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**UNIVERSITY OF
CAPE COAST**

USAID/UCC FISHERIES AND COASTAL MANAGEMENT
CAPACITY BUILDING SUPPORT PROJECT

YEAR FOUR
1ST QUARTER REPORT

1ST OCTOBER, – 31ST DECEMBER, 2017
DEPARTMENT OF FISHERIES AND AQUATIC SCIENCES
UNIVERSITY OF CAPE COAST

LIST OF ABBREVIATIONS

CCM	Centre for Coastal Management
CSLP	Coastal Sustainable Landscapes Project
DFAS	Department of Fisheries and Aquatic Sciences
FoN	Friends of the Nation
FtF	Feed the Future
FTFMS	Feed-The-Future Monitoring System
GDP	Gross Domestic Product
GIS	Geographic Information Systems
GMMB	Ghana Museums and Monuments Board
ICM	Integrated Coastal Management
IUU	Illegal Unregulated and Unreported
KNUST	Kwame Nkrumah University of Science and Technology
M&E	Monitoring and Evaluation
METSS	Monitoring, Evaluation and Technical Support Services
MoA	Memorandum of Agreement
MoFAD	Ministry of Fisheries and Aquaculture Development
SFMP	Sustainable Fisheries Management Project
UAV	Unmanned Aerial Vehicle
UCC	University of Cape Coast
UDS	University for Development Studies
UENR	University of Energy and Natural Resources
UG	University of Ghana
URI	University of Rhode Island
USAID	United States Agency for International Development
USG	United States Government

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Cover Photo: Head of Department at DFAS, Dr. Noble Asare (middle) in a group photograph with undergraduate students supported by the USAID/UCC Fisheries and Coastal Management Capacity Building Support Project at their graduation ceremony in October 2017.

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EXECUTIVE SUMMARY

The five-year USAID/UCC Fisheries and Coastal Management Capacity Building Support Project, awarded in October, 2014 is designed to develop individual and institutional capacities in Fisheries and Coastal Management at various levels in Ghana. This report provides a summary of events carried out during the first quarter of the fourth year i.e. October - December, 2017. The project M&E team fulfilled the project obligation of collating and entering all FY 2017 indicator data into the online Feed-The-Future Monitoring System (FTFMS). The data entered included project narratives, FY 2017 targets, performance and results achieved. The project also completed and submitted a project Annual Report for FY 2017 covering all Year 3 activities implemented, results achieved, lessons learned, challenges and opportunities to USAID for approval. A Procurement Plan for project Year 4 activities was developed and submitted to USAID for approval and also shared with the UCC Procurement Section to facilitate the acquisition of remaining equipment, payments and contractual issues. The project also developed a project Implementation Plan and an M&E Implementation Plan to guide the implementation and tracking of all Year 4 program activities. Ghana Audit Service carried out an audit exercise covering project Year 2 implementation period on behalf of USAID. The exercise also covered financial documentation on project accounts. Two (2) members of the project M&E team attended an M&E and Gender Point of Contacts meeting for USAID IPs organized by USAID/METSS in Bolgatanga to discuss USAID M&E Policies, IPs reporting responsibilities, and share knowledge and experiences across projects to enhance effective project implementation and management performance. An evaluation was carried out to assess the undergraduate research support grant extended to beneficiaries from collaborating universities during the 2016/2017 academic year. It is noteworthy that two (2) members of the project Communications team attended a Communications meeting organized by USAID for IPs to deliberate on issues of communications at the Royal Senchi Resort in the Eastern Region. The Centre for Coastal Management (CCM) facilitated the development of a proposal and a Memorandum of Agreement for the University of Cape Coast to go into partnership with the Ghana Museums and Monuments Board (GMMB) for the use of Fort St Jago based in Elmina by CCM. Also, the first batch of four (4) PhD students participated in a semester abroad program at URI to carry out research and participate in relevant courses arrived back home to finalize the writing of their thesis. The project project staff also participated in a one-day training workshop organized by METSS on Ghanalinks.org which is an online information hub on USAID Implementing Partners' activities to expose project members to the importance of the platform.

1.0 INTRODUCTION

1.1 Ghana's Marine Fisheries Sector

Ghana's natural resources include minerals such as gold, diamond, bauxite and manganese, forest resources like timber and cocoa, as well as water resources such as fish. Ghana's fishing industry comprises resources from marine waters, inland or freshwater bodies and coastal lagoons. Marine fisheries in Ghana are important for employment, income generation, nutrition, and food security. The marine fisheries sector contributes 3-5% to the country's annual gross domestic product (GDP). In spite of the economic importance of the sector, production from marine capture fisheries has been declining since the mid-1990s, from almost 420,000 tonnes to 202,000 tonnes in 2014, which translates into decrease in revenue generated by the sector. Declines in fish production and subsequent impacts on economic benefits derived from the fisheries sector are partly due to ineffective fisheries management.

Ghana faces increasing challenges of managing its coastal and marine resources, especially marine fish stocks and the degradation of other coastal resources. The overexploitation of fish and the pollution of marine and coastal ecosystems are just some of the problems the country faces along its coastal zone. This has come about as a result of non-compliance with and ineffective monitoring and enforcement of fishing rules and regulations, lack of education, training, research, data gathering and analysis, and low government investments in capacity building for natural resource management in the country. Lack of adequate human resource capacity, good governance and well-functioning regulatory systems are a threat to natural resources management in Ghana.



Figure 1: Artisanal fishing landing site at Elmina, Central Region, Ghana – UAV image captured by the Centre for Coastal Management

Non-compliance, lack of effective monitoring and enforcement of fishing rules and regulations provide fertile grounds for illegal, unregulated and unreported (IUU) fishing. Available fisheries

statistics data show that number of fishing vessels as well as fishers have increased beyond sustainable levels with corresponding decreases in fish catch, partly due to open access nature of small-scale fisheries. Decreases in fish catch result in lower income levels of fishers, which in turn lead to increased levels of poverty particularly in coastal communities. There is a critical need to address the problem of decreasing fish catches, which can be achieved through improved fisheries management. Addressing the problem of overfishing and decrease in fish catches will contribute to the realization of Ghana's Poverty Reduction Strategy.

Adequate human resource capacity is an enabling condition for improved fisheries management. This is a justification for the award of the USAID/UCC Fisheries and Coastal Management Capacity Building Support Project, which has a primary aim of promoting sustainable marine fisheries management in Ghana through capacity building of students, professionals and fishing communities, using effective partnerships across public and private institutions, both local and international. The project is sponsored by the United States Agency for International Development (USAID) through the Feed-the-Future (FtF) Initiative and it contributes to Government of Ghana's national fisheries policy and coastal management objectives.

1.2 Feed-the-Future (FtF) Initiative of the United States Government

Feed-the-Future (FtF) is a United States Government (USG) Initiative to address global hunger and food insecurity. In 2009, President Barack Obama of the United States committed US\$3.5 billion over a 3-year period to this global initiative, which was launched in 2010 with the aim of fighting hunger and poverty. FtF is coordinated primarily by the USAID on the basis that every 1% increase in agricultural income per capita reduces the number of people living in extreme poverty by between 0.6 and 1.8%. No other investment has that return. FtF supports initiatives in fisheries and coastal management with funding because most developing nations lack adequate resource capacity to sustainably exploit and effectively manage their coastal and marine resources.

1.3 The USAID/UCC Fisheries and Coastal Management Capacity Building Support Project

The Fisheries and Coastal Management Capacity Building Support Project is a partnership agreement between the USAID and the University of Cape Coast (UCC) which was signed on 24th October, 2014 and being implemented by the Department of Fisheries and Aquatic Sciences (DFAS) of UCC. The project provides DFAS with administrative, technical and financial assistance. USAID's total contribution to this Project is up to the tune of US\$5,500,000, which is sub-obligated on yearly increments to enable DFAS effectively coordinate capacity building at various levels for sustainable marine fisheries management in Ghana over a period of five years (2014-2019). The USAID award represents a strategic investment from the American people for food security in Ghana as part of the USG FtF Initiative, and subject to the terms and conditions of the Agreement signed with the University of Cape Coast (PIL No.: 641-A18-FY14-IL#007).

The main purpose of the award is to contribute towards addressing capacity needs in fisheries and coastal management in Ghana. The project was developed to respond to the issues raised in the DFAS SWOT Analysis. It aims at strengthening the institutional capacity of DFAS to train personnel for fisheries and coastal management, and support the Centre for Coastal Management (CCM) at UCC to become fully operationalized. The award also supports the restructuring of integrated data and information support systems for fisheries and coastal management, which serve as building blocks for evidence-based policy formulation and

decision making at all levels. Project activities contribute to USAID's development strategy for Ghana as outlined in its Country Development Cooperation Strategy (CDCS), and also respond to USAID/Ghana Development Objective 2: Sustainable and Broadly Shared Economic Growth. Expected outcomes from the five-year project include the building of significant capacity for sustainable marine fisheries and coastal management in Ghana, and ensuring that management outcomes become more evident.

Local scientific capacities are strengthened in specific areas such as the provision of quality and relevant educational programs, practical research, extension and advisory services to support the management of Ghana's fisheries and coastal resources, which will enhance the country's social and economic development. Relevant partnerships are built with institutions with shared research and training interests by creating a platform for regular interaction and dialogues with local and foreign universities, particularly with Centres, Institutes and relevant Academic Departments at the University of Rhode Island (URI). This project has also formed important collaborations with relevant government partners including the Ministry of Fisheries and Aquaculture Development (MoFAD), the Fisheries Commission of Ghana, as well as libraries and research institutions with the idea to promote increased use of science and applied research for decision making, law enforcement, climate change adaptation and biodiversity conservation for poverty alleviation.



Figure 2: HoD congratulates some graduands of the Department of Fisheries and Aquatic Sciences during Congregation, September 2017

The capacities of academic and technical staff of DFAS and the CCM are continuously strengthened to enhance the use of new technologies and scientific equipment, through the refurbishment of the fisheries and coastal research laboratory, library and offices of academic staff, acquisition of vehicles for field research, extension and the procurement of equipment for the creation of fisheries and coastal management database, working with other international data sources and host centres. These initiatives are aimed to facilitate the training of 10 PhD, 20 Masters and 150 Undergraduate students. The award also includes funding for short courses on climate change adaptation and mitigation in coastal communities, fisheries and coastal management and Geographic Information Systems (GIS) for targeted professionals over the course of five years, which are all facilitated by the Centre for Coastal Management (CCM) as part of its operationalization.

The project also supports the implementation of a DFAS Strategic Plan, development of a Business Plan for CCM, policy dialogue, and critical research with the help of the refurbished Fisheries and Coastal Research Laboratory. The project conducts research to generate data and information to fill key knowledge gaps that are required for a more effective implementation of Ghana's Fisheries and Aquaculture Sector Development Plan, and

undertakes community outreach and extension programs to improve long-term national capacity on fisheries and coastal issues, train personnel in relevant government agencies, and strengthen their links to a network of researchers within national and international research organizations.

1.4 The Department of Fisheries and Aquatic Sciences of the University of Cape Coast

The University of Cape Coast (UCC) is located close to the Atlantic Ocean, which makes the Department of Fisheries and Aquatic Sciences (DFAS) of UCC one of the leading institutions in the area of Fisheries and Marine Sciences in Ghana. DFAS has a vision to become an internationally recognized partner in the conservation of healthy aquatic ecosystems for sustained provision of goods and services, in collaboration with public and private institutions. This vision has been facilitated by the initiation of the USAID funding support to DFAS. The capacity of DFAS has been strengthened with the provision of adequate logistics and teaching infrastructure, which has made DFAS more attractive to an increasing number of students wanting to undertake studies at the School of Biological Sciences, and also enhanced opportunities for institutional collaboration.

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Our programmes are tailored to meet the needs of industry, giving our students the relevant skills and qualifications for direct employment after school

Figure 3: DFAS online ad for 2018 undergraduate admissions

DFAS now has a state-of-the-art laboratory with relevant modern equipment which supports hands-on practical-based training of students. This presents DFAS students with future academic prospects. DFAS offers undergraduate (BSc) degree in Fisheries and Aquatic Sciences and postgraduate (MPhil and PhD) degrees that expose students to:

- Oceanography, Limnology and Aquatic Ecology

- Integrated Coastal Resource Management including Petroleum Ecology and Climate Change Studies
- Aquaculture, bridging gaps between demand and supply in the fishing industry and aquaculture entrepreneurship
- Fisheries Science including fisheries ecology and organismic interactions

I.5 Monitoring and Evaluation (M&E)

Project monitoring and evaluation (M&E) is guided by the project Performance Management Plan (PMP) at the program level to track implementation and output systematically, and measure the effectiveness of program activities. This helps to determine whether if the project is on track with implementation of the annual workplan or changes are needed. In course of program implementation, all activities planned for the first quarter were closely monitored to check if they were actually implemented and within schedule. Activities planned for the first quarter and closely monitored include developing a Procurement Plan, Activities Implementation Plan, Monitoring and Evaluation Plan for Year 4, completing refurbishment and installation works of the Fisheries and Coastal Research Laboratory, development of PhD and MPhil research topics with postgraduate students and assigning supervisory roles, follow up on processes leading to the approval of a Dual PhD degree program, activities related to the operationalization of CCM particularly related to staffing, launch of CCM website, development of a CCM Sustainability Plan and the continuous search for a place to be used by the Centre for its outreach programs in the coastal communities. M&E visits were also conducted to inspect activities in the field and to assess the impact of field research funding support for undergraduate students from UCC and other collaborating universities.

In the early part of the quarter, the project M&E team responded to a call by USAID requesting for all IPs to collate and enter FY 2017 indicator data into the online Feed-The-Future Monitoring System (FTFMS). The data entered included project narratives, FY 2017 targets, performance and results achieved. Before submission, it was ensured that the data and information that was entered were all accurate, comprehensive and complete. USAID M&E Specialists contacted project M&E team about the data and information which were entered where there were any noticeable errors, inconsistencies and any missing information and the project M&E team responded appropriately before the entry was finally approved.

In the first quarter, two (2) project staff belonging to the M&E team attended an M&E and Gender Point of Contacts meeting for USAID Implementing Partners (IPs) organized by USAID/METSS in Bolgatanga. The purpose of the meeting was to discuss USAID M&E Policies, IPs reporting responsibilities, and share knowledge and experiences across projects to enhance effective project implementation and management performance. One other primary goal for organizing the workshop was to increase IPs understanding and remind them of ways to properly integrate gender in their projects and to provide an opportunity to share information, resources and basically learn from one another across projects. In course of the workshop, a Gender Working Group called “Team Gender” was formed with Terms of Reference to learn and share knowledge and information and advance gender issues across projects. The M&E Community of Practice and Gender Point of Contacts meeting was very useful because it was an opportunity for the M&E team to present the USAID/UCC Fisheries and Coastal Management Capacity Building Support Project to other USAID IPs, showcase project and M&E activities and learn from other IPs and resources available to improve the Project M&E system. Knowledge gained will be used to improve the project M&E system in Year 4 especially with respect to project performance monitoring, performance indicator data

collection and performance management and reporting. Key points of information from the workshop include the following:

- Projects should be evaluated periodically to assess impacts
- There should be continuous data collection and data collection should be participatory
- There is the need to ensure data quality by periodically performing data quality assessments
- Regular M&E capacity building activity for M&E Specialist and key staff
- Participatory M&E is key to ensuring efficient and effective implementation
- Technical staff and/or consultants should be involved in M&E activities
- Learn to communicate data needs to stakeholders since this helps to align data sources
- Have a database of all project beneficiaries and design a follow-up evaluations/assessments
- M&E Specialists should be bold to criticize Performance Monitoring Plans (PMPs), make decisions and recommend changes
- The project can ask for M&E support from METSS
- Simple functions and formulae could be applied in Excel to improve data management
- It is mandatory that every M&E Specialist understands the USAID Automated Directive System (ADS) 201 and the Evaluation Policy.
- Adequate funds should be allocated for M&E activities (about 3% to 5% of total project budget)
- Projects must prepare in advance for project close-out
- Projects must include gender issues in project implementation.

Also in this quarter, the project M&E Coordinator embarked on field trips to other collaborating universities to physically assess the undergraduate research support grant extended to beneficiaries from those universities during the 2016/2017 academic year. During those visits, full details of all beneficiaries, copies of their dissertations (both hard and electronic) and some documentation on the disbursement of the funds were assessed. He also interacted with the beneficiaries to have first-hand information on the usefulness and impact of the assistance. Lessons learned from the visit, interactions and assessments informed project management's decision to extend another round of support to potential beneficiaries in the 2017/2018 academic year. Below are some of the information gathered and lessons learned from the assessment;



Figure 4: Two undergraduate students who benefited from research grants from the USAID/UCC Fisheries Project.

- The overall administration of the funds was commendable, proper records of fund disbursement as well as beneficiaries were kept and provided upon request
- Funds were received quite late into the academic year which did not allow the process of selection of beneficiaries to commence prior to students choosing topics
- In the process of selection of beneficiaries, no gender consideration were given in the selection of beneficiaries
- For efficient implementation of this activity moving forward, project management should consider the release of funds to beneficiary collaborating institutions in the first semester of the academic year to promote adequate planning and selection of respective student beneficiaries
- To ensure gender parity among beneficiaries, effort must be made in the selection process to take into account gender considerations
- Based on the creditable administration of the funds received, it was recommended that support funds for 2017/2018 academic year should be released as soon as possible to ensure smooth running of their implementation

2.0 PROGRAM COMPONENTS, MANAGEMENT AND ACTIVITIES IN THE FIRST QUARTER OF YEAR FOUR

2.1 Activities Completed in the First Quarter

Key Activities Completed within the First Quarter:

- The project M&E team fulfilled the project obligation of collating and entering all FY 2017 indicator data into the online Feed-The-Future Monitoring System (FTFMS). The data entered included project narratives, FY 2017 targets, performance and results achieved.
- The project completed and submitted a project Annual Report for FY 2017 covering all Year 3 activities implemented, results achieved, lessons learned, challenges and opportunities to USAID for approval.
- A Procurement Plan for project Year 4 activities was developed and submitted to USAID for approval and also shared with the UCC Procurement Section to facilitate the acquisition of remaining equipment, payments and contractual issues.

- The project also developed a project Implementation Plan and an M&E Implementation Plan to guide the implementation and tracking of all Year 4 program activities.
- Ghana Audit Service carried out an audit exercise covering project Year 2 implementation period on behalf of USAID. The exercise also covered financial documentation on project accounts.
- Two (2) members of the project M&E team attended an M&E and Gender Point of Contacts meeting for USAID IPs organized by USAID/METSS in Bolgatanga to discuss USAID M&E Policies, IPs reporting responsibilities, and share knowledge and experiences across projects to enhance effective project implementation and management performance.



Figure 5: M&E training at Bolgatanga, Upper East Region

- An evaluation was carried out to assess the undergraduate research support grant extended to beneficiaries from collaborating universities during the 2016/2017 academic year.
- Two members of the project Communications team attended a Communications meeting organized by USAID for IPs to deliberate on issues of communications at the Royal Senchi Resort in the Eastern Region.



Figure 6: Communications for development workshop at Senchi

- The Centre for Coastal Management (CCM) facilitated the development of a proposal and a Memorandum of Agreement for the University of Cape Coast to go into partnership with the Ghana Museums and Monuments Board (GMMB) for the use of Fort St Jago based in Elmina by CCM.
- First batch of four (4) PhD students participated in a semester abroad program at URI to carry out research and participate in relevant courses arrived back home to finalize the writing of their thesis.



Figure 7: DFAS PhD students obtain academic experience at the University of Rhode Island

- METSS organized a one-day training workshop for project staff and management team on Ghanalinks.org which is an online information hub on USAID Implementing Partners' activities to expose project members to the importance of the platform.

3.0 PROJECT OUTPUT I.1: IMPROVED INFRASTRUCTURE

3.1 Activity 1.1.1: Renovating and Equipping Fisheries and Coastal Research Laboratory

Renovation works at the Fisheries and Coastal Research Laboratory was completed in Year 3. Much of the equipping aspects of the Laboratory with respect to the procurement of equipment and installation as well as procedures for ISO certification were also done but not fully completed. Implications were that procurement of equipment, installation and ISO certification actions needed to be continued in Year 4. In the first quarter of Year 4, project management continued to work with MES Equipment to procure one major outstanding laboratory equipment, the Gas Chromatographic Unit, a laboratory equipment used to analyze volatile substances in the gas phase. These efforts resulted in the purchase of the equipment and subsequent transport from abroad into the country.



Figure 8: Some laboratory equipment installed

The Gas Chromatographic Unit and other already acquired equipment but not installed will all be installed in Year 4. Project management also pursued processes regarding the ISO certification of the laboratory with MES Equipment, the Ghana Standards Authority and the Ghana Food and Drugs Board. In the last quarter, project management also requested for approval from USAID to complete the construction of the GIS hub container storage facility, which is yet to be granted.



Figure 9: The main laboratory and research laboratories with some installed equipment

In the quarter under review, registration of the research vessel *RV Sardinella* was also pursued with the Ghana Maritime Authority. One major issue that has delayed the registration of the vessel is the certification of a skipper to man the vessel. Ghana Maritime Authority vessel registration procedures require the evidence of a certified skipper to operate the vessel prior to registration. A Laboratory Technician at DFAS was identified for the purpose and went through training at the Regional Maritime University with a course certificate in Year 3.



Figure 10: DFAS Research Vessel embossed with the name *RV Sardinella*

After the training, project management was informed by the Ghana Maritime Authority that the trained skipper needed to visit the examination section of the Ghana Maritime Authority with his certified documents from the Regional Maritime University for a competency assessment and medical examination prior to certification and registration of the vessel. In the last quarter, plans were advanced for the Technician to undertake the competency assessment and the medical examination, which are both scheduled to take place in the ensuing quarter. Project management is hopeful that all laboratory equipment will be procured, fully installed and ISO certified, the research vessel will be duly registered to become operational for research activities in Year 4.

3.2 Activity 1.1.2: Refurbishing and Equipping office/Lecture/Computer rooms and Library

Refurbishing and equipping office/lecture/computer rooms and library is an activity that started at the beginning of the project and largely completed through Year 3. However, minor procurement of office equipment and library books and journals are planned for Year 4 which were included in the Year 4 Procurement Plan. The first quarter was mainly programmed for Year 4 start-up activities and request for the release of funds from USAID, after which the minor procurement of office equipment, library books and journals will be performed. In Year 4, the project plans to develop a maintenance plan for all project facilities and equipment to ensure sustainability.



Figure 11: Renovated offices of some DFAS academic staff with computers installed

3.3 Activity 1.1.3: Acquisition of Vehicles to Support Educational, Training, Research and Extension Activities

The acquisition of all originally planned project vehicles was completed in Year 2. In the last quarter, all project vehicles were maintained according to schedule with the annual renewal of vehicle insurance, road worthy certificates planned for Year 4. Due to the large volume of work to be done particularly with respect to students and academic field research travels, a request was put forward to USAID in the Year 4 Workplan to approve the purchase of another project vehicle without any additional cost. In the last quarter, project management made attempts at getting a feedback on approval for the purchase of the additional vehicle from USAID but no concrete report was received. In the coming quarter, project management will continue to pursue this goal until a final decision is taken. In case an approval is given, a fourth project vehicle will be procured to support project activities in Year 4 and 5 until the end of project and the vehicle will be properly maintained for sustainability.



Figure 12: Vehicles procured serve varied purposes at the Department of Fisheries and Aquatic Sciences, UCC

4.0 PROJECT OUTPUT 1.2 INCREASED TECHNICAL AND SCIENTIFIC KNOWLEDGE

4.1 Activity 1.2.1: Academic and Technical Staff Capacity Strengthening

The project has followed a plan aimed at strengthening the capacities of DFAS and CCM Academic and Technical staff since its inception where majority of people have already benefitted. Also, in course of the project in Year 3, USAID AfricaLead conducted an Organizational Capacity Needs Assessment for DFAS and CCM to identify areas for Academic

and Technical Staff Capacity strengthening. Following the capacity development plan and recommendations from the assessment, project management has selected three (3) members of staff (one administrative, one technical staff and one financial administrator) to receive capacity strengthening support in Year 4.

These are planned to cover USAID regulations, administration of donor projects and management, cooperative agreements, financial administration and management practices including office and public relations. The technician will be trained in laboratory procedures, management, and business administration. The project also plans to support other forms of training and conferences for members of staff in Year 4.

In the first quarter, it all started with the identification of relevant training programs and competent institutions to provide such training programs and the needed requirements and preparations towards the training in the next quarters. This will ensure that members of staff selected to participate in the training programs prepare adequately in advance of the training and also the required logistics are provided on time.

4.2 Activity 1.2.2: Operationalization of the Centre for Coastal Management

The operationalization of the Centre for Coastal Management is a flagship activity of the project. In view of this, project management has consistently worked hard to put systems in place to ensure that this comes to fruition before the end of project. One important thing that project management planned to do in efforts to operationalize the Centre was to find a location somewhere in the coastal communities that the Centre could operate from. This will ensure that the project is in constant and direct touch with communities and their members. In search of the place, project management located an old Fort (Fort St. Jago) at Elmina which was considered suitable for the purpose.

Project management contacted officials of the Ghana Museums and Monuments Board (GMMB), which is the Government of Ghana agency responsible for managing such properties in Ghana, to discuss the possibility of using the Fort as the Centre for Coastal Management. Several meetings were held thereafter, where the CCM presented a proposal to the GMMB detailing how the Centre intends to operate from Fort St. Jago. The proposal is currently under discussion by the GMMB which led to the drafting of a MoA between the University of Cape Coast and the GMMB in the last quarter. It is anticipated that the planned activities in the MoA will be implemented in phases in the future to see to the actual operationalization of the Centre in touch with coastal communities beyond life of project.



Figure 13: CCM website interface

The drafting of a new Strategic Plan to guide the Centre’s operations for 2017 – 2022 was also initiated in the last quarter. This is expected to facilitate processes involved in the operationalization of the Centre such as staffing, funding and long-term sustainability. In the last quarter, a Research Fellow in the person of Dr. Donatus Angnuureng was officially appointed by the University to CCM. This underscores the University’s commitments towards the operationalization of the Centre.

Dr. Donatus Bapentire Angnuureng

Research Fellow



Donatus Bapentire Angnuureng holds a Ph.D Degree in Environmental Physics from the University of Bordeaux in France. He obtained an M.Sc. degree in Physical Oceanography and Application from the University of Abomey-Calavi in Benin and a B.Sc. degree in Physics from the University of Cape Coast. He is a member of the Coastal Education and Research Foundation (CERF) and a member of the Ghana Science Association. He has several scientific papers in peer reviewed journals such as *Geomorphology*, *Journal of Coastal Research* and *Journal of Coastal Conservation*. He was a reviewer for a special issue of the *Journal of Coastal Research*. His expertise includes nearshore processes, hydrodynamics and morphology of coastal environments. His current project involves studies on beach dynamics using video monitoring systems for improving coastal management strategies in West Africa funded by the National Geographic Society and the French Embassy. Donatus is fun of playing and watching soccer.

Figure 14: Profile of Dr. Donatus Angnuureng as presented on the CCM website

As part of the Centre’s operationalization, a business and sustainability plan was developed for the Centre’s Unmanned Aerial Vehicle (UAV). The Centre also conducted a one-week mapping training for Military Officers of the Ghana Armed Forces Second Battalions Infantry

in Takoradi in the Western Region. Military personnel were equipped with fundamental knowledge and skills in Geographic Information Systems (GIS) and Remote Sensing. They were exposed to the practical skills of piloting the Unmanned Aerial Vehicle (UAV) for mapping their base camps and territories. The Centre's website was also upgraded to improve communication of the Centre's activities and increase visibility. New contents were developed and existing contents reviewed to accurately tell the Centre's story. Also, features of the website were optimized to ensure appealing user-interface.



Figure 15: CCM trains personnel of the Ghana Armed Forces, Western Regional Command on the use of UAVs

4.3 Activity 1.2.3: Support for Postgraduate (MPhil & PhD) Training Program

The activity on postgraduate support and training was originally planned to produce a total of 10 PhD and 20 MPhil fully funded students in various programs of study at DFAS. By the end of Year 2, all PhD students had been admitted in order to ensure that they are able to graduate before end of project. By the end of Year 3, the last group of five (5) MPhil students were admitted to begin their studies in the 2017/2018 academic year, also to make sure that they are able to graduate before end of project. Six (6) additional PhD students were also admitted on partial funding from the project with approval by USAID. This brought the total number of postgraduate students who are currently studying with scholarship under the project to thirty-six (36). In the last quarter all postgraduate students, including those who went away to the URI on a semester abroad to study were closely monitored and supervised to ensure that they were making continuous progress towards the successful completion of their various programs of study.



Figure 16: DFAS MPhil (Aquaculture) research student investigating the effect of some ingredients in fish diets on the growth of *Sarotherodon melanothron*

Also in the first quarter, UCC and URI pushed processes aimed at facilitating and institutionalizing the proposed dual degree program for both UCC and URI students. The dual degree program document was finalized and approved by the academic board of UCC in the last quarter which will see the next batch of students undertaking research that will lead to the award of dual degrees, making graduates with dual degrees more competitive and marketable. This development will further strengthen the existing partnership between UCC and URI. Also in the first quarter, four (4) PhD students who went to URI to undertake a one-semester research and study abroad program returned home. Knowledge and experience gained from the study abroad program will be used to enrich their research here and the writing of their thesis.



Figure 17: Postgraduate (PhD) research; Michelle analyses fish eggs (L) and Etonam studies fish otoliths (R) under a microscope

4.4 Activity 1.2.4: Undergraduate Research Grants

In Year 3, the project provided undergraduate field research grants to final year undergraduate students of other Ghanaian Universities to carry out research within the framework of the



project for their Bachelor degrees. Four (4) Fisheries Departments from KNUST, UG, UENR and UDS were identified and a total of 20 field research grants (5 per institution) worth US\$500 per student were awarded. During the quarter under review, field trips were embarked upon to the respective universities to evaluate the impacts of the grants awarded. Undergraduate research topics have been developed by academic staff of DFAS together with the final year students to for

repetition of the research grant scheme in FY18. In all, twenty-seven (27) undergraduate students are will receive support this year to embark on their research activities. Processes are currently underway to provide research grants to other sister universities but there have been a few delays with its implementation due to lack of project funds. This activity will be progressed as soon as the project receives funds from USAID.

5.0 PROJECT OUTPUT 2.1: INCREASED MARINE AND COASTAL RESEARCH AND RESOURCE ASSESSMENTS

5.1 Activity 2.1.1: Conducting Fisheries Stock Assessment

The primary objective of this activity is to provide information on the status of stocks of some selected commercially important marine fish species in Ghanaian coastal waters to inform management decision making. These species include cuttlefish *Sepia officinalis*, shrimp species, Carangidae (e.g. *Caranx hippos*, *C. chrysos*, *Trachurus spp.* and *Decapterus spp.*) and Sparidae (*Pagellus spp.*, *Dentex spp.*, and *Pagrus spp.*). Fish stock assessment surveys conducted in Year 2 and Year 3 by a project facilitator showed that the estimated Maximum Sustainable Yield (MSY) for artisanal, semi-industrial and industrial trawlers were 237,255 metric tons, 19,949 metric tons and 20,450 metric tons respectively, at an optimum fishing effort (Fmsy) of 9,045 canoes, 1062 semi-industrial vessels and 103 trawlers respectively. Based on these findings, it was recommended that ecosystem-based fisheries management should be adopted instead of single-species fisheries management approach to manage all fish species. The project facilitator conducted an all year round assessment and ended in Year 3. In Year 3, some postgraduate students also conducted research on fish stock assessment for their thesis to complement the information collected by the project facilitator. In the last quarter, the postgraduate students continued

Figure 18: *Penaeid shrimps (L)* and *Pseudotholitus speies (T)* being assessed by postgraduate students of DFAS

to collect data on fish stock assessment, which will eventually be analyzed to generate more information required for management decision making. A PhD student is currently conducting research on the bottom set gillnet fishery in the Central Region who interviewed fishermen engaged in the fishery and conducted canoe frame survey (70 canoes in all) at Apam and Cape Coast in the quarter under review. She identified seven 7 different mesh sizes of monofilament nets used in the fishery. The study is aimed at assessing the bottom set gillnet fishery in terms of catch, by-catch and possible ecological impacts on the marine ecosystem. This study will be supported throughout year 4.

5.2 Activity 2.1.2: Conducting Research and Assessment on Marine Fisheries Governance Issues

The project has mainly relied on the services of external facilitators to conduct research and assessment on marine fisheries governance issues throughout Year 2 and Year 3. The project intends to continue to use the services of external facilitators to lead this activity in Year 4. In the last quarter, project management developed Terms of Reference to guide the process and put out announcements for eligible candidates to apply. Contracts will be awarded in the next quarter for research and assessment on marine fisheries governance issues to begin in Year 4. A female MPhil student is also currently researching on the topic: “Traditional Fisheries Governance System: Their Social and Ecological Implications on Artisanal Fisheries Management in the Western Region, Ghana”. She is working in the six coastal districts of the Western Region to document the historical hierarchy of the coastal fisheries governance system, identify the current roles played by major stakeholders, the challenges associated with such roles, and identify some sources of conflict within the governance and management system. She is expected to collect more data in Year 4 to complement the information that will be collected by external facilitators. This will gather additional information required to make governance and management decisions.

5.3 Activity 2.1.3: Research on Fish and Shellfish of Commercial Value

This is mainly a research activity, which is conducted by DFAS students. PhD and MPhil students funded by the project are currently conducting various researches, supervised by competent experts at DFAS and through joint studies with colleagues from the Department of Fisheries of other universities. This activity continued in the first quarter where a second year PhD student continued his research on the biology and culture of Oysters in the Densu delta aimed at collecting socio-economic data, population dynamics as well as hydrographic parameters of the fishery. Culture experiments are underway and histological analyses regarding the reproductive aspect of the species are expected to commence in the second quarter and probably beyond. These activities will continue in the subsequent quarters until the end of Year 4.

Research on finding strategies for optimum oyster spat collection in four coastal waterbodies to promote aquaculture as supplementary livelihood for coastal dwellers also recorded significant progress.



Figure 19: Research on finding strategies for optimum oyster spat collection in four coastal waterbodies to promote aquaculture as supplementary livelihood for coastal dwellers. (Top) Racks mounted to hold spat collectors, (bottom) oyster spat settle on collectors after one month - (oyster shell – left, tile – middle, all collectors – right)

In the quarter under review, another PhD student also continued her research on the levels of PAHs in black-chinned Tilapia. She has been able to establish a quicker, effective and cheaper way of extracting PAHs from fish and sediment which is the QuEChERS method. Extractions done so far are yet to be analyzed pending the installation of the Gas Chromatography at the Fisheries and Coastal Research Laboratory.

An MPhil student is also researching on the comparative study of *Clarias gariepinus* and *Heterobranchus longifilis* toward the culture of the latter. In the past quarter, he obtained fish samples from the defined study site and conducted some morphometric measurements, stomach content analysis and gonadal examinations in addition to literature search. These research activities will be supported throughout Year 4.

5.4 Activity 2.1.4: Analysis of Value Chains of Fish Trade

This activity is led by DFAS with active participation by students, Research Assistants and academic staff of the Department. So far, the project has relied on the data and information collected by a female PhD student currently working on the topic “Value chain analysis of *Pseudotolithus species* towards food security in Ghana”. The focus of the study is to estimate the catch contribution by different fisheries sectors in terms of quantity, size and



and

price, investigate the production costs of different forms of processing, pricing and exports, develop a market map for the sale of the fish, establish the economic value of the species along the supply chain and project the overall livelihood outcomes, and examine the roles played by different institutions in the cassava fish trade in the Central and Western regions of Ghana. She collected the following information in the first quarter; activities of the two major fishing groups (artisanal and semi-industrial) in terms of expenditure and incomes generated per trip; the operational cost per trip, number of trips per week, quantities harvested per trip (cost) and the cost of the various sizes of the croakers. Interviews were also conducted on the sources of finance available to actors along the value chain. The various forms of processing, costs of processing and the preferred sale centers of the croakers established. She determined the role of gender along the value chain and established that the shelf life of smoked croakers is determined by the number of hours of smoking. Also, micro enterprise creation along the chain and its implications on livelihoods of actors were established. Major marketing centers and the actors who benefit most from the croaker business per their profit and loss margins were also identified. She is expected to continue data collection and analyses in subsequent quarters throughout Year 4.

5.5 Activity 2.1.5: Monitor the Biodiversity and Health of Coastal Ecosystems

In Year 3, external project facilitators from the Kwame Nkrumah University of Science and Technology (KNUST) were contracted to assess and monitor the health of a closed lagoon (Awiane lagoon) at Half Assini in the Western Region. This lagoon was to serve as a test case to monitor and improve the health of similar coastal ecosystems along the coast of Ghana. At the close of the contract duration, a report was submitted by the facilitators indicating that there were high levels of faecal coliforms and *E. coli* in the waters of the Awiane lagoon. This heavy contamination is as a result of human faeces from surrounding communities, which may also be a source of other pathogenic bacteria. The data from this study points to a potential health risk for the inhabitants of the communities who swim and use the water for domestic activities. Results also show that the lagoon contained three major fish species which include cichlids (*Hemichromis fasciatus*, *Sarotherodon melanotheron* and *Tilapia zillii*), bumper (*Chloroscombrus chysurus*), grey mullet (*Mugil cephalus*) and crab (*Callinectes amnicola*). Considering the species biodiversity present within the lagoon, it has become imperative to work with relevant actors to restore the lagoon as well as several others with similar conditions. The project during Year 4 intends to continue to work with District Assemblies to develop bye-laws to establish buffer zones around the lagoon. Also, there are plans to remove solid waste from within and around the lagoon. All these efforts are geared towards restoration of the lagoon.

The state of other coastal water bodies in the Central, Western Region and Greater Accra Regions is currently being studied. For instance the Whin estuary in the Western Region, Narkwa lagoon in the Central Region and Densu Delta in the Greater Accra Region are being assessed toward the development of Oyster culture. During the first quarter, a second year MPhil student collected data on physico-chemical parameters, biological oxygen demand, microbial load and condition index of oysters in the water and sediments. Heavy metal analysis of samples collected is expected to be carried out in the next quarter. These studies will be supported by the project throughout Year 4.

5.6 Activity 2.1.6: Developing Marine and Coastal Fisheries Database

The Department of Fisheries and Aquatic Sciences (DFAS), with support from the project, has developed an online database to manage historical data, new field observations and experimental results on Ghana's fisheries and other coastal resources. The database is called FishCoMGhana® which can be accessed online via <http://fishcomghana.com>.

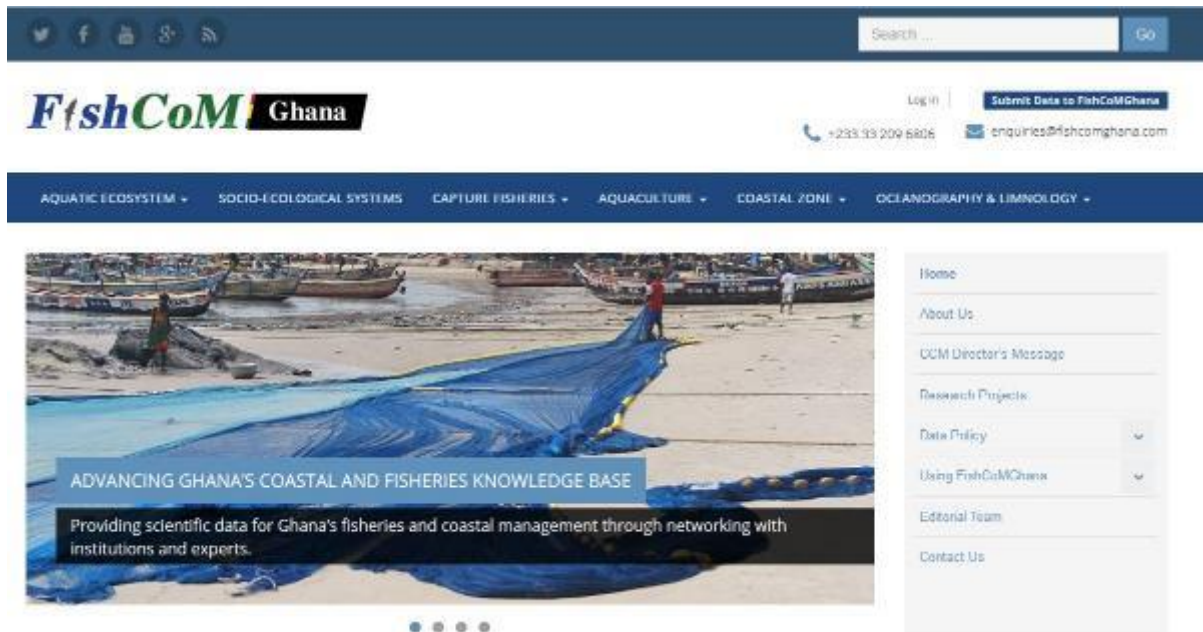


Figure 20: FishCoMGhana web portal interface

During this period under review, one-hundred (100) publications on various themes in fisheries and coastal issues have been added to the database. It is expected that more publications would be added in the next quarter on the basis of sustained collaboration among existing partners and the formation of new partnerships. Also, a plan has been drafted to increase the publicity of the database among relevant stakeholders. In this quarter, a call was advertised requesting for external technical experts to upgrade the database following the Terms of Reference (ToR) developed for activities in Year 4. Proposals were received and reviewed by project management team. It is expected that the upgrade will:

Allow users to produce dynamic maps indicating the characteristic features and the dynamics of key organisms in Ghana's coastal areas;

- Allow users to prepare maps of study area(s);
- Show fish landing bays/sites and their associated socio-economic information;
- Allow the publishing and hosting of a new scientific journal [Journal of Fisheries and Coastal Management (JFCoM)];
- Mark all papers/articles download via the site with the name of the database (FishCoMGhana.com) as well as the date and time an article/paper is downloaded.

6.0 PROJECT OUTPUT 2.2: COMMUNICATION, EXTENSION AND OUTREACH IMPROVED

6.1 Activity 2.2.1: Developing Material and Conducting Training on Integrated Coastal Management

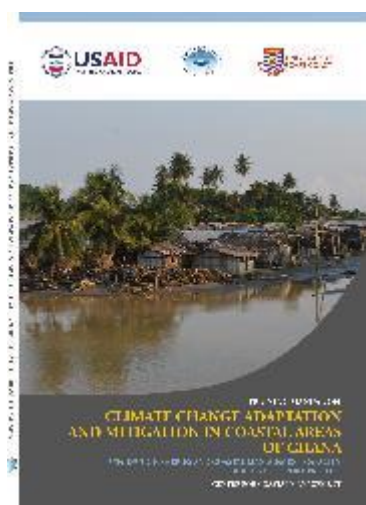


In Year 4, a 5-day training on Integrated Coastal Management (ICM) is planned to take place in the second quarter to be organized by the CCM and led by a facilitator using the published training manuals and modules developed for capacity building in ICM. In the first quarter, the project sent out advertisements announcing a call for the expression of interest to act as a facilitator to run the short course on ICM. Proposals were received, reviewed and decision made on one facilitator to organize the course and deliver report in Year 4. Training workshops for the ICM short course are expected to commence in the second quarter.

6.2 Activity 2.2.2: Developing Material and Conducting Training on Fisheries Management

In the quarter under review, announcements also went out to advertise for the expression of interest to act as a facilitator to run the short course fisheries management the published manuals and modules developed in Year 1. Proposals were received, reviewed and decision made on one facilitator to organize the course, assess and write a report in Year 4. For sustainability purposes, there were discussions on how the short courses could be organized with self-funding beyond life of project. Firm decisions will be taken in Year 4 after conclusions have been arrived at. The Fisheries Management short course will be rolled out in the second quarter.

6.3 Activity 2.2.3: Developing Manuals and Updating Training Materials on Climate Change Adaptation and Mitigation



The development and running of the short course on climate change has become necessary due to the increasing existing and potential impacts of climate change experienced on the global scale. For example, atmospheric and ocean temperature variability and the resultant shifts in ocean currents are likely to contribute to large-scale and catastrophic decreases in fisheries productivity. It is the aim of the project to train middle-level professionals on climate change adaptation and mitigation in coastal communities who will contribute towards addressing the impacts of climate change particularly in coastal communities in Ghana. Another short course on climate change will be organized in Year 4 following the advertisement of the call for the expression of interest to act as a facilitator to run the short course using the manuals and modules developed in

Year 1. Similarly, proposals were received, reviewed and a successful applicant selected to

lead the organization of the course in Year 4. The training workshop will take place in the third quarter.

6.4 Activity 2.2.4: Developing Material and Conducting Training on the use and Application of Geographical Information Systems (GIS)

The development of GIS short course is aimed at designing new approaches for managing coastal resources in sensitive environments due to the fact that there is lack of baseline data and information on our coasts, and management plans to effectively respond to these challenges. In responding to that need, a basic curricula and training manual in GIS developed to train individuals in two (2) training courses (Introductory and Intermediate GIS). These training events were organized in Year 2 and Year 3 and are planned to be carried out for participants from the public and private sector once more this year. In the last quarter, announcements went out to seek the services of an external facilitator to play a leading role in the organization of the course. The proposals received were reviewed by the project management team and a decision was made to select a facilitator who will lead the implementation of the course in Year 4. They are planned to take place in the second quarter.



Figure 21: Participants at the GIS Short Course in April 2017

6.5 Activity 2.2.5: Engaging Policy Makers to Address Coastal and Fisheries Issues

The activity on engaging policy makers to address coastal and fisheries issues has been combined with the activity on conducting research and assessment on marine fisheries governance issues.

6.6 Activity 2.2.6: Building Institutional Partnerships and Collaboration

In this reporting period and as it has always been, project activities were implemented in partnership and collaboration with relevant institutions in Ghana and elsewhere. Key among these institutions were USAID/Ghana and other USAID/Ghana supported projects such as the Sustainable Fisheries Management Project (SFMP), the Coastal Sustainable Landscapes Project (CSLP), METSS and AfricaLead. There were also continuous engagements with other Donor Partners, NGOs, the Ghana Museums and Monuments Board, the Ministry of Fisheries and Aquaculture Development, the Fisheries Commission and other Universities. The activity on wetlands ecological health monitoring using schools and communities was also implemented with Hen Mpoano, Friends of the Nation and the USAID/Ghana Coastal Sustainable Landscapes Project.

In this quarter, METSS organized a one-day training workshop for project staff and management team on Ghanalinks.org – an online information hub on USAID Implementing Partners’ activities. Participants were exposed to the different features on the portal, capacities were built on the usage of the portal with hands-on exercises, were showed how existing Implementing Partner data, information and knowledge can be added to the portal and on how to add documents to the electronic library, and events to the calendar.

In the first quarter also, due to existing collaboration with CSLP, a mangrove ecologist from Sustainable Wetlands Adaptation & Mitigation Program (SWAMP), a joint effort of the USFS, USAID and CIFOR [www.cifor.org/swamp] visited DFAS to interact with staff and students and to identify opportunities for working together. The focus of the visit was to ensure that the best science is used to promote mangrove conservation, their associated livelihood benefits in order to help local and government efforts to better manage mangroves and wetland areas in the Western Region.

6.7 Activity 2.2.7: Wetlands Ecological Health Monitoring Using School Clubs and Communities

This activity is implemented using the coastal zone wetlands educational curriculum developed to educate senior and junior high school level and undergraduate university level students on the nature, types and importance of wetlands, the ecological conditions, biodiversity and anthropogenic threats to coastal wetland habitats, and the techniques for monitoring the ecological health of wetlands. In the first quarter, the Centre for Coastal Management in collaboration with Friends of the Nation (FoN) organized quiz competitions in the Western and Central Regions to raise awareness of the importance of wetlands and promote their wise use. The quiz comprised of multiple sets of questions and a drawing competition to assess the ability of the contestants to forecast how they would want to see their wetlands in the next five years. Some members of the community also had the opportunity to share their views and experiences in wetlands management. In course of the events, students and schools were presented with books and other stationary to support academic work. Further collaborations with Hen Mpoano and CSLP are expected in Year 4.



Figure 22: Wetlands monitoring clubs measure physicochemical parameters of wetland ecosystems in the Western Region of Ghana



Figure 23: Students of Anlo Beach D/A JHS reading the brochure on wetlands

6.8 Activity 2.2.8: Strengthening Community-based Groups

Over the years, the project has identified and strengthened the capacities of coastal community resource users and groups in the Central and Western Region to understand community resource management issues, regulations, and by-laws and rules pertaining to the management of fisheries and coastal resources with the support of external project facilitators. Capacities were strengthened to acquire skills in conflict resolution, advocacy, negotiation, communication, and behavior change strategies to enhance coastal resources management. Capacity building and training of the community-based groups will continue in the second quarter of Year 4 to provide the enabling environment needed for the management and utilization of their own resources and to successfully undertake supplementary livelihood activities in snail farming and bee-keeping. Preparations and planning for such capacity strengthening activities started in this reporting quarter with strategies developed to facilitate their timely implementation.

6.9 Activity 2.2.9: Promoting Supplementary Livelihoods in Coastal Communities

This is a flagship activity being undertaken by the project given its role in reducing pressure on fish utilization in coastal communities. Following from the strengthening of community-based groups to more effectively manage fish and other coastal resources, and to engage in supplementary livelihood activities, members from some selected coastal communities in the Western and Central Region have been given support to implement bee-keeping and snail farming as supplementary livelihoods. The four pilot communities engaged are Narkwa in the Central Region for snail farming, Anlo Beach in the Western Region for bee-keeping, Ankobra in the Western Region for snail farming and Half Assini in the Western Region for both bee-keeping and snail farming. Demonstration sites were set up in the selected communities for this exercise. In the last quarter, project management made a decision to provide support to individual community members to set up their own farms after receiving training from the demonstration farms. Interested and committed community members were identified to receive support from the project to operate their own farms where activity facilitators were asked to prepare and present financial statements to support their implementation. In the coming quarter, the financial statements and other logistics will be assessed to inform the

actual decision to support individual community members to set up and manage their own farms. The outcome will be reported in the next quarter.



Figure 24: *Inspection of bee hives by facilitators and trainees*

APPENDICES

Appendix I: List of Project Performance Indicators and FY 2018 First Quarter Results

No	Indicator	Baseline	Life of Project (LOP) target	Annual target	Performance achieved in reporting period (actual)	Performance achieved in reporting period (%)	On target? Yes/No
1	Quantities and/or sizes of fish landed by selected canoe fishermen in the Central and Western Regions of Ghana	-	-	-	-	-	-
<p>Comments: Periodic stock assessment surveys conducted provide information and data for this custom indicator. The nature of the indicator makes it difficult to set baselines, annual targets and performance achieved in a particular reporting period which means results shown by this indicator could only be descriptive. The last fish stock assessment conducted by the project in FY 2017 indicated that quantities of fish landed by canoe fishermen have shown a gradual decline since 1986 mainly due to increase in fishing effort during the period. The assessments also showed that there is growth overfishing which is confirmed by lower modal sizes of fish landed.</p>							
2	Fishing Mortality at MSY (F_{msy})	-	-	-	-	-	-
<p>Comments: This is a custom indicator of the USAID/Ghana Sustainable Fisheries Management Project (SFMP) which is only tracked by the USAID/UCC Fisheries and Coastal Management Capacity Building Project. In 2014, the SFMP estimated Fishing Mortality at MSY (F_{msy}) to be 0.74 which was higher than the preferred Fishing Mortality at MSY (F_{msy}) of 0.40. In FY 2017, the SFMP reported Fishing Mortality at MSY (F_{msy}) to be 0.30 which indicates an increase in fishing mortality and a severe decline in population size. Current fishing effort is well beyond the level of sustainability for the small pelagic stocks.</p>							

No	Indicator	Baseline	Life of Project (LOP) target	Annual target	Performance achieved in reporting period (actual)	Performance achieved in reporting period (%)	On target? Yes/No
3	Biomass to produce MSY (B_{msy})	-	-	-	-	-	-
<p>Comments: This is also a custom indicator of the USAID/Ghana Sustainable Fisheries Management Project (SFMP) which is only tracked by the USAID/UCC Fisheries and Coastal Management Capacity Building Project. In 2014, the SFMP estimated Biomass to produce MSY (B_{msy}) to be 182,726 tonnes which was less than the preferred Biomass to produce MSY (B_{msy}) of 310,476 tonnes. In FY 2017, the SFMP reported Biomass to produce MSY (B_{msy}) as 30,000 tonnes. Current estimated biomass is much lower than those estimated in 2014. This suggests diminishing economic returns.</p>							
4	Number of hectares of biological significance and/or natural resources under improved natural resource management as a result of USG assistance	0	6.9	6.9	0	0	No
<p>Comments: In Year 3, the project concluded research on the ecological conditions and the overall health status of the <i>Awiane</i> lagoon at Half Assini in the Western Region in order to acquire a more comprehensive baseline data on the lagoon for improved management. In the quarter under review, the project initiated processes to work with the community and their traditional authorities as well as the District Assembly to put the lagoon and its associated wetland area under improved management.</p>							

No	Indicator	Baseline	Life of Project (LOP) target	Annual target	Performance achieved in reporting period (actual)	Performance achieved in reporting period (%)	On target? Yes/No
5	Number of hectares in areas of biological significance and/or natural resource showing improved biophysical conditions as a result of USG assistance	0	6.9	6.9	0	0	No
<p>Comments: In Year 3, the project concluded research on the ecological conditions and the overall health status of the <i>Awiane</i> lagoon at Half Assini in the Western Region in order to acquire a more comprehensive baseline data on the lagoon for improved management. In the quarter under review, the project initiated processes to work with the community and their traditional authorities as well as the District Assembly to put the lagoon and its associated wetland area under improved management. Areas in hectares of the lagoon and wetlands showing improved biophysical conditions will be determined.</p>							
6	Number of training and capacity building activities conducted with USG assistance	0	40	10	0	0	Yes
<p>Comments: No training and capacity building activities took place in the quarter under review. Training and capacity building activities are planned to begin in the next quarter.</p>							

No	Indicator	Baseline	Life of Project (LOP) target	Annual target	Performance achieved in reporting period (actual)	Performance achieved in reporting period (%)	On target? Yes/No
7	Number of people receiving USG supported training in natural resources management and/or biodiversity conservation	0	250	100	0	0	Yes
<p>Comments: One-hundred (100) training participants have been targeted to benefit from natural resources management and/or biodiversity conservation training in FY 2018. None of those training activities occurred in this reporting period.</p>							
8	Number of person hours of training in natural resources management and/or biodiversity conservation supported by USG assistance	0	15000	3000	0	0	Yes
<p>Comments: 3000 hours of training in natural resources management and/or biodiversity conservation has been targeted for FY 2018. None of those training activities occurred in this reporting period.</p>							
9	Number of individuals who have received USG supported long-term agricultural sector productivity or food security training	0	40	35	35	100	Yes

No	Indicator	Baseline	Life of Project (LOP) target	Annual target	Performance achieved in reporting period (actual)	Performance achieved in reporting period (%)	On target? Yes/No
<p>Comments: Thirty-five (35) students received USG supported long-term agricultural sector productivity or food security training in this reporting period, 11 males and 24 females.</p>							
10	Number of individuals who have received USG supported short-term agricultural sector productivity or food security training	0	250	80	0	0	Yes
<p>Comments: Eighty people have been targeted to receive USG supported short-term agricultural sector productivity or food security training in 2018. None of such trainings took place in this reporting period.</p>							

No .	Indicator	Baseline	Life of Project (LOP) target	Annual target	Performance achieved in reporting period (actual)	Performance achieved in reporting period (%)	On target? Yes/No
11	Number of food security private enterprises (for profit), producers organizations, water users associations, women's groups, trade and business associations, and community-based organizations (CBOs) receiving USG assistance	0	10	5	5	100	Yes
<p>Comments: Five (5) community-based organizations (CBOs) received technical assistance in supplementary livelihood activities (snail farming and bee-keeping) in 4 selected coastal communities in the Western and Central region of Ghana in this reporting period.</p>							

No	Indicator	Baseline	Life of Project (LOP) target	Annual target	Performance achieved in reporting period (actual)	Performance achieved in reporting period (%)	On target? Yes/No
12	Number of private enterprises (for profit), producers organizations, water users associations, women's groups, trade and business associations, and community-based organizations (CBOs) that applied new technologies or management practices as a result of USG assistance	0	10	4	4	100	Yes
Comments: Four (4) Community-Based Organizations (CBOs) that received technical assistance in supplementary livelihood activities applied new management practices in bee-keeping and snail farming in this reporting period.							
13	Number of members of producer organizations and community based organizations receiving USG assistance	0	200	100	80	80	Yes

No	Indicator	Baseline	Life of Project (LOP) target	Annual target	Performance achieved in reporting period (actual)	Performance achieved in reporting period (%)	On target? Yes/No
<p>Comments: One-hundred (100) members have been targeted to receive assistance in FY 2018. Eighty (80) members in total belonging to the 4 Community-Based Fisheries Management Groups (CBFMGs) formed in 4 selected fishing communities received technical assistance in supplementary livelihoods activities (snail farming and bee-keeping) by the project in the period under review.</p>							
14	Number of farmers and others who have applied new technologies or management practices as a result of USG assistance	0	200	100	80	80	Yes
<p>Comments: Eighty (80) members of the 4 Community-Based Fisheries Management Groups (CBFMGs) formed in 4 selected fishing communities applied new management practices in snail farming and bee-keeping in the quarter under review.</p>							
15	Number of rural households benefiting directly from USG interventions	0	200	100	80	80	Yes
<p>Comments: Eighty (80) rural households benefited directly from project interventions through supplementary livelihood support in snail farming and bee-keeping in the period under review.</p>							

No	Indicator	Baseline	Life of Project (LOP) target	Annual target	Performance achieved in reporting period (actual)	Performance achieved in reporting period (%)	On target? Yes/No
16	Score, in percent, of combined key areas of organization capacity amongst USG direct and indirect local implementing partners	-	95	-	80.13	80.13	Yes
<p>Comments: AfricaLead conducted an Organizational Capacity Assessment for DFAS and CCM. The assessment covered 8 major areas; 1) Governance 2) Administration 3) Human Resources 4) Financial Management 5) Organizational Management 6) Program Management 7) Network Capacities and 8) Policy Analysis and Advocacy and arrived at a total score of 80.13% as the combined key areas of organization capacity.</p>							
17	Number of beneficiaries receiving improved infrastructure services due to USG assistance	0	150	150	121	80	Yes
<p>Comments: One-hundred and twenty-one (121; 82 males and 39 females) people made up of 11 senior staff members, 6 Research Assistants, 5 Administrative staff, 8 Technical staff, 41 post-graduate students and 50 undergraduate students were beneficiaries of refurbished library, fisheries and coastal management laboratory, project vehicles and the premises of DFAS and the Center for Coastal Management in this reporting period.</p>							

No	Indicator	Baseline	Life of Project (LOP) target	Annual target	Performance achieved in reporting period (actual)	Performance achieved in reporting period (%)	On target? Yes/No
18	Number of new research collaborations established between USG-supported beneficiaries and other institutions	0	10	5	0	0	Yes
Comments: No new research collaborations were established between USG-supported beneficiaries and other institutions in this reporting period.							
19	Number of scientific studies published or conference presentations given as a result of USG assistance for research programs	0	10	5	0	0	Yes
Comments: No scientific studies were published or conference presentations given as a result of USG assistance for research programs in this reporting period.							
20	Number of dialogues and stakeholder consultations held on fisheries and coastal management	0	20	3	0	0	Yes

No	Indicator	Baseline	Life of Project (LOP) target	Annual target	Performance achieved in reporting period (actual)	Performance achieved in reporting period (%)	On target? Yes/No
Comments: No dialogues and stakeholder consultations were held on fisheries and coastal management in this reporting quarter.							
21	Percentage of graduates from USG-supported tertiary education programs employed	0	50	5	0	0	No
Comments: No DFAS graduates were reported as employed in this reporting period. The first batch of MPhil students trained by the project have just graduated, which presents an opportunity for some of them to be employed either by the Centre for Coastal Management or DFAS or by other organizations.							
22	Number of CSOs and government agencies strengthened	0	25	25	0	0	Yes
Comments: Representatives of CSOs and government agencies are strengthened through their participation in the GIS, Fisheries Management, Climate Change and Integrated Coastal Management short courses. None of those short courses took place in this reporting period.							
23	Total number of direct beneficiary						
Comments: Two-hundred and one (201) people benefitted directly in various ways as indicated above from project interventions in this reporting period.							

Appendix 2: Project implementation plan (Year 4)

Activity	To be done in YR 4	Activity Lead	Timelines	Resources/Support
Activity 1.1.1: Renovating and Equipping the Fisheries and Coastal Research Laboratory	Additional laboratory equipment (e.g. organic extraction fume hood, high precision electronic balance, etc.) procured	DFAS	1st Quarter	Support from Procurement Section, DPDEM and Stores, Approval from USAID, Project Management Support and support from consultants.
	Laboratory management plan put in place		4th Quarter	
	Container storage facility completed		1st Quarter	
	Research boat registered and commissioned		1st Quarter	
	ISO certification of the FCRL		4th Quarter	
Activity 1.1.2: Refurbishing and equipping offices of academic staff	Minor office equipment procured	DFAS	1st Quarter	Procurement Section, DFAS Administrative and Technical support.
	Renewal of anti-virus for computers		1st Quarter	
	Maintenance plan for refurbished offices and equipment developed		1st & 3rd Quarter	
Activity 1.1.3: Acquisition of vehicles to support educational, training, research and extension activities	Vehicle road worthy and insurance certificates renewed	DFAS/CM	All 4 Quarters	Approval from USAID and support from Project Driver and Project Management.
	Routine vehicle maintenance carried out		2nd Quarter	
	One additional vehicle procured		2nd Quarter	
	Capacities strengthened for			

Activity	To be done in YR 4	Activity Lead	Timelines	Resources/Support
Activity 1.2.1: Academic and technical staff capacity strengthening	One (1) administrative staff	DFAS/C CM	4th Quarter	DFAS and Project administrative and financial support
	One (1) technical staff		3rd Quarter	
	One (1) financial administration staff		2nd Quarter	
	In-country training and conferences for academic staff supported		2nd & 3rd Quarter	
Activity 1.2.2: Operationalization of the Centre for Coastal Management	CCM website upgraded	CCM	1st Quarter	University, project administrative and financial support, cooperation from Ghana Museums and Monuments Board.
	Internet service maintained		All 4 Quarters	
	Plans for Fort St. Jago as CCM pursued		2nd Quarter	
	Coastal Management Specialist hosted to develop Strategic Plan		3rd Quarter	
	Staff capacity for CCM strengthened		2nd Quarter	
	Subscription to journals renewed		3rd and 4th Quarter	
	Provide financial and logistical support for all funded students	DFAS	All 4 Quarters	Financial, logistical and administrative support

Activity	To be done in YR 4	Activity Lead	Timelines	Resources/Support
Activity 1.2.3: Support for postgraduate (MPhil and PhD) training program	Semester abroad program for five (5) PhD students conducted		4th Quarter	from DFAS and the wider university as well as support from external examiners.
	Postgraduate students attend conferences		3rd Quarter	
	External examiners hosted		1st and 4th Quarter	
Activity 1.2.4: Undergraduate research grants	Award research grants to 27 DFAS students	DFAS	2nd Quarter	DFAS Administrative support and cooperation from beneficiary universities
	Award research grants to 20 students from other universities		2nd Quarter	
	5 DFAS students supported for J-Term at URI		3rd Quarter	
Activity 2.1.1: Conducting fisheries stock assessment	2 Research Assistants and 1 Postgraduate student employed for cuttlefish research	DFAS	All 4 Quarters	Technical, financial and logistical support from DFAS
	Support research on fishing gear technology		2nd Quarter	
Activity 2.1.2: Conducting research and assessment on marine fisheries governance issues	Complete the assessment and mapping of 50 landing beaches in Central and Western regions and 70 landing beaches in the Greater Accra and Volta regions	CCM	All 4 Quarters	Project administrative and logistics support in cooperation with the activity facilitator
	Engage journalists to disseminate fisheries and coastal environmental management information		All 4 Quarters	

Activity	To be done in YR 4	Activity Lead	Timelines	Resources/Support
	Policy papers drafted and shared with policy makers		All 4 Quarters	
Activity 2.1.3: Research on fish and shellfish of commercial value	Support collaborative research work on oysters and other shellfish	DFAS	All 4 Quarters	Logistics, financial and administrative support from DFAS
	Support DFAS staff/students research work on oysters and other shellfish		All 4 Quarters	
	Provide support to GITA-UCC-SFMP-NGO collaborative research on cuttlefish.		1st and 3rd Quarter	
Activity 2.1.4: Analysis of Value Chains of Fish Trade	Support DFAS Academic Staff/ Students/Research Assistants research work	DFAS	All 4 Quarters	Logistics, financial and administrative support from DFAS
Activity 2.1.5: Monitor the biodiversity and health of coastal ecosystems	Monitor biological, physical and chemical conditions of the Awiane lagoon in Half Assini	CCM	All 4 Quarters	Project management support and cooperation with project activity facilitator and the District Assembly
	Develop a by-law for the Awiane lagoon		All 4 Quarters	
	Undertake replanting in the lagoon and wetland area		All 4 Quarters	
	Liaise with the District Assembly to provide a bin for the collection of wastes		3rd Quarter	

Activity	To be done in YR 4	Activity Lead	Timelines	Resources/Support
Activity 2.1.6: Developing marine and coastal fisheries database	Support management and operations of the database	DFAS/C CM	All 4 Quarters	Logistics, financial and administrative support from project management to activity team members and the IT Specialist
	Provide editorial competency training for managers of the database		2nd Quarter	
	Support programs aimed at providing visibility of the FishCom database		All 4 Quarters	
	Provide FishCom editorial team with smart mobile phones		2nd Quarter	
Activity 2.2.1: Developing material and conducting training on integrated coastal management	Plan facilitation process, identify training participants and conduct short course on integrated coastal management	CCM	1st & 2nd Quarter	Logistics, financial and administrative support from project management to activity facilitator
Activity 2.2.2: Developing material and conducting training on fisheries management	Plan facilitation process, identify training participants and conduct short course on fisheries management	CCM	2nd Quarter	Logistics, financial and administrative support from project management to activity facilitator
Activity 2.2.3: Developing manuals and updating training materials	Plan facilitation process, identify training participants and conduct short course on	CCM	3rd Quarter	Logistics, financial and administrative support from project

Activity	To be done in YR 4	Activity Lead	Timelines	Resources/Support
on climate change adaptation and mitigation	climate change adaptation and mitigation in coastal communities			management to activity facilitator
Activity 2.2.4: Developing material and conducting training on the use and application of Geographic Information Systems (GIS)	Plan facilitation process, identify training participants and conduct refresher short course on GIS	CCM	2nd Quarter	Logistics, financial and administrative support from project management to activity facilitator
	Organize GIS Leadership Reality Program		3rd and 4th Quarter	
	Procure high speed desktop computer to process high resolution images from UAV		2nd Quarter	
Activity 2.2.5: Engaging policy makers to address coastal and fisheries issues	Collaborate with media houses to sensitize communities on good fisheries and environmental management practices	CCM	All 4 Quarters	Project administrative and logistics support in cooperation with the activity facilitator
	Evaluate and renew partnership with ATL FM on the Egyanom Afarefu program		All 4 Quarters	
	Facilitate publication of the maiden edition of the journal		1st Quarter	
	Organize 2nd edition of CFCE		4th Quarter	
	Publish special edition of the journal on specific research outputs		3rd Quarter	

Activity	To be done in YR 4	Activity Lead	Timelines	Resources/Support
Activity 2.2.6: Building institutional partnerships and collaboration	Improve collaboration with MoFAD in the area of training, FishCom, workshops and seminars	DFAS/C CM	All 4 Quarters	Cooperation and support from all collaborating partners and institutions
	Collaborate with SFMP/URI and CSLP in areas as specified in the Year 4 Workplan		All 4 Quarters	
Activity 2.2.7: Wetlands Ecological Health Monitoring using School Clubs and Communities	Financial and technical support provided to Hen Mpoano and Friends of the Nation to work with schools in Central and Western Region	DFAS/C CM	All 4 Quarters	Logistics, financial and administrative support from project management to collaborating partners
Activity 2.2.8: Strengthening community-based groups	Employ 2 Research Assistants for SL activities in the field	CCM	2nd Quarter	Logistics, financial and administrative support from project management to project activity facilitator and on-the-ground Research Assistants as well as cooperation with District Assemblies
	Provide training for community members in SL activities		1st & 2nd Quarter	
Activity 2.2.9: Promoting supplementary livelihoods in coastal communities	Upgrade demonstration farms in all communities		All 4 Quarters	
	Support individuals to set up own farms		All 4 Quarters	

Activity	To be done in YR 4	Activity Lead	Timelines	Resources/Support
	Support actions along SL activity value chain		All 4 Quarters	
	Engage District Assemblies in SL activities		All 4 Quarters	
	Transfer SL activities to BAC/Department of Agriculture		4th Quarter	

Appendix 3: USAID/UCC Fisheries and Coastal Management Capacity Building Support Project M&E Implementation plan (Year 4)

Activity	To be done in YR 4	Activity Lead	Timelines	Planned Action
Activity 1.1.1: Renovating and Equipping the Fisheries and Coastal Research Laboratory	Additional laboratory equipment (e.g. organic extraction fume hood, high precision electronic balance, etc.) procured	DFAS	1st Quarter	Processes leading to the accomplishment of the activities will be regularly monitored with challenges effectively addressed to make sure they are completed within the specified timelines
	Laboratory management plan put in place		4th Quarter	
	Container storage facility completed		1st Quarter	
	Research boat registered and commissioned		1st Quarter	
	ISO certification of the FCRL		4th Quarter	
Activity 1.1.2: Refurbishing and equipping offices of academic staff	Minor office equipment procured	DFAS	1st Quarter	The Procurement Plan developed for Year 4 will be closely monitored and all responsible people involved in the activities regularly reminded of their duties
	Renewal of anti-virus for computers		1st Quarter	
	Maintenance plan for refurbished offices and equipment developed		1st & 3rd Quarter	
Activity 1.1.3: Acquisition of vehicles to support educational, training,	Vehicle road worthy and insurance certificates renewed	DFAS /CCM	All 4 Quarters	M&E team will actively collaborate with the project driver to ensure vehicle certificates are renewed
	Routine vehicle maintenance carried out		2nd Quarter	

Activity	To be done in YR 4	Activity Lead	Timelines	Planned Action
research and extension activities	One additional vehicle procured		2nd Quarter	according to schedule and project vehicles are well maintained
Activity 1.2.1: Academic and technical staff capacity strengthening	Capacities strengthened for	DFAS /CCM		M&E team will work closely with Project Management to facilitate all processes leading to successful organization of planned capacity building activities and conferences
	One (1) administrative staff		4th Quarter	
	One (1) technical staff		3rd Quarter	
	One (1) financial administration staff		2nd Quarter	
	In-country training and conferences for academic staff supported		2nd & 3rd Quarter	
Activity 1.2.2: Operationalization of the Centre for Coastal Management	CCM website upgraded	CCM	1st Quarter	Staff and other institutional capacity building activities for CCM will be closely followed to ensure their timely completion. Processes will be facilitated to ensure successful visit by Coastal Management Specialist
	Internet service maintained		All 4 Quarters	
	Plans for Fort St. Jago as CCM pursued		2nd Quarter	
	Coastal Management Specialist hosted to develop Strategic Plan		3rd Quarter	
	Staff capacity for CCM strengthened		2nd Quarter	

Activity	To be done in YR 4	Activity Lead	Timelines	Planned Action
	Subscription to journals renewed		3rd and 4th Quarter	
Activity 1.2.3: Support for postgraduate (MPhil and PhD) training program	Provide financial and logistical support for all funded students	DFAS	All 4 Quarters	All student activities will be regularly monitored with processes such as travel arrangements and TraiNet duly facilitated. External examiners will be identified on time and checked to carry out assessments
	Semester abroad program for five (5) PhD students conducted		4th Quarter	
	Postgraduate students attend conferences		3rd Quarter	
	External examiners hosted		1st and 4th Quarter	
Activity 1.2.4: Undergraduate research grants	Award research grants to 27 DFAS students	DFAS	2nd Quarter	Management of the grants and students' progress and performance will be monitored and assessed. Travel arrangements and TraiNet will be duly facilitated.
	Award research grants to 20 students from other universities		2nd Quarter	
	5 DFAS students supported for J-Term at URI		3rd Quarter	
Activity 2.1.1: Conducting fisheries stock assessment	2 Research Assistants and 1 Postgraduate student employed for cuttlefish research	DFAS	All 4 Quarters	Progress on research work will be regularly monitored in collaboration with activity implementers
	Support research on fishing gear technology		2nd Quarter	

Activity	To be done in YR 4	Activity Lead	Timelines	Planned Action
Activity 2.1.2: Conducting research and assessment on marine fisheries governance issues	Complete the assessment and mapping of 50 landing beaches in Central and Western regions and 70 landing beaches in the Greater Accra and Volta regions	CCM	All 4 Quarters	Activities of the facilitator conducting research and assessment on marine fisheries governance issues will be monitored regularly to ensure activities are implemented on schedule to achieve intended results
	Engage journalists to disseminate fisheries and coastal environmental management information		All 4 Quarters	
	Policy papers drafted and shared with policy makers		All 4 Quarters	
Activity 2.1.3: Research on fish and shellfish of commercial value	Support collaborative research work on oysters and other shellfish	DFAS	All 4 Quarters	All research activities and the provision of needed logistics will be monitored to ensure continuous progress and timely implementation
	Support DFAS staff/students research work on oysters and other shellfish		All 4 Quarters	
	Provide support to GITA-UCC-SFMP-NGO collaborative research on cuttlefish.		1st and 3rd Quarter	
Activity 2.1.4: Analysis of Value Chains of Fish Trade	Support DFAS Academic Staff/ Students/Research Assistants research work	DFAS	All 4 Quarters	All research activities and the provision of needed logistics will be monitored to ensure continuous progress and timely implementation

Activity	To be done in YR 4	Activity Lead	Timelines	Planned Action
Activity 2.1.5: Monitor the biodiversity and health of coastal ecosystems	Monitor biological, physical and chemical conditions of the Awiane lagoon in Half Assini	CCM	All 4 Quarters	Activities of the facilitator monitoring the biodiversity and health of coastal ecosystems will be followed regularly to ensure activities are implemented on schedule to achieve intended results
	Develop a by-law for the Awiane lagoon		All 4 Quarters	
	Undertake replanting in the lagoon and wetland area		All 4 Quarters	
	Liaise with the District Assembly to provide a bin for the collection of wastes		3rd Quarter	
Activity 2.1.6: Developing marine and coastal fisheries database	Support management and operations of the database	DFAS /CCM	All 4 Quarters	Processes leading to the successful establishment and management of the marine and coastal fisheries database will be monitored for successful implementation
	Provide editorial competency training for managers of the database		2nd Quarter	
	Support programs aimed at providing visibility of the FishCom database		All 4 Quarters	
	Provide FishCom editorial team with smart mobile phones		2nd Quarter	

Activity	To be done in YR 4	Activity Lead	Timelines	Planned Action
Activity 2.2.1: Developing material and conducting training on integrated coastal management	Plan facilitation process, identify training participants and conduct short course on integrated coastal management	CCM	1st & 2nd Quarter	Activities of the facilitator developing material and conducting training on integrated coastal management and the training activity itself will be actively monitored
Activity 2.2.2: Developing material and conducting training on fisheries management	Plan facilitation process, identify training participants and conduct short course on fisheries management	CCM	2nd Quarter	Activities of the facilitator developing material and conducting training on fisheries management and the training activity itself will be actively monitored
Activity 2.2.3: Developing manuals and updating training materials on climate change adaptation and mitigation	Plan facilitation process, identify training participants and conduct short course on climate change adaptation and mitigation in coastal communities	CCM	3rd Quarter	Activities of the facilitator developing manuals and updating training on climate change and adaptation and mitigation and the training activity itself will be actively monitored
Activity 2.2.4: Developing material and conducting	Plan facilitation process, identify training participants and conduct refresher short course on GIS	CCM	2nd Quarter	Activities of the facilitator developing materials and conducting training on GIS and

Activity	To be done in YR 4	Activity Lead	Timelines	Planned Action
training on the use and application of Geographic Information Systems (GIS)	Organize GIS Leadership Reality Program		3rd and 4th Quarter	the training activity itself will be actively monitored. Procurement of UAV will be closely followed.
	Procure high speed desktop computer to process high resolution images from UAV		2nd Quarter	
Activity 2.2.5: Engaging policy makers to address coastal and fisheries issues	Collaborate with media houses to sensitize communities on good fisheries and environmental management practices	CCM	All 4 Quarters	Activities of the facilitator conducting the activity on engaging policy makers to address coastal and fisheries issues will be monitored regularly to ensure planned activities are implemented on schedule to achieve intended results
	Evaluate and renew partnership with ATL FM on the Egyanom Afarefu program		All 4 Quarters	
	Facilitate publication of the maiden edition of the journal		1st Quarter	
	Organize 2nd edition of CFCE		4th Quarter	
	Publish special edition of the journal on specific research outputs		3rd Quarter	
Activity 2.2.6: Building institutional partnerships and collaboration	Improve collaboration with MoFAD in the area of training, FishCom, workshops and seminars	DFAS /CCM	All 4 Quarters	Partnerships and activities specified in the agreements, MoUs, contracts or otherwise as
	Collaborate with SFMP/URI and CSLP in areas as specified in the Year 4 Workplan		All 4 Quarters	

Activity	To be done in YR 4	Activity Lead	Timelines	Planned Action
				applicable will be monitored on regular basis
Activity 2.2.7: Wetlands Ecological Health Monitoring using School Clubs and Communities	Financial and technical support provided to Hen Mpoano and Friends of the Nation to work with schools in Central and Western Region	DFAS /CCM	All 4 Quarters	Activities specified in the MoUs and contracts between the project and collaborating partners will be monitored on regular basis
Activity 2.2.8: Strengthening community-based groups	Employ 2 Research Assistants for SL activities in the field	CCM	2nd Quarter	Activities of the facilitator strengthening community-based groups and promoting supplementary livelihoods in coastal communities will be monitored regularly to ensure planned activities are implemented on schedule to achieve intended results
	Provide training for community members in SL activities		1st & 2nd Quarter	
Activity 2.2.9: Promoting supplementary livelihoods in coastal communities	Upgrade demonstration farms in all communities		All 4 Quarters	
	Support individuals to set up own farms		All 4 Quarters	

Activity	To be done in YR 4	Activity Lead	Timelines	Planned Action
	Support actions along SL activity value chain		All 4 Quarters	
	Engage District Assemblies in SL activities		All 4 Quarters	
	Transfer SL activities to BAC/Department of Agriculture		4th Quarter	

Appendix 4: Call for short-term technical facilitation services under the USAID/UCC Fisheries and Coastal Management Capacity Building Support Project

DURATION OF ASSIGNMENT: 1ST JANUARY- 31ST AUGUST, 2019 (8 MONTHS)

In support of the Government of Ghana's (GoG) initiatives on food security, the United States Government (USG) through the United States Agency for International Development (USAID) is supporting a five-year capacity building program for fisheries and coastal management in Ghana. The project contributes to GoG's overall grand fisheries and coastal development objectives and USAID's Feed the Future (FtF) Initiative, the USG led global hunger and food security project designed to enhance economic growth in beneficiary countries. In this context, the Department of Fisheries and Aquatic Sciences (DFAS) at the University of Cape Coast is leading the USAID Capacity Building Support Program for the Fisheries and Coastal Development sub-component. The extension activities under the project are earmarked towards operationalising the Centre for Coastal Management at the University of Cape Coast.

In respect of these initiatives, the project is seeking experts, organizations or practitioners having relevant professional backgrounds with proven track records from universities, research institutions, NGOs and the private sector in Ghana for collaborative work with the project in the following six (6) thematic areas:

I. Activity 1: Engage policy makers to address coastal and fisheries issues

II. Activity 2: Conduct research and assessment on marine fisheries governance issues

III. Activity 3: Run short-term professional training courses on integrated coastal zone management, fisheries management, climate change adaptation and geographic information systems

IV. Activity 4: Undertake activities towards operationalization of the Centre for Coastal Management

V. Activity 5: Monitor the biodiversity and health of coastal ecosystems

VI. Activity 6: Developing Marine and Coastal Fisheries Database

ACTIVITY I: ENGAGING POLICY MAKERS TO ADDRESS COASTAL AND FISHERIES ISSUES

PRINCIPAL OBJECTIVE

Strengthen inter-agency collaboration for the sustainable management of fisheries and other coastal resources by working closely with the Ministry of Fisheries and Aquaculture Development (MoFAD), Fisheries Commission (FC) and other relevant government agencies.

SPECIFIC OBJECTIVES OF THE ASSIGNMENT

- Engage government, development partners, civil society organizations and private sector institutions with the goal of establishing a fisheries and coastal management sector working group. The working group will advise government on the development and implementation of policies, strategies and programmes to address the challenges of the sector. For a start, the group will advise government on the implementation of the recommendations outlined in the communique from the Conference on Fisheries and Coastal Environment (2017) and use the issuance of government's red alert on all forms of illegal fishing in Ghana as a basis.
- Engage with government to establish an inter-ministerial/agency coordination platform to support the design and implementation of broad programmes for fisheries and coastal management reforms.
- Set up governance, management and membership structures for the Fisheries and Aquaculture Society of Ghana. The facilitator should convene meetings of the interim management committee of the society. The facilitator should also ensure the establishment of permanent board and management committee. The facilitator should set up formal structures for the registration of members and engage stakeholders to promote membership of the society. Again, the facilitator will be expected to review and ensure the adoption of the draft Constitution of the Society

- Plan towards the second conference on Fisheries and Coastal Environment in 2019.
- Set up an editorial board and review processes for the Society's journal in line with requirements of African Journal Online (AJOL)
- Establish the structures for the Journal of the Society in collaboration with the Society.
- Facilitate the publication of the maiden edition of the journal based on proceedings of the Accra Conference, 2017.

EXPECTED OUTPUTS

- Fisheries and Coastal Management Sector working group established
- Inter-ministerial and agency platform for fisheries and coastal management established
- Governance, management and membership structures for the Fisheries and Aquaculture Society established
- Meeting of interim committee of the Fisheries and Aquaculture Society convened
- Draft Constitution of the Society reviewed and adopted
- Members of the Society registered
- Inter-agency platform strengthened
- Second conference on fisheries and coastal conference for 2019 planned
- Editorial board for the journal established in line with requirements of AJOL
- Maiden edition of the journal based on proceedings of the Accra Conference published.

ACTIVITY 2: CONDUCTING RESEARCH AND ASSESSMENT ON MARINE FISHERIES GOVERNANCE ISSUES

PRINCIPAL OBJECTIVE

To facilitate the decentralization of Ghana's fisheries management processes based on documented scientific information for advocacy to improve fisheries governance practices. This is expected to be achieved by working closely with the Ministry of Fisheries and Aquaculture Development (MoFAD), and the Fisheries Commission (FC), fishing communities, traditional authority, District Assemblies and other stakeholders.

SPECIFIC OBJECTIVES OF THE ASSIGNMENT

- Identify district and community level constraints and opportunities in the governance and management of fisheries and coastal resources. Currently district assemblies are not directly involved in fisheries governance.
- Strengthen the advocacy capacity of journalists, research institutions, think-tanks and civil society groups for sustainable management of fisheries and coastal resources. The facilitator will strengthen the capacity of these groups to monitor and dialogue with relevant government agencies on the enforcement of policies, laws and reforms.
- Create a platform for stakeholders that include journalists, MoFAD, FC, MMDAs, NDPC, etc. to advocate for the inclusion of fisheries and coastal issues into government policy/initiatives such as the Coastal Development Authority, the Fisheries Act currently under review, NDPC medium term development plan, and the involvement of District Assemblies in fisheries governance. Focus on supporting and identifying strategic partnerships with national organisations with the desire and ability to influence national reform agendas.

EXPECTED OUTPUTS

- District and community level constraints in fisheries and coastal management identified and addressed through advocacy actions
- Capacity of journalists, research institutions, think-tanks and civil society groups to undertake advocacy activities significantly increased
- Management strategies identified, evaluated and disseminated among stakeholders
- Roles and responsibilities at the community, district, region and national levels clarified in fisheries management
- Proposals for district bye-laws in fisheries for landing sites developed
- Collaborations with media strengthened
- Research assessments completed

ACTIVITY 3: TRAININGS ON INTEGRATED COASTAL ZONE MANAGEMENT, FISHERIES MANAGEMENT, CLIMATE CHANGE ADAPTATION AND GEOGRAPHIC INFORMATION SYSTEMS

PRINCIPAL OBJECTIVE

This activity will seek to optimize facilitation services to the highest standards of delivery and strengthen UCC's internal capacity for running short courses into the future. One (1) facilitator will be hired to introduce best practices in all the training courses and standardize technical delivery in the classroom and field activities, course programs, certifications and other outcomes. This option will ensure cost savings. The facilitator will be tasked to develop modalities for logistics planning and establish modalities for sustained funding on

fee-payment basis. Guidelines to project the training programs locally and internationally will be developed.

To this end, the facilitator will provide support services to run short courses covering technical and relevant contextual aspects for Ghana's coastal areas. The courses will target professionals actively engaged in the field of integrated coastal management, fisheries management, climate change adaptation and geographic information systems or individuals whose work is increasingly affected by issues of fisheries, development and physical planning in coastal areas.

SPECIFIC OBJECTIVES OF THE ASSIGNMENT

The assigned facilitator will coordinate various services in the following areas:

- a) Use existing training manuals on the courses to build the capacity of district, regional or national level stakeholders, and professionals working in Ghana's fisheries and coastal economies to steer fisheries and coastal development processes towards key outcomes. Participants will be selected from respondents to advertisements (for fee-paying participants) and nominations from relevant institutions for which funding will be provided.
- b) Coordinate all communications on the workshop and provide media communication covering print and electronic outlets
- c) Compile all materials including PowerPoint presentations of modules, videos, charts and other materials needed for classroom, laboratory and field exercises
- d) Facilitate the training workshop, evaluation and reporting on the project.

EXPECTED OUTPUTS

The key products of this assignment are:

- A 5-day training using published manuals and PowerPoint presentations, classroom discussions, video interactions as well as related laboratory and field excursions delivered.
- Trainers in the different subjects from within and outside the University of Cape Coast identified.

ACTIVITY 4: OPERATIONALIZATION OF THE CENTRE FOR COASTAL MANAGEMENT

PRINCIPAL OBJECTIVE

To facilitate the development of the next five-year strategic plan (2017-2022) for the Centre for Coastal Management (CCM) with a strong community-based coastal resources/ marine environmental management and outreach component.

SPECIFIC OBJECTIVES OF THE ASSIGNMENT

This assignment is in two parts, meant to create and expand opportunities for meaningful educational and outreach programs in marine fisheries and coastal resources management. First, the project is desirous of supporting CCM to develop a five-year strategic plan (2017-2022) to direct activities of the Centre into the future. The second part will secure the services of an architect or physical planner to work with advise from the Ghana Museums and Monuments Board (GMMB), Ministry of Tourism (MoT), and the Ministry of Fisheries and Aquaculture Development (MoFAD) and other experts from the University of Cape Coast (UCC) to develop a concept for an outreach and community-based program for the Centre for Coastal Management.

EXPECTED OUTPUTS

- A five-year strategic plan developed to include human, managerial, technical capacity and other logistical needs
- A concept for a community-based Centre for Coastal Management developed to deepen CCM's technical and outreach programs

ACTIVITY 5: MONITOR THE BIODIVERSITY AND HEALTH OF COASTAL ECOSYSTEMS

PRINCIPAL OBJECTIVE

Strengthen collaboration with the local government agencies and other stakeholders responsible for the highly degraded lagoon at Half Assini and advocate for necessary bye-laws for its wise use and conservation. Meanwhile, ecological monitoring by experts will continue to acquire comprehensive baseline data on the lagoon. This program has the intended goal of supporting the government to achieve its fisheries development objectives of poverty reduction, food security and sustainable management of coastal ecosystems.

SPECIFIC OBJECTIVES OF THE ASSIGNMENT

- a) Contribute to the development of bye-laws by the District Assembly to protect the lagoon with the active involvement of the community members.
- b) Advocate for the creation of a buffer zone of about 5-10m around the lagoon and plant wetland vegetation native to the area.
- c) Provide a skip to the community for waste collection

d) Dialogue and obtain commitment of the community and the District Assembly on the siting and regular emptying of the skip.

EXPECTED OUTPUTS

- Strategies including the creation of bye-laws to restore the lagoon at Half Assini achieved
- A skip for collection of refuse provided
- Advocacy for creation of a buffer zone around the lagoon done
- Information on biodiversity of fish, benthic invertebrates and other fauna, as well as mangroves and other flora documented
- Physical and chemical environmental parameters of the Half Assini lagoon documented
- Results on advocacy, scientific study and community sanitation presented at a forum for stakeholders at the District Assembly

ACTIVITY 6: DEVELOPING MARINE AND COASTAL FISHERIES DATABASE

PRINCIPAL OBJECTIVE

This activity seeks to engage an IT specialist to upgrade the FishCoMGhana® platform, an online database developed to manage historical data, new field observations and experimental results on Ghana's fisheries and other coastal resources. The database can be accessed via <http://fishcomghana.com>.

SPECIFIC OBJECTIVES OF THE ASSIGNMENT

The objective for this call is to engage an IT specialist

A. To expand the FishCoMGhana platform to:

(i) Manage maps and other GIS-based data. Here, it is envisaged that the capabilities of FishCoMGhana will be expanded to:

- produce dynamic maps indicating the characteristic features, e.g., geomorphology, land use and the occurrence of key species such as mangroves in Ghana's coastal areas. The species occurrence can shown in the form of a biodiversity map
- allow users of FishCoMGhana to prepare study area maps for free
- show fish landing bays/sites and their associated socio-economic information

(ii) Include a new menu item to host an online scientific journal. This new menu should be able to (i) handle the website of the journal, (ii) manage the protocols for the submission, review and editorial actions on new articles submitted for publication in the journal, and (iii) house all scientific papers published by the journal.

(iii) Mark all papers/articles download via the site with the name of the database (FishCoMGhana.com) as well as the date and time an article/paper is downloaded.

EXPECTED OUTPUTS

The following outputs are expected at the end of the assignment:

Dynamic maps indicating the characteristic features and the dynamics of key □ organisms in Ghana's coastal areas produced.

- Preparation study area maps completed
- fish landing bays/sites and their associated socio-economic information produced
- the published scientific journal hosted
- papers/articles downloaded via the site with the name of the database (FishCoMGhana.com) as well as the date and time an article/paper is downloaded marked.

PROPOSAL EVALUATION GUIDELINES:

Quality of Technical Approach:

- **Technical details:** Content and methodical approaches must be clearly articulated. Present a thorough understanding of the activity and how to operationalize the work.
- **Long-term Sustainability:** The extent to which the activity will be sustainable over the long term without continued external support will be required to be known.
- **Innovative Concept:** The degree of innovation must be evident in the proposal and the prospect of adoption of the innovation by stakeholders.

Past Performance and Management Capacity:

- Evidence of the capability to undertake and accomplish the proposed activities. The proposal should demonstrate the applicant's effectiveness in previous projects including technical capacity, and key personnel, in meeting activity goals.
- Have experience working with universities in the implementation of programs.

- Have demonstrated capacity to monitor and implement activities and fulfill reporting and documentation requirements

Cost Management:

- Prospective applicants should demonstrate ability to manage funding and capacity for accountability and program implementation.
- Appropriateness and reasonability of stated costs, compared with the approach laid out in the technical proposal.
- Establish understanding of current costs in Ghana, reflected in the budget narrative by a description of how costs were calculated.

MODE OF APPLICATION:

Interested applicants must submit a technical proposal and budget, in English, not exceeding 15 pages in length. Application may be submitted in electronic format (via email: ccm@ucc.edu.gh) or hard copy by EXPRESS MAIL to the address below and should reference Activity Number,

Addressed to:

The Project Manager, USAID/UCC Fisheries and Coastal management Capacity Building Support Project Department of Fisheries and Aquatic Sciences, School of Biological Sciences, College of Agriculture and Natural Sciences, University of Cape Coast, Cape Coast.

CLOSING DATE/ SELECTION/ APPOINTMENT:

Closing Date: Friday 8th December, 2017. Applications must be submitted no later than 11pm local time. Shortlisted applicants will be contacted for further interaction soon after the closing date.

Notification or award: 20th December, 2017.

Appointment Date: January, 2018.