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***FINAL REPORT ON WETLAND MONITORING ACTIVITIES IN
AKWIDAA COMMUNITY***

Coastal Sustainable Landscapes Project

August 2018

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POSITION: WETLAND COMMUNITY OFFICER



Contents

1. List of figures 1
2. List of tables 1
3. Background 2
4. Introduction 2
5. Methodology 4
6. Result 4
7. Discussions and findings 5
8. Recommendation and conclusion 6

List of figures

Figure 1: CCC members learning about climate smart agricultural practices. 3

Figure 2: CCC members preparing nursery beds on school garden. 3

Figure 3: climate change club members participating in a debate.5

List of tables

Table 1: list of modules and topics covered. 4

Background

The Ghana Coastal Sustainable Landscapes Project (CSLP) is a United States Agency for International Development (USAID) Feed the Future initiative and a U.S. Forest Service-managed intervention being implemented in the six coastal districts of Ghana's Western Region. The project, originally a three-year project (2013-2016) funded with USAID Climate Change monies, was extended initially for another three years through September 2019 with Feed the Future funding, based on successes achieved within the initial phase. It worked to promote low emissions development in Ghana's Western Region by strengthening community-based natural resource management and monitoring, and improving livelihoods in farming and fishing communities.

The project's second phase, under the U.S. government's Feed the Future Initiative, had a specific objective to reduce poverty and increase resiliency in the target communities through improved natural resource management, livelihood diversification, value chain development, and ecosystem conservation and restoration. The project interventions covered 43 core coastal communities with smallholder farmers and fisher folks as the main beneficiaries. In total, project actions of one sort or another had reached more than 82 communities as of early June 2018.

The interventions of the CSLP were guided by two main outcomes: (i) increased incomes from livelihood diversification and, (ii) improved environment and natural resource management. Specific activities included agroforestry and forestry best practices, short- and medium-term livelihood improvement activities (e.g. beekeeping, climate smart agricultural, CSA, vegetable production), on-farm tree planting of commercial and agroforestry species and management of greening areas / urban greeneries. Others included wetland/mangrove conservation, spatial planning, Village Savings and Loan Associations (VSLAs) and youth engagement (via formation of environmental clubs in public schools).

The CSLP used in-field consultations, targeted trainings, strategic capacity building, detailed technical assistance, and participation in institutional/policy level discussions and workshops based on field-level experience to achieve project objectives.

Introduction

The Akwidaa community is a coastal community in the Ahanta west district in the western region of Ghana, about 8.1km from cape three points which is the southernmost part of Ghana.

The notion among local folks had been that wetlands are waste lands and therefore used as refuse dumps in most cases and due to the natural regenerative nature of mangroves, their protection and preservation has been out of the question despite the direct benefits that they derive from them. However, contrary to these notions wetlands are critical parts of our natural environment as a result of the important range of environmental, social and economic services they provide. Wetlands provide services such as protection of shoreline from wave actions, flood attenuations, absorption of pollutants to improve water quality and provision of habitats for animals and plants.

Mangrove wetlands provide an important benefit to the fisheries industry since they serve as breeding and feeding grounds for fishes and other fresh water and marine water species hence the need to protect them.

Mangroves also have the ability to sequester carbon which prevent accumulation of carbon dioxide in the atmosphere and in effect helps to prevent global warming.

The coastal sustainable landscapes project in partnership with the University of Cape Coast's Department of Fisheries and Aquatic Science have been involved in Coastal wetland education in the community of Akwidaa for the past three years, a partnership in which pupils of Akwidaa SDA JHS environmental/ climate change club have been beneficiaries over the years in line with CSLP's youth

involvement activities. The Akwidaa community was selected due to the vast mangrove wetland in the area and the community being a coastal community has the majority of its population being fishermen or dependent on the fisheries in the area.

The wetland education is with the purpose of helping community members and pupils to get a good understanding of the social, economic and ecological benefits and importance of the wetland in the area and to promote the need to protect and sustainably manage them. In order to curb or eliminate the negative practices over the years such as indiscriminate cutting of mangrove for charcoal production and smoking of fish, uncontrolled killing of wildlife for food, use of dynamite and mosquito nets for fishing in the estuary and dumping of refuse and open defecation in the wetland in which the youth were the main perpetrators, The environmental club/climate change club members in the Akwidaa SDA JHS were engaged for the purpose, using the Coastal Wetlands Education Curriculum developed by the department of fisheries and Aquatic science of the University of Cape Coast as the main Academic/instructional material to educate them.

To further promote the wetland education and to ensure that the right knowledge is been transferred to the pupils, the CSLP designated a national service person from the university of cape coast to supervise and also help teachers in training pupils in wetland monitoring activities which has continued in the space of two years thus one year of national service and one year of employment with CSLP serving as Wetland Community Officer for the area from September 2016-august 2018 being the end of the project.

The objectives of the Coastal Wetlands Education Curriculum was to

1. To create awareness among students and local communities on the importance of wetlands
2. To develop capacity of students and communities to monitor and assess the health of coastal wetlands
3. To inculcate in communities and other stakeholders the need for the protection, conservation and restoration of wetlands.

As activities progressed along the line, the school club members were introduce to the CSLP's climate smart agricultural practice which has had some success stories, has provided the youth with economical and environmentally friendly ways of farming and eventually the school now has a garden where climate smart agriculture practices are applied.



Figure 1: CCC members learning about climate Smart agricultural practices.

Figure 2: CCC members preparing nursery beds on school Garden.

Methodology

The Curriculum contains 7 modules presented in two versions thus the teacher's guide and the pupils guide and it covers several topics on coastal wetlands.

Table 1: list of modules and topics covered

Modules	Topics treated
Module 1	Nature, types and importance of wetlands
Module 2	Ecology of coastal wetlands
Module 3	Biodiversity of wetland ecosystems
Module 4	Threats to wetlands
Module 5	Water quality and invertebrate monitoring
Module 6	Fisheries monitoring
Module 7	Wildlife monitoring in module

These modules were taught under regular class room condition in the Akwidaa SDA JHS on regular basis specifically on Fridays after 12 noon which was the designated time for club meetings. Each classroom session lasted a maximum of an hour and thirty minutes. The environmental club/ climate change club members were the main participants in these sessions and each member had the option to join out of their own free will. The modules were taught by the trained teachers and the wetland community officer in the area.

After each module was completed, there was a review exercise conducted to test the pupils understanding of the completed module either by verbally asking questions pertaining to the topics covered in the module, through written group exercises which are presented to the facilitator for assessment, debates or quizzes.

Field or site visits were also used as tools to train pupils. In this case pupils are sent to the wetland area base on the topic been treated and are allowed to familiarize with real life experiences in the wetland so as to get a better understanding of what was been taught in class.

The teachers who were in charge of facilitating the wetland curriculum trainings were also trained periodically in order to keep them abreast with the topics covered in the modules. First two trainings were in the University Of Cape Coast and the recent one took place at the CSLP conference room in Takoradi.

In respect to climate smart agricultural practices, class room trainings were held at the introductory phase followed by hands-on trainings on the school garden. Pupils were also trained on integrated pest management practices at the later phase

Result

In the space of three years, four teachers have been trained in all, two teachers were trained at the university of cape coast on modules one, two three and four. And for the module five, six and seven, two more teachers were added and trained. These trainings have helped deepen their understanding of the curriculum over the period and has given them a level of confidence to carryout classroom trainings effectively.

Over 100 pupils have also gone through the regular wetland trainings and based on assessment of written exercises, quizzes, debates and field tests, it is clear that pupils have a fair understanding of the topics covered in the curriculum and are now playing the role of educators in the community.



Figure 3: climate change club members participating in a debate.

Initially pupils were hesitant in addressing real life problems concerning the mangrove wetland in their area however with time they now willingly take part in discussions to point out critical problems threatening the wetland and also brainstorm for solutions to the problems.

Before the inception of the school garden which also served as the CSLP'S climate smart agriculture demonstrational site, the pupils were of the notion that the big sized tomatoes could not grow on their land and were in doubt if any crop could grow without the application of organic fertilizer because they believed that inorganic fertilizers have been applied on the land for a long time hence crops will not do well on the land if the fertilizers are not applied on them. However the notions have change since large sized tomatoes were grown successfully on the school garden without the application of inorganic fertilizers.

Discussions and Findings

During the project it was realized that the pupils who started the curriculum from module one at the inception did not have the chance to continue to the seventh module because they had completed school before module four was completed. Those who joined along the way may also not get the chance to know the content of the modules that were taught before they joined and therefore the full knowledge may not have been successfully transferred to the pupils at the end of the day.

On the other hand some of the teachers/facilitators did not have a good understanding of certain concept of the module hence they showed a lack of confidence at some point and that eventually led to them not showing interest in club activities.

Even though there was an apportioned day and time for club activities in the school, often the school uses the club meeting times for extracurricular activities such as sports and other projects which disrupt training sessions planned by the facilitators.

Recommendation and conclusion

More frequent training of trainers; to help the teachers who facilitate the wetland education training carry out their duties effectively, there should be more contact ours of training for them enough to get familiar with the curriculum since some of them do not have science background in education. This could be in the form of follow up trainings after an initial training on a particular module in the curriculum. This will give them mastery over the topics and help increase their confidence and sustain their interest in club activities.

Target a particular batch of pupils; in order to transfer the complete knowledge in the curriculum to pupils for them to experience all the modules from module 1 to module 7, a particular batch of pupils could be targeted and the trainings structured to help them go through all the seven modules before completing school.

Summary of the curriculum; the curriculum could be summarized to reduce the volume of its content in order to make it easier to teach by the teachers and also that could help the pupils get the whole package of information on the curriculum before completing school.