Sustainable Coastal Communities and Ecosystems Program (SUCCESS)

A Component of the Integrated Management of Coastal and Freshwater Systems Program (IMCAFS)

Semi-Annual Report

July 1 – December 31, 2010

USAID FROM THE AMERICAN PEOPLE

Coastal Resources Center
University of Rhode Island

University Of Hawai'i HILO

WIOMSA
Western Indian Ocean Marine Science Association

Integrated Management of Coastal and Freshwater Systems Leader with Associates Cooperative Agreement for Sustainable Coastal Communities and Ecosystems (SUCCESS)

Semi-Annual Report
July 1 – December 31, 2010

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A partnership between:

Coastal Resources Center
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University of Hawaii Hilo, Pacific Aquaculture and Coastal Resources Center
Western Indian Ocean Marine Science Association (WIOMSA)

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I. INTRODUCTION

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

The Coastal Resources Center (CRC) at URI is the Leader of this Agreement. The Pacific Aquaculture and Coastal Resources Center at the University of Hawaii (PACRC/UHH) is the sub-recipient. In the first five years of SUCCESS, regional implementation partners included 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) based in Nicaragua; and EcoCostas, a nongovernmental organization (NGO) based in Ecuador. The work of these partners focused largely on field applications while the work funded by the new five-year extension focuses on leadership activities at the global level—certification of marine protected area (MPA) professionals; climate change adaptation for the coast; and lessons learned in livelihoods. As well, there is a modest effort in finalizing the Fisheries and Aquaculture Guide for USAID. As a result of this change in focus from field to global level activities and the reduced funding level of this extension, involvement of the original SUCCESS partners will be limited to a few discrete activities. WIOMSA involvement will be limited to continued efforts on the WIO-COMPAS certification. UHH will be focused on climate change, the fisheries and aquaculture guide, and subsequent outreach. Currently, there is no continuing role for either EcoCostas or CIDEA/UCA.

The SUCCESS Program's goal *is to provide global leadership in integrated coastal management through innovative approaches in a participatory, issue-driven and results-oriented process to:*

- Promote sustainable use of marine resources
- Conserve marine biodiversity
- Improve food and income security

In the Program's first five years, its goals were achieved through four major components:

- 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

In the five-year extension, these same broad goals are being achieved through three major focus areas that concentrate on:

- Increasing capacity for marine protected area (MPA) professionals through certification
- Applying a climate lens to coastal policy, management, and practice
- Capturing and disseminating key learning about livelihoods development

All of the above make significant contributions to biodiversity conservation and play a role in raising awareness of the need to adapt coastal policies, plans, and practices in the face of global climate change.

Biodiversity Conservation and the SUCCESS Program

The SUCCESS Program falls under the Congressional biodiversity earmark secondary code. These are programs and activities—site based or not—with biodiversity conservation as an explicit, but not primary, objective. SUCCESS meets the following biodiversity earmark criteria.

The Program must have an explicit biodiversity objective; it is not enough to have biodiversity conservation results as a positive externality from another program

The overarching goal of SUCCESS is to help improve both human quality of life (health, income, education) and biodiversity through good governance. To meet this goal, the Program is now focusing on activities that can support 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 contribute to biodiversity conservation. One example is the SUCCESS Program's innovative new model for certifying MPA professionals. Referred to as the MPA PRO network, this initiative recognizes that as the number of MPAs around the world continues to increase, it becomes essential that the individuals responsible for effective operations of these sites have the requisite skills and experience to do so.

That said, SUCCESS activities span beyond formally designated marine and coastal conservation areas in recognition that while MPAs are one approach to achieving biodiversity conservation, in and of themselves they are insufficient in reaching biodiversity goals unless the areas outside their boundaries are also better managed. This is one of the very reasons why SUCCESS works on climate change adaptation issues in *all* coastal areas, including but not limited to those within the boundaries of protected areas such as MPAs.

SUCCESS operates under the premise that stakeholders in sustainable use and conservation efforts must see tangible benefits if these programs are to be effective and sustainable beyond the life of the USAID investments. Therefore, it recognizes the important role that livelihoods and enterprise development plays in helping to address poverty issues in coastal communities. It also recognizes that when poverty is rampant and there are few alternatives for livelihood opportunities, citizens often engage in marine resource extraction activities that can negatively impact biodiversity. Hence, SUCCESS is looking to capture what both it and

other programs and experts on the topic have learned about livelihoods development in natural resources-rich but economically poor coastal communities.

Global Climate Change Adaptation and the SUCCESS Program

For decades, CRC has been using an approach to integrated coastal management (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 experience and tools of the SUCCESS Program—can help coastal communities prepare for the changes that are already being felt today and will increase with time. This includes measures such as:

- Planning that anticipates sea level rise, including adjusted building codes
- Training in good practices that reduce climate impacts
- Encouraging MPA development as refuges and habitat for fish
- Community-based disaster management planning
- Constructing water tanks and recommending policy to address current and future 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. The SUCCESS Program is working to test and refine application of the guidance and direction provided in the publication *"Adapting to Coastal Climate Change: A Guidebook for Development Planners."* This Guide will help programmers and practitioners design and implement development projects in coastal regions in a way that accounts for and incorporates adaptations to the impacts of climate change and in a way that ensures they mainstream adaptation strategies into government and community coastal development initiatives.

Overview and Summary of Accomplishments

Below is a summary of the accomplishments of the SUCCESS Program from the start of the five-year extension (October 1, 2009) and highlights for the current reporting period. This is followed by sections that provide more detail on progress being made on the three key Program elements (MPA PRO, climate change, and livelihoods); contacts made with USAID Missions; updates on Associates Awards; and management challenges and opportunities. Appendix 1 provides a summary of the results per indicator to date and Appendix 2 lists leveraged funding to date (Oct. 2009 – December 2010), Appendix 3 presents one of the case studies included in the conservation enterprise guide.

Cumulative Program Accomplishments (October 1, 2009 – December 31, 2010)

- Secured endorsement of the WIO-COMPAS Program from the International Ranger Federation (IRF), WWF South Africa, and the Game Ranger Association of Africa

- Leveraged over US $240,000 for project activities related to climate change, learning, and MPA certification
- Trained 58 individuals (34% women) in climate change and through MPA PRO certifications
- Provided technical support to the Republic of Marshall Islands (RMI) to apply a climate lens to their Community-based Resource Management Planning (Reimaanlok) initiative; to Ghana, which is in early stages of developing its climate change adaptation activities; and to Tanzania, which is implementing a village level vulnerability assessment and adaptation planning tool that was developed by SUCCESS in collaboration with CRC's Pwani Project
- Developed six tools/guides/curricula, including the *Adapting to Coastal Climate Change Guide* and associated curricula and worksheets, *MPA PRO Handbook and Assessor Guide*, and a governance baseline how-to presentation
- Produced/presented 19 "success stories" and research papers. This includes featuring SUCCESS at the UN 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 World Conservation Union and WIOMSA publications; and in the final issue of the Basins & Coasts E-newsletter
- Successfully achieved having elements related to the process, guidance, and tools from the "*Adapting to Coastal Climate Change"* guidebook incorporated into the work of two developing country organizations—the Coastal Management Advisory Council (CMAC) in RMI and the Centre for Energy, Environment, Science and Technology (CEEST) in Tanzania
- As a result of outreach efforts on WIO-COMPAS, entered a partnership with the University of Cooperation International (UCI) in San Jose, Costa Rica to develop a new regional program based on the MPA PRO Network program (note: core SUCCESS funds are not being used to support any scale-up that results; rather, the partners are seeking other sources of funds to launch this effort)
- Initiated discussions with the Coral Triangle Initiative (CTI) to adopt/adapt the USAID climate adaptation Guidebook, which resulted in the CTI sponsoring 15 participants to the June 2010 CRC Coastal Adaptation to Climate Change course—the curriculum for which built on much of the material in the "*Adapting to Coastal Climate Change"* guidebook developed under SUCCESS. Following up on the CACC course, CTI will organize a regional climate change training in 2011 to which SUCCESS and CRC will provide technical assistance.
- Provided follow-up mentoring to 11 CCA participants who are implementing climate change activities in their home countries
- Conducted a first expert group meeting in Washington, DC to discuss an outline for the *"Guide for Enterprise Development in Coastal Management Programs"*

Program Highlights for the Current Reporting Period (July 1 – December 31, 2010)

- Leveraged over US $179,000 from CTI, Swedish International Development Agency (Sida), and the Regional Coastal Management Project (ReCoMaP) for climate change adaptation and MPA PRO-related project activities
- Certified 11 Level 1 MPA PROs bringing the overall total to 23 MPA PROs
- Conducted two village-level vulnerability assessments in Tanzania through the USAID Tanzania funded Pwani Project, using an adaptation planning tool that was developed from the "*Adapting to Coastal Climate Change*" guidebook
- Was awarded a US $58,000 grant from CTI to collect adaptation cases from the region, deliver two regional short courses and a training-of-trainers course
- Provided follow up mentoring to 11 CCA participants who are implementing climate change activities in their home countries.
- Prepared a draft guide called *"Enterprise Strategies for Coastal and Marine Conservation: A Guide for Practitioners and Local Government"*

II. PROGRESS IN MEETING PLANNED OUTCOMES OF WORKPLAN PROGRAM ELEMENTS

1. Regional Capacity Building: Certification of MPA Professionals

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 MPA PRO offers a combination of professional development, networking, ethics and certification, the focus is on the latter.

Staying true to the original intent of MPA PRO, SUCCESS has been sharing the model with other regions in the hopes of expanding the application of this innovative capacity building framework.

The three objectives of MPA PRO are listed below, though the report is broken down into regions due to the nature of the activities and strategies.

Objective 1: Certify
Objective 2: Service MPA PROs
Objective 3: Solidify and Scale-up the Model

1.1 Report Period Accomplishments (July 1, 2010 – December 31, 2010)

- Conducted two Assessment Events for Level 1 Marine Field Operations in South Africa and Kenya (Tanzania) with refinements to the model in between offerings
- Certified 11 Level 1 MPA PROs bringing the overall total to 23 MPA PROs

- Have four Level 1 candidates pending certification upon submission and approval of further evidence of having meet criteria to be certified
- Initiated discussions with South Africa Marine Parks Agencies to integrate competences into their human resources management systems
- Attracted significant cost sharing from MPA agencies and partners such as WWF
- Leveraged $US100,000 dollars from ReCoMaP and Sida
- Conducted outreach beyond WIO region to promote the MPA PRO program

WIO Region

The focus in the current year is on finalizing delivery of all aspects of the MPA PRO model in the WIO region, where it is known as WIO-COMPAS. In this reporting period, one individual from the July 2009 Madagascar certification event (2nd offering of the Level 2) submitted the additional evidence needed to earn her the MPA PRO designation (certification remains pending for three additional individuals from this event), making her our 12th MPA PRO at Level 2 and the second woman to be certified.

Assessors voluntary adopting competencies into their management systems

Assessors from South Africa and Kenya have seen the value of using WIO-COMPAS competencies for conducting performance reviews with staff. They are now voluntarily incorporating the competencies into their own management systems.

The first Level 1 Marine Field Operations Certification was conducted in South Africa with nine candidates enrolled out of 17 applications. The five-day Assessment Event at Tsitsikamma National Park, South Africa in July proved to be challenging. However, the program shined—as hoped—and the assessors left with a greater affinity for the program overall and suggestions for minor changes for further strengthening future Level 1 Events. Five candidates were certified, two are pending and two are on hold due to job interruptions/health issues. Level 1 is offered at a national/sub-regional scale to reduce costs, keep field rangers local and focus on sharing between common MPA sites. Significant leveraging of funds was achieved with WWF South Africa and the Government of South Africa as part of our financial sustainability strategy. From this first event, we are now leveraging funds to offer a Level 2 Certification in June of 2011 in partnership with WWF. Assessors-in-training from Kenya and South Africa attended the Level 1 Event as part of their mentoring process and skills building. Some of these assessors, who are also MPA managers, were so impressed by the power of the assessment process that they are now implementing parts of the program at their MPA sites. A presenter at the Event was The South African Field Guides Association, which trains field guides for southern Africa, including some MPA rangers. There is discussion of having this Marine Field Guides Course serve as a stepping stone for MPA rangers to achieve Level 1 Certification.

Group work during Kenya Level 1 Certification

A second Level 1 Certification was conducted in Kenya in September. Eight candidates attended out of 15 applications from Kenya and Tanzania. George Msumi, the manager of Mafia Island Marine Park, Tanzania, was the trainer-in-training. Six of the candidates were certified. The Kenya Wildlife Service (KWS) Director attended the final day of events and gave a closing speech. He is impressed with the concept and will be working with the marine section of KWS to potentially expand the competences to terrestrial protected areas.

The team leveraged US $100,000 from a joint ReCoMaP and Sida activity to update the WIOMSA MPA Management Course so that it prepares MPA staff for the competences and standards established in the WIO-COMPAS program. The course manual has been updated with our competences and the Fourth Regional Training Course in MPA Management was held in Mombasa in December 2010. The course is seen as a training element that prepares professionals for potential Level 2 Certification.

There is now a draft for a Level 3 Policy and Planning Certification—the most advanced certification level in the program. The coming months will focus on producing final Level 3 assessment and professional development materials and identifying potential dates for a first Level 3 Certification offering. The low number of potential candidates at this highest level (Level 3 is for those at a policy-making or equivalent decision-making level) dictates that Level 3 Events are a region-wide offering. There is some discussion, in fact, to expand it to an international offering/Event to secure more outside input and promote more professional skills sharing. We continue to engage experts in the field of professional assessments on reviewing the MPA PRO program for quality, rigor and consistency and in training the assessors who will conduct Level 3 certifications. Level 3 assessment instruments will differ from those used in Levels 1 and 2. This is due to several factors. One is the difference in the level and nature of the skills needed to effectively operate and perform at this high level. Another is the limited time that candidates at this level will have available to invest in this process.

In continued efforts to build support for the MPA PRO Network program, the team was pleased to secure the endorsement of the International Rangers Federation, WWF South Africa, and the Game Rangers Association of Africa. Additional endorsements of other agencies and organizations from each of the WIO countries are now being requested. Helena Motta and Remi Ratsimbazafy are exploring endorsements from the WWF-Eastern and Southern Africa Regional Office and the WWF-Madagascar, respectively.

Several outreach efforts were completed this reporting period. The World Conservation Union (IUCN) World Commission on Protected Areas (WCPA) Marine Blog posted news item on the latest round of MPA PRO certifications. This gives WIO-COMPAS some important visibility in the international community. We also publish articles in MPA newsletters distributed within the WIO region and MPA staffs tell us they are reading about the program and asking their MPA PRO peers for more information on the experience.

Latin America Region

As part of its outreach and dissemination efforts on the MPA PRO Network program, the team is exploring a partnership in the region, including the University of Cooperation International (UCI) in Costa Rica, which has expressed interest in adapting the MPA PRO program in the Latin America and Caribbean region. UCI has an excellent reputation across the region for delivering training courses and degree programs for protected area management. They are also developing a graduate program in MPA management, which would be designed in coordination with the MPA PRO Competences. Negotiations are slowed only by a lack of significant funding to create momentum at the regional level. The team is finalizing two MPA PRO brochures in Spanish as we prepare to contact additional leaders in the region. We are hoping that UCI and EcoCostas will be joint partners with their logos on the materials along with CRC, WIOMSA and USAID.

It is worth noting that in the very early stages of CRC/USAID development of the certification model, under discussion was the option for developing not only a stand-alone certification (which has evolved into MPA PRO), but of also offering a "certificate" that was tied to a degree program, but that was based on the competences identified in the certification program. Again, this might be a novel and cost-effective approach for getting the concepts and program elements that underpin the MPA PRO Network model (especially competences) introduced into the region as a stepping stone to developing the full certification program.

Another important note about the partnership with UCI is the fact that the UCI President holds the chair for the International Union for Conservation of Nature (IUCN) World Commission on Protected Areas (WCPA)/Central America Region, which has endorsed the MPA PRO Network program. The President has the respect of his peers, his recommendations and ideas receive serious consideration, and he has strong connections throughout the region, which could be helpful in raising funds for the MPA PRO program.

Recognizing our limited resources and partnerships in the region, the team is considering scaling back the initial strategy to instead focus on a single country. Costa Rica's Osa regional director has requested support in training the management staff in the competences. They have some funding available and can institute organizational change in performance reviews. CRC will explore this option of starting with human resources as an entry point rather than a full certification program. This complements the trend in the WIO region and also addresses the current reality of limited MPA expertise in Costa Rica.

Another strategy that is being considered for the larger Latin America region is to partner with the Costa Rica Forever program (funded by Walton Family Foundation) that is charged with doubling the MPA territory and building management effectiveness. Belize is interested

in this trust fund model. CRC has recommended to Costa Rica Forever that they consider partnering with Belize in our certification program to bring expertise to Costa Rica. In return Belize can learn about the Costa Rican trust fund mechanism and implementation. We are waiting for a response from Costa Rica Forever.

Finally, Brazil has expressed interest in the MPA PRO program and has encouraged SUCCESS to discuss potential partnerships through their InterAmerican Development Bank Loan for Marine Conservation. However after multiple attempts to initiate detailed discussions, the team in Brazil informs us that the timing is not right, though they continue to be interested. We will continue to probe this option though not to force something where there is not strong leadership and drive in-country.

At this point in time, we are not aggressively marketing the MPA-PRO Model in Central America. Rather, we are letting the local partners mentioned above take more of a lead in identifying next steps and funding sources. We feel that this will pay benefits in the long term as local ownership of the MPA-PRO model and its adaptations as appropriate to this region are essential for sustainability. More intensive efforts by SUCCESS to market the model in the CTI region are also underway (see below).

Coral Triangle (CT) Region

The Coral Triangle Initiative (CTI) has expressed interest in the MPA PRO program as players in the Southeast Asia region are also developing MPA performance measures for their training programs. Although discussions with The Nature Conservancy (TNC) and with Anne Walton of the National Oceanic and Atmospheric Administration (NOAA) regarding the MPA PRO initiative have been ongoing for some time, this dialogue has expanded during this reporting period to other individuals and groups involved in the CTI, including Maurice Knight and Alan White. CRC received an invitation from Alan White to make a presentation on the MPA PRO initiative at the upcoming March 2011 "regional exchange" on MPA management effectiveness—place and time to be determined. Also, Maurice Knight and Pahala Nainggolan, who lead the CTSP (Coral Triangle Support Program) regional program office for Indonesia, requested more information and materials on the MPA PRO Network program, with the belief it might be possible to incorporate the model into their own program that is aimed at developing national/Indonesia and regional standards for MPA manager certification. More details on these emerging opportunities will be provided in the next reporting period. Glenn Ricci will be meeting with the CTSP in January 2011, and will be assigned temporarily in Bali to lead several leveraged USAID initiatives in which CRC is involved (CTI and the IMACS/Indonesia Projects—V. Associate Awards and related projects).

1.2 Changes in Program Activities

South Africa

The Level 1 certification originally scheduled for May 2010 in South Africa was delayed until July 2010. This allowed time to address some internal administrative issues within the network of South African MPAs and to ensure a sufficient number of candidates with excellent credentials to justify holding the event. One issue is the significant reduction in the

national budget for MPAs. Amongst its other impacts, this reduced funding makes it difficult to excuse staff from their stations for long enough to attend a certification event. In addition, responsibility for marine and coastal management in South Africa is about to be transferred from its current placement within the Department of Environmental Affairs to the Department of Agriculture. This is creating yet another level of uncertainty around MPA operations and budgets. This said, two individuals in South Africa continue to spearhead promotion of the MPA PRO Network program. One is Lawrence Sisitka, who has been instrumental in helping shape the MPA PRO program from the start and who has a long history as a leader in South Africa in training and capacity building for those working in conservation, including in South Africa's National Parks. Lawrence also has a long history with Rhodes University and WWF South Africa. The second champion for the MPA PRO program is Peter Chadwick, Manager of the WWF Honda Marine Parks Programme. Peter was one of the first Level 2 MPA PROs, is a trained assessor for WIO-COMPAS, and has secured three endorsements as discussed earlier.

East Africa

Getting the support, endorsements and financial commitment of MPA management agencies has been slow. This is mainly attributable to the WIO-COMPAS strategy of using the WIOMSA country point people to push the discussions forward. While this is a wise decision, it is also naturally slower in producing returns on investments. The WIO-COMPAS Secretariat will be contacting these country point people to encourage more rapid advancements as needed.

West Africa

West Africa is the newest region to express an interest in the MPA PRO model, and during this reporting period confirmed its plans to have at least one or two individuals from the region (one funded by "BaNafaa" the Gambia-Senegal Sustainable Fisheries Project funded by the USAID West Africa Regional Mission, and WWF-WAMER is considering using its own resources to support another) trained as assessors through attendance at the 2011 Level 2 Event planned for South Africa. This would be a first step in either making the decision that those from other African regions could still participate in, be certified by, and be part of the network of the WIO-COMPAS program, or in deciding whether West Africa should develop its own regional version of the MPA PRO model. At this time, a decision as to which path to follow remains undecided.

Latin America

Although there was early interest from a group of leaders in Latin America to adapt/adopt and bring the MPA PRO Network program to the region, a lack of funding from other donors has slowed this initial effort. Continued outreach and networking, however, is helping to identify and build new partnerships—partnerships that may have access to the types and levels of resources that are needed to implement the MPA PRO program in a region. This includes but is not limited to the budding partnership with UCI.

Internal discussion amongst the CRC SUCCESS team has included the potential to test the waters for interest from prior CRC and SUCCESS partners in Mexico, where interest in

MPAs is strong and which has a critical mass of sites and professionals. This idea will be further explored in 2011.

1.3 Contacts with USAID Missions/Bureaus

Glenn Ricci met with USAID Kenya Mission – Charles Oluchina to provide an update on WIO-COMPAS activities in the country and region. USAID was interested in the certification concept and sees potential value in working with the Kenya Wildlife Service, an existing partner of USAID, in the future building off of the strengths of MPA professionals for their larger coastal management projects. CRC shared with KWS leaders USAID's level of interest.

1.4 Priorities for Next Quarter (January 1 – March 31, 2011)

- Facilitate dialogue between MPA PROs as part of our post-certification services
- Upload Case Studies to website
- Update WIO-COMPAS website features
- Contract an expert in professional assessments to review Level 3 Certification design
- Advertise for, review applications for, and select enrollees for a Level 2 Certification Event in South Africa
- Present MPA PRO at the CTI MPA Regional Exchange Meeting

2. Adapting to Coastal Climate Change

2.1 Report Period Accomplishments (July 1 – December 31, 2010)

Worldwide, coastal communities are experiencing the effects of global climate change on a daily basis. Current impacts coupled with predictions of future change make it critical to understand and share knowledge on how coastal managers and communities can adapt. Since 2007, SUCCESS has been supporting a USAID leadership role in coastal climate change by providing USAID Missions and partners with information, tools and techniques to mainstream adaptation to coastal climate change in various facets of their work. The SUCCESS Year 7 workplan reflects a continuation of this leadership role, with a greater emphasis on learning across regions to advance appropriate local adaptation actions. In efforts to advance this 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 provide the sites and leaders from which SUCCESS will draw for its Year 7 learning activities.

In addition to the existing programs in Ghana, Tanzania, and The Gambia, next quarter CRC will initiate efforts in the Asia Pacific region. CRC is a partner in the "Indonesia Marine and Climate Support" (IMACS) project funded by the USAID Indonesia Mission with lead partner Chemonics International. The project focuses on building the capacity of the Indonesia Ministry of Marine Affairs and Fisheries (MMAF) to address fisheries and climate change issues. CRC will play a senior advisory role for the coastal adaptation aspects of the project, using direct funding from the IMACS project, and leveraging these resources by bringing IMACS local partners into the cross-portfolio learning and documentation activities of SUCCESS. CRC will provide support to the MMAF in policy integration, vulnerability assessments, short training courses and interagency group meetings on implementation of the National Plan of Action on Climate Change. The focus during the project start-up phase will be on conducting vulnerability and livelihood assessments in two to three target areas of Indonesia.

Scale up SUCCESS

The SUCCESS investments in generating climate change tools and early actions are bearing fruit. In 2011, SUCCESS will support climate change activities in West Africa Associate Award sites and “partner” sites in Tanzania and Southeast Asia. All these activities will contribute to our global learning on how to implement climate change vulnerability assessments and adaptation plans.

Building off of the success of the June 2010 CRC Coastal Adaptation Course (CACC) training that was attended by 15 Coral Triangle Initiative partners, the US Coral Triangle Initiative (CTI) Program awarded CRC a small grant to collect adaptation cases from the region, and deliver two regional short courses and one training-of-trainers course. CRC will also coach the CTI field partners as they implement their independent adaptation programs. These same partners will participate in the larger SUCCESS Adaptation Network that is under development. Activities implemented under this small grant will be tightly integrated with the overall SUCCESS climate activities through coaching, profiles, case studies and curriculum.

Activities

Objective 1: Complete the pilot project in the RMI and disseminate products*—through a no-cost extension, complete products for linking climate change and biodiversity conservation planning, with application at the national and local scales. Utilize the information to develop guidance for a global audience.*

College of Marshall Islands partner demonstrates to village mayor how to survey a landscape to understand vulnerability to flooding.

The RMI-based team has completed a second draft of the Facilitator's Guide for community-based management (locally known as Reimaanlok), which includes a climate change component. The shoreline assessment methodology was initially developed for the Namdrik Atoll field assessment by the College of Marshall Islands and the University of Hawaii Sea Grant (CMI/UHSG) in collaboration with URI. This has been more fully developed and tested in two other atolls through a collaboration of CMI/UHSG and a University in Aukland, New Zealand. This guidance, "*Improving Understanding of Local-Scale Vulnerability in Atoll Island Countries: Developing Capacity to Improve In-Country Approaches and Research*," will become an appendix to the Facilitator's Guide, and together with other tools being developed in cooperation with SUCCESS, will assist communities in evaluating shoreline erosion and management options. A New Zealand consultant, who has worked extensively in Kiribati on similar issues, has been selected for the management options component of this task, and will begin in the second quarter of Year 7 (next reporting period) to adapt methods for RMI and similar environments. This will be input for the RMI Facilitator's Guide and be incorporated into the global outreach document as well.

Priorities for Next Quarter (January 1 – March 31, 2011)

- Complete the draft Facilitor's Guide and preliminary layout
- Identify preliminary options for erosion management

Objective 2: Support the emerging global community of practice in coastal climate change adaption *by synthesizing lessons learned through SUCCESS, and sharing what works and what does not related to planning and implementing of adaptation actions that address climate change impacts.*

The SUCCESS team held numerous discussions on the targeted learning objectives and the best tools and approach to employ in synthesizing and capturing this learning for sharing with a wider audience. After reviewing a number of case study templates, the team drafted a preliminary template for its use in developing field profiles. This template will be reviewed by a larger CRC team in early January. Also developed was a draft list of field sites to be profiled and networked through SUCCESS. While some are CRC field sites in Africa, others sites may be part of partner field activities in which CRC is playing a role—for example, sites from the CTI project or IMACS project or partner sites in Nicaragua. It is worth emphasizing that with the recent funding from IMACS and CTI, the team can now target and more actively engage the practitioners from this region, initiate coaching and develop site profiles from both CRC and other USAID-funded field programs.

In partnership with the Nature Conservancy (TNC), SUCCESS has been exploring the issues and opportunities related to ecosystem-based adaptation. An October 2010 workshop in Arlington, Virginia convened 18 people from various institutions, including the World Bank, Wetlands International and NOAA. This workshop set out to consider the scientific case for the use of natural ecosystems in adapting to climate change impacts (ecosystem-based adaptation or EBA) in coastal areas, specifically for coastal protection. It convened a small expert group comprised of individuals from a broad range of sectors to share information and understanding of current work and existing knowledge; and from this to formulate key questions and develop priorities for research and communications.

Joining forces to convene experts

The collaboration between CRC and TNC to explore opportunities related to ecosystem-based adaptation is a nice example of leveraging resources—CRC contributed technical assistance on coastal aspects and TNC contributed staff time and funding to organize the meeting.

A next step is to develop a briefing document that is simple and readable and that will help communicate the issues and describe priority actions. The document will then be circulated more widely for comment and improvement. Given the strong interest of a number of partners—both those who attended the meeting and others who did not—the team will work collaboratively to develop project outlines for one or more of the priority actions that are identified. Such collaborative efforts, networking and information sharing are critical to building synergies and maximizing the benefits and success of future work in this arena. TNC (as the primary partner on this effort) will keep all interested parties informed of ongoing work and progress.

Priorities for Next Quarter (January 1 – March 31, 2011)

- Confirm practitioners for network and profiles
- Complete the site profile template
- Begin development of the profiles

Objective 3: Identify and empower climate change adaptation champions *to take action to promote the mainstreaming of adaptation measures within national, local and private sector entry points where CRC is working—helping these champions to articulate and address the role that climate change plays in increased threats to biodiversity, livelihoods, and the overall well-being of coastal communities and ecosystems.*

As a follow up to CRC's three-week, practitioner-based Coastal Adaptation to Climate Change (CACC) course in June 2010, the virtual network of twenty five practitioners has been evolving. Primarily through a listserv function, there has been good activity to share information and experiences. This web-based forum was extremely useful as CRC was developing the proposals to engage and support ongoing practitioner activities through the CTI and IMACS projects. In addition, 10 practitioners have completed coaching sessions with CRC, which has helped them advance their skills and initiatives back home. Two of the African practitioners from the CACC course who are working in CRC project countries of The Gambia and Ghana, were recently awarded fellowships from the Intergovernmental Oceanic Commission as part of a group of young professionals to advance climate change adaptation and help facilitate more effective implementation of United Nations Adaptation Funds. CRC will host these two individuals and another from Mozambique for three weeks in March, to promote peer to peer exchange and enhance their individual and collective capacity and learning on coastal climate change.

Now that the CTI and IMACS projects have been awarded, CRC will be facilitating more virtual discussions with the practitioners (in connection with Objective 2 activities of profiling) with more directed web-based engagement with CACC alumni.

Priorities for Next Quarter (January 1 – March 31, 2011)

- Enhance the activity and number of participants for online communication
- Identify candidate topics for web-based discussion forum/webinar

2.2 Changes in Program Activities

There were no major changes in program activities this reporting period.

2.3 Contacts with USAID Missions and Bureaus

Members of the SUCCESS Climate Change team at CRC (Pam Rubinoff and Don Robadue) met with USAID staff from the Ghana and the West Africa regional missions (Robert Buzzard, Nino Naduiradze and Allen Fleming) as part of a debriefing on a technical assistance trip for the Ghana Associate Award project Hen Mpoano – The Integrated Coastal

and Fisheries Governance Initiative for the Western region, Ghana. There was great interest in applying the guidelines laid out in the Coastal Guide as well as using the Associate Awards and SUCCESS project to promote learning across the current and expanding CRC African portfolio.

3. Collaborative Learning

The collaborative learning element of the SUCCESS extension focuses on cross-portfolio learning activities. The learning team is now synthesizing the livelihoods experience and lessons learned that emerged from the field site activities that were part of the first five years of SUCCESS. This is complemented, where possible, with livelihoods experience from other development projects. In addition to the livelihoods learning agenda, a programming guide for fisheries and aquaculture is slated for completion, dissemination, and for eventual incorporation into various planned workshops and other training events. The final learning activity is related to applying the governance base-lining techniques in the work of the new SUCCESS LWA Associate Awards and other CRC field projects.

3.1 Report Period Accomplishments (July 1 – December 31, 2010)

Objective 1: Microenterprise Guide

The learning team has drafted a guide entitled, *"Enterprise Development in Coastal and Marine Biodiversity Conservation: A Guidebook for Local Government and Practitioners."* The primary purpose of the Guide is to assist coastal practitioners and local government officials who use enterprise as a strategy to conserve biological diversity in rural coastal communities and to benefit both local populations and their natural environment. The objectives are to:

1. Provide a framework for designing, implementing and monitoring conservation enterprises
2. Provide examples of conservation enterprises and lessons learned
3. Provide links to other resources, how-to guidance, and tools

The Guide's focus is on enterprise development and it is intended as one tool in implementing a coastal management plan that is developed using broader coastal issue analysis, climate change adaptation, or sustainable livelihoods frameworks. The Guide is not intended to be a primer on the theme of sustainable livelihoods (for which there are already many). Rather, its goal is to be practical, to be focused specifically on microenterprise development in the coastal and marine context, and to be relevant for local

Best Practice: Clear definition of ownership and access rights

Achieving clarity on ownership of, and rights of access to, coastal resources is crucial for effective resource management through local institutional arrangements. This allows regulated access to coastal resources and promotes exploitation patterns that are beneficial to livelihoods and the environment.

This is one of the best practices found from implementing mangrove management and entrepreneurship in Ghana. The full case study is presented in Appendix 3.

government and practitioners with modest resources.

The Guide includes a list of the types of enterprise opportunities that could be employed to help promote or reinforce biodiversity conservation in the coastal/marine realm. A few of these enterprise options are highlighted in detailed cases. The first draft of the Guide includes three case studies:

1. Clear Definition of Land Tenure Creates Opportunity for Commercial Forestry of Mangroves whose Economic Benefits Motivate Mangrove Planting and Marine Conservation along the Volta River Estuary of Ghana
2. Adding Value to Existing Income Sources Motivates Women in Menai Bay, Zanzibar
3. Crab Cage Culture Pilot in Tanzania Demonstrates Successful New Income-generating Enterprise to Local Communities that Fosters Sustainable Use of Mangroves

Five additional case studies are under development. Four of these will showcase conservation enterprise experiences from The Gambia, the Pacific, and Latin America. One will be a compilation of lessons learned from implementing coastal ecotourism enterprises—building from the experiences of the Biodiversity Conservation Network.

Final Product: A visual and user-friendly PDF-format Guide, plus a ready-for-training-use PowerPoint

Timeline

Task	**Due date**	**Status**
Host first expert workshop to vet guide concept	March 23, 2010	Completed
Prepare guidance for case studies	May-June, 2010	Completed
Send Guide concept, call for case studies, and model case study to advisory committee for comments	July, 2010	Completed
Send out call for case studies	August 2010	Completed (through the case study call, we received two case studies, but we are following up on additional expressions of interest)
First draft of Guide sent to advisory committee	December 2010	In progress: first draft sent to Maria Haws for review; and to the advisory group for review in February
Second draft of guide completed	April 2011	
Training PowerPoint prepared	June 2011	

Priorities for Next Quarter (January 1 – March 31, 2011)

- Circulate and receive feedback on the draft Guide
- Complete at least three additional case studies
- Revise the draft Guide based on feedback

Objective 2: Field-based Learning and Communication on Livelihoods

When planning for the second phase of SUCCESS, the learning team proposed to offer a series of regional learning and outreach workshops to disseminate the Microenterprise Guide. The purpose of these workshops would be to collect additional lessons from a broader base of experience, and work to help other USAID and international donor initiatives improve performance of their own livelihood components. The workshops would also help sustain the initial investments in livelihoods learning made in years one to five.

After completing the first draft of the Guide, we are uncertain which of two options makes better sense: 1) conducting stand-alone regional "conservation enterprise development" workshops, or 2) developing a series of session plans (e.g. ranging from a two hour session to a one or two day curriculum) that can be incorporated into a broader training—for example, related to coastal climate change adaptation; marine protected area management; or population, health, environment. The priority for the next quarter will be to determine how to use and disseminate the Guide.

Priorities for Next Quarter (January 1 – March 31, 2011)

- Develop a plan for how to use and disseminate the *"Enterprise Development in Coastal and Marine Biodiversity Conservation: A Guidebook for Local Government and Practitioners"*

Objective 3: Communicating Key Lessons Learned on SUCCESS Achievements and Learning in Years 1-5

The objective was met in Year 1 and there were no new activities in the current reporting period.

Priorities for Next Quarter (January 1 – March 31, 2011)

- No pending activities

Objective 4: Collective learning on Fisheries and Governance

SUCCESS is generating knowledge to inform ICM regionally and globally—not only on livelihoods as described above, but on other key issues. The learning agenda also addresses

the need for best practices in and reform of capture fisheries and aquaculture. SUCCESS planned to complete and print the Fisheries and Aquaculture Programming Guide in Year 6. However, final USAID comments on the final draft of the Guide remain pending. When received, the SUCCESS team will move rapidly to incorporate them and have the document electronically published and disseminated. Recent development of SUCCESS associate awards in Africa and their respective performance management plans has also highlighted a need to provide more guidance on how USAID bio-diversity and food security global indicators can be applied to the growing portfolio of USAID fisheries projects. In the last revision of the Guide, the team might also include a revised and expanded section on monitoring and evaluation and USAID indicators. An initial expert meeting on this topic will be held in February 2011, with a possible larger follow-up meeting at a later date.

Fish market in Ghana—one of the places where new fisheries/food security indicators would be helpful

As part of the CRC match contributions to the SUCCESS Program, the CRC Director is participating in a diversity of global and regional fora to disseminate, apply and refine the methods developed at CRC for assessing the sequence of outcomes that mark an advance to more sustainable forms of development and to analyze the governance dimensions of ecosystem change. In the current reporting period, the CRC Director, has continued advocating for greater attention to the governance dimension of coastal management. This included delivering a keynote presentation "Adapting to global change at the coast: Leadership, Innovation, and Investment" at the international conference/"Littoral" organized by CoastNet and Eurocoast and was held at the Royal Geographical Society, London, in September, 2010. The focus of the presentation was on social inequity as a driver in complex coastal ecosystems. The Director was also a keynote speaker at the World Oceans Week in Xiamen in November 2010, with his presentation focusing on the priority research needs for supporting sustainable coastal development. This presentation advocated for giving greater attention to the governance dimension of coastal development.

SUCCESS has also continued applying methods for analyzing governance responses to coastal ecosystem change to the Leader Program's new Associate Awards. Governance assessment tools were applied during the first phase of the Ghana Integrated Coastal and Fisheries Governance (ICFG) Project. This process featured a participatory discussion and analysis of current issues and their evolution over time. The results were written up in the "*Our Coast, Our Future*" report (http://www.crc.uri.edu/download/Our_Coast.pdf) which serves as a governance baseline, state-of-the-coast report, and a basis for the second phase of the ICFG Project. In August, the CRC Director traveled to Ghana to review the final draft of the "*Our Coast, Our Future"* report through a series of feedback meetings with staff and

partners. A governance scorecard is also being applied as one of pour performance indicators in the Ba Nafaa Project. Based on recent experiences, SUCCESS has refined and made operational the governance base-lining tools, which are organized to help analyze and understand the context of a place to better plan future development.

The conceptual frameworks for designing and evaluating ecosystem governance initiatives developed by CRC with a number of international partners are gaining attention and are being applied to an expanding diversity of projects and programs. The policy cycle that was initially developed in the mid 1990s as a five-step process for the design, approval, implementation and evaluation of ICM initiatives. It has been used to structure CRC field projects and trainings and is been widely used by national and international institutions as a simplifying process that has proved very useful in sequencing activities and identifying the essential actions associated with each step in a protracted and complicated governance process. More recently (beginning with Olsen, 2003), the Orders of Outcomes framework has been put forward as a practical means for assessing the outcomes of an ecosystem governance initiative. These two frameworks have been featured in such a recent reports as the 2008 National Research Council report on capacity building for ocean and coastal governance, a 2007 handbook distributed by the GEF on the governance dimensions of Large Marine Ecosystems (LMEs), a 2007 handbook prepared for the UNDP/GPA program on markers for assessing progress in ecosystem-based management and most recently in another handbook distributed by the LOICZ program (one of the International Geosphere Biosphere family of programs) entitled "Assessing Governance Responses to Ecosystem Change". Most recently the policy cycle and the orders framework are put forward in two documents on the monitoring and evaluation of LME programs. These documents are currently being developed by international teams with support of the World Bank and GEF. The Orders framework has also been put forward to structure articles that have been submitted to the Journal Marine Policy on the challenges of innovation in the management of coastal ecosystems.

The US Fish and Wildlife Service has requested a sequence of training sessions for its staff and one of the sub watersheds of the Chesapeake Bay as a means for developing a strategic plan and identifying this program's capacity building requirements in support of ecosystem-based management. The Orders of Outcomes framework is being successfully used to structure the external evaluations of two ongoing IGE RT programs sponsored by the National Science Foundation. These are considered highly prestigious university programs that provide an innovative curricula and offer scholarships to interdisciplinary groups of PhD students working to address important societal issues. The adaptation of the methods to these interdisciplinary programs is proving to be unusually effective in assessing the degree to which these programs achieve their objectives and are likely to be applied to additional IGERT programs.

Priorities for Next Quarter (January 1 – March 31, 2011)

- Incorporate final USAID comments into the Fisheries and Aquaculture Guide
- Hold an expert meeting to discuss how to adjust USAID food security indicators to incorporate fisheries

- Potentially add a "fisheries for food security" indicators section to the Fisheries and Aquaculture Guide
- Continue disseminating and applying methods for analyzing governance responses to coastal ecosystem change at international conferences and in SUCCESS Associate Awards

3.2 Changes in Program Activities

There were no changes in activities during the current reporting period. However, in the next three months, we will discuss potentially adapting the dissemination plan for the conservation enterprise guide and may add an indicator section to the Fisheries and Aquaculture Guide. The mini-workshops on the fisheries indicators are new activities for the upcoming quarter and were not planned or budgeted in the original workplan. However, some minor budgetary adjustments can be made to allow these new activities to be added without any impact on other workplan activities.

3.3 Contacts with USAID Missions and Bureaus

There were no contacts specific to the learning and livelihoods activities during this period.

4. Monitoring, Evaluation and Reporting

The SUCCESS Program's goal *is to provide global leadership in integrated coastal management through innovative approaches in a participatory, issue-driven and results-oriented process to:*

- Promote sustainable use of marine resources
- Conserve marine biodiversity
- Improve food and income security

This is a long-term goal (third order outcome). In its first phase SUCCESS contributed to the goal through a mix of regional and global activities and implementation of innovative practices, adaptations and learning in Nicaragua, Ecuador, and Tanzania. In its second (current) phase, SUCCESS continues to make additional contributions to this goal, but instead by providing regional and global leadership in climate change adaptation, cross-site learning, and MPA certification. Meanwhile, all field implementation activities will be funded and implemented solely through Associate Awards.

As a result of eliminating field activities, the SUCCESS PMP was revised in the first quarter of FY 10. The new performance management plan (PMP) for the extension period (Years 6-10) is a slimmed down version, with only nine indicators:

1. Individuals trained (gender disaggregated)
2. Dollar value of funds leveraged from USAID Missions and non-USG sources
3. Tools, protocols, procedures, systems, methodologies, guides, curricula, or indices

developed or adapted for country and/or thematic contexts
4. Success stories, peer review articles, conference papers, research studies documenting key actionable findings and lessons learned related to SUCCESS
5. Technical support interventions provided by SUCCESS to other partners and programs on toolkits and guidebooks developed by SUCCESS
6. Recipients of SUCCESS training and/or mentoring subsequently implementing projects or providing training or technical assistance in these topics to others
7. Target organizations incorporating SUCCESS tools etc. into their work
8. Hectares in areas of biological significance under improved management
9. Policies, laws, agreements, or regulations promoting sustainable natural resource management and conservation implemented

These indicators measure the outputs and impacts of SUCCESS activities related to MPA certification, climate change adaptation, and learning. Life-of-Program targets for the SUCCESS extension period were established for the first indicator only.

LOP Targets for number of individuals trained

INDICATOR	FY 10 Target	FY 11 Target	FY 12 Target	FY 13 Target	FY 14 Target	LOP Target
1: Number of Individuals trained	40	55	70	55	30	**250**
Number of women trained	16	23	27	25	11	**102**
% women trained	40%	42%	39%	45%	37%	**41%**

During work planning, targets were set for selected other indicators for Year 7. A table of accomplishments in relation to the targets is presented in Appendix 1. A full description of each indicator can be found in the PMP, which is available upon request.

III. MANAGEMENT ISSUES

With no field activities and the reduced size, scale, and scope of this second phase of the SUCCESS Program Leader Award, there are minimal management issues. With a relatively modest and very focused budget, a reduced number of partners involved in this second phase of SUCCESS activities, and with the CRC technical staff assigned to very discrete tasks with clearly defined goals, the level of effort that must go into program reporting and other management transactions is limited.

IV. UPCOMING CHALLENGES, CONSTRAINTS, AND OPPORTUNITIES

With no field-based activities included as part of this phase of SUCCESS, the team has lost some degree of connectivity and face-to-face time with clients in the field, which somewhat limits opportunities to promote two of the follow-on SUCCESS initiatives that we are looking to scale-up and have replicated on-the-ground in other countries and regions—i.e., the MPA certification and climate change adaptation for coastal communities initiatives. To overcome this issue, as the SUCCESS team visits the field or attends international conferences, etc. as part of their work on other USAID-funded and non-USAID funded field projects, they are using these—as appropriate—to also promote the MPA PRO program and the Center's work and tools in climate change adaptation for coastal communities.

One excellent opportunity that came to fruition this reporting period was partnership opportunities with the CTI. Peter Collier, COP, US CTI Support Program Integrator funded 14 participants from the CT region to attend the CRC Coastal Adaptation to Climate Change course in June 2010 and 11 CTI participants to the CRC Fisheries course held in August 2010 (which included a climate change adaptation element). Based on the high satisfaction level of the participants of these courses, the CTI awarded a small grant to CRC to continue its work with participants in-country, providing technical assistance and mentoring as they implement their plans of action for climate change adaptation and delivering additional training and training-of-trainers in the region.

As noted in the earlier sections of this report and in the section that follows, the SUCCESS Associate awards provide a wealth of cross-portfolio learning opportunity, including continued opportunity to test and learn from the tools, approaches, strategies, etc. first developed under the Leader Award. Several other USAID projects that CRC is involved with provide synergistic opportunities with SUCCESS objectives and activities and are also described below. However, the expanding portfolio of Associate Awards and CRC involvement in related USAID projects is stretching the current capacity of CRC which is a relatively small group within a University setting. While we have been drawing on expertise from local, regional and global partners and external consultants to expand our capabilities, with this comes added management burdens. CRC is currently in the process of planning and creating new positions both at the administrative and fiscal level and at the technical/programmatic level to help address this issue. This is particularly important as additional Associate Awards are anticipated and as several new projects (e.g. CTI and IMACS) get underway.

V. ASSOCIATE AWARDS AND RELATED PROJECTS

Ghana Associate Award

First year activities of the *Hen Mpoano* (Our Coast) Project focused on participatory and technical assessments of the coastal and fisheries governance issues within the Western Region and identifying more specifically what the project can do to help address these issues. A summary of these assessments are presented in the form of the CRC governance baseline tool in the report entitled *Hen Mpoano – Our Coast*, the local name of the project http://www.crc.uri.edu/download/Our_Coast.pdf). The annual report on the Year1 activities can also be downloaded at:
http://www.crc.uri.edu/download/Annual_Report_2010_Ghana.pdf

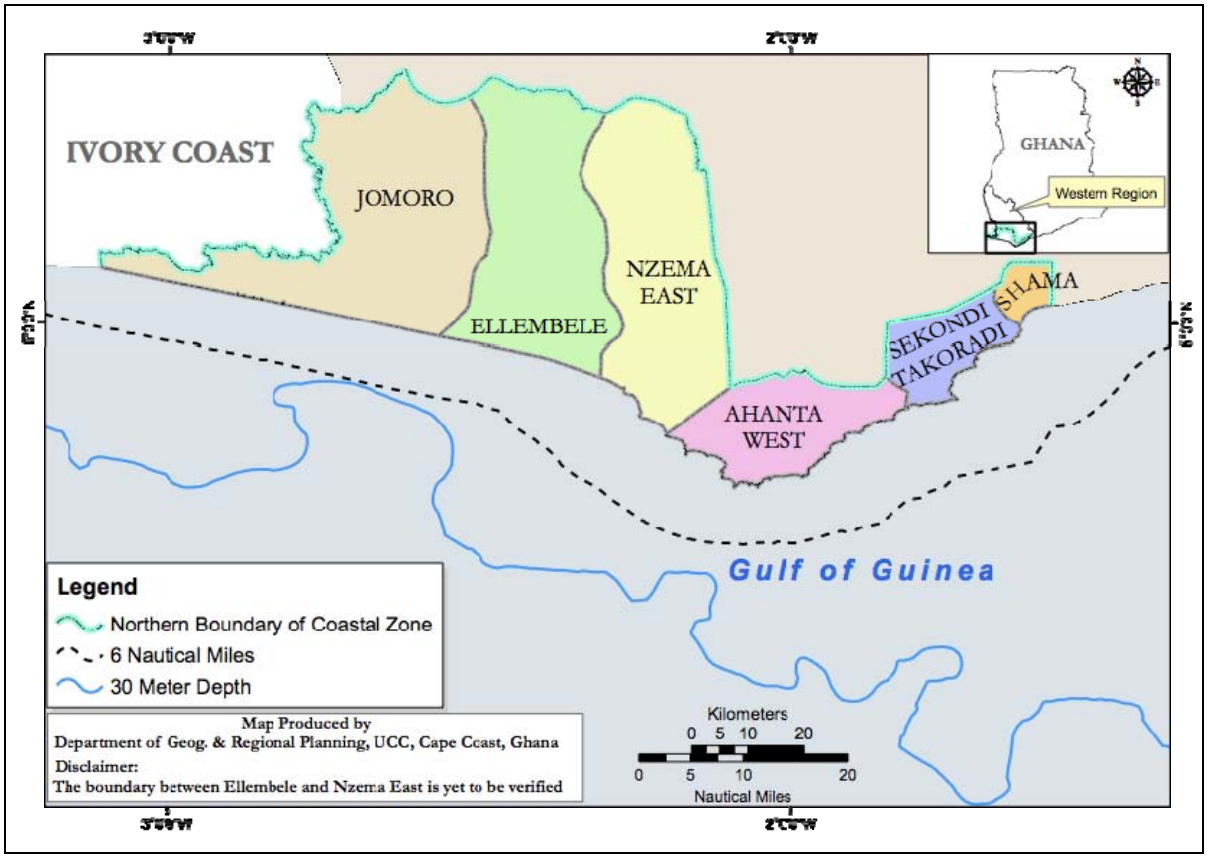
The Ghana Project also had its second Year Workplan approved in October 2010 http://www.crc.uri.edu/download/ICFG_Workplan_FINAL.pdf). This workplan lays out the Phase 2 strategy of the project over the next 24-30 months as well as detailed activities for its second year.

In Phase 1, the ICFG Initiative focused geographically on the Western Region's six coastal districts and the inshore fishing grounds designated as the Inshore Exclusion Zone. This definition of the coastal zone is shown in the figure below. Phase 2 will concentrate activities that address issues within this zone.

Phase 2 activities are designed to build towards the goal of formulating a nested governance system in which the roles and responsibilities of the individual communities, the six coastal districts and coordination at the regional scale are made explicit and strengthened. The necessary actions are likely to require changes in the policies and procedures of some Ministries and could require legislative action. This requires that the Initiative maintain a presence in Accra and consult regularly with agencies of central government as the ideas for a strengthened coastal and fisheries governance system take shape and alternative courses of action are explored. This is particularly obvious in fisheries, where all policy making and monitoring and enforcement actions are planned and executed. The Initiative will be encouraging dialog at the scale of the Western Region through its Advisory Council chaired by the Region's Chief Director. Options for an integrated program and its initiatives will be integrated into a formal proposal supported by one or more "white papers" during Phase 3 of the Initiative in 2014.

During Phase 2, activities pertaining to fisheries and the seascape portion of the coastal zone will concentrate on improving enabling conditions on which management decisions are based. This includes ways to improve information on how and why effort is changing and its impact on fish stocks and fishing businesses, as well as potential strategies for improving the basis for collaborative management. The later point is quite important as previous efforts at collaborative management have failed and the current legislative and institutional arrangements for genuine participation of fisheries stakeholders are weak. The development of pilot fisheries plans was considered as an option for Phase 2. However, given that the most important fish stocks (pelagics) range nationally and internationally, and fishermen also migrate throughout their range, management plans at the scale of the Western Region or for

smaller geographic units will not be useful until an improved co-management framework is in place that allows for nesting locally based management into larger scales at the district regional and national level. The only area based planning activities supported by the Initiative in Phase 2 is initial planning for the eventual establishment of proposed Marine Protected Areas (MPAs) within the Cape Three Points area where unique bottom habitats and critical spawning grounds for demersal species of fish are found.



The Western Region's Coastal Zone

On the landscape side of the coastal zone, activities will concentrate on developing a number of pilot models for integrated costal zone management and conservation in three focal areas that contain combinations of issues that are representative of the issues facing the coast as a whole. Each of the areas contains high biodiversity and ecological value where protection and the minimization of human activities is the primary goal. Each focal area also contains human settlements and sites where development or re-development is the priority. Each focal area will therefore address how such diverse needs can be integrated into a coherent strategy that addresses many issues simultaneously. The focal areas also have been selected for a range of conditions that span the relatively pristine and rural Amansuri wetland and associated shorefront area, to the urbanized Shama district where major new investments in infrastructure are being proposed. Between these two extremes, lies the Cape Three Points focal area with priority areas for conservation, and with several villages and small towns where the canoe fishery is the major source of employment and income and where shorelines are dotted with tourism lodges that hold the promise for new forms of economic

development. Sea turtle nesting beaches are yet another important feature of the both the Amansuri and Cape Three Points focal areas. A summary of key features of the three focal areas follows.

The Greater Amansuri Wetlands are probably the most biologically rich wetland area of Ghana. Yet it has no formal recognition as a conservation area of importance and there is no management plan for the conservation of its unique habitats and biodiversity. The Ghana Wildlife Society, however, has been active in tourism development and promotion, and rural development initiatives. The small population and low immediate threats within the wetland favor the establishment of a larger community co-managed protected area. That said, an extractive industries sector is rapidly evolving in the area and as such poses a potential threat. The paramount chief of the traditional area covering most of wetlands (Awulae Annor Adjae III), supports conservation and gaining protected area status for the area—as long as it is co-managed with clear roles for the communities, the chiefs, and the two districts.

The Cape Three Points Region contains a diversity of assets including some of the most attractive coastal sites for tourism, a number of important turtle nesting beaches, and several important historic sites of tourist interest. Migrating whales can be seen from several coastal overlooks. A major tourism enclave is being planned that will encompass a small lagoon and one of the most scenic areas of the Western Region. Offshore a number of areas of rocky bottom are possible sites for future Marine Protected Areas (MPAs). This region also contains a Forest Reserve containing the last remnant of coastal evergreen rainforest along the West African coastline. As home to five primate species and other significantly rare plant and animal species, it is of extreme importance for biodiversity conservation. Presently, the 51 square km reserve is poorly managed with only two conservation agents responsible for surveillance. The reserve is facing significant threats from poaching, illegal tree cutting for fuel wood and agriculture, and expanding rubber plantations.

Shama District has recently gained a measure of autonomy from the larger twin city Sekondi –Takoradi Metropolitan Area (STMA). Shama has recently adopted a land use plan

and its District Chief Executive and her staff have a strong interest in working with the ICFG Initiative to plan for major new investments in infrastructure that include a large aluminum processing plant, an airport and free trade zone. Shama contains a densely developed landing beach and a shoreline that has been severely impacted by river flooding and erosion. A particular challenge in this focal area is the large population of third generation Ewe migrants who lack land ownership rights and who live as tenant farmers and fishers. The needs of this minority population must be a special focus of planning and management in this area. Another focal point in Shama and the adjacent STMA will be the important goods and services generated by the wetlands in these urban areas. These provide important flood control functions as well as recreational space, clean air, and are important reserves for biodiversity. The Initiative's Advisory Council has suggested moving quickly to prepare a metropolitan bylaw that would classify the three sites as urban nature reserves. Such a bylaw would help in both communicating the importance of these areas and in providing a basis for checking the threats to them. The subsequent step will be to prepare a management plan for the wetlands and develop strategies for its enforcement.

Senegal-Gambia Sustainable Fisheries Project Associate Award

The year two workplan for the "Ba Nafaa" Project was approved in this last quarter. This project is continuing to develop and promote models of fisheries co-management in the West African region especially through examples under development in the Gambia. These examples focus on the establishment of a shellfish co-management plan for 500 women oyster harvesters in the Tanbi Wetlands National Park and a co-management plan and related actions to obtain MSC certification for the Gambian Sole fishery.

Included in this year's workplan are also several regional activities including a regional workshop on climate change adaptation with special emphasis on fisheries and marine protected areas, a bi-lateral workshop between The Gambia and Senegal on artisanal vessel registration, cross border trade in fish products and sharing lessons on fisheries co-management. At the request of Robert Buzzard, the new regional environment officer, we have also planned an add on to conduct a vulnerability assessment in the coastal sub-ecosystem area from the Saloum Delta down through the Gambia estuary, with the intention of requesting additional funds in subsequent years to conduct bi-lateral adaptation planning and implementation measures based on the findings of the vulnerability assessment.

In addition, we have also requested a three-year water and sanitation add-on component for the Gambia field activities, budgeted at approximately $700,000. The Gambia is currently facing problems with exporting to the EU, in part due to poor quality of sanitary conditions at the landing sites. This will affect plans for certifying the sole fishery and its associated export under an eco-label. In addition, water quality studies in the Tanbi have indentified several point sources of fecal contamination (a piggery and a hotel latrine) that put at risk opportunities to develop a shellfish sanitary management plan that could open up new local markets to hotels for raw shellfish and the potential for export further down the road.

Senegal Associate Award

Upon request by USAID/Senegal, CRC submitted an application for an Associate Award for a five-year, US$11.5 million fisheries and coastal management project "COMFISH". We received and replied to extensive comments to that proposal during the last quarter and have been informed that we should soon receive word from the Mission as to the status of the award. Having a third Associate Award project in the West Africa region would provide CRC and its partners with the critical mass of project-years and resources that are essential if there is to be sustainable and positive change to the governance and management of this critical natural resources base.

The *Pwani* Project, Tanzania

The Conservation of Coastal Eco-Systems in Tanzania: the *Pwani* Project is a four-year project funded through a bilateral cooperative agreement with USAID Tanzania. One of the Pwani Project's goals is to create wealthier and more empowered communities. Wealthier communities are created not by simply increasing people's economic health and standing, but improving as well other factors that contribute to quality of life—factors such as increasing people's resilience to the impacts of climate change stressors; and improving their access to health services that shape their overall physical well being. Although not an associate award, the *Pwani Project* is part of the SUCCESS family. *Pwani* has several direct links to SUCCESS. First it collaborates with SUCCESS on climate change related activities, where SUCCESS resources are leveraged to support the development of vulnerability assessment and adaptation planning tools that build upon the Guide. In return, the Pwani project is a pilot site for on-the-ground climate change vulnerability assessments and adaptation planning that SUCCESS can learn from as it refines its tools and training curriculums. Second, Pwani is a learning site for enterprise development and it will be one of the cases featured in the conservation enterprise guide. Lastly, Pwani has also sponsored several individuals from marine protected areas in Tanzania to undergo MPA-PRO assessment via the SUCCESS supported WIO-COMPAS Program.

IMACS

CRC is a partner in the Chemonics International-led consortium of the PLACE indefinite quantity contract (IQC) that was recently awarded for the "Indonesia Marine and Climate Support" (IMACS) project funded by USAID Indonesia Mission. The project is focusing on

building the capacity of the Indonesia Ministry of Marine Affairs and Fisheries (MMAF) to address fisheries and climate change issues. CRC is playing a senior advisory role for the coastal adaptation aspects of the project and will focus on providing support to MMAF in policy integration, conducting vulnerability assessments, designing and delivering short training courses, and helping facilitate interagency group meetings on implementation of the national plan of action on climate change. Project start-up will include conducting vulnerability and livelihood assessments in two to three target areas of Indonesia.

CTI

Based on the success of the CCA training attended by 15 CTI partners this past June, the US CTI program awarded CRC a small grant to collect adaptation cases from the region, and to design and deliver two regional short courses and one training-of-trainers course. In the process, CRC will coach the CTI field partners as they implement their independent adaptation programs. These field partners will also participate in the SUCCESS adaptation network that is under development. These small grant activities will be integrated with our overall SUCCESS climate activities through coaching, profiles, case studies and curriculum.

APPENDIX 1: PMP HIGHLIGHTS AND ACCOMPLISHMENTS

SUCCESS Year 6 and Year 7, quarter one, PMP results

INDICATOR	*FY 10 Target*	*FY 10 Total*	*FY 10 Q 4*	*FY 11 Target*	*FY 11 Q 1*	*Comments on FY 10 Q4 and FY 11 Q1 results*
1. Individuals trained (gender disaggregated)	40	58	21	40	0	Certification events
Number of women trained	*16*	20	5	16	0	
Percent women trained	*40%*	34%	24%	40%	0	
2. Dollar value of funds leveraged from USAID Missions and non-USG sources	No target	84,428	21,280	No target	158,423	Sources include: CTI, ReCoMaP, and Sida
3. Tools, protocols, procedures, systems, methodologies, guides, curricula, or indices developed or adapted for country and/or thematic contexts	1	6	2	7	1	CCA worksheets and ten day curriculum, WIOMSA MPA curriculum that builds on the WIO-COMPAS competencies
4. Success stories, peer review articles, conference papers, research studies documenting key actionable findings and lessons learned related to SUCCESS	9	17	2	10	2	WIO-COMPAS write-ups and conference presentations
5. Technical support interventions provided by SUCCESS to other partners and programs on toolkits and guidebooks developed by SUCCESS	1	4	0	3	1	Glenn Ricci TA to WIOMSA
6. Recipients of SUCCESS training and/or mentoring subsequently implementing projects or providing training or technical assistance in these topics to others	0	11	11	10	3	CACC participants that we are following/mentoring as they implement projects.

7. Target organizations incorporating SUCCESS tools etc. into their work	0	6	3	3	0	WWF South Africa, International Ranger Federation, and the Game Ranger Association of Africa
8. Hectares in areas of biological significance under improved management	0	0	0	0	0	
9. Policies, laws, agreements, or regulations promoting sustainable natural resource management and conservation implemented	0	0	0	0	0	

Highlights from Year 6 Self Assessment

The SUCCESS learning team organized an internal self assessment to look at accomplishments to date in relation to the PMP indicators. Highlights from this meeting included:

Applying SUCCESS methods in the field: CRC has developed for a reputation for itself and USAID in coastal climate change planning and adaptation. The methods and tools developed by the team are in demand. Groups, including the National Oceanic and Atmospheric Administration (NOAA), Conservation International (CI), and other large Washington DC-based for-profit development agencies such as Tetra Tech, Chemonics, etc. have repeatedly requested training materials and CRC's technical expertise in helping develop climate change adaptation sections of proposals and in actual field implementation. The SUCCESS Climate Change Team assisted RMI to apply a climate lens to their Community-based Resource Management Planning (Reimaanlok) initiative—and provided technical assistance to CRC's field projects in Ghana and Tanzania. As part of applying the methods in the field and during trainings, the team has developed a number of hands-on tools, such as the Tanzania village level vulnerability assessment and planning template, the 10-day CCA curriculum and worksheets, and MPA PRO related handbooks and facilitator guides. While it is still early to draw lessons from the field applications, the team agreed that an exchange between Ghana and Tanzania would be a good activity for the end of Year 7.

Documenting field experience: In Year 6, SUCCESS focused on disseminating field experience from years 1-5 and the Program was featured in 17 different journal articles, newsletter write ups, and conference presentations. In Year 7, field experience will be documented through the microenterprise case studies and through the peer exchange between Ghana and Tanzania.

Interest in trainings and certifications: There is a great deal of interest in CRC's climate change and MPA PRO related trainings. CRC received over 75 applications from around the world for its CCA training and 25 of these attended. Unfortunately there are always applicants who cannot attend simply for lack of funding, as was the case with the applicant from Bangladesh, who pleaded "Please, I need to attend, my country is sinking!" The MPA PRO certification events also received many applications. Interestingly, here applicants were rejected not for lack of funding, but for failure to meet the selection criteria.

Training impact: As part of the Phase 2 PMP, SUCCESS is following the individuals who have been trained by the Program to assess the extent to which they are using what they have learned. The CCA Institute included a mentoring feature and 11 individuals are actively taking advantage of that option. While the mentoring was conducted via phone and email in Year 6, in Year 7, a combination of emails, phone calls, and field visits is being used.

Interest in methods: NOAA, CI, and CRC's field projects in Ghana and Tanzania have requested training support related to climate change. Other international agencies have also requested training and in our climate change adaptation methods as have other US government agencies that CRC works with through its US/Sea Grant program. NOAA has also expressed interest in MPA PRO and might be using it for US MPA staff. Further, the MPA PRO concept has been integrated into the Kenya Wildlife Service and into two South African regions. There has also been international interest in the methods for assessing the sequence of outcomes that mark an advance to more sustainable forms of development and to analyze the governance dimensions of ecosystem change. The CRC Director has been invited to present these methods at several international forums and the methods and tools are reportedly being used. For all of these activities, SUCCESS is leveraging significant resources. In FY 10, SUCCESS leveraged over US $84,000. Clearly SUCCESS has been able to increase its impact through partnering and leveraging resources.

Endorsements: The MPA PRO/WIO-COMPAS program has been endorsed by IUCN, the International Ranger Federation, WWF South Africa, and the Game Ranger Association of Africa. The IUCN endorsement has been the most important one, raising the profile of the Program and increasing the interest in certification. By adding its logo to the CCA Guidebook, NOAA officially endorsed the guide—something that clearly has legitimized NOAA using the Guidebook in their trainings.

APPENDIX 2: LEVERAGED FUNDING TO DATE (OCT. 2009 – DEC., 2010)

Fiscal Year	Leveraging Partner	Donor	Activity	Leveraged Funds
2010	CRC	Marviva	To present the MPA Pro concept at a meeting in Costa Rica	1,800
2010	CRC	individual experts	Livelihoods learning meeting – value of the experts' time	5,322
2010	CRC	CRC	Reception at 3/24 meeting leveraged by URI	2,212
2010	CRC	CIDEA	Juan Ramon travel to Washington DC for Harvest seminar	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 Sea Grant	UH Sea Grant staff contributing to RMI coastal assessment	2,002
2010	CRC	LOICZ	Stephen participation in Paris meeting	2,133
2010	WIOMSA	SIDA	Dar es Salaam experts meeting, Feb 2010	15,200
2011	WIOMSA	ReCoMap	updating MPA training manual	25000
2011	WIOMSA	Sida	Conducting MPA training course	20000
2011	WIOMSA	ReCoMap	Conducting MPA training course	55000
2011	CRC	CTI	Climate change cases, courses, and training of trainers	58,423
LEVERAGED FUNDING TOTAL				242,851

APPENDIX 3: GHANA CASE STUDY FOR CONSERVATION ENTERPRISE GUIDE

Clear Definition of Land Tenure Creates Opportunity for Commercial Forestry of Mangroves whose Economic Benefits Motivate Mangrove Planting and Marine Conservation along the Volta River Estuary of Ghana

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Introduction

In West Africa, there are very few examples of successful community-based income generating ventures or microfinance schemes established within the scope of coastal resource conservation programs. However, community-based management of mangroves in Anyanui, one of the villages lying within the catchment area of the Volta Estuary in Ghana, provides a good demonstration of the feasibility of small-scale enterprise development alongside marine biodiversity conservation at a local scale. Community-based management of mangroves in Anyanui has been in place for nearly two decades. Community-based mangrove management is motivated by its economic viability and also for some historically compelling reasons. In the past, inhabitants of Anyanui relied predominantly on food crop production for their subsistence needs. The damming of the Volta River as part of a large hydro power development project in Ghana in the 1960s, resulted in a significant reduction of water flow to farmlands in the area. As a consequence, there was a huge decline in the yield of major food crops with attendant loss of livelihoods for the majority of the rural population. In the face of economic hardships and rising poverty, most of the inhabitants of the village shifted to commercial harvesting of mangrove wood as a means of livelihood. However, the pressure from mangrove harvesting far outweighed the rate of natural regeneration and the piecemeal restoration efforts undertaken by a few individuals at the time. Mangrove forests started dwindling as harvesting pressures continued.

Initiative

In 1991, a group of community leaders comprising mainly fishers, farmers and fuel wood gatherers formed the Mangrove Planters and Fishmongers Association in Anyanui. These leaders were motivated to act collectively to halt unsustainable exploitation of mangrove forests while fostering strong social ties at the community level. Consequently, the leaders had the association registered as a community-based organization (CBO) at the Keta District Assembly. At the time of formation, membership of the association comprised 7 females and 13 males. Through voting, leaders are selected to manage the affairs of the Association for a four-year term, made up of the Chairman, Vice chairman, Secretary, Assistant Secretary,

Treasurer, Organizer, and a Deputy Organizer. A 5-member Arbitration Committee is appointed to assure compliance, set rules, and manage conflict- related issues.

By 1992, the association had commenced systematic restoration of mangrove forests in the area. Mangrove restoration was only possible after a series of land tenure negotiations between the leadership of the association on the one hand, and land owners, and local Chiefs on the other. The association initially secured access to about 6 acres (2.5 hectares), based on a 12-year leasehold agreement that is automatically renewed. The areas acquired by the association for mangrove re-planting are located close to the banks of the Volta Estuary, thereby guaranteeing a water flow regime that is conducive for growth of mangroves. Collection of seedlings from the wild as well as planting is undertaken by the entire membership of the association. Individual members of the association are financially rewarded with an equivalent of US $ 3.5 for participating in seedling collection, planting and weeding. Non-participation in these activities do not attract penalties, however, absentees are not rewarded financially. The payments are made directly from the bank account of the association, thereby discouraging ‘‘free riding’’ and giving incentive for participation in mangrove restoration activities.

Over the years, the association has strengthened its internal procedures. For instance, the arbitration committee has, in a consistent manner, settled disputes amicably within their ranks. The result has been greater trust not only for the leadership, but also among the membership of the association. Increasingly, the association has gained credibility in the village and beyond. Customary agreements reached between the Association, land owners and Chiefs gives the Association the exclusive rights of access to re-planted mangrove forests. Noteworthy is the agreement reached on benefit sharing between the Association and Chiefs on one hand and land owners on the other. Within this framework of benefit sharing, the total mangrove harvested from an acre of land is divided into three parts –calculated in cash or number of stumps. While one part goes to the Chief/land owner, the remaining two parts are given to the Association.

This mechanism for benefit sharing has clarified ownership of mangroves replanted by the association. Currently, non-members are excluded through traditional laws, established by the association. In addition to mangrove forests collectively owned and managed, membership of the association is encouraged to individually acquire additional mangrove forested areas. As part of its stewardship of mangrove forests, the association networks effectively with other local institutions such as the Bush Fire Control Association to prevent and control forest fires among others. Furthermore, the work of the group has earned the members extensive market networks for trade in mangrove products in Ghana and some neighboring West African countries.

Currently, the Mangrove Planters Association has 43 members. In addition to the 6 acres owned by the Association collectively, each member of the association has secured tenure rights to an additional 1-2 acres, thus the total area replanted in mangrove woodlots is about 79 acres.

Results

Initial survey of members of the association and buyers of mangrove wood from the community indicates significant income benefits accruing from the restoration of mangrove forests along the Volta river estuary. According to Vincent Akpasu, a member of the association, mangrove restoration is a livelihood practice that requires minimal capital investment but generates significantly high financial outputs.

> *''I invest about GH¢ 295 in re-planting an acre of mangrove forest. However, I sell it at about GH¢ 433. So I gain over GH¢ 138 (US $97.80) per acre after harvesting.''*

Besides, members of the association recognize how mangrove planting has empowered women to offer mutual financial assistance. As aptly put by Naomi Agorkpo,

> *''Through mangrove planting, harvesting and selling, women are able to grant loans to themselves''.*

Mangrove restoration also provides a reliable supply of wood for supporting other livelihood activities like bread baking, biscuit making, fish smoking as well as housing construction at Anyanui and surrounding communities. For most members of the association, participation in mangrove restoration has markedly transformed the social status of their families. As noted by Amos Ametefe,

> *''in the early years, we did not believe we could afford our children's education, but now through this mangrove business, some of us have children pursuing courses at the University level.''*

Mangrove is allowed to be harvested by the group and its members only when they have reached maturity at 9 - 12 years. The timing of re-planting is such that the mangrove areas do not reach maturity at the same time. The association and its members sell off their mature mangrove trees to intermediaries who transport to the larger mangrove markets to sell. The mangrove traders do well financially. Mansa Sokpe says:

> *''I spend nearly GH¢ 2,057 to buy, cut, bundle and transport an acre of mangrove wood products to the wood market. However, I receive about GH¢ 3,830 after selling. Therefore, I make a profit of about GH¢ 1,779 (an equivalent of US $ 1,250) after selling all my wood.''*

Furthermore, by sharing the benefits with land owners and Chiefs, the association has fostered equity in access to coastal resources and in turn gained secured tenure rights to land and clear ownership of re-planted mangroves. Support of Chiefs and land owners for mangrove restoration has reinforced strict adherence by the wider community to local laws

preventing illegal harvesting of mangroves re-planted by the association or individuals. This is evidenced by Atsu Lolome's assertion that,

> *''in the past, community folks were cutting and destroying mangrove areas because there was free access. But now, you need to plant mangroves before you can harvest at commercial scale. As enshrined in the rules, illegal harvesting not only attracts hefty fines to be imposed by land owners and traditional authorities, but also violators are arrested and prosecuted in court.''*

Best Practices

Gaining commitment of traditional authorities

The commitment of traditional authorities and land owners is necessary for achieving workable institutional arrangements for conservation of coastal mangrove forests. In the case of Anyanui, the Mangrove Planters and Fishmongers Association gained commitment of the custodians of land by not only engaging them in negotiations for land tenure security, but also taking their interests into account in the ensuing benefit-sharing scheme. For their part, traditional authorities showed commitment for community-based management of mangroves by supporting the application of local norms and customs to deter illegal mangrove harvesting. Often, overt commitment by traditional authorities towards coastal resource management processes enhances legitimacy at the local level and reinforces conservation of coastal resources.

Collective recognition of resource use problems and demonstration of leadership

In coastal areas where local communities depend directly on coastal resources as sources of livelihoods, the more that resource users recognize that significant declines in livelihood-dependent resources threatens their very ability to earn income, this in turn spurs their collective action to better manage the resources. This is, however, not enough to guarantee effective community-based management. User/citizen action must be coupled with the exercise of leadership that advocates for conservation. In the case of Anyanui, it was interesting to note that leadership for restoration of mangrove forests did not reside in traditional authorities nor land owners, but rather in ''ordinary'' fishers and fuel wood gatherers who saw their livelihoods threatened by relentless over-exploitation of mangroves.

Clear definition of ownership and access rights

Achieving clarity on ownership of, and rights of access to, coastal resources is crucial for effective resource management through local institutional arrangements. This allows regulated access to coastal resources and promotes exploitation patterns that are beneficial to livelihoods and the environment.

In the case of Anyanui, ownership of mangrove forests by the Association serves as an incentive to conserve mangroves, which provide the major source of income for its members.

Conservation of biodiversity

Aside the planting of three species of mangroves, namely red (*Rhizophora* sp.), white (*Avicennia* sp.) and black mangroves (*Laguncularia* sp.), mangrove-forested areas are also good grounds for the continued supply of fisheries resources including crabs, oysters, clams and tilapias, most of which are exploited by local inhabitants and nearby communities for livelihood and food security.

Mangrove wood market at Anyanui along the Volta estuary of Ghana

Mangrove wood products in export process from the Anyanui mangrove market

Cross-section of members of the association at a meeting

Group photo of members of the Association standing by their mangrove products