regarding law enforcement. ICFG assisted the newly formed police unit in educating and sensitizing local people to the need for enforcement by engaging people in communities, churches, marketplaces, and other public gatherings. In 2011 the first police training took place during a multiple-day workshop with 25 officers gaining new abilities, guidelines for ethical conduct, pride in their mission, and confidence. In fall 2012 a second workshop was held to review new fisheries cases, and to identify the roles of various institutions in ensuring successful prosecutions. To help build an effective marine police force that the communities would respect, the project team coordinated marine police visits to 70 communities. Working closely with fisherman, traditional leaders, and all segments of the affected communities was integral to the success of the initiative. In addition, the team worked to help create a regional environmental court system for fisheries offenses. Navy, Marine and Judicial Police, Air Force, Attorney-General's department, and judges received training.

To build on the momentum Hen Mpoano Executive Director Kofi Agbognah led an effort to set up a toll-free phone line to allow anyone to report illegal fishing cases. The number of arrests of fisheries violations shot up dramatically in the Western Region. By 2013, 38 infractions had been recorded, and 37 were successfully prosecuted.

USAID | TANZANIA

FROM THE AMERICAN PEOPLE

SUCCESS STORY
Livelihoods Resiliency and Rewards

Project data find household income improves and biodiversity threats ease

CRC photo

A woman in the Mkange village celebrates receiving money from a local savings and credit society to support her livelihood enterprise.

The goal of the sustainable livelihoods activities along Tanzania's coast was to diversify and increase income, reduce pressure on natural resources, and increase resilience to natural and man-made stresses. The targeted villages rely heavily on fisheries and agriculture for household income and now benefit from diversified income streams.

"Green jobs" is a catchphrase often used to describe ways to build wealth, win votes, or influence agendas. In the less-developed world such jobs can be a route out of crushing poverty. This is the case in Tanzania's coastal villages near Saadani National Park and Menai Bay Conservation Area on Zanzibar, where incomes rely heavily on agriculture and fishing. Here, the Pwani Project partnered with 1,359 households to improve their lives while reducing biodiversity threats via sustainable livelihoods. Pwani continued the livelihoods work begun through the Sustainable Coastal Communities and Ecosystems Program (SUCCESS) and concluded activities in December 2013. It was implemented by the Coastal Resources Center (CRC) at the University of Rhode Island's Graduate School of Oceanography. Pwani, which means "coast" in Kiswahili, worked in coastal communities to address climate change adaptation, natural resource management, gender equity, and poverty. The project tackled these issues, in part, through a sustainable livelihoods component that diversifies income, reduces pressure on resources, and increases resilience.

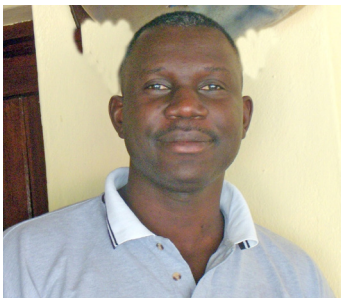
Households in 21 villages implemented livelihoods that boosted household income 43 percent, on average. Enterprises included: bread baking, beekeeping, shell-craft jewelry making, solar-powered cell phone chargers, and soap making. Project enterprises provided mainly additional livelihoods, fortifying household resiliency in times of stress. Added income was used to pay school fees or buy bicycles, energy-efficient stoves, or furniture. "The money I bring in makes a difference to the family. I support my brothers with school fees. Now, my stature in the family has changed," said Ikiwa Abdalla Ali, a jewelry maker.

The project succeeded by emphasizing entrepreneurship skills and mentoring as well as technical skills, all while easing biodiversity threats. Some villagers said sustainability messages prompted them to halt or reduce fishing or charcoal-making. The local Savings and Credit Cooperative Societies (SACCOS) was essential to that success. SACCOS supports livelihood activities linked to sustainable natural resource practices, and more than two thirds of project participants took out at least one SACCOS loan. "The capital I got from the SACCOS has improved my livelihood to the extent that I am now able to upkeep my family, including my parents and others who depend on me," said farmer Mile Rashid, a former charcoal dealer.

USAID | KENYA
FROM THE AMERICAN PEOPLE

SUCCESS STORY
A True Leader for MPA Management

The MPA PRO capacity development program transforms a student into a mentor, leader



WIO-COMPAS photo

Arthur Tuda built his competency and his confidence as he moved through the rigorous certification demands of MPA PRO.

MPA PRO evaluates marine protected area (MPA) professionals on a wide range of competences. Applicants must present a portfolio of evidence and work completed in the field. Assessments are held during multi-day events. As of late 2013, 51 professionals had received certification.

Wildlife-oriented tourism is critical to the economic well-being of Kenya, a nation of 44 million people. Tourism is the second-largest sector of the economy, accounting for 12 percent of Kenya's GDP, the largest in East and Central Africa. That's one reason why it is important for Kenya to have experienced and competent conservation leaders. Arthur Tuda, with more than a decade of experience in marine conservation, is one of those leaders. As the Assistant Director, Coast Conservation Area, Kenya Wildlife Service, Arthur is in charge of five marine-protected areas (MPAs) and six terrestrial parks. He oversees a staff of more than 350 people.

That sort of responsibility is not given lightly. Arthur has earned it, proving his leadership abilities and job capabilities in part through certification as an MPA PRO (Marine Protected Area Professionals). The certification comes from the Western Indian Ocean Certification of Marine Protected Area Professionals (WIO-COMPAS), a leadership and capacity development program that offers three levels of professional certification. WIO-COMPAS developed MPA PRO beginning in 2007 through the Western Indian Ocean Marine Science Association (WIOMSA) as a component of the Sustainable Coastal Communities and Ecosystems Program (SUCCESS) with support from the Coastal Resources Center at the University of Rhode Island's Graduate School of Oceanography.

Arthur credits his MPA PRO experience with building his confidence and competency. In 2008, then a site manager, he was the first Kenyan to achieve Level 2 Site Management Certification. "Getting certified was a rewarding experience," he said. "At the end of the assessment I felt humbled and ready to learn more about MPA management." He remained an active leader with MPA PRO by becoming an assessor. He appraised the capacity of other East African professionals hoping to get certified at Levels 1 and 2. In 2012 he proved his commitment to the value of the program by attaining Level 3 Strategy, Policy and Planning Certification. In early 2013 he was promoted to the assistant directorship he now holds. Today, as Arthur oversees more than 2,500 square kilometers of critical habitat, he uses what he has learned through MPA PRO to take on the challenges of managing expansive conservation areas with limited resources and personnel.

USAID | MADAGASCAR

FROM THE AMERICAN PEOPLE

SUCCESS STORY
Stepping Up To Lead in a Time of Crisis

Park director calls on capacity he gained through WIO-COMPAS certification program

WIO-COMPAS photo

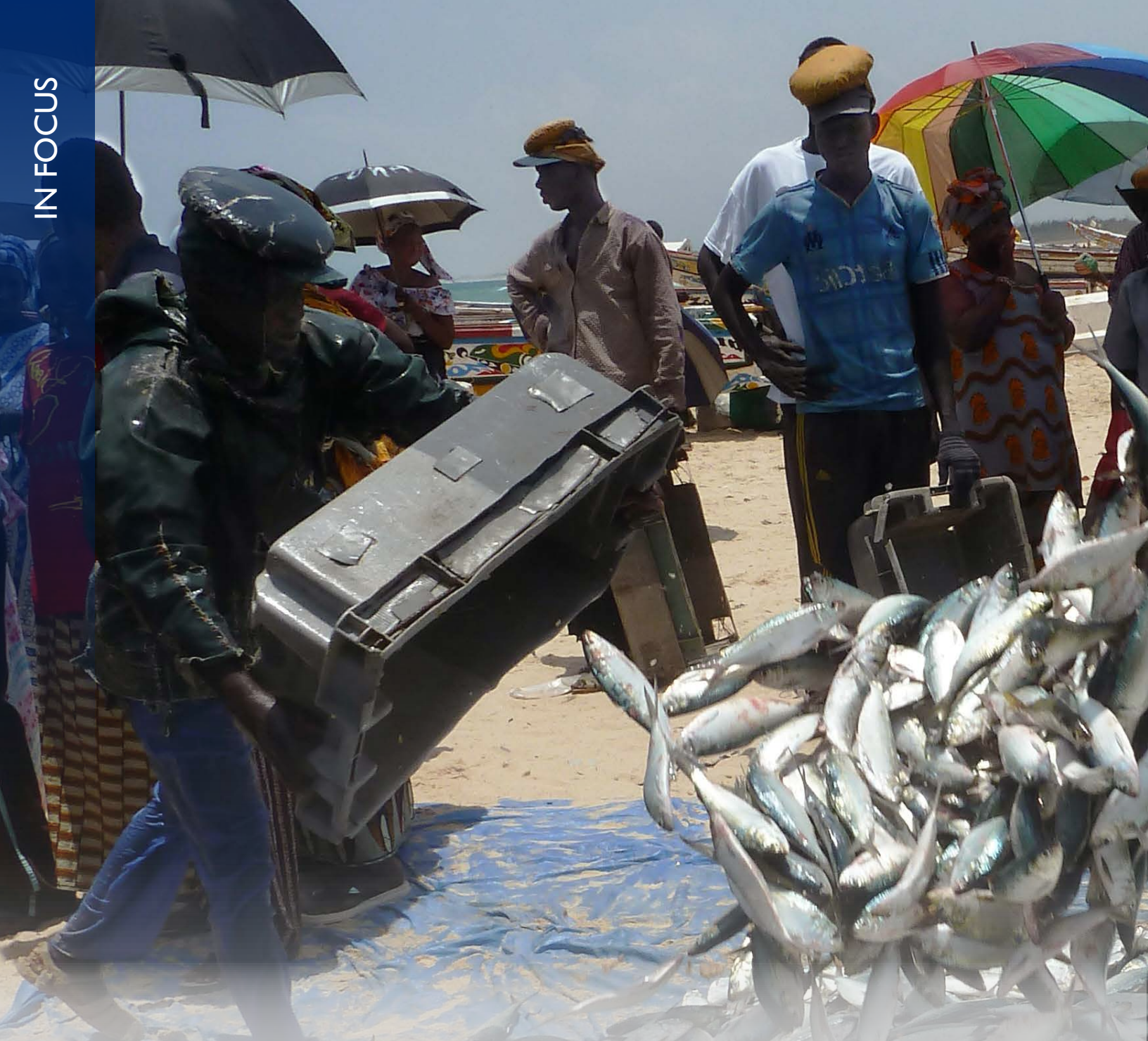
Isaia Raymond, Park Director at Sahamalaza National Park in Madagascar.

The national park director called on the skills and leadership abilities he developed through WIO-COMPAS's MPA PRO certification program to manage threats to the park's resources during a national government crisis in Madagascar. WIO-COMPAS created an innovative program that sets the standard for professional competence at three specialty levels—rangers, site managers, and policy makers.

How does a marine protected area (MPA) play a vital role in bringing a community together during a national political crisis? Just ask Isaia Raymond, Director of Sahamalaza National Park. He had to go beyond his normal duties to contain a growing mob mentality and find a path forward for all. In early 2009 the president of the Republic of Madagascar, Ravalomanana Marc, went into exile. A transition government was established, but in the wake of uncertainty the two major political parties disagreed on which laws were to be followed. Prince Arana IV, known as Ampanjakabe, was the chief of local traditional power and lead his party against the local government. He declared falsely that the new transition government didn't include an Environment Department, and therefore, everyone was allowed to exploit resources in Sahamalaza National Park without permits or regulations.

Isaia soon faced 300 fishermen from two neighboring districts using illegal gear. When Isaia's rangers confronted the fishermen, they physically threatened the rangers and cut down precious mangrove trees. Isaia had a choice to make: either instruct his rangers to forcefully uphold existing park laws, which likely would have led to armed conflict and physical harm, or take a political process of engagement. Fortunately for Isaia, he had just been certified through the Western Indian Ocean Certification of Marine Protected Area Professionals (WIO-COMPAS) as a Level 2 MPA PRO (Marine Protected Area Professionals). WIO-COMPAS was a component of the Sustainable Coastal Communities and Ecosystems (SUCCESS) program.

With renewed purpose and confidence, Isaia was able to use his new skills in stakeholder engagement to invite discussion among the appropriate representatives, such as the feuding political leaders, local government staff, local traditional authorities, older association members, technical services representatives, NGOs, fishermen, farmers, representatives of local communities, and park staff. The effort included a visit to the park to sensitize everyone to the issues and potential solutions. Fortunately, the meeting led to agreements on the way forward, resulting in fewer fishermen in the park boundaries than before. Even more importantly, the prince changed his attitude towards the park and now assists Isaia on sensitization activities with the local communities. The prince even spoke on a recent World Environment Day, citing the need to protect and support the valuable environment around Sahamalaza National Park.

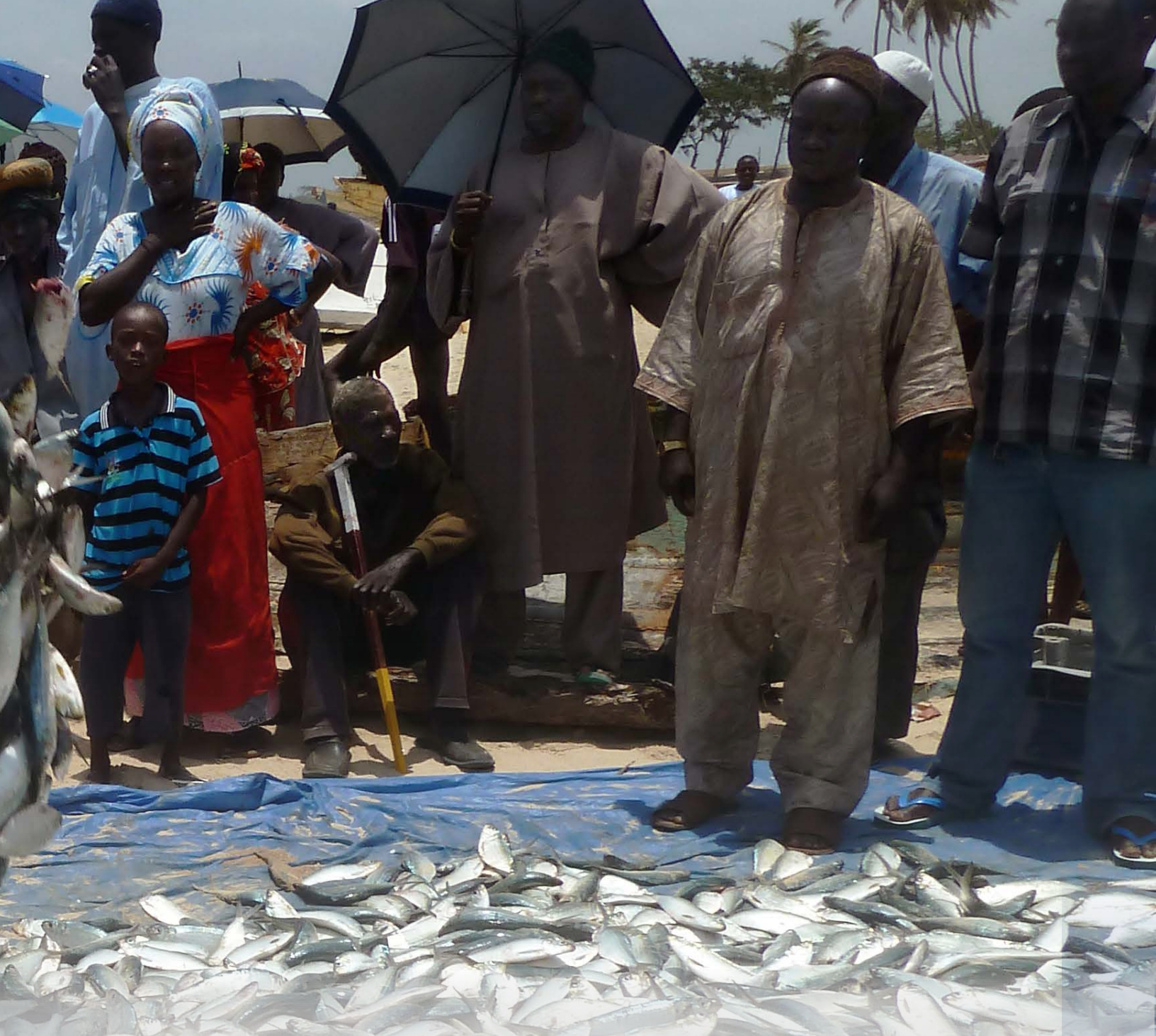


BRIDGING THE GENDER GAP

A STRONGER ROLE FOR WOMEN IN SENEGAL'S FISHERIES

THE DAILY CATCH: People in Cayar, Senegal eagerly await the delivery of the day's catch. In Senegal, fish provide over three-quarters of the population's animal protein.

Photo Credit: Anne Delaporte



It's a mosaic of sights and sounds: A group of women in brightly colored dresses sitting in a circle laughing, singing, beating on drums, and clapping. In the middle, two women move to the music, bending down and dancing. These women are fish processors in the coastal city of Cayar, Senegal, and they exchange ideas, improve their livelihoods, and celebrate life through song and dance.

WOMEN WORK TOGETHER

In 2011, the USAID/COMFISH project started working with these women to pioneer eco-friendly fish processing methods and boost their incomes. The project, which is managed by the Coastal Resources Center at the University of Rhode Island Graduate School of Oceanography, works across Senegal to increase the resiliency of coastal communities to climate change and to build an ecosystem-based management plan for six priority fish species, which provide much of the dietary protein for people in Senegal.

To successfully use an ecosystem approach, local fishers, processors, and the community must all take part in fisheries management to address a range of human and ecosystem needs simultaneously. As part of this process, USAID works with leading women's fish processing associations to organize into committees with specific responsibilities, such as ensuring hygienic standards for fish processing.

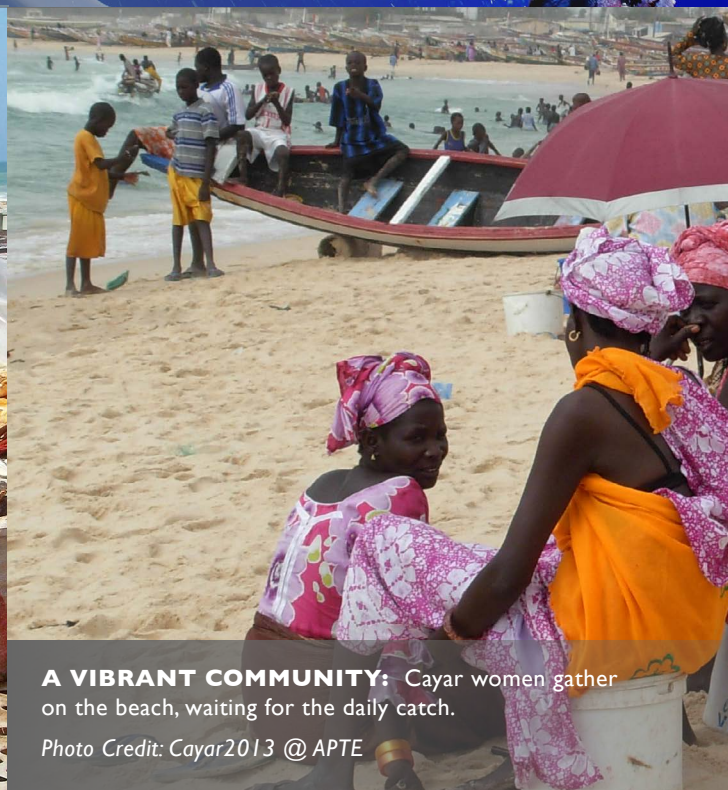
At first, many women fish processors lacked the tools and resources to reach their full potential. So the project set a goal: To establish environmentally

VITAL SOURCE OF REVENUE: A women's collective processes sardinella in Senegal, where over 7,000 women work in fisheries.

Photo Credit: Bruno Demeocq, UN Women

FROM FISH TO FOOD: A Cayar fish processor salts the catch.

Photo Credit: Cayar2013 @ APTE



A VIBRANT COMMUNITY: Cayar women gather on the beach, waiting for the daily catch.

Photo Credit: Cayar2013 @ APTE

sustainable processing sites for them. But this involved attaining land and permits from local authorities, some of whom discriminated against women. Project staff spent a lot of time lobbying stakeholders and explaining the ways women processors could benefit the environment, the economy, and the community. It was an arduous process but it paid off when they obtained land for a new processing unit for women in Cayar.

The site, which is home to fish smoking ovens and a modern 1,500-square meter processing facility, allows the women to work more productively and collaboratively. Over 200 women work there to salt, ferment, dry, and roast the fish. They manually process the fish into different products such as the fermented and dried fish known as *gej*, the salted and dried fish known as *sali*, and the roasted and dried fish known as *keccax*.

EMPOWERMENT THROUGH COMMUNITY

The women are working together to improve their processing methods. With support from USAID/COMFISH, they developed a code of conduct to govern their trade, the first of its kind in the women's fish processing sector. The code ensures that fish are processed in a hygienic and safe manner that complies with environmental regulations. One section of the code requires that the women not buy or process immature or juvenile fish, a prohibition that contributes to the fishery's resilience against climate change impacts. These new standards will enable the women to sell the fish products with a recognized label guaranteeing their quality, making them much more lucrative.

But illiteracy made it challenging to ensure all women could understand and adopt the code. To make sure they understand the intricacies of the new processing methods, USAID developed easy-to-understand literacy modules on hygiene, quality, and other topics.

The project also embraced the power of culture, community, rhythm, and melody. Project staff engaged the processors in performing traditional women's songs and dances in *Wolof,* the local language, that explained the code. The lyrics address the freshness of the fish, cleaning the work area, and personal hygiene–and dances bring them to life. "I can easily understand and memorize the code of conduct through our local songs and dance," said Fatou Kiné Diop, a fish processor in Cayar.

The women are now working together to build their business and help each other grow. They gather each month over tea and biscuits to discuss their work and plan initiatives to boost their productivity and earning capacity. USAID/COMFISH helps organize these meetings and put their plans into practice. Among the successful initiatives is a literacy program to enhance livelihood opportunities and to further empower them. "With the literacy program, I am now able to write my name, dial a number on my mobile phone, and, more importantly, hold my accounting in a notebook," said local fish processor Outé Yade.

As the women gain skills and confidence, they are better equipped to pursue alternative livelihoods, further reducing pressures on the fish and the ecosystem. Khady Sane Diouf, USAID/COMFISH project director, said the project has benefited the entire community. "Fish processing by women in Cayar is a shining example of empowerment, environmental protection, and poverty reduction."

C. McCarthy

Fisheries in Jeopardy

Fisheries fuel development. Over half a billion people earn their incomes from fish and over 2.6 billion people rely on fish for protein. But climate change puts critical fish stocks at risk and harms the food security and livelihoods of coastal communities. Rising sea temperatures cause coral bleaching, which threatens critical fish habitats, and rising sea levels damage coastal ecosystems like mangroves and salt marshes. Extreme climate events like cyclones and floods can further damage fish stocks. USAID is working with coastal communities in Senegal and around the world to adopt an ecosystem-based approach to fisheries management that helps them mitigate and increase resiliency to climate impacts.

More Information

USAID/Senegal Website

USAID/Senegal on Facebook

Coastal Resources Center Website