



**REOPTIMISATION AND REOPERATION STUDY OF THE
AKOSOMBO AND KPONG DAMS PROJECT:
REPORT ON COMMUNITY CONSULTATIONS**

Prepared by
The Centre for African Wetlands

for

THE WATER RESOURCES COMMISSION, GHANA

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The Centre for African Wetlands (CAW) expresses its thanks to the Water Resources Commission (WRC) for the opportunity to be involved in the Re-optimisation and Reoperation of the Akosombo and Kpong Dams Project. The support of the WRC Chief Executive, Mr. Ben Ampomah and the Project Officer, Mr Eric Oforu Antwi is gratefully acknowledged. The Centre also acknowledges the CAW Fellows, Dr. Yaw Opoku-Ankomah, Dr Daniel Nukpezah and Mr. Richard Twum Barimah, as well as the field research assistants, Edem Aku Kwamoa, Peter Obour and Louisa Sawyerr, whose inputs made this study possible.

Executive Summary

Development of rivers for hydropower has conventionally come at a high cost in terms of riverine livelihoods and ecosystems. The Akosombo dam, which was completed in 1965, formed Lake Volta, the largest man-made water storage reservoir in Africa and the world. Despite the huge national benefits, the Akosombo and Kpong dams have impacted on the livelihoods of the downstream communities and the physical ecosystem processes on which they depend, resulting in i) a reduction in floodplain agriculture; ii) explosion in the growth of exotic weeds, iii) increase in the snail vectors for the debilitating bilharzias, iv) the formation of a permanent sandbar at the estuary, and v) near collapse of the shell fish industry. The overall effect of the loss of agriculture, clam picking and other fishing activities is increased poverty and a dramatic shift in income generating activities.

The long term goal of the project “*Reoptimisation and Reoperation Study of Akosombo and Kpong Dams*” led by the Water Resources Commission (WRC) is to contribute to economic growth and poverty reduction through improvement of downstream ecosystem functions and restoration of food systems and livelihoods by re-operating the Akosombo and Kpong dams.

The Centre for African Wetlands (CAW) was contracted to lead in the consultations with the downstream communities and report back to the WRC. The specific objectives of the community consultations were to provide a platform to create awareness of the project, manage the expectations of the downstream communities, provide feedback on the project on current downstream issues and seek the consent of the communities on the project.

A total of 426 community members from 87 communities participated in eight consultative meetings of the downstream communities. These were made up of 326 males and 114 females constituting 73% males and 27% females respectively. The consultative meetings were held between 2nd May 2013 and 1st August 2013. Following the stakeholder consultative meetings, a rapid response survey was carried out, with the aim of finding out if, on the basis of the discussions held participants still wanted the project to continue. This was based on a simple questionnaire designed to elicit responses on participants’ perception of the project. A total of 151 people responded to the questionnaire.

The key issues and concerns raised by the communities included the following:

- Unpredictable Flooding;
- Loss of natural floodplains;
- Growth of aquatic weeds which also causes vegetation decay, fish kills and impede smooth flow of river;
- Fishing industry adversely affected;
- Reduction in Onchocerciasis (River blindness);
- Increase in Bilharzias;
- Increase in nutrient content of the river as a result of discharge of waste;
- Increased salinization;
- No more sand to filter the water;
- Reduced yield from farmlands;
- Reduction in rainfall due to loss of tree covers;

- Development of sand bars and dunes;
- Widened gender disparities.

The results of the Rapid Response Survey showed that although respondents had some reservation regarding the project, they overwhelmingly want the project to come on. Further, respondents would do everything to ensure the success of the project as long as the project would be beneficial to the community. Indeed, 73.5% of respondents agreed strongly that the project will be beneficial to the community.

The findings from the consultative meetings showed clearly that following the damming of the River Volta, livelihood, health and environment had been affected resulting in poverty of the downstream communities.

Suggestions to alleviate poverty in the study area provided by participants included the following:

- Removal of the sandbar at the estuary;
- Dredging of the creeks and the lagoons;
- Weed harvesters required to harvest the aquatic weeds that have infested the rivers;
- Provision of irrigation as a temporally measure to alleviate farmers' suffering;
- Institution of an early warning systems to ensure that communities are warned way in advance (3 weeks before opening of spillgates to avert possible disaster; preferably this should be done during the day);
- Establishment of a data collection stations at vantage points;
- Promotion of cage farming;
- Provision of credit facilities to the communities;
- Resettlement schemes for affected communities;
- Strengthening of communication and information flow.

A number of the issues of concern expressed by the communities were beyond the scope of what the reoperation and re-optimization project seeks to achieve. Also some of the issues and concerns of the communities would impact on the sustainability of community livelihoods. It is recommended that a comprehensive development strategy should be developed to solve the serious problems of poverty and other social problems facing the communities. Re-optimization should only be part of an overall strategy targeted at poverty reduction and sustainable livelihoods of the communities of the Lower Volta. The communities raised several concerns in relation to the reoperation project. The consultative meeting showed that to the extent that the project would solve the problems of inequality, poverty, disease and loss of livelihood in the areas the communities whole heartedly welcomed the project. Indeed the Rapid Response Survey (RRS) carried out showed overwhelming support for the project by the communities.

Introduction

1.1 Project Background

Development of rivers for hydropower has conventionally come at a high cost in terms of riverine livelihoods and ecosystems. The Akosombo dam, which was completed in 1965, formed Lake Volta, the largest man-made water storage reservoir in Africa and the world. In addition to power generation, Akosombo provides some degree of flood protection due to its very large storage capacity relative to inflow, and Kpong supplies a small amount of irrigation for rice cultivation. Navigation and a robust lake fishery are important additional benefits of the reservoirs.

Dams alter the natural river flows by storing and releasing water in rhythm with the patterns of electricity demand in the service area, rather than the seasonal patterns of rainfall and runoff in the catchment area. The effect on the downstream flow pattern is to reduce the peak flows and increase the base flows, effectively eliminating the dynamic interactions between the river and its floodplains, wetlands, deltas, estuaries, mangrove and beach environments. These are the great engines of riverine and marine biodiversity and the environmental services that they provide for the myriad of human livelihoods that are dependent upon a fully-functioning river system.

Thus, the Akosombo and Kpong dams have impacted on the livelihoods of the downstream communities and the physical ecosystem processes on which they depend. The results have been: i) a reduction in floodplain agriculture as natural flooding no longer leaves rich alluvial deposits that improve soil fertility; ii) explosion in the growth of exotic weeds that have choked off the once lucrative shell fishery; iii) increase in the snail vectors for the debilitating bilharzias, and iv) the formation of a permanent sandbar at the estuary. The shellfish have been hit particularly hard; before the dam, there was a robust clam fishery downstream of the dam. Due to the vegetation and water quality changes, clam picking, an occupation mainly dominated by women, has almost been eliminated. Many other commercially valuable aquatic species have declined severely or disappeared altogether. These include the blue crab, shrimps, shad and herring.

The overall effect of the loss of agriculture, clam picking, and fishing activities has resulted in increased poverty and led to a dramatic shift in income generating activities.

The long term goal of the “*Reoptimisation and Reoperation Study of Akosombo and Kpong Dams Project*” is to contribute to economic growth and poverty reduction through improvement of downstream ecosystem functions and livelihoods.

In relation to this project, the Centre for African Wetlands (CAW) was contracted to play a lead role in consulting the downstream communities and report back to the Water Resources Commission. The specific objectives of the community consultations were to provide a platform to create awareness of the project, manage the expectations of the downstream communities, provide feedback to the project on current downstream issues and seek the consent of the communities for the re-optimization project. This report focuses on the outcomes from consultations held with communities of the Lower Volta between April and August 2013.

1.2 Project Area

The project area covers the Lower Volta Basin. This is the area downstream of the Akosombo and Kpong dams down to the estuary of the Volta River, with relief below 100 m. The basin

is within the southern savannah climatic zone in Ghana, and like most part of the coastal basin, the Lower Volta experiences two rainy seasons from March to November with peaks in May/June and October. A map of the project area, showing district capitals and communities involved in the consultative meetings is provided in Figure 1.

2. Process and methods used for the community consultations

2.1 Reconnaissance visits

A reconnaissance visit was paid to the project area in April 2013. This visit was preceded by a preparatory phase where the project core team members met to discuss the project execution. A map of the downstream communities was obtained and after thorough discussions, 87 out of 437 communities were selected for the community entry and consultations¹. The communities were chosen strategically to ensure geographic spread in the eight districts in the Lower Volta (see map - Figure 1). Thus the methodology used was partly stratified (sampling based on districts) and purposive. Further, the choice of the 87 communities was partly guided by closeness to the Lower Volta River, accessibility by vehicle, size, and peculiar challenges of the communities, and the perceived vulnerability of the communities to the effects of the dam creation.

In selecting the communities, chiefs and opinion leaders of the area were consulted during the reconnaissance visits to confirm traditional boundaries and generally validate the preselected communities. The chiefs and opinion leaders were respected people in the communities considered to have high integrity and some authority; they were also well versed in local geography, culture and the peculiar challenges of the study area. The reconnaissance visits confirmed the appropriateness of the 87 communities selected for the study.

2.2 Community entry

This phase of the project was very vital and strategic to the overall success of the project. As a way of seeking the consent of the communities, giving them prior information about the project and also in conformity with the Ghanaian cultural norms and practices, there was the need to undertake community entry to all the 87 towns and villages. Even though the exercise was a bit tedious, considering the geographical spread of the communities, it served a very good purpose. Distinct from the consultative meetings, the community entry involved advance interaction with key people in the community prior to the consultative meetings. The community entry targeted key influential people and opinion leaders who could help propagate the objectives of the project and help in the selection of the community representatives to participate in the community consultative meetings. The categories of stakeholders community entry are listed below;

- Paramount and Local Chiefs
- Opinion Leaders
- Assembly Members
- Municipal and District Assembly Officials

Thus, typically before any consultative meeting, an advanced team was sent to the communities to inform such stakeholders of the scheduled consultative meeting and to ask

¹ According to the Volta River Authority's Emergency Preparedness Plan Report of 2010, there are 437 communities downstream of the Akosombo dam

them to invite five representatives of each community to the consultative meeting. The key factors considered in selecting the five included:

- Age: The guiding principle recommended was that the selection should reflect the general demographic profile of the community and should not be skewed towards one particular age group.
- Gender: A healthy proportion of male and female was recommended.
- Influence: Key influential people and opinion leaders were to be considered
- Knowledge: People knowledgeable about peculiarities of the communities in relation to the damming of the river Volta
- Status: To the extent possible the five were to include people with status in the community such as chiefs, queen mothers and community elders.

As custom demands, the advance teams “entered the communities” by presenting two bottles of schnapps to the community leader (normally the local chief) (Picture 1). The team then explained the project concept and invited the community representatives through the leader to the consultative meeting. The venue and time of the consultative meeting were also communicated to the leaders during the community entry. Importantly also, the advance team educated the leaders on the importance of having gender balance in the delegation sent to the consultative meeting and mentioned that the team was particularly keen on hearing the perspective of women on issues at the meetings as, traditionally, the views of women tended to be marginalized.



Picture 1 CAW Fellow Richard Twum-Barimah presenting customary drinks to elders of a community

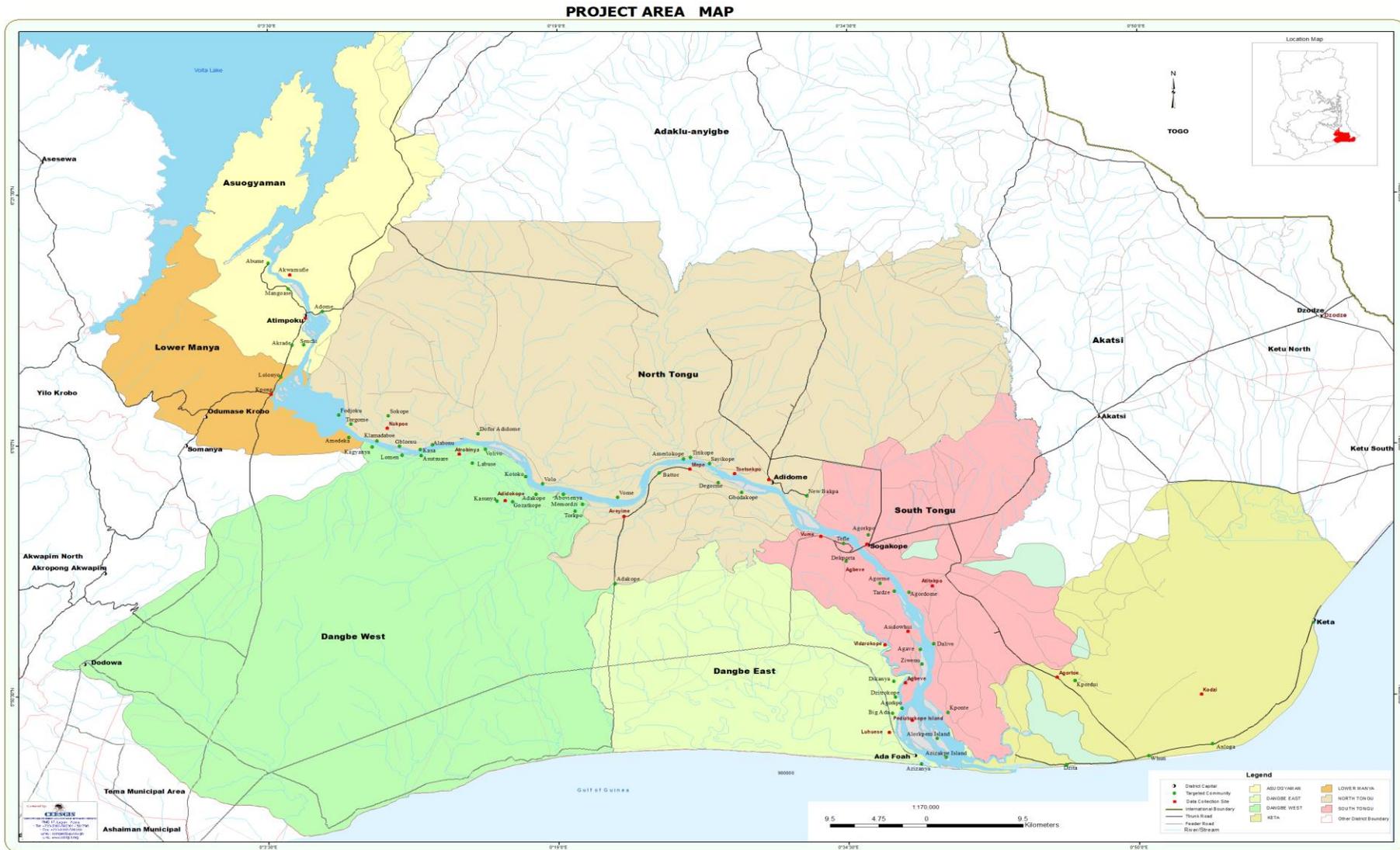


Figure 1 Map of Project Area showing districts, towns and villages in the downstream area

2.3 Consultative meetings

Eight consultative meetings were held on different dates in eight districts in the Lower Volta area covering a total of 87 communities. The eight comprised Asuogyaman, Lower Manya Krobo, Dangme West (Now Shai Osudoku), Dangme East, North Tongu, Central Tongu, South Tongu and Keta (Table 1). A minimum of five people from each community were invited to the meetings. The approach used for the consultation was mainly stakeholder group discussion. At the consultative meetings itself, the key focus was to create awareness of the project, manage the expectations of the downstream communities and to gather feedback from the communities on current downstream issues for the re-optimization project. Such consultative meetings were typically chaired by a traditional ruler or a community leader and started with a prayer. This was followed by introduction of participants, welcome address by the district office representative and then highlights of the project concept by the Team of Resource Persons from the Centre for African Wetlands.

In all the consultative meetings, the resource persons emphasized the fact that conducting research into the various issues facing the communities would provide scientific basis to solving the problems within the communities that had resulted from the creation of the dam. Following this, the meetings were opened for a general discussion in which participants had the opportunity to express their views and any concerns related to the project. Minutes of the proceedings of the individual consultative meetings are presented in Appendix 1 (a)-(h).

Following the stakeholder consultative meeting, a rapid response survey was carried out in all the districts except Asuogyaman. The decision for a rapid response survey was taken after the consultative meeting at Asuogyaman when it became clear from the interactions that such a survey would further validate the findings of the consultations. The objective was to find out if, following the presentations and discussions, participants still wanted the project to proceed. This was based on a simple questionnaire designed to elicit responses on participant perception of the project. A total of 151 people responded to the questionnaire (see Appendix 2 for a sample of the questionnaire used).

2.4 Validation Durbars

Following the consultative meetings, two separate durbars were organized for selected downstream communities who had participated in the community consultation sessions. The durbars were organized to disseminate information and validate the findings obtained from representatives during interactions at the community consultation meetings. Key issues and concerns raised during the community consultation meetings were presented to invited representatives of selected communities to receive their final assent or make corrections.

The first durbar was organized on Tuesday, 4th February, 2014 for selected downstream communities in the northern section of the lower Volta Basin at Atimpoku; and the second on Wednesday, 5th February, 2014 at Sogakope for selected communities in the southern section. Five representatives each from four traditional areas and three district assembly officials from Asuogyaman District Assembly were present at the meeting organized on 4th February, 2014 at Atimpoku. The four traditional areas are Asutsuare, Asuogyaman, Lower Manya Krobo and Natriku. Twenty – three representatives from five traditional areas as well as three district assembly officials from the Sogakope District Assembly were present at the meeting held on the 5th of February, 2014 at Sogakope. Five representatives each were invited from

five traditional areas at the southern section downstream of the dam, namely, Ada, Adidome, Aveyime/Battor, Keta, and Sogakope.

Table 1: Summary details of communities, dates and participation in the consultative meetings

District	No. of Towns/Villages	Names of Towns/Villages	Date of meeting	Participants		Total
				Male	Female	
Asuogyaman	7	Abume, Adome, Akrade, Atimpoku, Akwamufie, Mangoase, Senchi	Thursday, 2nd May, 2013	21	9	30
Dangme West (Shai-Osudoku)	14	Abuvienya, Adakope, Asutsuare, Atrobinga, Doffor, Dzorkpor, Gozatkope, Kadjanya/Dormelian, Kassunya, Kotoko, Lubuse, Natriku, Tokpo, Volivo	Thursday, 27th June, 2013	61	6	67
Lower Manya Krobo	3	Amedeka, Kpong, Lolonyo	Thursday, 4th July, 2013	14	1	15
North Tongu	16	Alabonu, Atitekpo, Aveyime, Azaglokope, Battor, Daledorkope, Degorme, Fodjoku, Gbadasikope, Gblormu, Kasa, Klamadaboe, Mepe, Nakpoe, Sokope, Torgorme	Wednesday, 17th July, 2013	53	27	80
Central Tongu	10	Adidome, Amerlokope, Doffor Adidome, Dugame Mafi, Husekope, New Bakpa, Sayikope, Titikope, Tsetsekpo, Volo	Thursday, 18th July, 2013	35	15	50
Dangme East (Ada East)	14	Ada Foah, Agorkpo, Alorkpem Island, Amesikpe Island, Aiflive Island, Azizakpe island, Big Ada, Dikanya, Dzitrokope, Luhuese, Pediatorkope Island, Tuanikope Island, Azizaya, Vidzrokope	Tuesday, 18th July, 2013	53	17	70
South Tongu	16	Agave, Agbeve, Agordome, Agorme, Agorkpo, Asidowhui, Dalive, Dekporta, Gbenuakope, Kponte, Sogakope, Sokpoe, Tadze, Tefle, Vume, Ziwenu	Wednesday, 31st July, 2013	51	28	79
Keta	7	Agortoe, Anloga, Dzita, Whuti, Keta, Kodzi, Kpordui	Thursday, 1st August, 2013	24	11	35

The outcome of interactions with traditional representatives during the community consultation meetings were summarized and presented in PowerPoint at the durbars. The outcomes were categorized into “direct key issues” (those relating directly to the project) and “remote concerns”. The results from the rapid assessment surveys conducted were also presented. The PowerPoint presentations at Atimpoku and Sogakope were made by Mr. Richard Twum-Barimah while he presided over the interaction at Atimpoku. The interactions at Sogakope were presided over by Dr. Daniel Nukpezah.

3. Findings from the Community Consultations

A total of 426 community members from 87 communities participated in the consultative meetings. This was made up of 326 males (73%) and 114 females (27%). The consultative meetings were held between 2nd May 2013 and 1st August 2013. The questions and concerns posed by participants in all eight consultative meetings are discussed under broad headings in the following sections.

Pre-dam and early post-dam issues

Participants decried the unpredictable flooding situation in terms of duration and period of occurrence and explained that flooding was more predictive (once a year) before the impoundment of the river and farmers were able to plan their farming activities. Some of the participants mentioned that no compensation package has been offered to communities affected by the construction of the dam. There was also a perceived indifference by the Volta River Authority (VRA) to the plight of the communities.

Education & Job opportunities

Most of the participants stated that the district lacked educational facilities to enable the youth to acquire formal education. A small number of the participants were of the view that there was no need to change the flow rate as they had already adapted to the current regime, but suggested the establishment of more schools and industries for the youth.

Livelihood Information

There was some consensus that people had adapted to the current flow regime of the river and some people had established businesses along the river banks. A change in the flow rate therefore may cause destruction of property. There was also the issue of possible re-location to a new site as was done in the early post-impoundment days in case flooding is re-introduced.

The participants suggested that if there was going to be a change in the flow regime, the communities should be made aware of the periods of flooding so that those involved in aquaculture in the Lake, in particular, will not suffer losses. Participants reported some of the negative impacts of the spread of aquatic weeds (Picture 2) on the socio-economic activities of the community. These included impeding the smooth flow of water; vegetation decay processes that resulted in foul smell of the water making it unpleasant for use for bathing and also led to fish deaths. At Atimpoku (Asuogyaman) the fishery type that had been harvested by the community included Tilapia, lobster and the West African pygmy herring (“one man thousand”). The creation of the Akosombo and Kpong dams had affected the fishing industry resulting in a decline in the catches of lobster and other shell fish.



Picture 2 Invasive aquatic weeds on the banks of the Volta Lake

Health

The participants noted that there has been a reduction in the prevalence of Onchocerciasis (River Blindness) while the prevalence of Schistosomiasis had increased. The lack of a proper drainage system in the district also was blamed for the discharge of waste into the lake which resulted in an increase in the nutrient content of the water and subsequently led to the explosion of weed growth in the river.

Miscellaneous

Participants also outlined a number of developments that they had observed post dam creation. These included loss of natural floodplain, salinization which was reported to have affected the shallot farming industry negatively in Keta and its environs. Furthermore participants expressed the view that there had been gender disparities and increased social problems such as prostitution as a result of loss of livelihoods. The participants also raised several concerns that were considered to be outside the project mandate. These included inadequate educational facilities, high unemployment rate, high electricity bills, inadequate water and sanitation facilities and communities not directly involved in dam safety measures.

4. Findings from Rapid Response Survey

The findings of the rapid response survey are summarized in Figures 2-5. All the respondents answered in the affirmative to the question “*Do you want the project to come on, and the follow-up question, if yes, will you do everything within your power if you can to ensure the project comes on?*” The results show that respondents overwhelmingly want the project to come on. Further, respondents would do everything to ensure the success of the project as long as the project would be beneficial to the community. From figure 2, 73.5% of respondents strongly agree that the project will be beneficial to the community.

Figure 2: Perception about potential benefits of the project

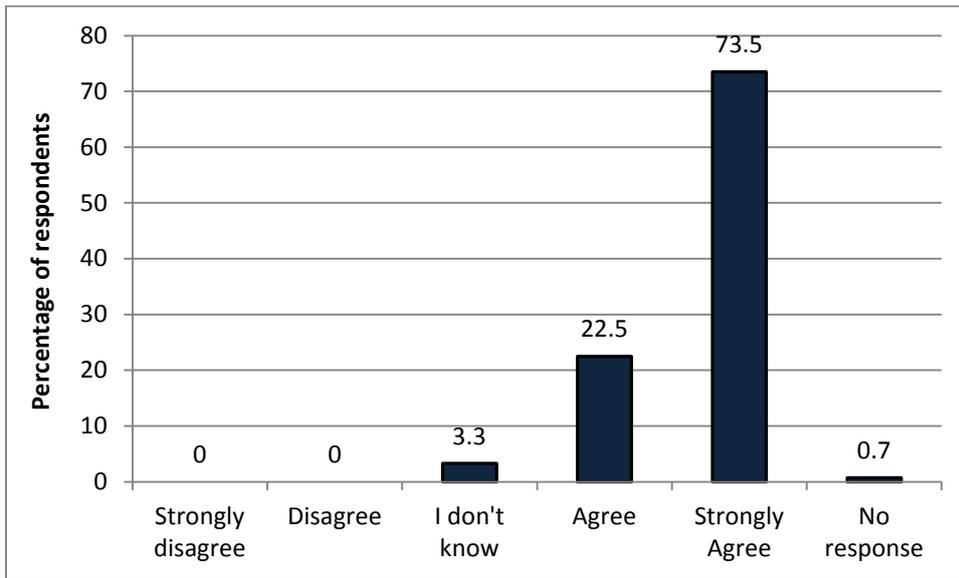


Figure 3: Participants Readiness/Willingness to tell others about the project

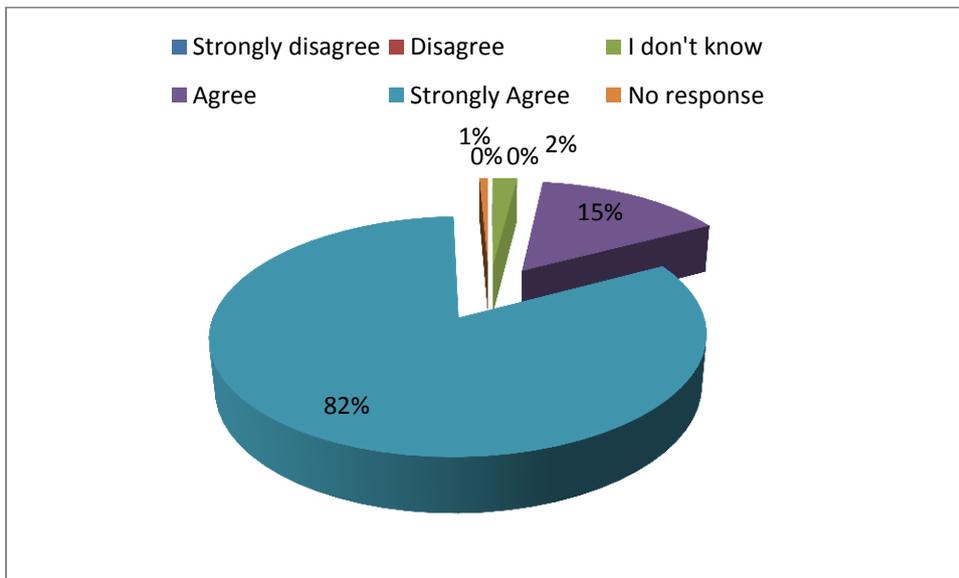


Figure 4: Respondents' willingness to ensure success of the project

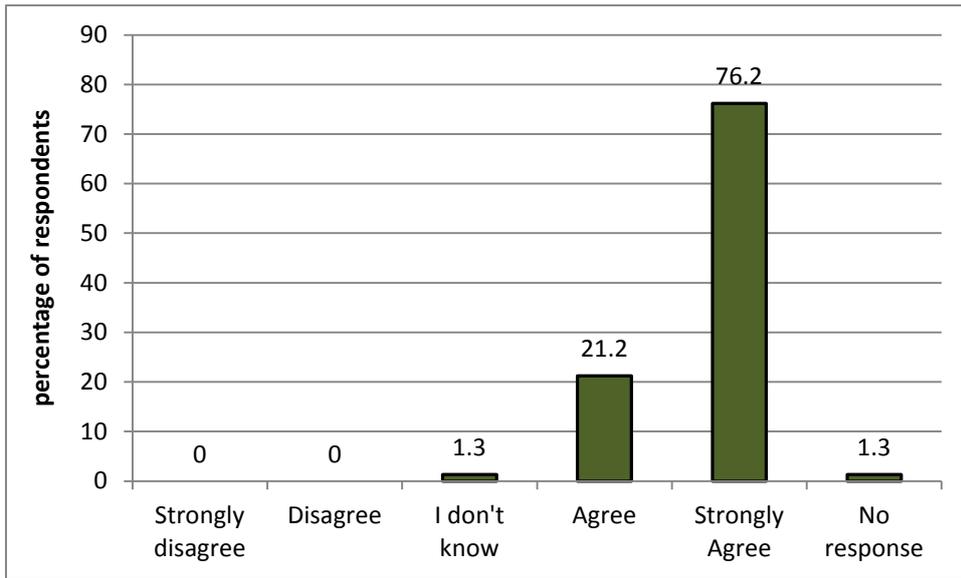
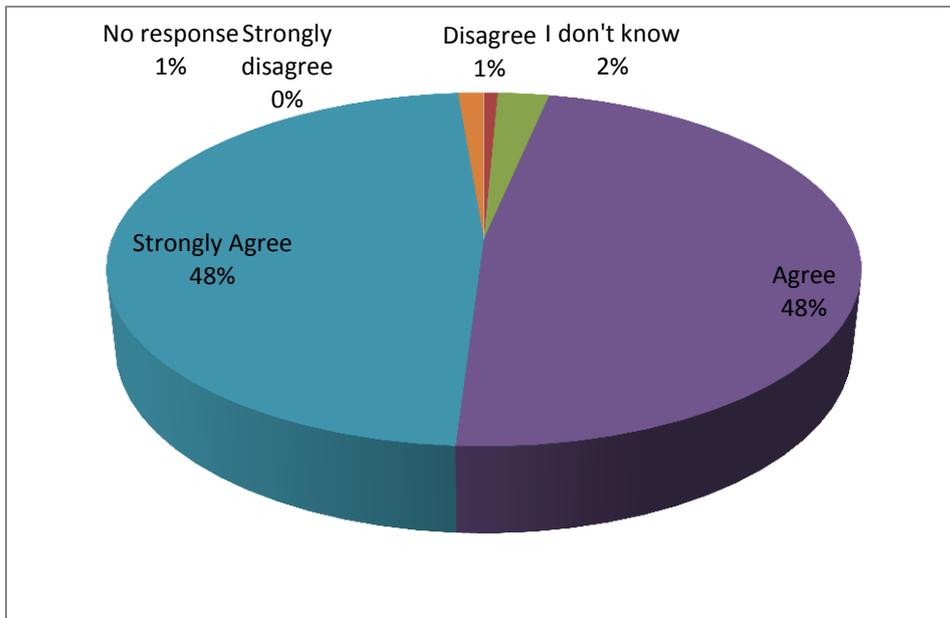


Figure 5: Respondents' willingness to ensure project succeeds despite its uncertainties



In spite of the concerns, reservations and uncertainties expressed by the participants during the consultative meetings, many overwhelmingly gave approval for the project to come. The fact that not all participants were willing to ensure success of the project reflects the reservations that a few of the respondents had. Most of the participants, however, saw the project as providing them with hope compared to the current state of hopelessness they faced. This suggests that from the participants' perspectives, to the extent that the project would restore livelihood and improve their general living conditions, the communities were in favor of the project.

5 Findings from the Validation Durbars

The full minutes of the two durbars are presented in Appendix 3. The participants of the durbars agreed that most of the points raised during the consultative meetings had been captured in the report of the findings. Of the issues raised during the consultations, the key ones stressed during the durbars were as follows:

- The urgent need to dredge the river bed to de-silt and remove aquatic weeds and the need to support the communities so they can remove the aquatic weeds periodically;
- Regular engagement of VRA with the communities;
- The likely benefits and losses from the proposed project.

6 Conclusions and recommendations

The finding of the consultative meetings showed clearly that livelihood sources, health and environment of the downstream communities had been affected following the damming of the River Volta resulting in poverty. The key concerns expressed by the communities may be summarized as follows:

- Loss of particular fish species
- Sand bar formation at the estuary
- Aquatic weeds infestation
- Diseases such as bilharziasis
- Reduced fish catch
- Reduced yield from farmlands
- Loss of livelihood and general poverty

A summary of suggestions to alleviate poverty in the study area as provided by participants are presented below.

- Removal of the sandbar at the estuary
- Dredging of the creeks and the lagoons

- Weed harvesters required to harvest the aquatic weeds that have infested the rivers
- Provision of irrigation as a temporally measure to alleviate farmers' suffering
- Institution of an early warning systems to ensure that communities are warned way in advance (3 weeks before opening of spill-gates to avert possible disaster; preferably this should be done during the day)
- Establishment of data collection stations at vantage points
- Promotion of cage farming
- Provision of credit facilities to the communities
- Resettlement schemes for affected communities
- Strengthening of communication and information flow

Some community members were of the view that people building close to the river were breaking the law, that their acts were against the town and country planning code and they should be sanctioned.

While the Reoperation and Reoptimization Project might take care of some of the suggestions, some issues of concern raised by the communities were beyond the scope of the project. There were also other issues and concerns of the communities which might impact on sustainability of their livelihood sources. There is clearly a need for the development of a comprehensive strategy to tackle the poverty issues as well as other social problems facing the communities. The reoperation and reoptimization of the dams would then be part of an overall strategy targeted at poverty reduction and sustainable livelihoods of the communities of the Lower Volta. People in the communities made it clear that as far as the project seeks to solve problems of inequality, poverty, disease and loss of livelihood in the areas, they would whole heartedly welcome the project. Indeed the Rapid Response Survey (RRS) carried out showed that majority of the members of the communities consulted supported the project. The indication was that having suffered for a long time; the respondents were prepared to give a chance to any proposed initiative that promised hope. To this end, the people in the downstream communities would welcome the project as long as it contributed to solving the problems they currently faced.

Consultative meetings and Durbar in pictures



Consultative meeting at Atimpoku (Asuogyaman)



Consultative meeting at Battor (North Tongu)



Consultative meeting at Adidome (Central Tongu)



Consultative meeting at Keta (Keta)



Durbar at Asuogyaman

Appendix 1: Minutes of consultative meetings

Appendix 1(a) Asuogyaman District

The first consultative meeting was held on Thursday 2nd May 2013 at the Asuogyaman District Assembly Hall with 29 community members and district officials. The meeting opened with a prayer by the Assemblyman for the Atimpoku Area (Honourable Nana Yaw Ampem Darko Jnr) at 9.55 am after which the welcome address was delivered by the Deputy District Co-ordinating Director (DDCD) who represented the District Chief Executive (DCE). He informed the meeting that the DCE had a meeting with the Regional Minister.

The DDCD stated that the challenges faced by communities along the banks of the Lower Volta River had to be addressed by government and other stakeholders and this will be possible if research is conducted to inform policy makers about the exact measures to take to counter the adverse effects. He therefore entreated the selected communities to give their maximum support to the project team during the conduct of research in their areas. He emphasized, however, that the project will not address financial and infrastructural needs but is aimed at getting to the root of the problems facing the communities in order to find solutions. The Master of Ceremonies for the meeting, Mr. Richard Twum-Barimah, a member of the CAW Team, explained that because of resource limitations, participation in the meeting had to be limited to the seven main communities in relation to the proposed project.

Dr. Daniel Nukpezah, leader of the CAW Team, introduced the project by explaining the title of the project and introducing the local and external partners involved in the project to the gathering. He indicated that the reasons for meeting with the community representatives were to:

- introduce and explain the concept of the project to the communities involved;
- seek the views of the representatives on how best to proceed with the data collection process especially on issues concerning the pre-dam era, diseases and livelihood effects occurring from the situation of the dam in the district; and then.
- Provide feedback from the findings to the appropriate policy making bodies for implementation.

He stressed on the fact that conducting research into the various issues will give scientific basis to solving the problems.

The questions and concerns posed by participants are summarized below.

Pre-dam and early post-dam issues

Some of the participants mentioned that no compensation package had been offered to communities affected by the construction of the dam. There was also a perception that the Volta River Authority (VRA) was indifferent to the plight of the communities.

Education & Job opportunities

Most of the participants stated that the district lacked educational facilities to enable the younger ones to acquire formal education. Some of the participants were of the view that there was no need to change the flow rate as they had already adapted to the current regime but suggested the establishment of more schools and industries for the youth.

One key participant Nana Semanhyia was forceful in his submissions. In his words: *“talking about dams and VRA, we feel like pointing a gun at you. VRA has not done much for farmers; even menial jobs at VRA are done by people from outside the areas; VRA should give communities scholarships. With regards to bilharzia, he said, there are drugs; their most important need is not reoperation, but scholarship to communities”*

Livelihood Information

There was some consensus that people had adapted to the current flow regime of the lake and some people had established businesses along the banks of the river. The change in flow rate may cause destruction of property. There was also the issue of re-location to a new site as was done in the early post-impoundment days.

The participants suggested that if there was going to be a change in the flow regime, the communities should be made aware of the periods of flooding so that those especially involved in aquaculture in the Lake will not suffer losses. A fisherman by name Francis Adzani elaborated on how livelihood had been affected in the district with respect to fishing. According to him, aquatic weed infestation was common in the lower Volta. He recounted some of the negative impacts of aquatic weeds infestation on socio-economic activities of the community, including choking the river and impeding the smooth flow; decaying vegetation that results in foul smell which makes the water unpleasant for bathing and also leads to fish death. At Atimpoku the type of fishes that had been impacted most included Tilapia, lobster and the West African pygmy herring (“one man thousand”).



Picture 4 Cage fish farming on the Volta Lake

The creation of the Akosombo and Kpong dams had affected the fishing industry in the sense that there had been a decline in lobster catch and increased weed infestation. What had to be done, from the perspective of this participant, was to clear the weeds to increase flow of water. In response to a question regarding the alternative livelihood to be put in place in the

face of dwindling income from fishery industry and farming activities, the participant suggested cage fishing (a form of fish farming). However, as the respondent put it, high investment cost made it difficult for this to be done.

Health

The participants noted that there had been a reduction in the prevalence of Onchocerciasis (River Blindness) while the prevalence of Bilharziasis had increased. The lack of a proper drainage system in the district was also blamed for the discharge of waste into the river which resulted in an increase in the nutrient content of the water and subsequently led to the explosion of weeds.

Addressing issues raised by the participants

Dr. Nukpezah assured the participants that the project's intention was to benefit the downstream communities, i.e, restoration of livelihoods (fishing and farming), flushing out the water weeds and reduction in the prevalence of Bilharziasis. He also mentioned that the consultation would inform the modeling work to be done to ensure that there was very little negative impact on property along the banks of the river. Dr. Nukpezah assured the participants that the issues raised which were outside the scope of the project will be captured and forwarded to the appropriate authorities.

Nene Tetteh Amoaku IV lamented the neglect of the VRA of the downstream communities as expressed by some of the participants and emphasized that the communities should unite to support the project for the benefit of all members.

The meeting ended with a closing prayer at around 12:20 p.m.

ASUOGYAMAN DISTRICT: PARTICIPANTS LIST

Community	Name of participant	Community	Name of participant
Abume	Vincentia Governor	Adome	Abusuapanyin Pobi
	Francis Adzani		Mawunyo Dzitse
	Timothy Adzegli		George T. Wayo
Akrade	Giftly Nyarko	Akwamufie	Nana Samanhyia Darko II
	Elizabeth Korantemaa		Oheneba Ayerakwah
	Samuel Awuku		Frank Okonh
	William Yirenkyi		Richard Yeboah
	Isaac Ofei-Nyarko		Sarah Apea
Atimpoku	Tobui Kpalekpor	Senchi	Patience Asantewaa
	Felecia Asio		Nana Dade-Kyem II
	Nana Yaw Ampem Darko		Isaac Owusu-Poku
	Rev. Samuel Ayiah		Paul Quist
Mangoase	Elizabeth Opoku		
	Francisca Ntwo		
	Samuel Debrah		
	B. Y. Ansah		
	Bismark Asante		

Appendix 1(b) Dangme West District

The community consultative meeting for the Dangme West District (now Shai-Osudoku) was held at Asutsuare for 14 selected communities on the 27th June, 2013. The program started at exactly 9: 40am.

An opening prayer was offered by Apostle Thomas from Asutsuare. Thereafter, Mr Twum-Barimah led the introduction of participants and the resource persons. The chairman for the occasion, Nene Ablor Michael then gave his acceptance speech. Dr. Daniel Nukpezah presented purpose of the meeting; he spoke in English and then addressed the Ewe speakers in attendance in the Ewe language. Dr. Nukpezah highlighted what the project sought to achieve and stressed the importance of having consultative meetings with all the downstream communities.

Mr. Richard Twum-Barimah translated Dr Nukpezah's speech into Dangme, the main language spoken in the area. The issues raised by the participants in the discussions that followed the presentations are summarized below.

- The participants emphasized that the main occupation of the people is fishing and farming. However, the creation of the dam had resulted in a decline in fish catch. The fishermen were not able to harvest as much fish as they used to harvest prior to construction of the dam. In addition, the communities experienced flooding of their farms any time the spill gates of the dams were opened.
- There had been an increased prevalence of schistosomiasis due to the slow moving water which allowed the snail host of the schistosome parasite to thrive. The situation is especially serious at Asutsuare.
- Participants expressed concern on the safety of the dam; they were of the view that in the event of dam failure after 52 years of construction, their lives would be in danger because of the high probability of flooding. They further express concern that they had neither been consulted nor involved in the design of dam safety measures.
- Some participants were skeptical about the project and were of the view that should the project come on, the release of water was going to flood their farms, houses and affect them negatively.
- The participants decried the poverty in the area and expressed the desire to be assisted through microfinance schemes for income generating activities or projects along the Volta.
- Some participants linked the low level of fish catch to the flow regime and expressed their readiness to accept the project if it was going to lead to an improvement in terms of fish catch.
- Some participants were of the view that lack of scholarship opportunities to the indigenes have led to many of the youth not being able to seek skilled employment in any dam related jobs.
- There had been a decrease in farm yield since the construction of the dam.
- The benefits of the new project should be elaborated to them further so they would be in the position to spread the good news.

- Some participants wanted to know whether this study had been piloted in any part of the world and the impacts on communities.

Dr. Daniel Nukpezah addressed the concerns raised by the participants. He pointed out the fact that many of the issues raised by the participants fell outside the scope of the project and for that matter could not be addressed directly by the project. He reemphasized the purpose of the project and assured the participants that the concerns expressed by the communities including those not directly related to the project would be captured in the project report.

The Chairman for the occasion indicated that the populations of the towns were growing at a fast pace and suggested a housing project to cater for those around the river banks before any eventuality occurred. According to the Chairman, as part of its Corporate Social Responsibility, VRA had been awarding scholarships to communities but this needed to be expanded to cover more students. Mr. Richard Twum-Barimah thanked the participants on behalf of the Project Team. Finally a closing prayer was offered by Apostle Thomas and the meeting ended at 11:50 am.

DANGME WEST DISTRICT: PARTICIPANTS LIST

Community	Name	Community	Name
Abuvienya	Fiah Wayo	Kadjanya/Dormelian	Theophilus Lawer
	Avlime James		Emmanuel Sedofia
	Atcher Melchore		Narh Kofi
	Tsikopo-Teye Wewey		Asumah James
	Asidigbe Zottor		Cephas Agbodza
Adakope	Felix K. Ahukpe	Kassunya	Teye Akakposu
	Wewe Mensah		George Lovi Akakposu
	Micheal K. Asileo		Nene Narh Akakposu
	Bright Kaner		Andrews M. Olu
	Kwabeah Ahuno		Fawoyifa Christian
Asutsuare	Nene T. Ablorh	Kotoko	Francis K. Fio
	Manye Lakokie		Emmanuel Odonkor
	Asafoatse Nyarko		Apostle T. Apiorsornu
	Isaac Odonkor		Adjetey Matey
	Albert Frimpong		Jonas Abuvie-Kpong
Atrobinya	Lawer Ayertey	Lubuse	Nene Kwaku Martey
	Nene Someh V		John Martey
	Charles Ayertey		Telleh Ameleptey
	Edward Ayertey		Martey Nauyo
	Philip Ayertey		Hellen Martey
Doffor	Joseph Quarshie	Natriku	M. T. Tekpor
	Julius Tetteyfio		Stephen Kwao
	Adjah Darkey		Daniel Akumani
	Margnt Teye-Ali		Leigh H. Hayford
	Manye Manue		J. T. Agbo
Dzorkpor	Kwesi Brown	Tokpo	John T. Animle
	Gabriel Inkum		Numo M.L.K Animle
			Sakamoto Animle
			Piogah Animle
			Seidu Sambo
Gozatkope	Jonas Gozah	Volivo	Kwesi Onyadzi
	Keleni John		Kwesi Egble
	Ben Day		S. K. Narh Nehemiah
	Bernard Dunyo		Asietu Faustina Wayo
	Else Adikah		Guama Ohipeni

Appendix 1(c) Lower Manya Krobo District

The meeting was held at Kpong Methodist Church premises on the 4th of July 2013. The programme started at 11:25 am with an opening prayer offered by the Methodist Pastor of Kpong. Mr. Richard Twum-Barimah, the Master of Ceremony for the day asked participants to introduce themselves. After the self introduction, Mr Twum-Barimah introduced the Methodist Pastor as the chairman after which the Pastor gave his acceptance speech. He emphasized the need for all to remain united in order to achieve the purpose of the gathering.

Mr. Twum-Barimah then introduced the key resource person, Dr. Daniel Nukpezah, who gave a brief presentation on the project. He mentioned that the purpose of the gathering was to inform participants of the reoptimization project and also to obtain information from the participants about their concerns with respect to the creation of the dam.

He further explained that the creation of the dam was intended to generate electricity, but it had affected also a section of the inhabitants downstream of the dam adversely. He emphasised that the Re- optimization and Re-operation Project was to address some of the problems faced by the people after the construction of the dam. He then invited then invited the participants for their views/inputs.

In the discussion that followed, the following issues were raised by the participants:

- In the early days following the construction of the dam, the water was often sprayed to reduce certain diseases like malaria, etc among them but currently nothing of that sort was being done.
- Since the construction of the dam, there had been no re-settlement; their areas were prone to flooding during periods of high flows and this was affecting their houses.
- Participants referred to the period of high flow in 2010, but said the flow was not high enough to get rid of the aquatic weeds in some communities. On the other hand, the flow caused dilution of water leading to increased incidence of schistosomiasis.
- Some participants were of the view that should the project come on, and should there be increase in flow, it could, for example, erode the sand at Amedeka thereby causing gully erosion in the town.
- Participants mentioned the high prevalence of schistosomiasis in their communities and called for action to reduce it.

The participants also provided some suggestions on the dam operation. These were

- Early communication of the period of opening of the dam.
- Keeping records of the water level to help or assist the fishermen in their fishing activities
- Installation of water level measuring systems at vantage points

Mr. Twum-Barimah thanked the chairman and the participants and the meeting ended at 1.35 pm with a closing prayer by the Chairman.

LOWER MANYA KROBO DISTRICT: PARTICIPANT LIST

Community	Name		
Amedeka	B. B. Vormawor	Lolonyo	Seth J. Lomotey
	Gamor Kwabla		Tetteh Atteh
	Kofie Gakpo		Christopher Domey
	James Dzatse		James Cobblah
	Patience Teckutse		Christopher Mensah
Kpong	J. B. Phenuku		
	D. Ansah-Osei		
	Thomas K. Zewu		
	H.O.T Anim		
	Phillip Kisseh		

Appendix 1(d) North Tongu District

This consultative meeting was held at Battor in the North Tongu District on 17th July, 2013. The meeting started with a prayer by one of the participants at 9.45 a.m. Following the established protocol of self-introductions, welcome address and a presentation on the project by the lead resource person, Dr. Daniel Nukpezah, the participants expressed their concerns on issues. The main highlights included the following:

- Most of the challenges in the North Tongu related to development issues. Weed invasion of the Lower Volta River choking creeks and drains was a common phenomenon.
- Farming was no longer profitable since the yields were poor as a result of not having enough flow to flood the farmlands with deposition of rich alluvial soil.
- Declines in the shell fishery and clam picking industry, resulting in general loss of livelihoods to the communities.
- Cassava farming that used to thrive well no longer does well because farmlands had become nutrient deficient.
- One participant pointed out that there had been cases of river blindness in the area and also increased incidence of bilharzia which affected the young people in particular.
- Regarding uncertainties such as extent of flooding that might result if the reoptimization and reoperation was carried out, the participants pointed out that there was a need to establish buffer zones where buildings would not be permitted. One chief pointed out that there should be early warning system to warn people in the event of high flow. This should be communicated effectively. A participant emphasized the need for information to be given in the day time to avoid night time panic.
- Some of the concerns did not relate directly to the project objectives but indicated that the reoptimization should be situated within a broader strategy of reducing poverty in the project area.

Dr. Nukpezah emphasized that while the project will not give them money directly, its intent was to restore their livelihoods which would help improve their living conditions.

The meeting ended with a prayer at 12.35 pm.

NORTH TONGU DISTRICT: PARTICIPANT LIST

Community	Name of participant	Community	Name of participant	Community	Name of participant
Alabonu	Gidisu Jonas	Degorme	Hudson Ladzagla	Mepe	Kwadwo Gali
	Degah Siame		Felix Akorlor		Togbe Adzimah IV
	Tretu Phillip		Kwaatse Dufe		Mama Evesor
	Lydia Tutu		Kwami Avu		Mama Adinakwa
	Mary Agbetum		Joshua Ladzagla		Micheal Agbodebotsu
Atitekpo	Akpo Sampson	Fodjoku	Torgbe Norgbedzi	Nakpoe	Dorla Comfort
	Doekuve Gbenour		Mama Yakagbe		Raphael Avor
	C. K. Aflamevu		Mary Asare		Ebenezer Wolordzor
	Avorli Frank		Amemugah Vugbagba		Fedelia Dzro
	Agnes Agbozo		Asare Ernest		Tsidi Anthony
Aveyime	Gati Xorlali Comfort	Gbadasikope	Togbe Tordaiba II	Sokope	Sitto Gabriel
	Daniel Norgbodzi		Believe Ameta		Nyagble Kofi
	Joseph Yakah		Raphael Nyandi		Benyo Felix
	Agbosu S. O		Mercy Gborgla		Kpogla Woetsa
	Dame Dameki		Amos Gborgla		Esso Lumorsi
Azaglokope	Micheal Kuleke	Gblormu	Torny Ferguson	Torgome	Togbe Asamoah VI
	Machine Gilbeth		S.K. Ababio		Mama Adokuwe
	Awudu Abotsi		David Droh		Togbe Afutu Kweku
	Prosper Dzadu		Faustina Droh		Togbe Denyi
	Dzigbordi Kpetigo		Deborah Amaglo		Christian Aninigo
Battor	Togbe Adzable III	Kasa	Richard Alornyenu	Klamadaboe	C. K. Latsu
	Mama Kpelesi II		Kennedy Deyounson		Ebenezer Hormeku
	Beatrice Habasu		Mawuli Mordo		Janet Agbodomegbe
	Ben Morti		Rose Kugbe		Korsi Gale
	Moses Dhoto		Juliet Kodohu		Norviegbe Vidogo
Daledorkope	Atsu Abaya				
	Etse Abaya				
	Dekpe Emmanuel				
	Elizabeth Viku				
	Normesi Janet				

Appendix 1(e) Central Tongu District

This meeting was held at Adidome on the 18th of July 2013. The meeting started at 9.30 a.m. with an opening prayer. Following the established protocol of self-introductions by participants, Dr. Daniel Nukpezah gave a presentation on the project. In his presentation, Dr Nukpezah explained the purpose of the meeting. He explained the concept of the reoperation and reoptimization project and what the project seeks to achieve in the Ewe language. He then invited the participants to share their experiences, concerns, how they think they would be affected by the project and whether they think it was a good idea to embark upon such a project.

The main highlights of the issues raised by participants included the following:

- One participant was skeptical and mentioned that this was not the first time teams had visited the Lower Volta in relation to projects. His earliest memory in relation to team visits was in 1974 but in his view nothing concrete ever comes out from such meetings.
- The Chairman for the occasion, Torgbui Agyemang IV explained that it was also of value even if the project was only of academic interest and that without a proper study, specific interventions could not be implemented. Dr. Nukpezah reiterated the point made by the Chairman and added that the Volta reoperation study has been on the drawing board for well over 6 years and the fact that the project team was there shows commitment and good intentions.
- A participant lamented the spread of exotic weeds in the district and mentioned that there were no more oysters in the district.
- Bilharziasis had been on the increase as a result of drinking and bathing in the water since there was no good drinking water. In the view of this participant, this problem would be solved if they were provided with tap water.
- Some participants decried the poverty and bad roads in the area
- One participant mentioned that most of their people had migrated to Ada in search of none existing jobs and thereby making their towns and schools empty.

Following concerns raised by participants, Dr. Nukpezah provided clarifications where it was deemed necessary and then summarized proceedings of the meetings.

The meeting ended at 1.15pm with a closing prayer.

CENTRAL TONGU DISTRICT: PARTICIPANT LIST

Community	Name of participant	Community	Name of participant
Adidome	Togbe Kwasiyini Agyeman IV	New Bakpa	Emmanuel Defia
	Daniel Azanoo		Cecilia Zotor
	Newton Kpedo		G. A. K. Amedor
	Esenam Adzimah		P.A. K. Kpeli
	Elenawo Adzimah		Livingstone Kposah
Amerlokope	Amenorlor Atsuga	Sayikope	Adi Gus
	Amenorlor Eric		Adi Beauty
	Amenorlor C. K.		Hwuem Solomon
	Amenorlor Korblavi		Tse Adi
	Mahu Lawson		Adi Stephen
Doffor Adidome	Simon Sraha	Titikope	Gbodo Excel
	Austin Dabah		Dzegli Amadzi
	Charles Nukpedu		Akou Aseye
	Dyina Akpabli		Glover Christiana
	Asafo Favour		Jonathan Anyrakotlu
Dugame Mafi	C. K. Adzormane	Tsetsekpo	Kuwornu Vuasi
	Makaila Fruworme		Gbeku Mansah
	Puplampu Richard		Emma Boti
	G. K. A. Dzormahe		James Tsatsu
	Amu Simon		Avor Wisdom
Husekope	Solomon Azievor	Volo	Torgbe Ababio IV
	Saharia Azievor		Torgbe Agawu IV
	Bertha Gbedzeke		Tsiamega Dogah
	Kwamidzie Vida		Edith Mensah
	Dorlagbanu David		James Akabu

Appendix 1(f) Dangme East District

The Dangme East consultative meeting was held at the Ada Community Centre on 30th July, 2013 at Big Ada. The meeting began with a short prayer at 9:40 a.m followed by self introduction by members of the 14 communities invited. Following introduction of the Chairman by the Master of Ceremony for the occasion, Mr. Twum-Barimah, Dr Nukpezah highlighted the purpose of the visit and briefed the participants about the project. He then invited views from the participants. The main highlights of comments by participants included the following:

- Before the construction of the dam, there were two clear farming seasons. However after the construction of the dam, the farmlands have ceased to be productive.
- There had been Bilharzia infestation in the area after the closing of the dam making the communities suffer adversely.
- Fishing was the main occupation for the people but due to the dam construction, certain species of fishes such as the salmon could no longer be found in the river. As a result of the dam, such species were unable to migrate upstream for breeding purposes.
- Oyster and crab picking was another lucrative business for the people along the river but because of weeds growing in the river, this activity had ceased.
- There had been sand deposition at the estuary forming a sandbar; this was attributed to the reduced flow.
- Lack of economic opportunities in the area following the closing of the dam; most of the people, especially the youth had left the area to other parts of the country to fish and farm.
- Poverty was rife in the district, especially after the dam construction, and many parents were unable to send their children to school.
- There had been social effects of the creation of the dam; for example because there were no more lucrative jobs, most men could not take care of their families and this had led to broken homes.



Picture 5 Clam industry at Ada

The specific suggestions with regards to the reoperation and reoptimization project are summarized below.

- Most of the participants welcomed the project to the extent that it would solve the problem of poverty and associated health issues
- Participants expressed concern about the potential flooding of some residents due to the project and suggested that opening of the spillgates and flow downstream should be done discretely since most of the people have their buildings and farms along the river
- There should be a taskforce to guide people not to put up their buildings very close to the river.
- The people living along the river should be informed before opening the dams
- The creeks that feed the farms should be dredged
- The weeds in the rivers should be harvested and be used for manure in the farms

Following the interactions with the participants, Dr Nukpezah summarized the salient points. The meeting finally ended with a concluding prayer at 1:30 pm.

DANGME EAST DISTRICT: PARTICIPANT LIST

Community	Name of participant	Community	Name of participant
Ada Foah	Stephen Alorbu	Big Ada	Kordjo Agbasi
	Nene Dugbatey		Kaseie Nartey
	Nene Kerker		Nathan Agah
	Margaret Mensah		Peter Narh
	Nii Otoh		Rebecca Aguh
Agorkpo	Rockson Serwornu	Dikanya	Robert Sechie
	Isaac N. Dordo		Daniel Sechie
	Grace Nyameku		James Avadzi
	Joseph Abuanor		Margaret Sechi
	Emily Amerdjoe		Eunice Avadzi
Alorkpem Island	Nene Oklu Siameh	Dzitrokope	Amuzu Apdoe
	Nene Kplivi		John N. Ofoe
	Samuel Awuku		Edward Kwame
	Gbeda Siameh		Boley Ayi
	Francis Agor		Julia Gamor
Amesikpe Island	Ayooba Amezue	Luhuese	Nat Lanuer
	Joyce Kude		T. T. Borga
	Alobu Grace		J. Ateku
	Gyeam Agbadiaba		Eric Ayiku
	Vincent Agbadiaba		Henry Numo
Aiflive Island	Philip T. Kisseh	Pediatorkope Island	Humphry Ayerh
	Amatey Kisseh		Teye Barbanylaa
	Daniel Adjakpah		Agama Agudey
	Ebenezer M. Djangmah		Kisserh Lanie
	Eben O. Adna		Baflo Justice
Azizakpe Island	Korlety Aggrey	Tuanikope Island	Gershon K. Kuadegbeku
	Nene Daniel Toku		Gilbert Tordzoglah
	Esther Out		Yofi Kuadegbeku
	John Buenor		Sedo Awa
	John N. Out		Lucas Kuadegbeku
Azizanya	Nortey Joseph	Vidzrokope	David Fume
	Siameh Kwajo		Gladys Nyabogyanu
	Akli Gabriel		Giftty Vidzro
	Laseyo Agbasi		Gershon Fume
	J. B. Plahar		Nene Avli Vidzro

Appendix 1(g) South Tongu District

The seventh consultative meeting was held at the South Tongu District Assembly Hall at Sogakope on 31st July 2013 for invited members of the 16 communities. The meeting started at 10.05 am with a short prayer and introduction of the Chairman Mr. Samuel Kofi Apedo and Resource Persons. This was followed by self-introductions of the participants.

The District Coordinating Director of the South Tongu District, Mr. Majid Ayarega, welcomed the participants and the CAW Team. He commended the initiative to give the community members the opportunity to express their views since they knew the problems better than anybody outside the area. He then asked the people to feel free and take the meeting seriously.

Mr. Twum-Barimah, the MC, introduced the lead Resource Person, Dr Daniel Nukpezah, gave a presentation on the project and invited inputs/comments from the participants regarding the project and any suggestions they may have to help in making the project more effective. The following issues were raised in the discussion that followed the presentation.

- There had been a decline in fish stock after the dam was built. Further, certain species of fish that hitherto were abundant can be found no longer after the construction of the dam
- Farming was no longer lucrative due to the fact that most of the creeks have reduced flow after dam construction and no longer fed the farmlands with water
- People put up their building very close to the rivers and these were washed away in 2010 when the spillways were opened, but no compensations had been paid to the victims
- The dams were constructed to generate electricity but most of their towns and villages had no power supply.
- Drinking water was a problem to most of the communities since they lack pipe borne water and the river water was not suitable for drinking
- Weeds were growing along the rivers which make fishing difficult for the people.
- Most of the creeks fed by the main river had dried up
- Most of the youth have migrated to other parts of the country to fish and farm
- Oyster and crabs picking which was a major source of livelihood for the people had ceased because of the weeds in the river.
- Poverty was a big problem in the area.

Suggestions:

- Most of the participants agreed that the reoptimization project should come on provided it did not compound their problems in any way.
- Should the project come on, flow downstream should be regulated in order not to destroy the properties of the people as happened in 2010.
- Some of the participants argued that people who build close to the river should take responsibility for their own actions since they were breaking the law.

- Irrigation facilities should be provided to help farmers in the area.
- Weed harvesters should be given to the people to help them harvest the weeds in the river.
- Outstanding compensation issue needed to be resolve.
- The people had attended a large number of workshops, but no positive result had been seen, they hoped the project would not be the same as the other workshops.

Following the interactions, Dr. Nukpezah summarized the salient points and the meeting ended with a prayer at 1:25pm.

SOUTH TONGU DISTRICT: PARTICIPANT LIST

Community	Name of participant	Community	Name of participant
Agave	Edward Mensah	Dalive	Ameklu Reuben
	Tetu Christian		Daliesor Winfred
	Fordzor Adoboli		Daliesor David
	Gloria Agbokpe		Kpetigo Rejoice
			Doe Rose
Agbeve	Grace Dinu	Dekporta	Jackson K. Kpornu
	Robert Alike		John Ghartey
	Sename Adorkenu		Bessah Kprim
	Francis Yao Hewey		Aku Tsali
	Stephen Ahelege		Esther Atsu
Agordome	Pele Agbavor	Gbenuakope	Sali Samuel
	Daniel Aheto		Moses Hottor
	Patience Ablordey		Kwame Satsi
	Adzove L.C.K		Christiana Ahemor
	Emma Semabia		Nutakor Cecilia
Agorme	Torgbe Alfred A.	Kponte	Godza Daniel
	Gabo Moses Foli		Woyome John
	Alfred Amenuku		Korbla Matey
	Minua Wodzaka		Afafa Sokpoli
	Veronica Awutor		Adzo Sokpoli
Agorkpo	Togbe Dagadu IV	Sogakope	Vandyke Owusu
	Patrick Gakpo		Kennedy Kortortsi
	Caroline Agbi		Gershon Azumah
	Agnes Dunatonu		S. K. Apedo
	Mac-Peter Dumatun		Christie Tornye
Asidowhui	Stephen K. Asidowhui	Sokpoe	Togbe Hevi IX
	Daniel Tetteh		Togbe Awui II
	Augustina Kutin		Mama Amenuvega II
	Charles Tetteh		Mama Ahedze II
	Joana Agbewornu		Albert Hodo
Tadze	Emmanuel Doe	Tefle	Togbe Agbozo Agorklu
	Godwin Deku		Paul Adomah
	Azayome Peace		Godwin Mensah
	Tagbor Patience		Richard Koku
	Azayome Jackson		Akoto Seth
	Mama Adobea IV		Kattah Dodzi
Vume	Togbe Badu IV	Ziwenu	Juliana Ahiator
	Togbe Atah		Dela Atime
	Mama Vessor		Mensah Jonah
	Simon Hadzor		Soku Nicholas

Appendix 1(h) Keta District

The last in the series of consultative meetings was held at Keta on 1st August, 2013 for participants from the seven communities. The meeting started at around 10 am with self-introductions. The Chairman, Torgbe James Ocloo V of Keta Co-Chairman, Mama Torkomi were introduced by the MC Mr. Richard Twum Barimah. The Municipal Planning Officer welcomed the participants and the CAW Team to the meeting on behalf of the Municipal Chief Executive. He expressed his personal happiness because he believed the meeting was going to help to solve some of the many problems facing the communities.

In his presentation, Dr. Nukpezah highlighted the concept of the project and expected impact to the participants and invited the participants to provide comments/concerns and suggestions in relation to the project. Many of the concerns raised by the participants were similar to those expressed in other districts and included the following:

- One participant expressed his frustrations and decried the lack of opportunities and the consequences of the dam creation, quote: *“Our streams have turned into dry lands with our children playing football on what was once a stream!”* This concern highlights the reduced volume and flow of water in the creeks as a result of reduced flow downstream of the river. Participants expressed the view that their farmlands no longer got flooded with water from the creeks resulting in a reduction in crop yields.
- There had been rural urban migration because of the lack of job opportunities especially for the youth, making the once vibrant towns now ghost towns.
- Another concern expressed was the increased salinization of dug -in well water. Decreased flow downstream had resulted in over abstraction of water from the wells. According to a participant, hard water does not make shallot thrive. *“We are losing our shallot farming businesses”*. *In the past when we had more reliable flow downstream, we had relative fresh water in the creek that fed our farms but that is not the case nowadays. Creeks and other tiny tributaries of the Volta have now dried out.”*
- At the point where the river enters the sea, the salt water becomes diluted and runs into creeks that fed our shallot farms. However with the construction of the dam, there is reduced flow downstream. There had been little dilution effect and the little water to the creeks and eventually to the farmlands are much more saline. The high salinity level does not support farming. As a participant put it, *“salty water from the sea has now covered the whole land and farming is entirely interrupted.”*
- Sediment deposition at the river banks cut off the Lagoon, resulting in low productivity of the lagoon.
- Some participants also mentioned that aquatic weeds made it difficult for them to cast their nets and this had affected the catch.
- The participants also observed that schistosomiasis was not in Anlo land due to the high salt content of the water which killed the snail vector.
- Fishing is the major activity of the people of Keta but since the river can no longer enter the sea freely, some fish species could be found no longer.
- Oyster and crab picking was another lucrative business for the people along the river but because of weeds growing in the river, this activity had come to an end.

- Because of the dam, and the recent road construction, most of the small rivers in the area had been blocked.
- A participant observed that “*Fishes move in two directions i.e from the sea to rivers and vice-versa to multiply, but because of the reduced flow of the river into the sea, the movement of the fishes has been compromised.*”

Suggestions:

- Most of the participants agreed to the idea of the proposed reoptimization project to allow free flow of water.
- Participants suggested that the Lagoon and the rest of small rivers in the area should be dredged to improve the flow from the Volta River.
- The people should be provided with weed harvesters to help them to get rid of the weeds in the rivers.
- Potable drinking water should be extended to all towns and villages.
- The other small rivers which were blocked as a results of the construction of the roads should be opened to allow water to flow into the farm lands.
- Government should compensate the people down streams who were affected by the activities of the dams.

Dr. Nukpezah summarized the important points and the meeting finally ended with a concluding prayer at 1:35 pm.

KETA MUNICIPAL: PARTICIPANTS LIST

Community	Name of participant	Community	Name of participant
Agortoe	Vinolia Dunyo	Keta	Togbe James Ocloo IV
	David Indigo Dakpo		Mama Torkomi II
	Simon Nyavor		Mama Deawofa
	Afadina Amevorwoshi		Master Ekloe
	Yao Adzagba		Rapheal Mawuli
Anloga	Joseph Hattoh	Kodzi	Adzika Lucas Yao
	William Wemegah		Godwin Gadzo
	Emma Kpodo		John Agbenyo
	Ablaga Agbemotu		Leticia Atsu
	A. A. Amevo		Hellen Gadzo
Dzita	Adzoyi Felix	Kpordui	Agbenyek John
	Tsey Agbenaza		Hayford Asomali
	Francis Gahi		Isaac Asomali
	Logosi Adzagbei		Dalietor Agbatsovor
	Hon. Gakpetor		Dzifa Tsikata
Whuti	Amekpor Julius		
	Jacob Nutakor		
	Shiasiu Yewudzi		
	Kodzo Sablah		
	M. P. Dagbui		

Appendix 2 Minutes of Validation Durbars

The first durbar was organized on Tuesday, 4th February, 2014 for selected downstream communities at the northern section of the lower Volta Basin at Atimpoku and the second on Wednesday, 5th February, 2014 at Sogakope for selected communities at the southern section. The purpose of the durbars was to disseminate information and validate the findings obtained from representatives during interactions at the community consultation meetings. Key issues and concerns raised during the community consultation meetings were presented to invited representatives of selected communities to receive their final assent and corrections, if any.

Five representatives each from four traditional areas and three district assembly officials from Asuogyaman District Assembly were present at the meeting organized on 4th February, 2014 at Atimpoku. The four traditional areas were Asutsuare, Asuogyaman, Lower Manya Krobo and Natriku. Twenty three representatives from five traditional areas as well as three district assembly officials from the Sogakope District Assembly were present at the meeting held on the 5th of February, 2014 at Sogakope. Five representatives each were invited from five traditional areas at the southern section downstream of the dam and these areas are Ada, Adidome, Aveyime/Battor, Keta, and Sogakope.

The outcome of interactions with traditional representatives during the community consultation meetings were summarized and presented in PowerPoint at the durbars by the CAW Team members, Mr. Richard Twum-Barimah and Dr. Daniel Nukpezah. The outcomes were categorized into those relating to key issues (directly relating to the project) and remote concerns raised. Results from the rapid assessment surveys conducted were also presented.

Key contributions from the first Durbar held at Atimpoku

- There was the need to address the outstanding commitments of VRA to the downstream communities before beginning to execute new.
- Participants at the meetings also raised concerns about the change in vegetation in the area as a result of the two dams. They indicated that before the construction of the projects, the whole area was covered with trees but this is not the case anymore as most of the tree covers have been removed and this they claimed has consequences on rainfall patterns.
- One of the chiefs from the Akwamu traditional area stressed on the need to institute an investigation into the possible impacts of cage farming on the water bodies. He indicated that the chemical components of the feed for the fish may have some dire consequences on the water bodies and ultimately on human life since most of the communities depend on the river as their main source of drinking water. This, he said should be looked at since their communities are in between another lake, thus between the Akosombo and Kpong dams.
- The assemblyman for Amedeka community had wanted the key concerns to be separated for all the communities since they all expressed different views. In response, the facilitators stressed the value in presenting the concerns of all the communities as a group
- The participants also complained about inadequate information to communities prior to spilling by the Volta River Authority, which they claimed had negative impacts on them as they lose lives and properties.

- The issue of unemployment as captured in the presentation was also commented on by the participants. In order to arrest this menace which has resulted in out migration and for that matter underdevelopment of the area, social amenities like good roads and water should be provided so as to attract investments.
- Nene Tetteh Ablorh mentioned that farmers did not receive compensation for damages caused as a result of the overflow into the Lomem River which flooded the rice farms.
- There should be a decentralization of responsibilities so that district assemblies (DA) become more responsible.
- Nene Tetteh Amoaku III proposed that the chiefs and representatives of the communities downstream unite in their pursuit of reimbursement for their collective losses from VRA especially as downstream communities have not been treated fairly in relation to upstream communities. It was also suggested that the VRA Trust Fund be extended to cover communities downstream of the Kpong Dam.
- Road networks in the area were badly in need of a face-lift . When this is done, it will encourage investors to invest in projects which will better the lives of the people.

Key outcomes of the second Durbar at Sogakope

Aquatic weeds

Nene Tsatsu Pediator IV harped on the nuisance caused by aquatic weeds to the communities and the termination of dredging activities by the Volta River Authority (VRA) which has compounded the problems as manpowered efforts have proved futile. Madam Emily gave an instance where a community was provided with funds to engage in the weed removal exercise but the results were dismal. She suggested that there should be collaboration between communities and the Ministry of Agriculture to devise a means to convert the weeds into manure. Mama Torkomi II also lent her support to a regular dredging exercise which she believes will aid in solving a majority of the problems they were facing in this regard.

Environment

Togbe James Ocloo IV noted that the area was very dry because of the absence of the annual flooding. This had led also to an increase in the salinity of the water which has resulted in a situation where some fresh water species are no longer found in the area. Mr. S. K. Apedo also commented on the change in rainfall patterns which he attributed to climate change and global warming instead of the presence of the dam.

Education and sensitization

Mr S. O Agbosu suggested that there was the congruent need to educate downstream communities and recommended that this be on-going to sensitize people about the benefits and losses of the project as well as expectations to be derived from the project.

Livelihood

Togbe James Ocloo IV stated that the water levels in the lake had drastically reduced and seriously hampered fishing activities. Togbe Azagble III concurred that the periodic releases of water as the project seeks to implement will turn around the low outputs currently being experienced in the fishing and farming sectors. The movement of clams from the upper

reaches of the downstream section of the lake to the Ada areas was also mentioned. This has affected adversely economic gains of the people.

Stakeholder involvement

A participant commented on the need to involve district assemblies in the project. This would help to create awareness about the project and its objectives and will also galvanize the project's effort to offset a lot of projected negative effects as the district assemblies are closer to the people.

Conclusions from the Durbars

The meetings concluded that most of the points raised had been captured already in the report from the consultative meetings. The main issues raised during the durbars are summarized below:

- The urgent need to dredge the river bed to de-silt and remove aquatic weeds.
- Communities' willingness to remove the aquatic weeds periodically, if they were supported.
- Regular engagement of VRA with the communities regularly.
- The likely benefits and losses from the reoperation and reoptimisation project.

Participants at the durbars expressed the desire to receive copies of the final reports.

Appendix 3 Key Contact Persons in the various Communities

District	Location	Name	Position/Rank	Tel. Number(s)
Lower Manya Krobo	Kpong	Rev. Stephen Amanor Tetteh	District Assembly Staff	0244928829/ 0268 734 177
		Manya Maku I	Queen mother	0246 578 407
Dangme West	Natriku	Nene Tetteh Amoaku	Chief	0242 840 925
		Leigh Hayford		0249 332 239
	Kadjanya/Dormelian	Theophilus	Assemblyman	0242 026 132
	Atrobinya	Nene Maklalo Anyegbor Someh	Chief	0243 616 204
		Mr. Charles Ayertey		0248 723 978
Dangme East	Pediatorkope	Nene Tsatsu Pediator	Chief	0242 211 224
North Tongu	District Assembly	Mr. Frank Fudzi	District Engineer	0244 744 330
	Aveyime	Hon. Comfort Gati	Assembly woman	0243 716 119
	Mepe			
	Atitekpo	Akpo Sampson	Teacher	0242 739 951
Central Tongu	Adidome	Hon. Fred Adzimah	Assembly man	0246 520 206
	Tsetsekpo	Mr. James Tsatsu		0249 806 866
South Tongu	Sogakope	Hon. Daniel A	DCE	0244 974 737
		Hon. Emmanuel Gator	Assembly man	0244 470 090
	Vume	Hon. Simon K. Hadzor	Assembly man	0246 664 383
Keta	Salo/Agortoe	Hon. Winfield	Assembly man	0208 478 241
	Keta	Hon. Sylvester Tornyeavah	DCE	0243 286 497
		Hon. Rockson	Assembly man	0246 948 036

Appendix 4 Questionnaire for Rapid Response Survey

Based on the background given regarding what the project is envisaged to achieve:

1. Do you want the project to come on?

Yes

No

2. If yes to question 1, will you do everything within your power if you can, to ensure the project comes on

Yes

No

3. If no to question 1, will you do everything within your power if you can, to ensure the project **does not** come?

Yes

No

4. Please rank the following (in the table below) on a scale 1 to 5 to reflect your feelings and the extent to which you agree with the statements. The minimum you may rank is 1 and the maximum 5

	Strongly disagree	Disagree	I don't know	Agree	Strongly agree
The project will be beneficial to the community	1	2	3	4	5
I will tell people about the project	1	2	3	4	5
I will do everything within my power to ensure the project succeeds	1	2	3	4	5