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Coastal Sustainable Landscapes Project

Annual Progress Report

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ACRONYMS AND ABBREVIATIONS

AFOLU	Agroforestry and Other Land Uses
BAC	Business Activity Center
BMP	Best Management Practice(s)
CA	Conservation Agriculture
CCC	Climate Change Clubs OR Community Conservation Committees
CCM	Center for Coastal Management (at the University of Cape Coast)
CBO	Community Based Organization
CDCS	Country Development Cooperation Strategy
CHED	Cocoa Health and Extension Division
COCOBOD	Ghana Cocoa Board
CREMA	Community Resource Management Association
CRI	Crops Research Institute
CRMC	Community Resources Management Committee
CSA	Climate Smart Agriculture
CSLP	Coastal Sustainable Landscapes Project
CSO	Civil Society Organizations
DA	District Assembly/ies
DCC	District Conservation Committees
DOFA	Departments of Food and Agriculture
EDIF	Export Development Investment Fund (of Ghana)
EPA	Environmental Protection Agency
ESP	Environmental Sustainability and Policy for Cocoa Production in Ghana Project
FC	Forestry Commission
FCMCBSP	Fisheries and Coastal Management Capacity Building and Support Project
FMNR	Farmer-Managed Natural Regeneration
FON	Friends of the Nation (local NGO)
FORIG	Forestry Research Institute of Ghana
FSD	Forest Services Division (of the Forestry Commission)
FY	Fiscal (or Financial) Year
GAW	Greater Amanzule Wetland
GAWCCC	Greater Amanzule Wetland Community Conservation Committee
GDA	Global Development Alliance
GES	Ghana Education Service
GHG	Green House Gases
GIS	Geographic Information System
GOG/GoG	Government of Ghana
GSCDP	Ghana Supply Chain Development Project
ICFG	Integrated Coastal Fisheries and Management Project
IP	International Programs (of the USFS)
IPM	Integrated Pest Management
IR	Intermediate Result
ISP	Internet Service Provider
IUCN	International Union for the Conservation of Nature
LULC	Land Use/Land Cover
M&E	Monitoring and Evaluation
METSS	Monitoring, Evaluation and Technical Support Services
MOFA	Ministry of Food and Agriculture
MOP	Manual of Procedures
MMDA	Metropolitan, Municipal and District Assemblies
MTDP	Medium Term Development Plan(s)
NBSSI	National Board of Small Scale Industries

NGO	Non-Governmental Organization
NRM	Natural Resources Management
NTFP	Non-Timber Forest Products
PAPA	Participating Agency Program Agreement
PMP	Performance Management Plan
PPP	Public Private Partnership
REDD+	Reduced Emissions from Deforestation and Forest Degradation
RMSC	Resources Management Service Center
SFMP	Sustainable Fisheries Management Project
SL	Sustainable Landscapes
SNV	Netherlands Development Organization
SOP	Standard Operating Procedures
STMA	Sekondi-Takoradi Metropolitan Assembly
TOT	Training of Trainers
TCPD	Town and Country Planning Department
UCC	University of Cape Coast
USAID	United States Agency for International Development
USFS	United States Forest Service
USG	United States Government
USGS	United States Geological Survey
VSLA	Village Savings and Loan Association
WD	Wildlife Division (of the Forestry Commission)
WR	Western Region
WRCF	Western Region Coastal Foundation

I. Program Overview/Summary

I.1 Activity/Mechanism Overview

Program Name:	Coastal Sustainable Landscapes Project
Activity Start Date and End Date	October 1, 2013 to September 30, 2019
Name of Prime Implementing Partner:	United States Forest Service International Programs
Contract/Agreement Number:	AEG-T-00-07-00003
Name of Subcontractors / Sub-awardees:	None
Major Counterpart Organizations	Ghana Forestry Commission (Forest Services Division, Wildlife Division), Ghana Ministry of Food and Agriculture, Ghana Town and Country Planning Departments
Geographic Coverage (cities and/or countries)	Six coastal districts of the Western Region of Ghana
Reporting Period:	October 1, 2016 to September 30, 2017

I.2 Program Description/Introduction

Ghana's Western Region faces multiple land use pressures in its six coastal districts. Inland and coastal forests are being cleared for commercial development, agriculture, cash crop development, charcoal, timber production, and artisanal mining. In all, these forces are posing significant threats to ecologically significant areas and biodiversity, including in-shore fisheries. High unemployment rates compound these pressures, exacerbating unsustainable natural resource management practices and reducing ecosystem services provided by the Western Region's natural areas. Off and inshore fisheries are on the verge of collapsing due to extreme rates of illegal fishing and the lack of political will to enforce existing laws.

Most land in the Western Region outside forest reserves, other protected areas and sacred groves has already been deforested and converted to agriculture. The current challenge is to find ways of taking pressure off the remaining forests and other natural areas while improving livelihoods.

Other anthropogenic pressures on the landscape, especially land use changes linked to developing oil and gas infrastructure, and a warming climate caused by increased atmospheric carbon dioxide, pose significant risks to the region's coastal landscapes. Climate change is also linked to jet stream fluctuations that cause irregular, more extreme, and unusual weather patterns and events. Changing rainfall patterns and intensities can lead to droughts in some areas and floods in others. In addition to storm events, other adverse impacts to the region from climate change include rising sea levels, salt water intrusion producing higher salinity rates of coastal water sources, changes in marine and terrestrial biological life cycles, and the likely extirpation of species.

The land cover maps below in Figure 1, prepared by the United States Geological Survey (2014), clearly show the trend in agriculture expansion and the loss of forest cover throughout Ghana. The rapid expansion of farmland threatens the remaining forests and natural areas and segments of the population that rely on these resources for their livelihoods. Many poorer rural inhabitants depend on natural products to supplement their income; frequently, these products are their main source of revenue. This is the case especially for youth, women and the elderly, and the loss of this income source equals a dramatic loss as it relates to food security.

USAID/Ghana's Environmental Threats and Opportunities Assessment of 2011 identified the need for the Feed the Future (FTF) program to mitigate any possible negative effects on forests and other natural areas from agriculture expansion. That threat, together with increased demand for fuel wood and charcoal production, are the dominant drivers of deforestation. Moreover, health risks increase as the quality and quantity of water resources for human and productive uses declines as a result of the hydrologic functions of watershed catchment areas being disrupted by agricultural expansion, deforestation and mining.

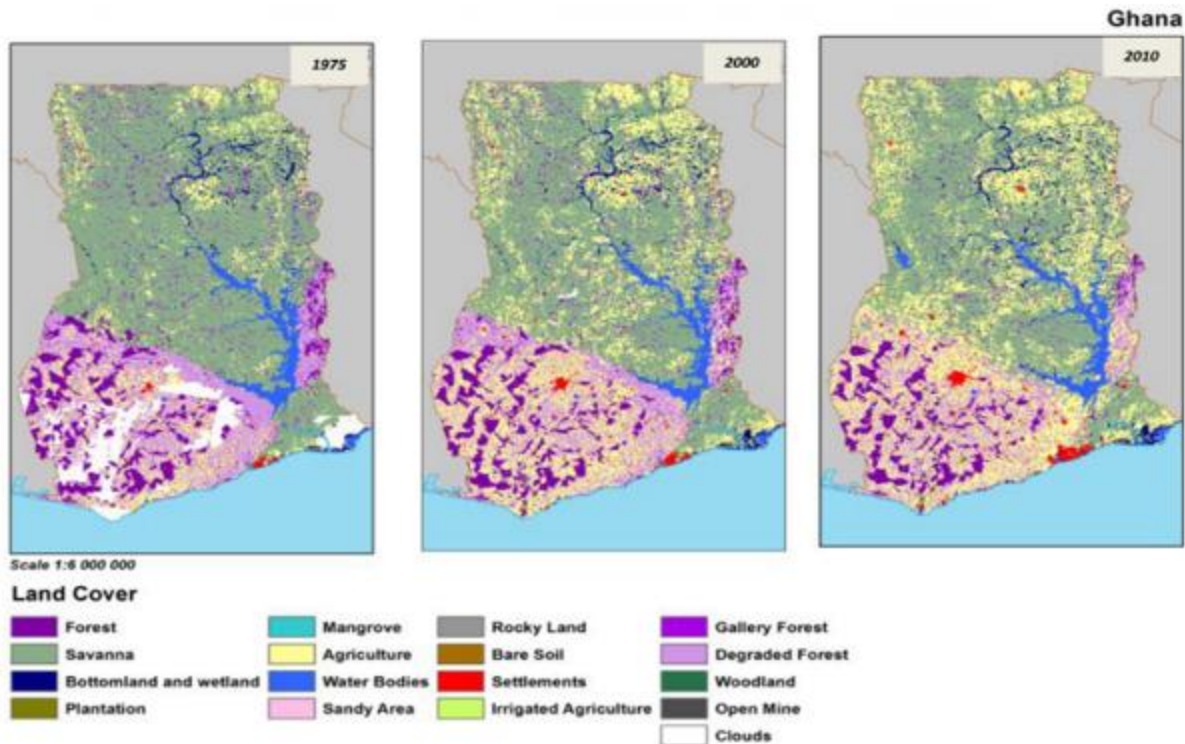


Figure 1. Ghana Land Cover Trends 1975-2010

To address these numerous threats to sustainability, USAID/Ghana’s Economic Growth office has developed natural resource interventions in Ghana’s Western Region. USAID’s main initiative, the Fisheries and Coastal Management Program (FCMP), has four components: (i) Strengthened enabling environment for decentralized fisheries and coastal governance, (ii) Increased use of applied science to inform decision-making, law enforcement and the implementation of management plans, (iii) Heightened public awareness of trends, challenges and successes in ecosystem management and stronger public demand for sustainable use and conservation, and (iv) Improved management of marine and coastal natural resources for multiple benefits.

The US Forest Service, under an inter-agency partnership agreement with USAID, manages one component of the FCMP, the Coastal Sustainable Landscapes Project (CSLP). The CSLP contributes in some form to all four components with special emphasis on component (iv). The CSLP activities target landscape level engagement with communities, non-governmental organizations, government of Ghana agencies, the private sector, and international partners, who live and work in the coastal area from the Cote d’Ivoire border east to Shama District.

The CSLP is responding to the USAID Sustainable Landscapes (SL) Results Framework by focusing on Strategic Objective 1: *Accelerate the transition to low emission development through investments in clean energy and sustainable landscapes*. The SL interventions will support the second development objective of ensuring sustainable and broadly shared economic growth in Ghana under the USAID/Ghana Country Development Cooperation Strategy (CDCS). The goal of the strategy is to support the Government of Ghana in realizing its goal of becoming an established middle-income country by 2022. In this regard, the CSLP works to support Ghana’s economic development agenda and strategies such as the Shared Growth and Development Agenda, Growth and Poverty Reduction Strategy (GPRS), and the Food and Agriculture Sector Development Policy (FASDEP II). USAID/Ghana’s Development Objective 2 also supports two US Presidential Initiatives related to the CSLP, including Feed the Future and Global Climate Change.

If successfully implemented, these efforts will lead to increased employment, improved livelihoods, better land management, increased soil fertility, and increased carbon stocks. Moreover, improved land management will reduce pressure on intact areas of remaining natural forests and wetlands thereby protecting their biodiversity and allowing for the continued development of opportunities linked to ecotourism.

To confront these growing threats mentioned above, the CSLP is working to improve carbon sequestration, forest management, and livelihoods in the six coastal districts of the Western Region (see Figure 2). The overall long-term impact of the project will be to *promote low emissions development in Ghana's Western Region by strengthening community-based natural resource management and monitoring*. The project focuses on the coastal landscape, including mangroves, other wetlands, and forests and agricultural areas (within and outside protected areas) all of which are managed under a diversity of land tenure regimes.



Figure 2. The six coastal districts in Ghana's Western Region

Ghana has seen numerous interventions related to forest conservation in the past, many with only limited success. CSLP's primary activities are focused on community-level interactions that work to achieve low emissions development goals. The project's activities have been established within communities where there is an existing and functioning community governance body such as Community Resource Management Associations (CREMAs) or similar entities. This history of community collaboration provided an entry point for the project to work with community members on a variety of livelihood activities. One such activity leverages the Village Savings and Loan Association (VSLA) concept, a significant aspect of the project. It is a social entrepreneurial concept that enjoys much success in other areas of Ghana. But it is a novel idea for communities of the Western Region's coastal districts. With each passing year, enthusiasm and excitement builds with its implementation. The project uses it as a platform to help encourage and promote activities that maintain and increase forest cover with native and existing tree species while also serving as a means of reaching a large portion of female farmers and household representatives. The CSLP is applying the VSLA concept to provide incentives for farmers and landowners to incorporate more indigenous species of trees on their land while helping provide seed funding for a revolving funding mechanism to work towards improved and diversified livelihoods.

CSLP's interventions have brought awareness among farmers, community members and government officials and substantially increased the understanding of these impacts among stakeholders in the Western Region during and since the project's first phase from 2013 to 2016. Climate smart agriculture activities and other resilient agricultural best practices are helping farmers adapt to this changing climate, reducing the need for high cost inputs, while aiming to sustain or increase productivity despite less predictable weather. In addition, conservation of secondary forest through activities such as beekeeping and increasing tree cover on degraded agricultural lands through farmer managed natural regeneration and enrichment planting has been increasing over the life of the project. The CSLP is building on this work by further connecting farmer groups with markets to increase value of their goods and thereby increase economic opportunity.

With successful implementation, these cumulative efforts will contribute to increased employment, diversified and improved livelihoods, better land management of existing natural resources, augmentation of soil fertility, increased carbon stocks, and avoided emissions of greenhouse gases. Moreover, improved land management and livelihoods will reduce pressure on intact areas of forest reserves and areas of high conservation value, protecting their

biodiversity, allowing for ecotourism opportunities and enhancing the value of other ecosystem services within the value chains of the local communities.

2.0 ACTIVITY IMPLEMENTATION PROGRESS

2.1 Progress Narrative & Implementation Status

The Coastal Sustainable Landscapes Project (CSLP) now in its second phase, has just completed its first year under the US Government's Feed the Future Initiative. Its overall objective is to reduce poverty and increase resiliency in the target communities through improved natural resource management, livelihood diversification, value chain development, and ecosystem restoration. The focus of its implementation activities is to demonstrate, train, coach and mentor beneficiaries in alternative livelihood practices that are beneficial to the environment and also provide improved food security and microeconomic benefits to the rural communities and their members.

With smallholder farmers and fisher folk as the CSLP's direct beneficiaries, the CSLP continues to work with Government of Ghana institutions, local NGOs, private sector actors, community institutions and traditional leaders. Project actions during the year, sought to further demonstrate and scale up proven additional livelihood interventions, agroforestry and reforestation techniques, and to ensure enhanced economic conditions of beneficiaries. The project interventions targeted food security issues and the development of smallholder farmers and fisher folk as entrepreneurs as well as empowering local communities to derive maximum economic benefits from available natural resources—namely wetlands and mangroves. Activities range from livelihood diversification efforts to agroforestry interventions to effective management of wetlands and their associated mangroves through mangrove re-planting activities to the development of community management frameworks and training and awareness activities with traditional authorities and local Government of Ghana decision makers and technical specialists.

The following highlights key project interventions, results and outcomes, as available, from the year. Further details are provided within this report.

- In Ghana, charcoal is believed to be the largest source of domestic fuel with 60% to 70% of all households using at least some charcoal. In the Western Region, its production provides an alternative income source for many people as an alternative to their farming activities. Charcoal production is considered a major cause of deforestation both on and off forest reserves in the country and therefore threatens carbon sequestration, climate change adaptation and biodiversity conservation efforts in Ghana.

Given charcoal's prevalence, CSLP is focusing on working with producers in the Western Region to improve management of charcoal production wood lots and the efficiency of production of the charcoal to reduce overall environmental impacts. During the year, the CSLP trained 48 producers on concepts related to management of wood lots while simultaneously developing improved metal kilns to improve the efficiency of production. Paired with these efforts, the CSLP helped facilitate the establishment of two charcoal producer groups which have now elected officers and drafted constitutions that include regulations for the use and management and maintenance of the kilns. Also, the groups have been linked with the district level business advisory centers as a means of ensuring longer-term functionality of the groups. Such efforts will hopefully lead to more sustainable management of charcoal production wood lots that will thereby reduce impacts on protected forest areas and provide greater economic returns to charcoal producing households.

- Within the coastal districts, wild honey harvesting is done haphazardly while little is known about better beekeeping practices in general. CSLP has introduced beekeeping in the coastal districts of the Western Region to reduce deforestation and degradation in the areas where the hives are kept. Beehives and their subsequent honey collection can serve as supplemental nutritional sources as well as a valuable income source for rural households—many of which currently rely heavily on one or two key commodities for their income. By increasing training and access to modern equipment for an activity that has been traditionally practiced, the CSLP hopes to improve livelihood opportunities for households while conserving secondary forest patches where the apiaries are established as a means of further incentivizing forest conservation.

During the year, 53 new beneficiaries, including 10 women, received training in beekeeping. In addition, 95 beneficiaries, including 14 women, who have already established hives, were trained in honey harvesting and processing. Two beekeeping associations have recently been formed with a goal of sharing expertise and lessons

learned while exploring market opportunities more readily available as a group. These groups will be further supported in the coming year with marketing and business skill development.

- Vegetable production in the coastal districts is a common venture but one that is increasingly threatened by expansion of land for tree crop production such as cocoa, rubber and oil palm. Vegetable production is an important activity for households as it provides a valuable nutritional source as well as potential modest income. Since the less suitable land is often allocated for their production, high volumes of chemicals are often applied to ensure production which further degrades the soil and impacts the health of those consuming the produce. The CSLP has been promoting climate smart agricultural (CSA) practices as a means of supporting farmers to produce wholesome vegetables using environmentally friendly practices that will be better adapted to impacts from climate change.

The CSLP continues to collaborate with the local Department of Food and Agriculture extension agents and the DfID-funded Western Region Coastal Foundation to train farmers on concepts ranging from composting to post-harvest management to entrepreneurship skills to improve farmers' production and economic opportunities. During this year, more than 600 people received trainings in CSA vegetable production practices and more than 100 adopted at least one of the practices demonstrated in the trainings.

In order to increase adoption of these improved practices and as a means of putting them into greater practice, the CSLP has worked with farmers during the year to establish 13 demonstration sites, covering a total area of 11.35 hectares. Each demonstration site is established on the land of one of the group's farmers and is visited by a cluster of interested farmers who have received the classroom training and are participating in the practical aspect of the training. The positive results being obtained by the early adopters are increasing the number of requests from other farmers who want to participate. Continued use of this champion model to increase awareness and adoption of these improved management practices will continue over the coming months. Such efforts will hopefully increase improved produce availability for rural households, reduce costs for households due to reduction in use of costly inputs, improve water and soil quality in the area, and serve as a potentially increased income source due to the improved longevity of produce developed under these principles.

- Many of the CSLP engaged farmers in the Western Region live far from urban centers and are therefore physically far removed from formal lending institutions. As many of these farmers live with limited financial safety nets, and given a history of poorly managed microfinance institutions operating in the region, the CSLP has worked to facilitate the development of Village Savings and Loan Associations (VSLA). The VSLA system enables member farmers to mobilize their own funds and support themselves with small loans at low interest rates while also having access to emergency monies from the group's social fund. Once loans are repaid, the members also benefit from the interest accrued at the close out of the loan cycle. During FY 2017, 10 new VSLAs were established bringing the total number supported by the project to 35 groups, with a total membership of 893 members of which more than 65% are women. For the 20+ groups that have successfully completed a savings and loan cycle in FY 2017, members loaned themselves more than \$50,000 (with a less than 1% default rate) and also saved more than \$38,000.

While VSLAs can be quite self-sustaining with limited outside support, given the growing number of groups and in order to more readily address challenges that may arise, while also identifying potential additional groups, the CSLP has been training and empowering Village Agents (VAs) to support the groups. VAs are themselves members of a VSLA and have undertaken additional training to support their fellow community members or neighboring community groups in the process. During the year, 30 new Village Agents, including 13 women, were selected and trained to support the modular training and monitoring processes of the VSLAs. In addition, the 13 existing VAs gained further training through a refresher which helped to highlight lessons learned and address recurring challenges with the groups.

The CSLP also provided several of the VSLA groups with skill development trainings in record keeping and financial education skills. 211 VSLA members (including 60 men) were trained on basic record keeping skills. Given that many members have limited literacy and numeracy skills, the CSLP tailored trainings so as to support

members to be better able to manage their financial expenses and income as part of their farming and other livelihood activities.

- Improved conservation and coordination for the Greater Amanzule Wetlands (GAW) area remains a high priority for the CSLP and its grantee partner, Hen Mpoano. The GAW stretch across two of the coastal districts of the Western Region and harbor a diverse array of habitats including mangroves, swamps and other wetland areas that are also home to various fish, mammals and amphibians. The area is home to thousands of people and also serves as an important basis for rural livelihoods as many people work as fisher folk, fish processors as well as other farming related activities in and around these wetland areas.

Efforts with Hen Mpoano and communities in the GAW aim to increase sustainable management practices through the development of management committees and plans. During the year, two new community conservation committees (CCCs) were established within GAW bringing the total now established to 24. The CCCs are men and women volunteers who have been nominated and elected to represent the community relative to the wetland and to mobilize the rest of the community members for management activities in the wetland. Through establishment of these committees and subsequent trainings, the goal is to increase understanding of the importance of mangroves for community members while supporting greater support for sustainable management of the resources.

Related activities to improve management across the GAW this year included further mapping of the wetland resources. 12 community wetland resources were mapped which brings to a total of 17 communities whose wetland areas are mapped. The process created the opportunity for CCC members to be trained in the use of GPS and allows for comparison of land cover change when compared to photos over time. Additionally, the process helps determine the effectiveness of management practices over time.

For those areas where degradation of the mangroves has taken place, some communities prioritized restoration activities aimed at improving the biological conditions of the sites. More than 27 hectares of mangroves were replanted this year and will be monitored over the coming months to ensure success. The goal of such improved management and restoration is to ensure these wetland areas are sustainably managed to provide benefits for communities in and around the area while also conserving the important ecological role of these special places.

- The CSLP continues to engage students and teachers throughout the coastal districts in order to increase awareness about important environmental challenges. During the year, four new climate change clubs were created. In addition to establishing demonstration climate smart agriculture sites and participating in climate change awareness trainings, students and teachers also learned about gender and the environment through a trainer of trainers approach. As a result of these awareness efforts, the CSLP is gaining additional requests from clubs and the schools for support on such issues as controlling erosion at the school sites and identifying trash bins to better address waste management issues.
- As cocoa is a primary crop under production in some areas of the Western Region, its impact on tree cover and environmental quality has been significant. Through the Environmental Sustainability and Policy for Cocoa Production in Ghana Project (ESP), the COCOBOD in Ghana is now promoting agroforestry concepts within cocoa farms. Thousands of tree seedlings are provided to farmers to integrate into their farms as they receive free cocoa seedlings for planting. Following interaction with the Cocoa Health and Extension Division (CHED) of the COCOBOD, which is responsible for the tree seedlings distribution, the CSLP learned that extension staff do not have any knowledge in supporting the farmers to set up such an agroforestry system. The two organizations have agreed that the CSLP will provide the CHED extension staff with the necessary training using the CSLP's Cocoa Shade Tree Cover Restoration training module.

As a result, in FY 2017, 25 CHED extension staff (including two women) operating in Jomoro District received two trainings in how to restore trees in cocoa farms and benefit from both the trees and cocoa without harming the cocoa trees. Topics covered included the role of trees in environmental resiliency, considerations for species selection in cocoa shade tree restoration, managing trees for optimum shade in cocoa farms, and insight into farmer managed natural regeneration (FMNR). It is hoped that such efforts will further scale up the achievements of the

CSLP beyond the primary focal communities while increasing carbon sequestration, environmental quality and food security throughout the region.

- Given the importance of tree tenure to achieving the goals of carbon sequestration and improved natural resources management, the CSLP has been eager to support the Forestry Commission (FC) in testing out the newly developed tree registration process. Late in the year, the CSLP was able to engage 30 farmers who have planted trees in their farms to collect their biodata using FC approved forms which is leading to the registration of their planted trees. Registration of the planted trees is the assured way for ensuring security of ownership of the planted trees. This will open the way for many more people to become interested in tree planting. As lessons are learned through this process, the CSLP aims to share those with government partners in order to ensure ease and practicality of the registration process.

Output I: Increased Incomes from Livelihood Diversification

Table 1. Planned and implemented activities for Output 1 in FY 2017

Activities to be Implemented	Expected Outputs	Achievements	Outstanding Activity
<p>Activity 1.1: Intensified and diversified climate smart technologies adopted by target beneficiaries</p>	<ul style="list-style-type: none"> Charcoal producers in Shama District adopt improved charcoal producing technologies Farmers have improved knowledge in the practices of resilient agriculture for the production of vegetables and other food crops Demonstration farms are setup as practical/hands-on training grounds for conservation agriculture technologies 	<ul style="list-style-type: none"> 2 mobile metal charcoal kilns delivered to 2 charcoal producer associations in the Shama District for pilot testing 610 farmers (306 males and 304 females) were trained in conservation agriculture Demonstration farms have been set up in 13 sites in 13 communities as sites for practical training in conservation agriculture with a total area of 11.35 hectares 	<p>Training of the members of the associations is on-going</p> <p>Depending on site characteristics some want to practice dry or rainy season only; the CSLP will support them accordingly to improve skills</p>
<p>Activity 1.2: Natural resources value chains improved</p>	<ul style="list-style-type: none"> Beekeepers are supported to establish functional apiaries 	<ul style="list-style-type: none"> 95 beekeepers (including 14 females) received training in honey harvesting and processing 45 new beekeepers received start-up equipment to establish apiaries 53 new beneficiaries including 10 females received training in beekeeping 170 apiaries were monitored to assure implementation of best management practices (BMP) 	
<p>Activity 1.3: Economic opportunities increased</p>	<ul style="list-style-type: none"> More VSLAs formed within the coastal landscape of the Western region to enhance livelihoods 16 Village Agents re-trained to further improve their services 30 new Village Agents selected and trained to support VSLA activities VSLA members improve their record keeping and their capacity built to keep records VSLA members have improved skills in dealing with financial institutions 	<ul style="list-style-type: none"> 10 new VSLAs were formed during the year (5 of which were facilitated by Hen Mpoano) with a total membership of 247 (including 157 females) 13 men and 3 women Village Agents received refresher training to enhance their performance 17 men and 13 women from 17 VSLAs from 16 communities received training as Village Agents 211 farmers (including 60 men) from 10 VSLAs received training in record keeping to improve their farm and/or other business management 223 VSLA members (including 145 women) from 10 VSLAs received training in financial education to enable them to make informed decisions both individually and collectively as a group 	

	<ul style="list-style-type: none"> • Farmers are organized into formal groups and functioning • Enterprise groups are linked with service providers and buyers 	<ul style="list-style-type: none"> • 18 vegetable producer groups received training to enable them to function better as a groups • Informal linkages have been established with 3 institutions to support enterprise group members • VSLA members from 10 communities participate in a survey effort to assess livelihoods and changes due to project activities • CSLP participated in the planning and implementation of the VSLA Summit in Accra 	
Activity 1.4: Capacities enhanced for diversified livelihoods	<ul style="list-style-type: none"> • Individual farmers supply seedlings for sale to other interested farmers for planting in their farms • CSLP beneficiary farmers adopt alternative natural resources related livelihoods • Farmers are conversant with the pillars of food security and influence their farming practices 	<ul style="list-style-type: none"> • A needs assessment was conducted in CSLP communities in 4 districts to identify interested individuals who want to set up nurseries to meet tree seedlings needs of farmers • 75 farmers (including 34 women) were trained in mushroom farming • 67 farmers including 23 females were trained in snail farming • 195 farmers (including 106 females) were trained in factors of food security and how food security may be achieved 	One woman has established a commercial timber tree nursery; the CSLP (and others) are supporting her efforts to produce & sell more than her FY 17 production of 400 seedlings

Improved Charcoal Producing Technology

In Ghana, charcoal is believed to be the largest source of domestic fuel with 60% to 70% of all households using at least some charcoal (especially in cities and towns). In the Western Region, its production provides an alternative income source for many people as an alternative income source to their farming activities. Large truckloads are transported on a weekly basis to major cities such as Sunyani, Kumasi and Accra for sale. Charcoal production has been labeled as a major cause of deforestation both on and off forest reserves in the country and therefore threatens carbon sequestration and biodiversity conservation efforts in Ghana.

While charcoal production may be considered necessary given the prevalence of charcoal as a fuel source for cooking in the country, its production is organized differently in some communities of the Western Region, such as in the Shama District. Men and women within the District have established cassia (*Senna siamea*) woodlots that they harvest in a 3 to 4 year cycle (on average) to produce charcoal. The CSLP is working in the charcoal value chain to help meet domestic fuel needs and to lower the production system's impact on the environment. The project has engaged the practitioners to better understand the production chain, assess particular challenges identified by the producers, and then work together to resolve them. One immediate area of collaboration involved working with the producers to implement woodlot best management practices (BMP). These included:

- Avoiding burning during land preparation to reduce biodiversity loss and carbon emissions;
- Nurturing natural regeneration of indigenous species;
- Introducing other economically-valuable species such as fruits and timber scattered on the farm landscape;
- Avoiding total block or clear cut harvesting; and,
- Adopting tree stand harvesting practices that encourage high coppicing.

Another initiative has been to introduce charcoal kilns in place of the traditional method that involves heaping the wood into piles, covering the whole pile with soil and plant biomass, and 24/7 monitoring to avoid total combustion of the wood. The producers are exposed to very high heat during the carbonization processes and more so when they have to slow or stop the burning using water. In discussions with the charcoal producers about trying improved

technologies, they opted for mobile metal kilns instead of sedentary brick kilns. This would allow them to move the kiln to the wood source rather than having to transport the heavier raw material to a sedentary kiln.

The CSLP tapped into the experience of the International Institute for Bamboo and Rattan (INBAR) in Kumasi which had worked successfully to train people in the mobile metal kiln technology in Nzema East District (one of the six where the project is engaged). The initial problem confronted by the project was identifying a metal works fabricator as there were none with the experience of making metal kilns in the Western Region. The project located a fabricator in Takoradi who was willing to construct a metal kiln under supervision of INBAR and the CSLP. INBAR provided the design specifications, photos and monitoring to the chosen fabricator.

Two kilns were manufactured and delivered, one each to the Yabiw and Krobo charcoal producers association in Shama District. The INBAR trainer, during the pilot and training days, faced many challenges with ineffective yield of charcoal. Further investigation led to another charcoal producer who also uses metal kilns for producing charcoal with forest wood. It turned out that the kiln designs for burning bamboo is different from that for forest woods because bamboo has far lower density than forest wood. He therefore recommended the creation of many more vents and further re-designing of the base for ease of firing the kilns. The two associations have earmarked the next pilot carbonation trial to be held in November 2017, when they would have collected sufficient *Senna siamea* wood from their woodlots.



Figure 3. Members of charcoal producers association observe effectiveness of new mobile metal kiln for potential use and adoption

The CSLP also helped facilitate organizing the producers into formal enterprise groups. The two groups have now formally elected officers and drafted constitutions that include regulations for the use, management and maintenance of the two kilns. In addition, the groups have been linked with the regional office of the National Board for Small Scale Industries (NBSSI) and their corresponding district office, the Business Advisory Center (BAC). The BAC has expressed interest in working with them and the CSLP will follow up to ensure that the relationship solidifies and becomes meaningful so to hopefully ensure longer term functionality and support for the groups by the local government partners.

Beekeeping Training

Interaction with bees is common within the six coastal districts of the Western Region, but this is primarily in a natural state. Harvesting honey from bees in the wild is mainly for subsistence consumption with only small surplus amounts being sold in the marketplace. The main issue with honey harvesting from beehives in the wild is that it almost always results in the destruction of the hive and the eradication of the colony. There is very limited knowledge about beekeeping in the area, but great interest in producing honey for household consumption and possible sale. The CSLP has provided training on beekeeping and apiary management as a means of diversifying livelihoods. It is also an effective way to encourage farmers who have secondary forest and fallow lands to avoid clearing and burning them (as is the traditional practice), and to reserve them for use as apiaries, for future sources of wood/timber and for other non-timber forest products (NTFPs). As a result, the primary condition for becoming a CSLP beneficiary beekeeper is that one must have forest patch or fallow land.

Training in honey harvesting and processing was provided for 95 established beekeepers including 14 women across the coastal landscape in FY 2017. This training was tailored for beekeepers that have colonized hives and were getting ready to harvest honey in their apiaries. The CSLP Livelihood Specialist handled the training theory portion and the practical aspect was handled by a member of a renowned beekeeping association in Attebubu in the Brong Ahafo Region of Ghana. The trainees from 14 communities received hands-on instructions and demonstrations in areas such as:

- Inspection of hives to establish familiarity with the bees and also determine timeliness of maturity of honey for harvest;
- Handling and proper use of required tools;
- Proper protective clothing and safety during maintenance of hives; and,

- Harvest of honey combs and processing.

Forty-five new beekeepers received start-up equipment from CSLP to help establish their apiaries following their training. The equipment provided by the project included, a beehive, bee suit, a pair of hand gloves, bee veil and a beehive stand. They were then supported to set up the apiaries in their earmarked secondary forest or fallow patch.

Fifty-three new beneficiaries, including 10 women, received training in beekeeping during the year. This was the first batch of beekeeper trainees who will not receive start-up equipment from CSLP. The training covered the CSLP introduction to beekeeping module which included topics such as managing the fear for the African bee, establishing the apiary and management of the apiary. The 53 participants were from 8 communities including some GAW communities.

A number of CSLP's farmers experienced bees absconding from their beehives during the year. The frequency of this phenomenon mandated a thorough investigation as to the reasons so that it could be mitigated. An experienced beekeeper from the Ashanti region was contacted and engaged to assess a sample of the apiary sites, particularly the sites where the bees were absconding, and to propose solutions to prevent this from happening in the future. The assessment presented a number of possible causes, all which were related to the apiary environment. These included:

- The rampant use of chemicals such as herbicides and insecticides in close proximity to the apiaries (especially in some districts such as Ellembelle);
- A weedy hive environment;
- Faulty hive construction and/or insufficient top bars that allows water access into the hive on rainy days;
- Exposure of the hives to sunlight which results in a very hot hive interior during the afternoons; and,
- Inadequate or poor site establishment of the hive resulting in ants invading the hives after colonization leading to the bees absconding.

These findings have been developed into an apiary management protocol and integrated into the basic training, coaching and monitoring activities for beekeepers supported by the CSLP. Apiary monitoring is initiated with the support of the Community Assistants (CAs) to ensure that all hive owners follow the apiary management protocol. During monitoring visits from the CSLP Specialist and/or the CA with the farmers, the hive environment and interior are inspected to ensure that they comply with the recommendations of the consultant. Bees absconding reduced drastically and out of the 170 beehives that were monitored following the assessment, 150 of them are now colonized.

Conservation Agriculture and Vegetable Production

Vegetable production has been an important venture in the farming enterprises in the six coastal districts of the Western Region. They are usually managed by women and produced as part of the annual crops that are incorporated in the mixed cropping system to nurture the cash/tree crops, including cocoa, rubber and oil palm, which is managed predominantly by men. The women are given the task of producing the subsistence crops/vegetables, used for the household and selling any surplus at local markets. As the majority of the land becomes occupied by cash crops, very little area is available for vegetable production. The rest of the open land is often used repeatedly without measures to improve fertility leading to a state of degradation.

In the attempt to achieve better yields, farmers, with the support of DoFA extension agents and agricultural input dealers, apply large quantities of chemicals such as fertilizers, insecticides and fungicides. Over time, farmers need to increase the application of such chemicals in order to achieve anything substantial in terms of production. As a result, the vegetables being produced were heavily laden with high concentration of chemicals, in some cases even beyond acceptable limits for human consumption. Farmers on the CSLP landscapes also testify of how short the shelf life of their produce is due to the overreliance on chemical inputs. The oil and gas industry within the Western Region landscapes recognizes this and many companies choose instead to import vegetables both from outside the region and the country to feed their expatriate staff.

The CSLP has participated in, or led, numerous awareness activities centered on resilient agriculture best practices for almost two years. Several of these have been in collaboration with the DfID-funded Western Region Coastal

Foundation. The main tenants promulgated in the CSLP's training, coaching and mentoring activities about conservation/resilient/climate smart agriculture (CSA) include:

- No use of weed-controlling chemicals (herbicides)
- Timely/regular manual weed control
- No bush burning
- Adoption of recommended spacing
- Preference for planting in lines
- Use of improve/certified seeds
- Application of only organic fertilizer
- Adoption of integrated pest management techniques

To date, nearly 800 people have received trainings on these concepts. While the total number of adoptees is currently low in comparison, numbers are improving. People who decided to try CSA vegetable production usually only allocate very small pieces of land because they doubt the possibility of becoming successful without chemical fertilizer and high doses of insecticides and fungicides. Others, depending on the actual soil conditions of their vegetable plots, also complain about the increased amount of labor that is needed. (Those with good soils initially require less labor than those with depleted/degraded sites; repeated cycles of CSA will generally result in less and less labor being required to combat pests/diseases and improve vegetable production.)

During FY 2017, more than 600 people attended these trainings, equally split between men and women. The specific module topics included:

- Climate Smart Agriculture Practices-Overview
- Composting
- Integrated Pest Management
- Post-Harvest Management
- Group Formation
- Entrepreneurship Development

The last two modules are targeted at people who have decided to organize into groups and support themselves in the vegetable production practice.

Following persistent awareness creation by CSLP, and with the support of stakeholder institutions such DoFA and the Western Region Coastal Foundation, the interest of farmers in CSA has been increasing. The results being obtained by the early adopters are increasing the number of requests from other farmers who want to participate. One of the strategies used to enhance CSA adoption is the introduction of the establishment of demonstration sites. These provide participants with a site for practical hands-on-training to practice and observe each of the training topics. During the year, 13 demonstration sites, with a total area of 11.35 hectares, were established. Each demonstration site (which is on the land of one of the group's farmers) is visited by a cluster of interested farmers who have received the classroom training and are participating in the practical one. The number of cluster farmers at a demonstration site varies from 10 to 42. A total of 327 farmers (149 are women) are involved at the 13 sites. Continued use of this champion model to increase awareness and adoption of these improved management practices will continue over the coming months.

Village Savings and Loans Associations (VSLA)

The VSLAs are a group of men and women ranging between 15 and 25 members who decide to work together to contribute an agreed amount of money into social and loan funds for the benefit of the members under rules agreed to by the group. Rural banks and savings and loans institutions serving the Western Region's coastal landscapes are, for the most part, reluctant to invest in farming ventures primarily because it is considered a high risk business. As a result, farmers' access to outside funds is often very limited and where they are available, they may pay interest rates of up to 100 percent. In addition to these financial challenges, farmers have also had negative experiences with microfinance institutions that have absconded with funds.

The VSLA system enables member farmers to mobilize their own funds and support themselves with small loans at low interest rates while also having access to emergency monies from the group's social fund. Once loans are repaid, the members also benefit from the interest accrued at the close out of the loan cycle. The VSLA enables farmers to obtain loans and purchase farming inputs such as improved seeds, beehives and other domestic expenses, or other materials depending on the groups' rules. The associations have proven to be an important source of funds, especially

for women's activities in the communities—something that had not existed before. In a livelihood survey¹ conducted with CSLP VSLA members in coordination with the USAID-funded SFMP, findings revealed that the majority of association members felt that the VSLAs have had positive impact on their communities.

Ten (10) new VSLAs were established during the year bringing the number to 35 VSLAs supported by the project, with a total of 893 members out of which 593 are women. The 10 new VSLAs have a total membership of 247 (157 are women). Establishment of five of the 10 were facilitated by CSLP while the other five were facilitated by the local NGO, Hen Mpoano, through the grant agreement with the CSLP.

The membership of all the CSLP-supported groups now numbers close to 900 and is more than 65% women. Most beneficiaries access loans ranging from \$100 to \$350 for purposes of expanding farms, increasing yield and engaging in other economic activities as supplementary livelihoods. For the 20+ groups that have successfully completed a savings and loan cycle in FY 2017, members loaned themselves more than \$50,000 (with a less than 1% default rate) and also saved more than \$38,000.



Figure 4. Members of the Kamgbunli VSLA conducting business at a share out meeting.

Village Agents

Thirteen Village Agents (VAs), including 3 women, received a refresher training during the year. These Agents are members of the VSLAs who have received extra training beyond the regular VSLA modular trainings with a goal of providing long-term support to the associations. The Agents not only conduct the VSLA training modules, but also, with the aid of training from the CSLP, help to manage conflicts and misunderstandings as they may arise within a group. This year's refresher training resulted from the periodic monitoring that revealed inconsistencies and minor management issues among some of the associations. Some faced challenges in the recording of data into the passbooks of members but, interestingly, the most significant challenge was dealing with and recording conversion between the old and the New Ghana Cedi currency values.

The trainee Village Agents were taken through topics such as facilitation skills, group formation and dynamics, conflict resolution, time management and planning, and adult learning principles. They were also given time to organize mock VSLA facilitation for their peer review and learning.

The positive results being obtained with this group of 13 Village Agents prompted the training of another group of 30 Village Agents in FY 2017, including 13 women. The 30 members were selected based on their understanding of the VSLA rules and philosophy, level of numeracy and literacy skills, acceptance by the general body of VSLA members, and proximity to the community and their readiness to offer services. The training of the 30 new VAs built upon the lessons learned from the operations of the 13 existing VAs and their refresher trainings. All the VAs signed a commitment to good behavior and also to function for at least 18 months as a VA following the training in their respective communities.

The VSLA members are a cross section of the general population of the farming communities within the CSLP landscape and in general have low literacy and numeracy skills. Although they are always excited about the financial benefits accrued for themselves and their household members from their VSLA membership, they do not keep any transaction records that could be referred to for learning or for future decision-making. In all their ventures, therefore, they have little idea about whether they are making profit or not. Their estimates about the profitability of their business ventures are often incorrect because they do not have the holistic record of all inputs. Their perception of their profit is based on the outputs only and does not give the true picture of the venture and performance.

¹ Sustainable Fisheries Management Project. 2017. MSMEs/VSLAs Formative Evaluation Report. *Draft*. SFMP/Univ. of Rhode Island.

Providing the knowledge and skills in record keeping has generally shown that these are the initial steps in visualizing the farm as a business and that having such skills will improve farm management practices and provide for better decision making about allocating resources. In FY 2017, the CSLP provided 211 VSLA members (including 60 men) with basic record keeping skills. These participants came from 10 VSLAs in 8 communities across four districts in the Western Region. After the training, the participants received sample formats and tables for collecting records of their activities. They also received table formats for recording expenditure and income accounts. The follow-up strategy is to encourage those with the appreciable literacy levels to adopt these by inspecting their efforts periodically and to support them to improve the recordings along with analyzing the data from time to time for decision-making. Results from the same livelihood survey cited above, indicated that members of the CSLP VSLAs were beginning to appreciate the record keeping trainings and that the members wanted more of such trainings.

The VSLAs provide important small loans to low-income farmers and the CSLP is recognizing that these monies are especially important to women in these small, rural communities. This is a role that has been unattractive to rural banks and microcredit institutions in Ghana. The project has interacted with a number of these institutions in the Western Region and the loan amounts available and the interest rates charged remain prohibitive to most rural community members. Nevertheless, some institutions are taking note of the success of the VSLAs, especially those with two or more years of success, and they are beginning to see some potential for interaction.

It is important for the VSLAs to enter into any relationship with care, especially when the banks' interest rates on lending are hovering around 30% but their earnings on savings are between 2.5% and 19%. (The VSLAs, with their modest interest rates, earn around 20% to 26% from which they all benefit equitably at share out). A VSLA could therefore land into serious crisis if they obtain loans from these institutions and do not utilize and manage them well. To stay ahead of such a crisis, the project has designed a financial education training module aimed at enlightening VSLA members both individually and collectively. The objectives of the module are to:

- Enhance their ability to save;
- Plan and budget with available money for their homes and businesses;
- Make good choices about using financial institutions to save and invest; and,
- Understand and manage loans from banks and other institutions.

The module covers topics such as principles of financial literacy, concepts of avoidable and unavoidable expenses, how to save, how to manage money, financial risks and mobile money. In FY 2017, ten VSLAs from 8 communities (across three districts) received training from the financial education module. A total of 223 members (including 145 women) participated. The training has helped in their loan re-payment rate within the VSLA, and at the same time, builds their knowledge and confidence for developing a relationship with a formal lending institution.

VSLA Summit

During the year, the CSLP was also active in promoting the VSLA concept more broadly within Ghana. These associations are taking the center stage in a number of ways. This includes becoming a very important platform for livelihood empowerment, for serving as an initial vehicle for other training activities especially in the areas of food security, and women and child health interventions, and as a leveraging tool for other opportunities. Across Ghana, a number of different donor organizations, including USAID, are successfully supporting VSLAs in a variety of ways with different objectives and using different approaches.

Recognizing the impact of these savings groups across the development spectrum in Ghana, USAID/Ghana's Economic Growth Office agreed to sponsor a summit convening different development partners to discuss their experiences with VSLAs in the country. The CSLP and another USAID-funded project, Resiliency in Northern Ghana (RING) were tapped to organize and help implement with METSS (Monitoring, Evaluation, and Technical Support Services), a day-long VSLA Summit to share experiences, lessons learned, and examine ideas and methods for improving and leveraging the savings group platforms in the country.

The first of its kind, the event included a video documentary on VSLA mechanics, panel discussions with topics such as 'Leveraging VSLAs for Development Impact', 'Linking VSLAs to Formal Financial Institutions and Other Private Sector Players' and 'Exit Strategies with VSLAs'. Representatives from institutions such as CARE International, the

originator of the VSLA concept, and other donors such as PLAN International were present. Following the successful summit, USAID encouraged the organizers to meet periodically with other key development partners to follow through on key points that were discussed and to plan on holding a similar event in a year's time. Since the initial event (held in March 2017), two meetings of the ad hoc committee have been held focused mainly on exploring financial leveraging opportunities for savings groups.

Enterprise Groups

Organized groups by their nature tend to have a larger, more influential voice than individuals. In its role of facilitating the adoption of alternative livelihoods, CSLP is leveraging this philosophy. CSA vegetable producers and beekeeping practitioners are being encouraged to organize into groups to help them better achieve their goals. To do this, the CSLP has developed a number of training modules including group formation and dynamics, entrepreneurship skills development, and product handling, packaging and marketing. These efforts are meant to revive the spirit of *mobo*, a system where farmers' groups provide labor to one another's farms while also keeping the input/output relationships in check to enhance their profit margins.

During the year, 18 groups received training in both the group formation and dynamics and the entrepreneurship skills development. The 18 groups comprised of 208 men and 191 women came from 16 communities across four districts. Out of this number, three groups were facilitated in collaboration with the WRCF (and their focus on catfish aquaculture and CSA vegetable production); one of the groups is also being facilitated in collaboration with the CSLP grantee, Hen Mpoano.

The enterprise groups supported by the CSLP are very new and for most members it is the first time that they have experienced being members of a formal, duly registered group. The support activities being facilitated by the CSLP include connecting them to the market chains and linkages with institutions that are relevant for their day-to-day activities. The relevant institutions are those that are sources of inputs for their activities or outlets for the produce. To date, two groups, one in Jomoro District, the second in Ahanta West District, have applied for registration with their respective assemblies. With this registration, the groups will receive certificates that keep them in the books of the assembly permitting them to approach the district for support, and also providing the district officials with means for contacting them in case opportunities for groups operating in their focus areas arise. The interactions, coaching and training provided by the project to the groups are all aimed at making them fully functional and independent, hopefully well before the end of the CSLP.

Another form of support that is being given to the enterprise groups is facilitation of further linkages with private sector groups. One such group is the collaboration among the TIKOLA (a local, private sector partner of the global seed distributor, East-West International), Ankobra Beach Hotel/Farm and the German Development Organization, GIZ. The linkage with these groups has provided the opportunity for 10 representatives from 10 enterprise groups to benefit from a number of trainings. The Ankobra Beach Farm's organic vegetable garden was used as the training grounds for training in seed handling and management and a training on Green Labelling standards facilitated by the GIZ. Another linkage established with some enterprise groups was a connection with vegetable Market Queens, particularly at the Agona Market in the Ahanta West District. The interaction was fruitful in building their marketing skills and linkages for connecting to specific buyers of their unique produce and in negotiating prices especially in times of a bumper harvest. These efforts are meant to build the confidence of the enterprise groups in networking and dealing with entities for the benefit of their members while also learning about regional and local opportunities that they had been unaware of otherwise.

Seedlings Needs Assessment

Free tree seedlings are ubiquitous in the Western Region. Projects have long provided them to farmers and the CSLP was one of such providers during the first two years of the project. But a free supply of tree seedlings usually results in low commitment on the part of the farmers to plant them in a timely manner and to protect them and nurture them to the point where they need less maintenance and care. Distribution of free seedlings can result in an enormous waste of resources and time on everyone's part with low survival rates for the overall number of trees planted. Trees for which farmers comprehend the long-term benefits, and for which they have cost-shared, tend to have more value and worth to farmers. To assess this on the landscapes of the coastal districts, the CSLP conducted a survey to identify farmers who have interest in paying for the cost of tree seedlings for planting in their farms. The ultimate objective is to wean

farmers from the situation where they plant trees only when free seedlings are provided. By making a contribution to the cost of the seedling, they are more apt to see the value and provide for its care.

The CSLP hopes to identify and work with individual farmers who are willing to take on the risks and raise the seedlings to address the demand. One woman was able to raise 400 seedlings of emire (*Terminalia ivorensis*) and she will be supported by way of negotiating a fair price to attract buyers and transportation for buyers from other communities. She improvised using sachet water bags, polypots and hand-collected emire wildlings using her lessons from the CSLP-facilitated training in Farmer Managed Natural Regeneration (FMNR) that had touched on seedling identification for some common tree species. She is optimistic and wants to continue to produce more tree seedlings for sale, but until more farmers genuinely appreciate the value of these trees on their landscapes, meeting her costs of production will be difficult.

Mushroom and Snail Production

The two major livelihood activities that are found in the coastal districts of the Western Region are cocoa farming for the district uplands and fishing for the littoral communities. Both of these predominant livelihood activities have inherent challenges. The fisher folk are confronted by a dwindling fish stock of catastrophic proportions due to unregulated fishing and too many boats in the water. The cocoa industry is faced with declining yields resulting from old cocoa trees and poor nutrient management and farmers are ready to go to the extent of (sub)leasing their cocoa farms to illegal artisanal mining operators instead. Cocoa farmers, given the farm gate prices paid, are not able to save enough money to sustain their households and they run into financial difficulties immediately when the cocoa season is closed.

In a bid to lessen the financial burden, CSLP engaged the farmers to assess what other low-input livelihood opportunities exist that they are interested in engaging in, apart from charcoal production, beekeeping and CSA vegetable production. Mushroom and snail production became the next two important livelihood options that farmers said they would like to practice. As a first attempt at exploring these additional livelihood options, an introductory training was provided. For the 75 interested participants (including 34 women) in mushroom production, they learned about the importance of mushrooms in the local ecology, types of edible mushroom, what mushroom farming entails, financing options for mushroom production and steps in establishing a mushroom farm.

For the group of 67 participants (including 23 women), who wanted more information on snail rearing, their training covered definitions, the importance of snail farming, the key steps in establishing a snail farm, basic inputs needed as well as estimated costs and benefits, marketing and value addition of snails. Sponsored by the CSLP, the two training activities were facilitated by the Western Regional Ministry of Food and Agriculture (MoFA) Extension Officer. Mangrove, a Ghanaian NGO located in Accra, also participated in the snail production training and made a presentation that indicated their readiness to support interested farmers who wished to invest in a snail operation, and to help them to market their produce.

For both of these activities, the CSLP is treading cautiously and is at the stage of identifying a few farmers who are ready to commit funds to begin. The CSLP's assistance in these two activities will be limited to advisory roles and as an interlocutor to provide linkages and help identify resources for the early adopters. If the few early starters are successful, they are likely to influence other adopters as well.

Training in Food Security

Almost all available arable land in the coastal districts of the Western Region is being put under the production of tree crops, mainly cocoa, rubber and to some extent coconut. There is little land available for food production and what is available is often severely degraded from poor land use/land cover practices. Very little is left for the production of food crops especially when the tree crops are mature and the canopy is completely closed. Farmers often put all their risk in one livelihood and count on the production to provide for all their family's needs for cash, food and shelter. The fact that land availability is limited also leads to repeated use of the same land with little done to improve fertility. This results in very little attention to food security by families in the region. What food that is produced is often of low quality and quantity, with low nutritional value and, due to the heavy use of fertilizers and pesticides associated with the cash crops, probably not safe for consumption either.

The CSLP has designed a training module to expose community members to the pillars of food security and further explain what food insecurity is. The training revolves around the 1996 World Food Summit definition “when all people, at all times, have physical, social and economic access *to sufficient, safe and nutritious food that meets their dietary needs* and food preferences for an active and healthy life”. The emphasis is placed on the italicized portion in the quotation and further explained to the participants. The training seeks to highlight the need for farmers to spend resources to produce food that meet globally accepted standards instead of the current situation where the food produced in the area is known to contain lots of chemicals beyond generally acceptable levels. Participants were made to understand that food is not just food that fills the stomach but should meet minimum quality standards. Meeting that quality begins with the farmer right from land preparation through to harvesting and post-harvest handling. The training also complements other CSLP activities such as the CSA trainings and other best practices being promoted that are linked to improved natural resources management. CSLP specialists work together to coordinate the food security, CSA and NRM trainings so that they will reinforce one another in the community.

In FY 2017, the food security training was provided to four communities across two districts. There almost 200 participants with men and women attending equally. In the next year, this training will be provided to an additional five communities and also to community based organizations (e.g., VSLAs), enterprise groups connected with food production and school clubs, especially those engaged with CSA activities on their premises.

Output 2: Improved Environment and Natural Resources Management

Table 2. Planned and implemented activities for Output 2 in FY 2017

Activities to be Implemented	Expected Outputs	Achievements	Outstanding Activity
Activities 2.1: Forestry and Agroforestry Interventions Developed and Practiced	<ul style="list-style-type: none"> • Urban forestry trainings conducted for groups and planting facilitated • Farmers are assured of security of planted trees • Cocoa agroforestry is enhanced in CSLP catchment area • CREMA and GAW Conservation Committee members have improved skills in mangrove seedling production and raising seedlings for re-planting degraded areas 	<ul style="list-style-type: none"> • 49 participants, including 16 women, received training in urban forestry • Registration of farmers' planted trees begins in the coastal districts • 25 COCOBOD staff trained in cocoa shade tree cover restoration • 5 members (3 men and 2 females) of the Ketakor CRMC paid a learning visit to Ankobra Community Conservation Committee to learn about the establishment of mangrove nursery 	They will be supported to establish mangrove nursery in Ketakor
Activities 2.2: Carbon Sequestration Improved and Effectively Monitored	<ul style="list-style-type: none"> • All CSLP intervention sites are mapped and used for lesson learning and decision-making • Climate smart agriculture (CSA) sites are monitored to assess adoption of practices • Planted trees in farms and communities are monitored to assess survival rates 	<ul style="list-style-type: none"> • 506 ha of mangrove mapped within the GAW area • 184 ha of cocoa and food crops farmland were mapped during the year • 106 CSA sites were monitored covering a total of nearly 40 hectares and are practicing recommended technologies • Urban planting in 24 schools and 9 other community sites were monitored 	
Activities 2.3: Stakeholder coordination strengthened	<ul style="list-style-type: none"> • CSLP stakeholders and beneficiaries are identified with unique ID numbers • Traditional authorities within the CSLP communities are abreast with project activities and challenges within their respective communities • District GoG staff are conversant with the CSLP activities within their jurisdiction and reporting on them • Western Region Coordinating Council and relevant GoG staff are updated on CSLP activities. • The youth in junior high schools are knowledgeable in environmental awareness and act responsibly 	<ul style="list-style-type: none"> • Unique ID has been developed for all CSLP stakeholders and beneficiaries in order to avoid double counting in the system • Two meetings were organized to update chiefs, queen mothers and elders from 18 CSLP communities • 4 update meetings involving 5 out of the 6 coastal districts were organized in the year. The meetings also promoted lesson sharing and peer review • 4 meetings were organized to update the Western Region Stakeholders on the implementation of CSLP activities and receive critiques, inputs and recommendations for the future • 58 female teachers from 29 public basic schools in the Shama District trained 1,055 basic school students in gender, environmental issues and how to address them 	

<p>Activity 2.4: Capacities increased in climate change adaptation and natural resource management</p>	<ul style="list-style-type: none"> • DoFA staff has improved its skills to facilitate CSA best practices • CREMAs are strengthened to support wetland conservation • Community-developed mangrove management plans are established for Yabiw and Akwidaa • Climate Change Clubs are strengthened to support and implement environmental awareness • More Climate Change Clubs formed and functioning • GAW community members are conversant with wetland values and contribute to its management • Junior high school students and community members monitor wetlands and ensure sustainable management. • GoG staff at the district assemblies employs GIS in their planning and reporting • CSLP interventions are monitored by a cross section of media for lesson sharing 	<ul style="list-style-type: none"> • 47 DoFA extension Agents and 118 lead farmers were trained in a Training of Trainer (ToT) fashion in non-CSLP communities • 3 CRMCs of the Cape Three Points CREMA received training to help them to improve wetland conservation in their communities • Community members implement the Yabiw wetland management plan • Climate Change Club members and teachers participated in two study tours to share lessons to enhance their understanding of the need for natural resources preservation as well as organic agriculture production • 4 new Climate Change Clubs were formed during the period • African drama movies and music videos were used as fun fare to attract community members in 10 communities in Jomoro district (4 communities) and Ellembelle district (6 communities) to listen to presentations on the importance and values of wetlands • Wetland monitoring by junior high school students initiated in Yabiw in Shama district and Akwidaa in Ahanta West district • CSLP engaged 4 Municipal/District Assemblies in the Western Region's TCPD to assess their spatial planning capacity needs • 8 officials representing 8 stakeholder institutions of the Western Region, 8 media personnel from print, online, television and video media platforms were involved in the media day celebration • The World Environment Day 2017 was marked in Cape Three Points amidst fun fare that created the opportunity for awareness creation on the need to sustainably preserve the environment 	<p>Demonstration sites will be set up at selected sites to encourage adoption of CSA practices</p> <p>Akwidaa plan has yet to be started</p> <p>CSA gardens continue at 2 schools</p>
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Urban Forestry

Since the project's inception, most of the tree planting and forest resource conservation efforts have been concentrated on-farm and in forest patches and fallow land areas. CSLP support to urban forestry planting is being promoted to help larger towns and cities to contribute to tree planting to improve urban micro environments and aid carbon sequestration. To help achieve this, some key community leaders were selected for training to raise the awareness of the importance of urban forestry and help them identify the choice of species, appropriate planting sites and the necessary spacing for the plantings. In FY 2017, the trainings targeted decision makers in three key institutions: officials and teachers of the Ghana education Service (GES) and members from five Traditional Councils in Jomoro, Ellembelle and Nzema East Districts. The teachers supervise the school children to plant and nurture trees in the school compounds. The chiefs and STMA technical staff will lead the planting in the general community spaces and streets. In all, 10 chiefs and five queen mothers from the traditional councils and 21 GES staff (including 6 women) from the districts received the basic training.

In a separate effort with the Sekondi Takoradi Metropolitan Assembly (STMA), 13 teachers and officials (including 5 women) were introduced to urban forestry topics that covered the impacts of population increases on vegetation cover and actions that can help urban areas be more resilient to climate change. The training led to the decisions by the teachers to incorporate urban tree planting in the schools' extra-curricular activities.

Registration of Planted Trees

The Constitution of Ghana vested all trees in Ghana in the President of the Republic and by Act of Parliament transferred to the Forestry Commission for its management and benefit of the country. This limited accessibility to trees by individuals except through the Forestry Commission. Farmers were, therefore, not ready to allow trees to grow in their farms, only to be harvested through a concessionaire and in case farmer's crops are destroyed, they receive what was always described as inadequate compensation. This phenomenon made tree planting unattractive to farmers as they were likely to lose the right of ownership to the state.

In order to curtail the deliberate destruction of trees on farm, the law was amended to indicate that anyone who plants a tree owns the tree at harvest. And, in order to distinguish a planted tree owned by an individual from a naturally occurring tree (that is vested in the state), tree planters need to register all planted trees in their name.

This process of tree registration by the Forestry Commission has been under development for a long time but never implemented. During FY 2017, the forms for gathering data leading to the registration of planted trees received approval from the Forestry Commission. The CSLP is one of the institutions that has devoted time to pilot the registration process and provide feedback where necessary for the finalization of the process.

The piloting effort for tree registration, including collecting biodatas of the tree registrants, started after the District Forest Manager responsible for the area was contacted and made aware that the planted tree registration process was being implemented. For the CSLP, involvement began with a joint visit with FC officials to some of the farmers' fields in the communities where trees had been planted with the CSLP's support. The FC officials interacted with the farmers and gave the assurances about the process. The requisite biodata information for 30 farmers has been completed as of the end of September 2017 and it has boosted farmers' excitement for deciding to plant trees and get them registered. There is also feeling of disappointment for those who did not plant trees for fear of not securing an ownership certificate. The process is continuing and the CSLP will work to make sure that all project-facilitated tree planters are legally registered under this new system.

Training in Cocoa Agroforestry

Through the Environmental Sustainability and Policy for Cocoa Production in Ghana Project (ESP), the COCOBOD is promoting agroforestry in cocoa farms. Thousands of tree seedlings are provided to farmers to integrate into their farms as they receive free cocoa seedlings for planting. Following interaction with the Cocoa Health Extension Division (CHED) of the COCOBOD, which is responsible for the tree seedlings distribution, the CSLP learned that extension staff do not have any knowledge in supporting the farmers to set up such an agroforestry system. The two organizations have agreed that the CSLP will provide the CHED extension staff with the necessary training using the CSLP's Cocoa Shade Tree Cover Restoration training module.

In FY 2017, 25 CHED extension staff (including two women) operating in Jomoro District received two trainings in how to restore trees in cocoa farms and benefit from both the trees and cocoa without harming the cocoa trees. Topics covered included the role of trees in environmental resiliency, considerations for species selection in cocoa shade tree restoration, managing trees for optimum shade in cocoa farms, and insight into farmer managed natural regeneration (FMNR).

Ketakor CRMC Learning Visit to Ankobra

The Ketakor CRMC is one of the 20 CRMCs of the Cape Three Points Cape CREMA. Although the mangrove wetland area only covers just under one hectare, it is a haven for some crocodiles and the CRMC has a high interest in maintaining that population and reversing the indiscriminant mangrove harvesting practices that threaten the forest. To observe first-hand what others in the area are doing to restore and maintain mangroves, the CRMC visited the Ankobra Community Conservation Committee in Ellembelle District that is working with the CSLP's grantee Hen Mpoano.

During the one day visit, the 5-member group was taken to the mangrove nursery where they were shown all the processes required in the mangrove nursery establishment; from obtaining the propagules through filling polybags, fixing the propagules in the bags, watering and the ideal water to ensure success, and the shading regimen required until transplanting. The visitors were excited to learn all this new information and some were highly surprised at the scene of the beautifully arranged mangrove seedlings. At the end of the day, they went back with a strong desire to establish a mangrove nursery and a resolve to be successful.

Mapping of CSLP Intervention Sites

Management of mangrove and wetland resources cannot happen without knowing the location and extent of the resource and having a better knowledge of the content and state of that resource. Hen Mpoano, a CSLP grantee and local NGO, is assisting communities in the Greater Amanzule Wetland area to map their wetland resources. In FY 2017, more than 500 hectares of mangroves were mapped in 9 communities across two districts that span the GAW. With these data, the community conservation committees are organizing community members to implement management activities. For this past year, the focus was mainly on identifying degraded areas, establishing local mangrove nurseries to begin restoration.

Mapping selected farmland sites in the upland areas of the landscape also continued in FY 2017. The areas selected were those where CSLP interventions tree planting and/or FMNR on cocoa farms for shade, or food crop areas that have agroforestry and/or CSA activities were being implemented. A total of 184 hectares of farmland were mapped; 85% of the total was for areas where tree planting in cocoa farms for improving micro climate for cocoa had occurred, the remaining area was associated with agroforestry (nitrogen fixing trees on crop land) and CSA vegetable production.

CSA Vegetable Production Sites Monitored

The 106 farmers (41 men, 65 women) adopting CSA vegetable practices across the coastal landscapes continue to be monitored. The farmers, on their collective 40 hectares, were adopting the best practices for which they received CSLP training at varying rates. The main practices with their adoption rates and primary activities are shown below for the group as whole.

Cultural Practices (57 sites)

- Manual weeding (No herbicides use)
- Planting at recommended distances
- Regular weed control

Pest management (7 sites)

- Adopting IPM
- Organic recipes e.g. chili pepper and soap mixture

Soil Management (47 sites)

- Use of organic fertilizer
- Use of nitrogen fixing plants

The CSLP recognizes that more engagement with farmers is needed in FY 2018 to improve their use of the IPM technologies, including the use of bamboo vinegar being produced locally by the Ankobra Beach Farm in the Nzema East District.

Urban Forestry Monitoring

Urban tree plantings in 24 public junior and senior high schools and nine other community sites within the six coastal districts of the Western Region were monitored during the year to assess survival rates and how the institutions concerned were managing the trees into maturity. 6,248 seedlings were planted comprising five species namely *Acacia mangium*,

Adenanthera parvominia, Senna siamea, Dacryodes klaineana (locally called Adwea which is a fruit tree) and Tetrapleura tetraptera (locally called prekesse which has medicinal and herbal values). There is about a 60% survival rate as of the time of monitoring. Some of the reasons that have been assigned to the low survival rate include the impacts of long distances for transport of the seedlings and their impacts on seedling health, the eating of seedlings by livestock that roam some of the areas where the trees were planted, as well as the stealing of some of the seedlings as was indicated by the way seedlings were dislodged from the soil. Most of the schools are requesting for replacement of the lost seedlings and so there are discussions to determine how to mitigate the potential challenges just discussed while ensuring higher survival rates moving forward.

CSLP Stakeholders and Beneficiaries ID

CSLP is implementing a number of interventions across a wide geographic area with several stakeholders and beneficiaries. In order to avoid double counting, the CSLP designed an identification system and assigned a unique ID to all stakeholders and beneficiaries. The unique identifier categorizes beneficiaries by the district, community locations and also whether they are male or female. Biodata of all beneficiaries of CSLP will be collected and linked to the ID numbers and stored in one database. The system also allows new beneficiaries and stakeholders to be added with ease.

In total, 2,331 beneficiaries have been registered out of which 1,107 are females. These numbers are coming from Shama district (with 137 males and 118 females), Ahanta West (149 males and 187 females), Nzema East (202 males and 160 Females), Ellembelle (437 males and 413 females) and Jomoro (299 males and 229 females). Biodata for all these clients are gradually being collected to update the data over time.

Chiefs and Elders Updated on CSLP Activities

The chiefs, elders and queen mothers are custodians of the land in all the CSLP communities. As traditional custodians of the land, they are the first point of call in the resolution of any land case or dispute. In addition, the traditional authorities are within the chain of command at the local level after district authorities. They need, therefore, to be updated in order for them to stay abreast with activities going on in their areas of jurisdiction. The objective of the meetings with the CSLP are for the chiefs to be informed of all the interventions that have been carried out in their communities and their progress, any issues that require the attention of the chiefs for management or resolution and also share with them upcoming activities which may require their participation. The chiefs are also asked to share with the CSLP any feedback or recommendations related to the implemented activities. Two such meetings were held accordingly in the year in which 26 male chiefs and elders and 6 queen mothers participated in the first one and 23 chiefs and elders with 15 queen mothers participated in the second meeting.

District Assemblies Quarterly Update Meetings

These quarterly update meetings, which normally includes representatives from five of the six coastal districts, are an important opportunity for the CSLP to share updates on ongoing activities from the quarter and to help capture the work in the district work plans. During such update meetings, the assembly staff confirm the reports of activities in which they participated while also learning about other activities of which they may not have been aware or engaged. The quarterly meetings are also used to discuss upcoming activities and events and creates the opportunity for striking collaborative activities between CSLP and other district agencies. During the meeting deliberations, it was discovered that district institutions were in some cases implementing similar activities where they could collaborate among one another and in some cases, they were implementing activities that could complement one another to enhance the benefits to the communities.

Critical CSLP stakeholders that participate in the meetings are the Coordinating/Administration Department, Economic Planning Department, Town and Country Planning Department (TCPD), Community Development & Social Welfare Department, Ghana Education Service (GES), Department of Food and Agriculture (DoFA) and the Business Advisory Centre (BAC). During the sharing, it came to light that different institutions of the same district such as BAC and DoFA were implementing the same activity without knowing of one another's activity. In order to enhance such opportunities for collaboration, it was decided that at each meeting, apart from the presentation by CSLP of implemented activities as well as upcoming activities, one institution will have their officers from the 5 assemblies to also do similar presentations. Following the presentations, recommendations, suggestions and possible collaboration issues are discussed. This structure has created a sort of friendly competition among the district agencies and has

resulted in a stronger sense of participation in the meetings. On the average, 27 males and 7 female officers participated in these meetings. It should be noted that representatives from the STMA are often not present at these meetings given the lack of farmers engaged from the metropolitan area in CSLP interventions.

Western Region Stakeholders Meetings

The regional stakeholders are the officers who have the oversight responsibility for all the district stakeholders within the districts as well as the coordinating directorate of the Western Region. The CSLP therefore engages with the regional heads and shares updates with them to ensure that CSLP activities support Western Region priorities. Regional institutions that are involved in the meetings are Ministry of Food and Agriculture (MoFA), National Board for Small Scale Industries (NBSSI) which is responsible for the BAC, Economic Planning Unit, Ghana Education Service, Environmental Protection Agency (EPA), Town and Country Planning Department (TCPD) and the Forestry Commission (FC) including the Wildlife Division and the Forest Services Division.

The meetings provide very important guidance in dealing with and resolving difficulties with the district stakeholders especially relative to issues of sustainability. The regional stakeholders have helped in resolving problems surrounding the training of district assembly staff in spatial planning and GIS. The regional stakeholders meeting has been used as a platform for constant sharing of CSLP implementation with the regional directorate including the Regional Minister. This ensures that the previous perception that development projects do not respect and recognize the coordinating role of the regional coordinating council is dispelled.

Environmental Awareness Creation with Public Schools

Environmental cleanliness is a major concern in Ghana in both the cities and towns. In many locales, refuse dumps are poorly sited and pose dangers to the health of the environment and communities. The CSLP, learning from a previous training of trainers (ToT) for teachers in waste management for the Shama District, organized an additional ToT for female teachers also in the Shama District. The targeting of the female teachers was based on the reason that, at the basic level in the public schools, the female to male ratio is high and in order to touch the core interest of the female students, the female teachers are the best option. 58 female teachers from 29 public basic schools in the Shama District received training entitled, “Gender and the Environment”.

The objectives of the ToT included providing skills for the female teachers to further train students of their respective schools, especially the female students, to understand the concept of gender, environmental issues, and the roles that boys or girls have in efforts to maintain a healthy environment. After the ToT, the female teachers followed it up with the training of 1,055 students, including 523 were females, from 29 public junior high schools. The trainings were monitored by the District Mathematics and Science & Environment Coordinator and the District Girl Child Coordinator. Following the training in the schools, some schools requested for waste bins for use in their schools. Others improvised for waste bins using baskets. Still others sought to resolve erosion channels in their school compounds.

ToT for DoFA Extension Staff

While farmers across the six coastal districts are engaging on CSA vegetable production trainings and adoption, many of the area’s agricultural extension agents still lack the knowledge and skills in such concepts. In order to better ensure long-term support for such initiatives, the CSLP trained 47 extension staff of DoFA as well as 118 lead farmers, chosen by the extension officers from five district assemblies, to learn about CSA best management practices. The goal is to leverage these trainees to further disseminate this new knowledge to scale up the adoption of CSA practices across the region.

Cape Three Points CREMA

While the laws of Ghana dictate that the Cape Three Points CREMA has absolute autonomy and should function and manage their natural resources with minimum influence from any sources including government, once they are within the law, the CREMA is not yet up to the task. Upon interaction with some of the executives, particularly at the CRMC level, it was identified that members lack the knowledge necessary to collaborate with the Wildlife Division of the Forestry Commission which is responsible for CREMAs and the CREMA Executive Committee (CEC).

As a result, the CRMCs, or management bodies of the CREMA, the highest management body of the CREMA decided to organize a number of trainings for 3 CRMCs. The training objective was to promote better understanding among CRMC members on their constitution and its relation to wetland conservation and management. 65 CRMC members from 3 CRMCs, including 44 women, participated in the training. Following the trainings, important decisions were made relative to the wetland resources. One decision was by the Cape Three Points community to clean their wetland area of garbage and also to stop open defecation in the area. In Ketakor, members became newly interested in learning to establish a mangrove nursery for restoring the degraded mangrove. As a result, members of that group completed a study tour to Ankobra Community Conservation Committee mangrove nursery to learn about how to move forward with such an idea.

Yabiw Wetland Management

One key component of the CSLP efforts is to increase sustainable management of mangrove forests along the coast. In Yabiw in the Shama district, education and training on the values and importance of coastal mangroves has yielded positive results. With the guidance of the CSLP, the community developed and adopted a management plan for the mangroves that includes measures to avoid further degradation. Recognizing that the major harvesters of the mangrove are not necessarily from within their own community but rather from adjoining communities such as Shama, Krobo and Anlo Beach, they decided to increase monitoring of the site by establishing a volunteer group for patrols. In addition, the community asked for support from the CSLP to collaborate on educational campaigns in the neighboring communities. The CSLP also leveraged the support from a National Service person to support efforts for wetland management in Yabiw. The service person's support included work with climate change clubs and the mangrove management committee in carrying out awareness and monitoring activities. This support will continue in the new year and further details are provided later in the report. Finally, the community plans to engage commercial harvesters who sell mangrove wood to fish mongers for smoking, on proper harvesting techniques that can reduce impacts on the mangroves while allowing for natural regeneration.

Climate Change Club Members on Study Tour

10 representatives of the Komfoeku Climate Change Club members embarked on a study tour to learn about climate resilient vegetable production, coastal mangrove management and its usefulness to the world at large. The participants included the headmaster of the Komfoeku DA Junior High School, five other Climate Change Club patron teachers and four students (2 boys and 2 girls). Their first visit was to the Ankobra CCC where they were briefed on the values and importance of coastal wetlands by members of the CCC. They were taken to a nearby mangrove forest to see the form of the trees since they were from an inland community where there is no mangrove. They also visited the mangrove nursery where they learned about the purpose of the nursery and the process for raising of the seedlings.

The next visit was the Ankobra Beach Hotel climate resilient and organic vegetable demonstration garden. At the vegetable garden, they learned about why there is a need to avoid the use of chemicals and what environmentally friendly products are used to ensure the vegetables are safe for human consumption and with longer shelf life. The visiting team also visited the brick kiln where bamboo charcoal and vinegar are produced. Back at school, a debriefing was organized where all Climate Change Club members listened to the lessons learned on the trip.



Figure 5. Members of CCC study tour visit mangrove nursery.

Educational Tour for Climate Change Teacher Patrons

The Ankasa Nature Conservation area is an important forest resource that is very highly endowed and located in the Western Region. Covering 509 square kilometers, this protected area falls within an ancient rainforest and is the most biodiverse in Ghana representing the only wet evergreen protected area. It is known to be home to over 800 plant species, including populations of large mammals such as the forest elephant, bongo, leopard, and yellow-backed duiker. As many people in Ghana have little or no knowledge about this important forest, the 27 patron teachers of the school clubs were taken on a tour of the forest to learn about it and share with all the members of the 12 clubs in their schools. It is believed that sharing the values of the resources with many people will likely earn greater support in favor of its conservation and reduce incidences of poaching.

Four New Climate Change Clubs Formed

Four new Climate Change Clubs were formed during the year. All the four new clubs are located in the Shama District and have a total membership of 208 students including 96 girls. The formation of the four new clubs were motivated through the experiences that took place as a result of the ToT for the female teachers and the impact that occurred during the trainings in the schools for the students. All the clubs were inaugurated and have participated in number of trainings and study tours.

Awareness Creation on Wetlands through Video Shows

Most GAW communities know the benefits of the mangrove resources simply by what they use them for—namely building poles, domestic fuelwood for cooking and fish smoking. The resources have historically been managed as a communal resource with limited regard for sustainable use. Any call or announcement for people to participate in any awareness creation event yields very low attendance. Since videos attract lots of people at all times in the local communities, videos were adopted as the means of attracting the people so that the opportunity is created to reach a larger audience. YouTube videos were downloaded and blended with some local videos from areas in the coastal districts and merged into a 30 minute video.

The event for the day began with music, followed by African (mostly Ghanaian) drama videos. Midway in the African drama video, the 30 minute video on the values and importance of wetlands is shown usually with a member of the CCC who is coached doing the commentary on the video. At the end of the wetland video, a short discussion is facilitated by another CCC member, taking lessons from the video, comparing to the local community setting and drawing conclusions on what to be done in the community to follow on. The videos were shown in 10 communities in Jomoro and Ellembelle districts. These events attracted more than 1,500 people including many who would ordinarily have not attended awareness programs on wetlands.

Wetland Monitoring in Yabiw and Akwidaa

The University of Cape Coast has developed wetland monitoring curriculum for junior high schools with the objective to increase the students' interest in the management of coastal wetlands. Lessons are followed on with data collection on ecological and biodiversity indicators as well water quality. The idea is that long term monitoring can lead to understanding the consequences of multiple environmental and anthropogenic stressors on these ecosystems and stress the need for sustainable utilization of the resource for those participating in the monitoring.

CSLP is piloting the curriculum in two communities in Shama District. The piloting is intended to test the suitability of the modules in relationship with the level of the students and to suggest means to improve or enhance its use. Through the University of Cape Coast, two National Service Persons were obtained to support the piloting processes in two communities. During the year, the students were taken through to Module 3 out of the seven modules. Following the completion of their National Service and in order to build on the gains so far, the 2 National Service Persons have been re-engaged to continue the processes. The 3 modules that have been covered so far are:

MODULE 1: Nature, types and importance of wetlands

MODULE 2: Ecology of coastal wetlands

MODULE 3: Biodiversity of wetland ecosystems

In this pilot testing phase of the modules a few issues were noted that require improvement and these have been shared with the University of Cape Coast for updating in future versions.

Spatial Planning Needs of Local Municipal/District Assemblies

From inception until now, the CSLP has acquired a large amount of spatial data from intervention sites from across the six coastal districts. The ultimate goal is to transfer these data to the respective planning departments of the assemblies. In order for these data to be useful, CSLP attempted to build the capacity of the spatial planning officers so that they can interpret, edit and use the data subsequently in reports and other communication documents.

The CSLP, in collaboration with the WRCC TCPD, facilitated training for the staff of some agencies in five of the coastal districts including Jomoro, Ellembelle, Nzema East, Ahanta West and Shama. Institutions whose staff

participated included the DoFA, Ghana Health Service, Community Development & Social Welfare, TCPD and GES. Post training visits to the districts indicated that the training was not being practiced and there were indications that the knowledge was being lost with people requesting for re-training. Even more worrying, was the fact that when it was agreed for a refresher training to take place in some districts, an entirely new set of staff were present from the same institutions. Upon discussing these concerns at the Western region stakeholders meeting, they recommended a dialogue involving the regional stakeholders and the management of each of the districts and CSLP to discuss a solution.

Through the dialogue, it was discovered that spatial planning is now very critical for the planning and reporting activities such that the districts need to give these trainings more attention. The District Coordinating Directors were tasked to become the point of call to coordinate with the heads of departments and select appropriate staff that have computer literacy for such trainings. It was also recommended for CSLP to engage the districts separately to identify the district-by-district specific spatial planning needs and train their staff accordingly.

CSLP has re-engaged all five districts and discussed needs and challenges to be considered in moving forward on this endeavor. There are now agreements on training of core staff within the districts, to consolidate the effort in ensuring success. CSLP has also agreed to provide two GPS units to each of the districts to aid data collection. Since the districts have different equipment and staff abilities, it makes their respective needs also different. The district development needs also influence their spatial planning needs, therefore CSLP is preparing accordingly to respond to meeting the specific needs of each district.

Media Engagement

CSLP interventions within the communities in the six coastal districts in the Western Region are innovative technologies targeted at solving critical problems facing communities in the region. A successful implementation will result in contributing to reducing negative human impacts on the environment while creating a conducive environment for humans and crops and reduce chances of food insecurity and production of unwholesome food. Such innovative ideas mostly require encouragement from all stakeholders to motivate the practitioners to adopt such new ideas. They also require wide circulation and discussion of the ideas on their benefits to stimulate adoption. The media are an important stakeholder to achieve these objectives.

CSLP's media days are set aside as a means of engaging a variety of stakeholders to visit the intervention sites to see and interact with farmers. The media and regional authorities travel to rural communities each year to interact with farmers and gain a better understanding of some of the challenges faced by such households. The media day held in FY 2017, once again created the opportunity for media from print, radio, television and online platforms to directly engage and learn about project interventions. The media day was planned to coincide with the regional stakeholders meeting and enabled eight GoG regional technical officers and eight media personnel, and CSLP and Hen Mpoano staff to visit two communities of the GAW area. The day included visits to Anyanzinli to meet the 45 member CCC, the 5,000 capacity mangrove nursery, and the 2.5 hectare mangrove restoration site as well as a meeting of the 25 member VSLA at Kamgbunli.

World Environment Day 2017

The CSLP celebrated the United Nations Environment Program's World Environment Day that is celebrated on the 5th of June every year since 1972. This year's event was held in Cape Three Points in the Ahanta West District. The global theme was "Connecting People to Nature", however in collaboration with the Forest Services Division and the Wildlife Division, a local theme was chosen as "Our Forest Our Life" and focused on creating awareness on the need to stem the indiscriminate and illegal activities that are perpetuated in the Cape Three Points forest reserve. This reserve is 51 square kilometers and is a Globally Significant



Figure 6. Climate change club members on parade during World Environment Day 2017 at Cape Three Points.

Biodiversity Area (GSBA) and also Important Bird Area (IBA).

The event included representation by the District Coordinating Director who represented the District Chief Executive, the Regional offices of the Forestry Commission's Forest Services Division and the Wildlife Division who educated the public on the importance of the forest and the District Directorate of the GES. There was a brass band procession through the Cape Three Points town by the junior high school and primary school students who carried placards with many thought provoking statements written on them. The procession was followed by a durbar with a cultural display by the Akwidaa SDA junior high school Climate Change Club, speeches by the chief, Forestry Commission and Ahanta West District staff as well as a drama by the Cape Three Points CREMA members and the Akwidaa Climate Change Club members. The last event on the day was a tour into the Cape Three Points Forest Reserve facilitated by the Forestry Commission staff. During the tour, some community members and Forest Guards of the Forestry Commission helped identify trees and their names as well as their uses.

Greater Amanzule Wetland (GAW) Conservation Activities

Table 3. Planned Activities

Activities to be Implemented	Expected Outputs	Achievements	Outstanding Activity
Strengthening Governance within GAW Communities	<ul style="list-style-type: none"> Coordinated and mobilizing wetland activities at the community GAW Traditional Authority is updated on the activities of the GAW GAW District Conservation Committees support wetland management activities 	<ul style="list-style-type: none"> 2 new Community Conservation Committees (CCC) formed GAW CCC members receive training in 6 modules to enable them to function effectively Monitoring visits to CCCs in GAW Learning visits were organized among CCCs to enhance one another's performance Semi-annual meetings organized to update chiefs and elders Quarterly meetings were organized with the 2 district conservation committees 	
Mapping of community wetlands	<ul style="list-style-type: none"> Wetland resources are well managed 	<ul style="list-style-type: none"> 12 GAW communities' wetland resources are mapped 	
Restoration of degraded mangrove wetland areas	<ul style="list-style-type: none"> Mangrove degraded wetland areas are restored to provide both environmental and economic benefits 	<ul style="list-style-type: none"> Metika and Anyanzinli CCC members received training in mangrove nursery establishment Over 5 hectares of degraded mangrove are re-planted in Metika and Anyanzinli Ankobra CCC re-planted over 18 hectares of degraded mangrove through collaboration between the CSLP and the SFMP 	
Livelihood Opportunities are improved in the GAW communities.	<ul style="list-style-type: none"> GAW communities adopt alternative ventures to improve their livelihoods 	<ul style="list-style-type: none"> Planting materials of improved cassava varieties are distributed to GAW community farmers for production 30 farmers are trained in CSA vegetable production 	Marketing opportunities are being explored for the produce

Two New CCCs formed

2 new Community Conservation Committees (CCCs) were formed during the year to bring the total active CCCs in the GAW area to 24. These two new committees are Apataim and Adelekazo which are in the Ajomoro Traditional

Council in the Nzema East District. The GAW focus in the past two years has been in Jomoro and Ellembelle Districts although there are still portions of adjoining mangrove wetlands in some communities in the Nzema East district. The decision to bring on these two communities is based on the presence of pristine mangrove forests which include important populations of crocodiles. While the mangrove forest locations along the Ankobra River, makes them inaccessible or difficult to access, as of late, community members have started visiting the forests to gather periwinkles and mud skippers for subsistence and therefore could come under threat in the near future.

The CCCs are men and women volunteers who have been nominated and elected to represent the community relative to the wetland and to mobilize the rest of the community members for management activities in the wetland. These trainings aim to increase understanding of the importance of mangroves for community members while supporting greater support for sustainable management of the resources. A total of five females and 11 males constitute the membership for Adelekazo while Apataim has 21 males and 12 females.

The CCCs are continually engaged by the Hen Mpoano facilitators despite all the skill development and trainings that they have received. The visits, which create opportunities for the CCC members to share challenges and concerns that they may be facing, also gives the chance for the Hen Mpoano facilitators to provide encouragement and address issues as they may arise. A total of 48 such monitoring visits were carried out during the year.

In order to enhance the performance of CCC members, peer learning was adopted since it is believed that community members learn best among themselves. Kamgbunli and Anyanzinli CCCs were considered as sustained and confident in their mode of organization, deliberation and achievements in terms of restoration of degraded areas. A selection of CCC members from the other 22 CCCs were taken on visits to interact with those 2 relatively successful CCCs and encouraged to continue to engage on such efforts.

GAW Traditional Authorities Updated

A meeting was held with 25 chiefs from the GAW communities including the Paramount Chief of Nzema Manle Traditional Council whose jurisdiction covers the greater part of the GAW area. The chiefs and elders are supposed to receive briefings from the DCCs, however, it was their first time of comprehensive briefing in the year on the activities and implementation of the GAW processes. This covered the formation of the CCCs and the DCCs including their respective functions, the development of the wetland management actions which are community specific, the nurseries establishment and re-planting activities as well as the various livelihood interventions.

GAW District Conservation Committees (DCCs)

The GAW DCCs comprise mainly of district assembly members and staff who by their position and role in the assembly have something to do with the Amanzule wetland. They therefore have membership that includes the District Development Planner, members of the assembly sub-committee responsible for forest, environment and sanitation, the assembly member of the communities adjoining the wetland and the town and country planning officer. The GAW DCCs are responsible for serving as a link between the CCCs at the community level and the Traditional Councils such as Nzema Manle and the responsible District Assembly Sub-Committee by collating the concerns of the CCCs and sharing with the Assembly and the chiefs. They therefore report to the Traditional Councils and the General Assembly. The two DCCs for the Jomoro and Ellembelle districts had two meetings each during the year. In view of transfers of staff, the last meetings were used to update new members of the committees who by their positions become members.

Wetland Resources Mapped

The GAW has received some amount of attention from scientists in Ghana including social scientists. However, what has not been given as much attention is mapping of the area. The maps are very important for a number of reasons including decision making in the management of the resources and also monitoring over years, the impact of human and natural factors on the resources.

During the year, 12 community wetland resources were mapped which brings to a total of 17 communities whose wetland areas are mapped. The mapping begins with a community participatory process where they indicate by sense of sight, the land cover types with a description of whether degraded or intact, shapes and location. It is then followed up with community guides to ground truth the various shapes and digitize the areas using GPS. The maps are then

finalized based on available aerial photos. The land cover types include mangrove forests, swamp forests, waterbodies, and fresh water swamps. Degraded portions of mangrove forests are earmarked with their sizes indicated on the maps which become the target for re-planting. The process created the opportunity for CCC members to be trained in the use of GPS. A future map of these same areas when compared with these ones will give an indication whether the management processes are effective or not. The next seven communities will have their wetlands also mapped.

Ellebelle District			Jomoro District		
Community	Mangrove in good stand (Ha)	Degraded Mangrove (Ha)	Community	Mangrove in Good stand (Ha)	Degraded Mangrove (Ha)
Ebonloa	No Mangrove	-	Ekpu	4.34	1.19
Alloakpoke	No Mangrove	-	Bonyere	57.41	0.48
Allabokazo	2.73	1.11	Mangyea	0.48	0.28
Azulenloanu	89.39	9.83	Old Kabenlasuazo	39.16	2.53
Old Bakanta	128.01	4.19	Egbazo	23.76	1.60
Sanzule	16.54	0.47			
Kamgbunli	34.25	1.83			

Table 4: List of GAW Communities with their Wetland areas Mapped

Re-planting of Degraded Mangrove Areas

As some of the early adopters of the GAW monitoring efforts began to notice degradation of their mangrove forests, restoration activities were undertaken by three communities during the year. Taking advantage of the trainings received in nursery establishment and restoration by Hen Mpoano, these three communities started and raised mangrove seedlings for re-planting. The two nurseries in Anyanzinli and Metika raised 10,000 mangrove seedlings to replant. Anyanzinli re-planted 2.5 hectares out of the total degraded mangrove area of 17.8 hectares. Metika also re-planted 2.7 hectares of degraded area out of a total of 3.7 hectares as they received extra 2,300 mangrove seedlings lifted from the CSLP facilitated mangrove nursery in Yabiw in the Shama District. Through the nursery facilitated by the SFMP in Sanwoma, the Sanwoma CCC also re-planted a total of 18.4 hectares of degraded area. These sites will be monitored by the CSLP enlisted mangrove expert early in FY 2018 to leverage best practices to ensure their success.



Figure 7. Members of community conservation committee in Anyanzinli engaged in mangrove replanting and restoration activities.

Livelihood Opportunities in GAW

Three years ago, cassava became so scarce and expensive that food security within the coastal districts was an issue given the significant role of it in the diets of people in the Western Region. In an assessment to identify alternative livelihoods for the people of the GAW area, a significant number of people signaled an interest in a high yielding and disease resistant improved variety of cassava to grow to alleviate the threat to food security. Through a contact with the Crops Research Institute of Ghana, quantities of three varieties of cassava planting materials were procured and distributed to 91 males and 133 females from 9 communities. The three varieties are “Ampong”, “Sika Bankye” and “Essam Bankye” and they cover total land area of 17 hectares. The farmers received training in the cassava cultivation dubbed “Zero Input Technology” which encourages no use of chemical fertilizer, herbicides or any other. Some of the training topics covered included soil and water management, handling of plant material and planting distances.

2.2 M&E Plan & Implementation Update

FY 2017 was the CSLP's first year of implementation under the Feed the Future Initiative. Compared to its previous three years in the first phase (with climate change funding sources), more emphasis is now being placed on farms as small businesses, sustainable and economic food production and food security. Five additional USAID standard indicators were also added (see Annex 1) to capture progress in these new focal areas.

The M&E Plan was also updated and upgraded to follow the recommendations provided by the project-hired M&E consultant. This adjustment also included the reduction of three output areas to two. One places four key activity areas under Output 1: Increased Incomes from Livelihood Diversification and an additional four activities under Output 2: Improved Environment and Natural Resources Management. Activities and main tasks undertaken within each output are discussed at length in the previous sections of this report.

The CSLP's M&E system has also benefited in FY 2017 by a full time M&E Specialist. In prior years, the monitoring tasks were overseen by the Assistant Director but attended to in detail by the project's Communications Specialist. The benefits of a dedicated specialist for the M&E System have proven useful in helping to standardize inputs to the CSLP's Performance Monitoring Plan and in overall reporting of the diverse details of the project.

Readers will note from the information provided in Annex 1, Summary (of Project) Results to Date that the targets set for the 11 indicators formally tracked were achieved successfully within the +/- range of ten percent preferred by monitoring specialists. In three instances, the target exceeded the preferred range but in each instance the reasons why these happened is logical given the operational parameters. Conversely, two targets fell short of the project's estimate for the fiscal year; in each case they were custom indicators. In one instance, start-up items provided by the project were not provided at the rate originally estimated. This is in line with the CSLP's strategy to decrease the number of physical items it provides for free to project beneficiaries. The project's focus will shift even more in its last two years to coaching and mentoring, and fine-tuning advice as farmers adapt the activities on their own. The start-up items were always intended to have a demonstration value and not be items that beneficiaries could not afford on their own once the value of the activity from using these items was understood.

The last target of Custom Indicator No. 4 that was not achieved, "the number of seedlings surviving of tree seedlings provided by the project" was examined in detail for the first time. The estimated target number was initially erroneously provided. The total number of seedlings planted in the past two years was slightly less than 63,000 and the CSLP was hoping to achieve a 65 percent survival rate; only 52 percent was achieved. There are many reasons for this and project staff suspect that there were also a substantial number that were not actually planted following distribution to the farmers. Regardless of the reasons for the seedlings' demise, more emphasis will be needed to ensure survivability for seedlings provided in the future with project funds; and these will be exclusively urban tree seedlings in the last two years of the project.

Already alluded to above, is the reinforcement of on-going activities for the last two years of project implementation. Nearly all of the activities undertaken by CSLP require behavior change and as a result, require regular reinforcement and monitoring from trusted staff and partners. The long term success and positive outcomes from these activities depends upon this relationship of trust as built by the CSLP team with beneficiaries and partners. The CSLP, using an intensive, local level model that leverages interdisciplinary activities, has seen tremendous success promoting the following activities as a means of creating short, medium and longer-term improved incomes and resiliency for households. There is no intention to deviate from this as it implements activities with all its stakeholders.

Regional and district government officials now regularly inquire about the CSLP's participation and advice as they conduct their business – this is a significant indicator that what the project is undertaking with farmers and communities is taken note of, and is successful in the eyes of local level decision makers. The project and these same GoG officials are also actively engaged to take the steps necessary to ensure the sustainability of project actions after the CSLP's current projected end date two years hence.

3.0 INTEGRATION OF CROSSCUTTING ISSUES AND USAID FORWARD PRIORITIES

3.1 Gender Equality and Female Empowerment

The CSLP's staff benefited from a briefing on the USAID Gender Integration Framework (GIF) on two occasions during the year. The discussions facilitated by the Gender Desk Officer of the Economic Growth Office in the USAID Ghana exposed the staff to gender issues and how they may be addressed to enhance implementation.

A Consultant was selected to conduct a gender assessment and provide strategic recommendations for actions within the project's capabilities focusing on improving/empowering women and youth within their communities during the last two years of the project. The assessment is scheduled to be carried out during the early part of the first quarter of the FY 2018.

3.2 Sustainability Mechanisms (including local solutions and partnerships)

The CSLP Community Assistant (CA) mechanism was originally adopted to enable community members to contribute to mapping of CSLP facilitated intervention sites to feed into monitoring and evaluation data. Over time, it has become an avenue to enhance adoption of practices and behaviors. CAs are community members who started as early adopters of CSLP interventions and were recommended by fellow community members, chiefs and elders. As CSLP beneficiaries and CAs as well, these beneficiaries have participated in many trainings and have become ambassadors of CSLP at the community level. CAs are actively engaged with their own activities and in supporting fellow community members in a wide variety of activities including beekeeping, CSA vegetable production, and tree nursery establishment. In the FY 2018 and onwards, the goal will be to further empower CAs through skill development and confidence building so as to serve as mentors for their neighbors.

The Village Agents (VA) system (originally initiated by CARE International) is a selection of dedicated VSLA members who have also received further training to function as facilitators to support the VSLAs. During the year, 13 VAs who received their first VA training during FY 2016 and then a refresher training in FY 2017. Another group of 30 new VAs were identified from among the VSLAs and trained to begin activities as VAs. All 43 VAs are being supported to perfect themselves in their functions and to aid the various VSLAs across the region.

The VAs and the CAs are important sustainability mechanisms within the communities. Combined with the continuous engagement with regional, district, local and traditional authorities, it is hoped that many of the CSLP interventions will be ultimately sustainable as champions are trained and empowered to carry forward with key activities resulting in a cascading effect in improving livelihoods and adapting to a changing climate.

3.3 Environmental Compliance

CSLP participated in the regional USAID Environmentally Sound Design and Management in Project Implementation workshop in FY 2017. The CSLP was represented by two staff members who provided three one-day trainings for all other staff of CSLP on what they had acquired in the regional workshop. The output of the CSLP training in Environmentally Sound Monitoring and Design was a draft Environmental Monitoring and Mitigation Plan (EMMP) for CSLP that is re-aligned with CSLP's focus in the Feed the Future initiative. It is being finalized to capture the project's FY 2018 Work Plan activities, and following USAID's approval of the latter document, the revised EMMP will be submitted to the AOR for review early in FY 2018.

4.0 STAKEHOLDER PARTICIPATION AND INVOLVEMENT

During the year, the CSLP has continued to foster the strong relationships with the Ghana government agencies both at regional level and at district/municipal/metropolitan levels. Some of these government agencies have participated in field activities with CSLP and serve as important mechanisms for long term sustainability of project interventions. For instance, the DoFA has been involved in the training of community members in livelihood activities such as the beekeeping, snail and mushroom trainings. With the objective of soliciting support from the DoFA Extension agents in

promoting CSA vegetable production, 47 Extension Agents of the DoFA were trained in the year to be able to serve as trainers for other farmers especially in non-CSLP communities.

The regional stakeholders meeting participants have also been very supportive in pursuing the implementation of two critical activities that were stalled. These activities were the training of district staff in spatial planning and GIS as well as the greening of the STMA initiative. The regional TCPD staff has worked tirelessly to get new traction for the take-off of these activities. In addition to the regular communication created through such quarterly meetings, these additional efforts indicate the value of such meetings with regional stakeholders for project success.

There have been several collaboration activities between the CSLP and the UKAid-funded WRCF. The two institutions collaborated and printed environmental education brochures that were used as training material in training 25 Conversation Managers as Training of Trainers (ToT). The Conversation Managers then trained over 200 Community Volunteers who will also train stakeholder groups in 100 communities within the six coastal districts of the Western Region.

Another collaboration effort in development is between the CSLP, Ghana Education Service Directorate of the Western Region, the Regional Office of the Wildlife Division of the Forestry Commission and the Regional Office of the Environmental Protection Agency. A training module has been collaboratively designed with content that covers the individual interests of the various organizations and targets junior high school children across the Jomoro and the Nzema East districts of the Western Region. The trainings will begin in the first quarter of FY 2018.

5.0 LESSONS LEARNED

Several key lessons have become more solidified in FY 2017. These include:

- The CSLP recognizes that the Village Savings and Loan Associations (VSLA) are an effective platform to help roll out other interventions and also serve as a key to incentivize for farmers and landowners the need to incorporate more indigenous species of trees on their land, and also for fisher folk and other farmers to support wetland and mangrove restoration campaigns. In addition, the mechanism can help provide seed monies for a revolving funding mechanism to work towards improved livelihoods. The savings scheme also helps farmers to access timely loans that enhance their economic conditions; e.g. buying additional beehives and certified vegetable seeds.
- Stakeholder buy-in and benediction is critical to success and sustainability over time. The project has been consistent and diligent with stakeholder involvement in the project implementation. This involves joint planning, sharing of approved work plans, active involvement in field activities and quarterly review of activities with regional, district decision-makers and traditional authorities.
- The project has also found that farmers are adopting practices and that their behaviors are changing. Likewise, that the lack of technical know-how and alternative options available to farmers is a driver in the many things that farmers do that can cause harm to their environment. In communities close to wetlands, some community members are voluntarily embarking on mangrove re-planting exercises and leading campaigns against indiscriminate cutting of mangroves. This demonstrates that when farmers and fisher folk are provided the basic and necessary knowledge on natural resources they will decide to support the sustainable management of such resources and make more decisions that are appropriate to the conservation of those resources.

6.0 UPDATES ON ISSUES/COMMENTS RAISED BY AOR FROM THE LAST PROGRESS REPORT

There were no comments or issues raised by the AOR on the last progress report (FY 2017 3rd Quarter Report).

7.0 PLANNED TASKS/INTERVENTIONS FOR THE NEXT REPORTING PERIOD

The activities for FY 2018 build significantly on the experiences, results, challenges and lessons learned in previous years. FY 2018 is the project's second year under Feed the Future funding and additional efforts are being made to contribute to achieving the overall Feed the Future goal. The CSLP will continue its activities (broadly on environment and livelihoods) with farmers, communities, and GoG stakeholders with greater emphasis on food security issues to facilitate poverty reduction and increase resiliency in the coastal districts of Ghana's Western Region. Using the results of the CSLP's recent gender assessment and strategy exercise, more emphasis will also be placed on improving women's participation and empowerment in some project activities.

On livelihoods, the project will reinforce activities on beekeeping with a focus on improved and targeted apiary management and the marketing and processing of honey. In addition, other livelihood and food production areas of organic vegetable production and snail and mushroom production will be further pursued. There will be more educational learning tours for farmers to interact and learn from fellow farmers within the country. In addition, more Trainer of Trainers (ToT) have been planned for Government of Ghana institutions, especially extension staff of the Department of Food and Agriculture (DoFA) to enable more farmers in the region to benefit from the much applauded project interventions. As the Village Savings and Loan Associations (VSLAs) continue to incentivize beneficiaries, additional groups will be formed and existing ones further strengthened with learning and exchange visits and refresher trainings for Village Agents. Detailed literacy, numeracy and business skills trainings will be conducted for members to enhance among others, their record keeping skills. Similar trainings will be organized for organic vegetable producers who are part of enterprise groups to become innovative and better entrepreneurs. A series of food security trainings will be conducted for farmers (mostly women involved in food crop production) to be kept abreast with the relevance of food security and ways of achieving expected results in a reasonable timeframe.

Efforts will also be made towards planting more trees in towns and communities as part of urban forestry practices. This will be done in close partnership with government agencies and traditional authorities. Managers of the coastal urban communities and towns will be coached on management strategies that help improve survivability of trees and enhance green spaces.

To improve environmental education in local communities, the CSLP will work with three government agencies—notably Wildlife Division, the Environmental Protection Agency and the Ghana Education Service—to collectively roll out education on targeted environmental topics in selected public schools. More schools will also be supported to establish farms that promote environmentally friendly practices.

The project will strengthen and consolidate the community-led implementation of wetland management framework in the Greater Amanzule area. It will also support wetland management and monitoring in two other coastal districts and further strengthen collaboration with USAID/Ghana-funded projects at the University of Cape Coast's Center for Coastal Management to train more students in wetland and mangrove conservation. In addition, collaborative efforts will continue with the Sustainable Fisheries Management Project in the area of coastal wetland real-time monitoring and mapping.

These activities respond to the project goal of reducing poverty and increasing resiliency in coastal communities of Ghana's Western Region and are linked directly to the CSLP's 15 indicators (including 5 Feed the Future Indicators) with their established, realistic targets. In all the activities, the CSLP is ensuring appropriate sustainability strategies. The project will also foster improved collaboration with other USAID and donor-funded projects (e.g., West Africa Biodiversity and Climate Change [WA BiCC] Project and the Western Region Coastal Foundation [WRCF]).

ANNEXES

Annex I. Summary Results to Date

Indicator	Baseline		Unit of Measure	FY17 Performance							Comments
	Year	Value		Measure	Annual Target	Q1 Actuals	Q2 Actuals	Q3 Actuals	Q4 Actuals	Annual Actual	
4.8-7 Quantity of greenhouse gas (GHG) emissions, measured in metric tons of CO2e, reduced or sequestered as a result of USG assistance	2014	0	Mt CO2e	7,000,000	0	4,066,852	64,218	3,173,786	7,304,856	104%	
4.8-7a Clean Energy											
4.8-7b Sustainable Landscapes						4,066,852	64,218	3,173,786	7,304,856		
4.8.1-26 Number of hectares of biological significance and/or natural resources under improved NRM as a result of USG assistance	2014	0	Hectares	1,415	450	88.74	314.91	669.38	1,523	108%	More than 1,000 hectares of mangrove areas under various forms of management practices
Biologically significant areas					450	88.74	146.8	669.38	1,355		
All other areas							168.11		168		

4.8.1-29 Number of person hours of training in natural resources management and/or biodiversity conservation supported by USG assistance	2014	0	Number (of person hours)	8,500	1,967.26	3,116	3,282.1	1,658	10,023	118%	In the last three quarters, more hands-on trainings were done in tendering and replanting of mangroves for conservation committee members to help in their mangrove restoration efforts.
4.8.1-29a Number of men hours					1,281.81	2,123.96	1,924.4	1,035.9	6,366		
4.8.1-29b Number of women hours					685.45	992.58	1,356.7	622.1	3,657		
4.8.1-6 Number of people with increased economic benefits derived from sustainable NRM and conservation as a result of USG assistance	2014	0	Number of people	1,200		1,113		465	1,578	132%	More VSLA members accessed loans for diverse economic activities; e.g. buying extra beehives & certified seeds
4.8.1-6a men						372		117	489		
4.8.1-6b women						741		348	1,089		
4.8.2-14 Number of institutions with improved capacity to address climate change issues as a result of USG assistance	2014	0	Number of institutions	75		31	20	25	76	101%	
Sustainable Landscapes, e.g., REDD+ capabilities						31	20	25	76		

4.8.2-29 Number of person hours of training completed in climate change as a result of USG assistance	2014	0	Person-hours	5,000	688.49	1,406	1,737.95	1,495.53	5,328	107%
4.8.2-29a Sustainable landscapes men					349.49	654.43	985	808.16	2,797	
4.8.2-29b Sustainable landscapes women					339	752.42	752.95	687.37	2,532	
EG.3.2-1: Number of individuals who have received USG-supported short-term agricultural sector productivity or food security training	2016	0	Number of people	861	191	291	205	159	846	98%
Type of Individual										
Producers										
Male					66	127	124	72	389	
Female					113	157	69	47	386	
People in government										
Male					7	7	11	37	62	
Female					5	0	1	3	9	

EG.3.2-4: Number of for-profit private enterprises, producers organizations, water users associations, women's groups, trade and business associations and community-based organizations (CBOs) receiving USG food security-related organization development assistance	2016	0	Number of groups	63	0	49	8	7	64	102%	
Type of organization											
Community-based organizations (CBOs)						49	8	7	64		
EG.3.2-17: Number of farmers and others who have applied improved technologies or management practices with USG assistance	2016	0	Number of farmers	344	0	123	115	119	357	104%	
Producers											
Sex											
Male						63	40	47	150		
Female						60	75	72	207		
Technology type											
crop genetics							115		115		
cultural practices						101			101		
pest management						6			6		
soil-related fertility and conservation						16			16		

climate adaptation								32	32		
Commodity				Vegetables -egg plant, okra, pepper, Cassava							
EG.3.2-18: Number of hectares of land under improved technologies or management practices with USG assistance	2016	0	Number of hectares	80	0	14.35	31.5	35.76	82	102%	
Technology type											
crop genetics								13	13		
cultural practices						12.35		10.89	23		
pest management						1.5		1.28	3		
soil-related fertility and conservation						0.5		10.58	11		
irrigation											
climate mitigation							31.5		32		
climate adaptation											
Sex											
Male						9	21	66	96		
Female						4	11	136	151		
Joint											
Commodity				Vegetables -egg plant, okra, pepper, cassava							

EG.3.2-20: Number of for-profit private enterprises, producers organizations, water users associations, women's groups, trade and business associations and community-based organizations (CBOs) that applied improved organization-level technologies or management practices with USG assistance	2016	0	Number of groups	50	0	27	6	18	51	102%	
Type of organization											
Community-based organizations (CBOs)						27	6	18	51		
C-1: Number of person hours of training completed in VSL modules as a result of USG assistance	2016	0	Person-hours	5,000	833.93	255	314.2	4,345.62	5,749	115%	Most trainings were set for Q4. A week-long training for Village Agents (VAs) amounted to more than 1,000 person hours. This was followed by financial education trainings for the VSLAs. The VA supports/facilitates other trainings.
C-1aNumber of men hours					279.22	64.5	83.46	1,868.07	2,295		
C-1bNumber of women hours					554.71	190.5	230.74	2,477.55	3,454		

C-2: Number of community sensitization sessions on climate change issues and/or NRM/bio-diversity conservation as a result of USG assistance	2016	0	Number of sessions	50	16	23	5	10	54	108%	
C-3: Number of persons/institutions receiving start-up items for improved NRM/ bio-diversity conservation as a result of USG assistance	2016	0	Number of persons	600	0	263	10	135	408	68%	The shortfall is due to project strategy to phase out the supply of start-up items.
C-2a men						168	10	48	226		
C-2b women						95	0	61	156		
Institutions								26	26		
C-4: Number of project-planted seedlings surviving as a result of as a result of USG assistance	2016	0	Number of seedlings	65,000				22,880	22,880	52%	The target figure was erroneously recorded. It should have been 65% of the total number planted (62,500), or 40,700

Annex 2. TraiNet Report

Not Applicable

Annex 3. Stories From The Field

CLOSE TO 2,000 STUDENTS PROMOTE PROPER SANITATION IN THEIR COMMUNITIES



Climate change club members clearing weeds in a community during one of their clean up exercises

A total of 1,910 students, comprising 932 boys and 978 girls in 36 public schools in Shama district of Ghana's Western Region have committed themselves to help tackle insanitary conditions that breed disease and cause injuries in their communities. This was a result of the Feed the Future Ghana funded Coastal Sustainable Landscapes Project's (CSLP) follow-on monitoring activities as part of a training of trainers organized in collaboration with the Ghana Education Service for 74 teachers.

The students, led by their teachers and actively supported by officials of the education unit are championing the promotion of proper sanitation conditions through effective behavior change campaigns; especially through clean-up exercises and peer education.

One of their key messages is the use of the 3Rs: REDUCE, REUSE and RECYCLE.

Students in the coastal communities are advocating for open defecation free practices. They are raising awareness about the negative linkages between such deviant behaviors and the outbreak of diseases. Student champions of these efforts believe such practices impact the incomes of their parents as monies which could otherwise be spent on their studies are rather used in the treatment of preventable diseases.

Due to the poor sanitation conditions in Ghana, the first Saturday of every month has been earmarked as National Sanitation Day. The day, declared in 2014 by the Government of Ghana through the Ministry of Local Government and Rural Development, was in response to a cholera outbreak in the country in 2014. It is marked with nationwide clean-up exercise by all residents. A bill is currently before parliament and is expected to be approved soon to ensure individuals and groups who refuse to join the activities on the day are duly prosecuted.

The US Forest Service-managed CSLP has climate change clubs in selected junior high schools within the project's zone of influence and members serve as climate change ambassadors. Clean up exercises are among the frequent activities of the school clubs and are meant to help reduce unsanitary conditions.

The CSLP recognizes the need for proper sanitation as a national duty and continues to support the involvement and contribution of youth groups.

FEMALE FARMERS TAKE LEAD IN CLIMATE SMART VEGETABLE PRODUCTION IN GHANA'S COASTAL COMMUNITIES



Left: A farmer at her organic vegetable farm. **Right:** harvested organic vegetables from the Fawoman community.

Zenabu Ibrahim, a local restaurant operator in Kamgbunli, a coastal community in Ellembele District of Ghana's Western region noted, **"I prefer buying eggplant from CSLP enlisted farmer because I can store the eggplant for more than one month and is still look fresh and in good state. I learnt no agrochemical is added during the production period. In fact, soup prepared from the eggplant is tasty."**

The case of the operator is not different from other Ghanaians; most people prefer organic products but farmers find it difficult to produce due to several factors. However, with the environmentally friendly agricultural practices being advanced by the Feed the Future Ghana funded Coastal Sustainable Landscapes Project (CSLP), managed by the US Forest Service, admirers of organic products have applauded the project and farmers are beginning to reap the economic benefits. The CSLP has facilitated the adoption of Climate Smart Agriculture (CSA) practices by 150 farmers in the project's geographic zone of influence. Among the key environmentally friendly agricultural practices currently adopted by the farmers are the use of improved seeds, application of organic fertilizers and elimination of use of agrochemicals to control pests and diseases. A farmer at Ayawora, Mrs. Comfort Obeng emphasized that, **"with the hands-on trainings by CSLP, I have stopped the slash and burn method of farming and allow the cleared weeds to rot to serve as mulch for my vegetables."**

The CSLP has led the establishment of 14 CSA vegetable enterprise groups with most groups being chaired and dominated by hardworking female farmers. For the first time in the history of their farming practices, members of 10 groups recently purchased improved and certified seeds worth US \$482 from private seed vendors. Prior to this, the farmers used their own seeds which often transferred diseases from the parent plant to the offspring. The enterprise groups have been linked to local markets and in the recently ended 2015/2016 farming season, one group made total sales of US \$9,113 with plans underway to ensure they benefit from linkages to other local markets such as that of the auxiliary supply services in Ghana's oil and gas sector located in the greater Sekondi-Takoradi region.

CSLP EMPOWERS FARMERS TO HARVEST OVER 10 - YEAR OLD COLONIZED BEEHIVE

The USAID funded Coastal Sustainable Landscapes Project (CSLP) has supported farmers to successfully harvest a colonized beehive after 14 years of being abandoned in a half hectare secondary forest. The hive was established by a farmer, Kwesi Nyamekye, with support from a Dutchman, Allan Van Abros in 1998 at Krobo in the Shama District of Ghana's Western Region. Due to inadequate equipment and know-how, it was left in the forest after harvesting in 2003 by Abros.

According to the farmers, the agreement with Abros was for the farmers to provide land space for the hives and be paid some money after harvesting. This informal arrangement received community support and 30 hives were established on farmlands (mainly woodlots) of fifteen farmers. Unfortunately, the dreams were dashed as Allan passed away in 2003 and that led to the collapse of the enterprise. Due to the fact that the apiaries were no longer managed, most of them were lost to bushfires and termites. Later, the Non-Formal Education Unit of the District Assembly provided basic beekeeping training but that did not help the farmers to fully manage their apiaries because they did not have the necessary protective clothing and equipment. Eventually, all the hives were destroyed by termites and bush fires except one.



CSLP Specialist, Kwame Appiah Owusu, demonstrates simple packaging style to beekeepers in Krobo

The hive, with an active honeybee colony, was not been harvested, again because none of the farmers had the appropriate tools and protective clothing to undertake the rather risky activity. In late 2014, the CSLP identified the apiary as an untapped potential for a win-win sustainable livelihood activity in a landscape that needed to be developed. Between 2015 and March 2017, the CSLP built the capacity of nine interested farmers in the community as active beekeepers and supported them in establishing their own apiaries. With hands-on trainings and coaching, the project provided start-up materials such as beehives, beehive stand, bee wax (attractant) and protective clothing (bee suit with attached veil, bee gloves). This effort also resulted in the successful harvest of honey from the 14-year old Kenyan top-bar hive. The harvested and processed honey is currently selling at US\$10 per liter in Shama District. This has not only generated excitement among others in the community but also enhanced motivation among farmers to reconsider beekeeping as a viable, additional livelihood. In addition, such activities serve as an important climate change mitigation activity as it helps to avoid deforestation and/or encourages sustainable management of woodlots.

The US Forest Service managed CSLP has supported over 230 farmers in the six coastal districts of Ghana's Western Region in the setting up of apiaries and continue to promote the activity in its geographic areas of operation.

FEMALE FARMERS EMPOWERED TO HOLD LEADERSHIP POSITIONS



Assuming a leadership role in Ghana, even at the community level, continues to be something often dominated by men. During Ghana's 2016 general election campaigns, there was great public support for increasing the number of women in parliament at the national level. The parliament that began working in January 2017, now includes 35 women out of a total of 275 parliamentarians (an increase of six women from the previous national elections). The US Agency for International Development-funded Coastal Sustainable Landscapes Project (CSLP) is similarly interested in promoting female leaders and is doing so through empowering women in the Western Region. To date, seven of the project's Village Savings and Loan Associations (VSLAs) are chaired and managed by women who had previously not held such a leadership role. Relatedly, women form 80% of the 165 management committee members from the more than 30 VSLA groups facilitated by the CSLP.

The US Forest Service-managed CSLP has also used its Climate Smart Agriculture (CSA) vegetable production activities to mentor other female champions. From 14 CSA vegetable groups with over 150 members, two groups are chaired by women and 60% of management committee members are females. To further support these leaders, CSLP is supporting them with numeracy, literacy and basic record keeping skills to ensure they have the skills and resources available to manage their new found opportunities beyond the life of the project. These female leaders are making their impact felt by effectively managing their groups, serving as role models and transferring new skills in leadership to other women, men and children in their communities. As noted by some of the women, "we now feel empowered in various spheres of life and are poised to attempt greater leadership responsibilities".

Within the past three years, the CSLP has improved the economic benefits of more than 400 female farmers through improved agricultural and livelihood activities using the VSLA as a sustainable financing scheme for other interventions.

A VSLA is a member or community managed group of 15-25 people who save together and take small loans from those savings. Each member has a passbook for recording share purchases (savings) and loans.

Photos: Top: CSLP farmer, Gladys Atsu addressing the media on CSLP's food security intervention Middle: CSLP organic vegetable farmer, Cecilia Tandah receiving award from the CSLP Director on Farmers Day. Bottom: Executives of Nebeyin VSLA at Asonti at a share out meeting.

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57-YEAR OLD FARMER PLANTS OVER 2,000 MANGROVES

Some people believe that “conservation without compensation is conversation.” This is not the case for 57-year old Ibrahim Sunday, a conservation committee chairperson at Kamgbunli in Ellebelle district of Ghana’s Western Region. Re-planting mangroves in degraded wetland areas is his hobby. Over the past two years, he has planted over 2,000 mangrove seedlings and as he put it, **“I am ready to restore the entire mangrove degraded area in Kamgbunli”**. He uses the propagules to replant and tells residents, **“...it is very easy to replant, I pick the propagules on daily basis and plant”**. Mr. Sunday attributes his interest and commitment to this mangrove replanting effort to trainings on wetlands and mangroves conducted by the US Agency for International Development-funded Coastal Sustainable Landscapes Project (CSLP) and its partner, Hen Mpoano (a local NGO).



Mr. Sunday at wetland site



CSLP mangrove nursery site



Mangrove restoration site

Mangrove forests serve as part of Ghana’s natural resources and provide many benefits including habitat for fisheries, monkeys and birds as well as protection against coastal storms. The trees also sequester about five times more carbon per unit area than any other forest ecosystem, including tropical rainforest, which is an important attribute given the global effort to address climate change caused by increased levels of carbon dioxide in the atmosphere. Preserving the important functions of these forests was one of the reasons the US Forest Service-managed CSLP supported conservation of the Greater Amanzule Wetland area in Ellebelle and Jomoro districts as well as selected wetlands in Shama and Ahanta West Districts of the Western Region.

In the Greater Amanzule Wetland area, the CSLP, Hen Mpoano and the Wildlife Division of the Forestry Commission work in 25 coastal communities to help conserve these natural resources. Activities include participatory mapping and ground-truthing of the forests, replanting of degraded sites, training of conservation committees and implementation of supplementary livelihood activities to incentivize conservation. Maps of community wetland resources as well as land use and land cover maps have been produced to show the extent of mangrove cover, areas where mangroves have been degraded and the extent of water bodies. Between 2015 & 2016, more than 20,000 mangrove seedlings were raised and successfully transplanted onto degraded sites. In addition, degraded sites were restored with over 2,000 red mangrove propagules. Currently, the CSLP and its partners have established three nursery sites where over 10,000 high quality mangrove and acacia seedlings are raised for restoration in degraded areas. The acacia woodlot plantation will serve as an alternative source of wood for mangrove harvesters and charcoal producers who harvest mangrove wood for charcoal production.

The CSLP is also collaborating with the Community Resource Management Areas (CREMAs) and the University of Cape Coast (UCC) Centre for Coastal Management in a wetland monitoring effort in Junior High Schools. These efforts are aimed at building co-management capacity of the local communities and district assemblies so that such conservation and restoration efforts can be maintained and strengthened moving forward. Given the importance of mangroves in the Western Region for cultural, social and environmental benefits, efforts such as those of Mr. Sunday are vital to ensuring the future generations can also enjoy the benefits of these incredibly unique ecosystems.

FEMALE FARMER PROMOTES PLANTING OF COMMERCIAL TREES



The loss of forest cover throughout the Western Region of Ghana is caused by clearing of the forests for agricultural purposes, urban expansion, extraction of mineral resources, and for use as fuelwood. The loss of this tree cover can have devastating impacts on soil and water quality and reduce the ability for trees to sequester carbon which can help mitigate impacts of climate change. In order to help address some of these challenges, the USAID-funded Coastal Sustainable Landscapes Project (CSLP), is undertaking a number of activities with farmers throughout the region to maintain existing tree cover and add additional tree cover that can lead to improved soil and water quality and resulting improvements in agricultural productivity and biodiversity.

The US Forest Service-managed project has encouraged conservation of secondary forest patches as sites for establishment of apiaries, integration of tree cover within agricultural fields that can improve soil quality as well as provide additional income sources, and production of vegetables using climate resilient practices. Such activities, as well as practicing farmer managed natural regeneration of important tree species and the production of honey from her beekeeping efforts, has provided farmers such as Yaa Sekyiwaa with greater financial income which is especially important in the off season when her cocoa and coconut production is limited.

“It has not being easy establishing a tree nursery. It is labor intensive and requires greater attention. Some seedlings did not survive and had to be replaced. But I have gained great experience and will increase the size of my nursery by permanently acquiring land for it.”—Yaa Sekyiwaa, pictured above.

Yaa is a 53 year old farmer in the Ellembelle District in Ghana’s Western Region and is the first farmer of the CSLP project to undertake the establishment of a tree nursery as an economic venture. She started in 2016 after recognizing the importance of agroforestry practices based on lessons learned from the project trainings and awareness raising activities. By learning of best practices and technologies such as that of agroforestry and tree nursery management, this mother of five was motivated to start a tree nursery. Currently, her tree nursery site has over 400 seedlings of the *Terminalia ivorensis* species (locally called emere) ready for planting and she seeks to raise over US\$200 from the sale of these seedlings. She is optimistic of raising more seedlings as she counts on increasing demand from farmers. Yaa values the importance of trees and notes that; ***“...trees help to make the environment a better place, some rivers are now drying up as people have cut all the trees along the river banks.”***

Given the importance of trees and the challenges farmers have in procuring high quality seedlings, it is encouraging to see farmers such as Yaa, taking the initiative to raise commercial tree seedlings for planting. CSLP hopes this can serve as a long term, small scale enterprise to provide Yaa with an important income source while also promoting tree cover that will improve the environmental conditions in the region.

DEVELOPING ENTREPRENEURS THROUGH VILLAGE SAVINGS AND LOAN ASSOCIATIONS

In an effort to increase her economic resiliency given the high risks associated with dependence on small scale agriculture, 28-year-old mother of two, Grace Alimatu Truba took up apprenticeship in hairdressing. Just prior to her completion from the apprenticeship, Alimatu joined one of the Village Savings and Loan Associations (VSLAs) formed by the USAID funded and US Forest Service managed Coastal Sustainable Landscapes Project (CSLP) in her community, Asonti, in Ghana’s Western Region. With her first loan of \$152, she was able to finance the construction of a hair dressing salon. After successfully repaying the loan, she was able to take an additional one to procure necessary start up items for her new venture. As Alimatu stated, “...***the benefits I have enjoyed from joining the VSLA are very great. Aside my hair salon which is bringing additional income, I also used my savings after our share out to buy roofing sheets to complete another house so my family now feel secured in our two bedrooms***”.



Alimatu at her newly built hair salon

Like Alimatu, many farmers and fisher folks who are members of CSLP’s VSLAs have reported and attributed significant improvement in their economic conditions thanks to the benefits derived from the savings and loans made available through participation in the associations which now number more than 33 across the Western Region. A local Chief of Navrongo (in Jomoro district) and a record keeper in his VSLA, Mr. Walter Cudjoe, purchased four beehives with loan from his group and is obtaining additional income from beekeeping while avoiding deforestation by using a secondary forest for the apiary. Similarly, a farmer in Tweakor No 1 (a

community next to Navrongo) indicated how financial support from the VSLA enabled him to enhance his farming activities to effectively cater for his family and stopped poaching in the Ankasa rainforest, one of the last virgin forests in Ghana which borders his community. A few further examples of some of the results of participation in the VSLAs are noted below.

<i>I became a business woman by buying and selling maize with a loan of \$155 from the VSLA</i>	<i>-Mary Amos</i>
<i>I started selling earrings and clothing with a loan of \$38 and have now expanded the business</i>	<i>-Juliana Doma</i>
<i>With the support of the VSLA, I got money to send my child to the university. I now feel happy to have a child at the tertiary education level</i>	<i>-Comfort Oklety</i>

VSLAs are member or community managed groups of 15-25 people who save together and take small loans from those savings. The CSLP helped establish 7 groups in Asonti which total more than 150 members. All these groups have now completed at least one share out cycle with average total savings of \$3,000 and return on savings between 18-22%. Members are also benefiting from other CSLP interventions such as beekeeping, tree planting/agroforestry and organic vegetable production. Without the USAID intervention, Alimata, Mary, Juliana and many other farmers and fisher folks in Ghana’s Western Region would have found the ability to build economic resiliency and improve their livelihoods that much more difficult.