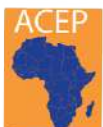




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SOCIAL, ECONOMIC AND ENVIRONMENTAL OUTCOME ANALYSIS OF ABFA-FUNDED PROJECTS: THE CASE OF KEYIME, OHAWU AND DAWA IRRIGATION DAM PROJECTS

Authors: Linda Ahunu, Jo Ann Sackey, Theophilus Adoko, and Akachukwu Okafor



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Executive Summary

The Africa Centre for Energy Policy (ACEP) is committed to initiatives that harness Africa's energy resources for sustainable development. To contribute to the transparent and accountable use of revenues from Ghana's petroleum resource, ACEP periodically undertakes field audits of projects funded with the

Annual Budget Funding Amount (ABFA) across the country. The ABFA is that portion of petroleum revenue that is spent on programmes and activities in selected priority areas within Ghana's national budget. Some of these include the rehabilitation of various irrigation dams in Ghana, including those located in Dawa in the Greater Accra Region of Ghana, and in Keyime and Ohawu in the Volta region of Ghana. The table below summarizes ABFA disbursement to these three irrigation projects:

Table 1: Contribution of oil revenues to Projects

Project	Year of Disbursement	Amount (GHC)
Payment for rehabilitation of the Dawa irrigation dam	2014	570,903
Payment for the Construction of Dam and Irrigation Infrastructure at Sandema, Wiaga, Zuedem and Tankese in Upper East Region, Dyke in Central Region, Keyime and Ohawu-Aka in Volta Region, Silibele in Upper West Region.	2015	16,043,953.28
Payment for rehabilitation of Irrigation Project at Keyime and Ohawu-AKA in the Volta Region	2017	2,037,858.73
Payment for rehabilitation of the Dawa irrigation dam	2017	169,490.38

Source: 2015 and 2017 Reconciliation Reports on the Petroleum Holding Fund

In 2015 and 2016, ACEP undertook a value-for-money (VFM) assessment of the Dawa irrigation dam on the one hand, and the Keyime and Ohawu irrigation dams on the other hand, to evaluate the progress of work, any accompanied challenges, and possible outcomes. The findings contributed to ACEP's advocacy for the need to target ABFA utilization and allow inclusiveness during project planning, among other recommendations. Following completion of these projects in 2017, ACEP undertook another field visit in June 2018 to assess the social, economic and environmental outcomes of all three projects on the project beneficiaries.

A summary of the findings of the assessment are as follows:

The Keyime irrigation dam rehabilitation project

Economic Outcomes

1. The project which received ABFA funds in 2015 and 2017 was completed in 2017 and is in use by Adzonkor and its neighbouring communities. This is after it had suffered a time overrun of thirteen (13) calendar months. The delay in project completion delayed economic returns that could have accrued to the farmers if the dam had been completed earlier.

2. The Adzonkor community is very pleased with the completion of the project as it has brought economic

relief to them and the other neighbouring communities. Farming is now done all year round. Farmers now produce five crates of tomatoes in five days for GHC200 and two crates of okra every three days, also for GHC200. This is twice the farm yield and returns prior to rehabilitation works.

3. There remains the need for government to complement the dam project with other essential farming inputs like fertilizer and weedicides. Farmers envisage that if they are supported with such farm inputs, their yield could triple.

4. What remains is for the irrigable land to be re-allocated to the farmers. This is expected to be done before the end of 2018, after the committee for the allocation is constituted.

Social outcomes

1. The social value is also enormous as it brings good cohesion among members of the Adzonkor community and members of neighbouring communities. The cohesion, when properly fostered can lead to joint business ventures which could yield significant economic and social returns to the communities.

2. The dam continues to serve all the domestic applications of the communities.

People no longer need to dig trenches to find water. Eventually, this will help reduce the incidents of diarrhea and other related diseases among the people.

3. The Adzonkor community is satisfied that government has heeded to their call to rehabilitate the Keyime dam. Hope is once again restored to the youth of Adzonkor community as farming has become more lucrative. The community is hopeful that more young people who have left home will return.

4. However, none of the respondents were aware that funds from the ABFA had been committed to the project. This shows a lack of inclusiveness of all relevant stakeholders in ABFA investments planning for development. Yet, this is important for inclusive governance and effective monitoring of ABFA utilization.

Environmental outcomes

1. The completion of the dam has helped reduce deforestation for charcoal production. It has also reduced carbon emissions which otherwise was caused by charcoal production and use.

Recommendations specific to the Keyime irrigation project

Based on the findings, the following are recommended to ensure optimal utilization of the Keyime irrigation dam:

1. The agriculture department of the district assembly should design a training programme under the current Planting for Food and Jobs Programme that would train Keyime farmers on:

2. The cultivation of new crops such as cabbage, beetroot, onions, cucumber, lettuce that mature within a short time, provide more yield and earn more income;

3. integrated pest control and management methods that are efficient and cost effective;

4. how to increase the quality of their crop produce;

5. writing simple proposals for assessing funds and contracting fundamentals to fund and expand their businesses;

6. processing and packing of their produce for supply in certain high-end markets;

7. various approaches to improving their marketing strategies and exploring the export market.

8. As much as possible, the Ministry of Agriculture should work closely with GIDA, the district assembly, development organizations and investors to provide the farmers with financial assistance and farm inputs that they may need to maximize their use of the dam.

9. GIDA and the district assembly should expedite action in constituting the committee that will allocate the irrigable farmland.

[The Ohawu irrigation dam rehabilitation project](#)

Economic outcomes

1. Farming remains unprofitable as the dam is still not completed. The funds committed to the project in 2017 went to the payments of interests accrued because of late payments to the contractor rather than the execution of project work. In view of this, the dam which remains the only available source of water for Ohawu and ten (10) other communities is of very little economic value to the communities. The communities remain bedeviled with the same economic hardships they were faced with before rehabilitation works began on the dam in 2015.

Social outcomes

1. Ohawu and its neighboring communities continue to manage the little available water the Ohawu

provides. The community is dissatisfied with how government has handled the dam rehabilitation process. They are not confident that the problem will be rectified any time soon.

2. Similar to Keyime, none of the respondents for the Ohawu project was aware of ABFA's contribution to the project. This remains a challenge in promoting active participation of citizens in how oil revenues are utilized in the country.

Environmental

1. As seepage through the dam wall continues, flooding and erosion is inevitable. The community's safety is at risk because if not repaired anytime soon, the dam could collapse eventually.

[Recommendations specific to the Ohawu irrigation project](#)

Based on the findings, the following are recommended to ensure realization of rehabilitation of the Ohawu irrigation dam

1. The government must commit funds to complete the Ohawu dam project. This must be done in a timely manner with periodic follow-up by GIDA and the Ministry of Finance to ensure that the project is completed effectively.

2. To clear any ambiguity of what ABFA disbursements have been used for, the Ministry of Finance must explicitly state in the reconciliation reports, the exact expenditure for which ABFA disbursements are made.

The Dawa irrigation project

The following findings were made on the Dawa project

Economic outcomes

1. The dam has advanced economic activities and encouraged the introduction of new crops such as onions into the community.

2. Generally, the standard of living in the community has improved due to higher incomes from farming, especially during dry season. Farm produce are also sold at a higher rate as harvest coincides with the lean season.

3. Soil on the Irrigable land is very clayey soil and does not adequately support the farming of vegetables such as pepper. Hence, high losses are incurred before the harvest. This does not enable the farmers to maximize the economic benefit of the irrigation system.

Social outcomes

1. Land owners who were displaced to make way for the construction of the dam and irrigable area have not been compensated.

2. Nutrition of the community has improved as new crops are introduced and fishing catches are increased

3. Migration of people from the Northern Region to the Dawa Community for farming purposes has increased.

4. The dam has provided a reliable water source for domestic purposes such as cleaning and washing.

Environmental outcomes

1. The dam water is constantly polluted because cattle herders water cattle in the stream at the dam while others wash clothing in it.

2. High levels of malaria and typhoid fever have been recorded. This is attributed to the domestic use of unwholesome water from the dam and the stream.

3. Three years after the rehabilitation, erosion has left the sides of the dam with deep gullies and visible breakaways of soil where the water meets the dam. There is a genuine fear that the dam will be breached once there are heavy rains. This poses as a safety risk to farmers and community members who use the dam as a walk way to their farms and the community on the opposite side of the river.

It is insightful that GIDA acknowledges these fears and stressed that its initial plan to incorporate boulders to protect the upstream of the dam against waves of water was shelved due to funding constraints. It however plans to revisit that initial intent when there is funding.

Other findings on the Dawa irrigation dam

1. Lack of maintenance plan

There is no formal plan for maintenance of the dam. The District Assembly has handed over the responsibility of maintenance of the dam to the Dam Committee to ensure that the dam is maintained regularly using funds obtained from levying the farmers.

2. Misuse of the dam

There has been misuse of the irrigation system by some farmers forcing the dam committee to detach the valve that turns on the system. The valve is only attached when farmers formally request for the use of the system.

Recommendations specific to the Dawa irrigation project

Based on the above findings, the following are recommended for the Dawa dam irrigation project:

1. The District assembly must liaise with the Dam Committee to plan for and provide regular professional

maintenance of the dam. Also, community stakeholders should own the dam and take charge of minor maintenance works such as cultivating the grass along the downstream section of the dam wall to prevent erosion.

2. There must be innovative ways of raising funding for proper maintenance of the dam.

3. Security must be provided at the site of the dam to prevent misuse.

4. Erosion of the upstream portion of the dam must be catered for using boulders, gravel or concrete in the shortest possible time to prevent another breach of the dam.

5. Agric extension officers must provide guidance into the right types of crops that can be planted on the fields as well as good farming practices to reduce the incidence of poor harvests.

Other (general) recommendations for future ABFA investment decisions

Based on lessons learned from field visit to the Dawa, Keyime, and Ohawu projects the following recommendations are made for future ABFA investment planning and cost-effective implementation:

To improve planning and implementation of future ABFA-funded Projects that are also cost-effective,

1. ABFA allocations must be made to projects that have been assessed to guarantee high economic, social and environmental benefits to the communities where projects are allocated to. As much as possible, broader consultations should be held with the communities for whom projects are designed. This will increase value and utility of projects funded by government.

2. Government must allow for inclusiveness across all levels of the implementation of ABFA funded projects. This will ensure that stakeholders are aware of the contribution of oil revenues for national development. This will promote active citizen participation in the monitoring of ABFA investments across the country, and increase citizenry trust for the government.

3. For agriculture projects, GIDA must put up appropriate mechanisms to ensure that its evaluation of irrigation projects is professionally done and credible for successful implementation of projects. Government should in turn provide the resources necessary for GIDA to adequately do its work. GIDA must be supported to plan and frugally implement cost-effective projects.

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Part One

Introduction

1.1 Brief Background

Petroleum revenue continues to be relevant to Ghana's development financing. This is particularly seen in how it constantly features in budgets for developmental projects across prioritized sectors of the economy. The Petroleum Revenue Management Act (PRMA), 2011 (Act 815) indicates how oil revenues should be utilized for national development through the Annual Budget Funding Amount (ABFA). Agriculture, touted as the backbone of Ghana's economy, is one of the sectors prioritized to receive funding from the ABFA, and has since 2011 to 2017 received GHC405,525,656.08. Out of this amount, the construction and rehabilitation of irrigation dams have received about GHC293,287,575.95.¹ It is common knowledge that irrigation remains crucial for agricultural modernization as agriculture in Ghana is predominantly rain-fed.

To provide monitoring support to government and ensure that existing and future ABFA-funded agriculture projects achieve intended outcomes, the Africa Centre for Energy Policy (ACEP) periodically conducts value-for-money (VFM) analysis of randomly selected projects, many of which are often-times under construction. This has often-times made it nearly impossible to assess full project outcomes. It has therefore become necessary to re-visit ABFA-funded projects, once completed, to capture the real post-completion outcomes (economic, social, and environmental) on targeted beneficiaries. By capturing success stories or otherwise, this approach would provide important learning curve for government and key stakeholders in ensuring that oil revenue investments yield the needed returns.

In June 2018, ACEP, with the support of Ghana Oil and Gas for Inclusive Growth (GOGIG), undertook an evaluation of the Dawa irrigation dam project in the Greater Accra region, and the Keyime and Ohawu irrigation dam in the Volta region.

¹ Computed by ACEP based on Reconciliation Reports on the Petroleum Holding Fund from various years.

About GHC740,393.38 of ABFA was disbursed to the Dawa irrigation project in both 2014 and 2017, while GHC2,037,858.73 of ABFA was disbursed to both the Keyime and Ohawu projects in 2017. It is important to also note that in 2015 an amount of GHC 16,043,953.28 was disbursed from the ABFA for the construction and rehabilitation of irrigation dams in seven (7) communities in the Upper East, Upper West, Central and Volta Regions of Ghana. The disbursement to the Volta Region went to the Keyime and Ohawu irrigation dams; however, the exact ABFA amounts could not be ascertained at the time of initial VFM field visit in 2016. ACEP found in 2016 that both the Keyime and Ohawu projects were not completed. This was same for the Dawa project in 2015. All three projects were completed in 2017, according to the 2017 reconciliation report on petroleum funds.

1.2 Objective of the evaluation

The objective of this evaluation was to determine the social, economic and environmental value of the Keyime, Ohawu and Dawa irrigation dams to the project communities upon completion of rehabilitation works that were funded from the ABFA. The assessment analyses the extent to which communities have benefited from the project or otherwise.

From the findings, recommendations have been made about how the use of the irrigation dams can best be maximized, and how the ABFA can be utilized more efficiently in future projects.

1.3 Methodology

The methodology for this report was mainly qualitative.

1.3.1 Data Collection

Primary data were obtained through observation, semi-structured interviews and administering of questionnaires during field survey of the Keyime, Ohawu and Dawa irrigation dams, as well as visits to the Ghana Irrigation Development Authority (GIDA) and all other identified respondents.

Through desktop research, secondary data were obtained from government reports such as the 2014, 2015 and 2017 Reconciliation Reports on the Petroleum Holding Fund, media articles, ACEP's 2015 VFM report on the Dawa project, and ACEP's 2016 VM report on the Keyime and Ohawu projects.

1.3.1.1 Observation Method

The observation method was adopted mainly to assess the current state of the project. It was also used to determine the way the dams were used by the farmers and other project

beneficiaries in and around the host communities.

1.3.1.2 Interviews

Interviews were conducted with key stakeholders. Interviews were guided by an evaluation framework in the form of a semi-structured questionnaire, to gather data from project beneficiaries on the social, economic and environmental outcomes of the projects. Telephone interviews were also carried out with stakeholders that were physically out of reach.

1.3.1.3 Questionnaire

A semi-structured questionnaire was used to collect primary data from respondents. The questionnaire used an open-ended method to allow the respondents to express their views regarding the project.

1.3.2 Selection of Respondents

A mixed method was adopted in selecting respondents. People in sensitive positions who were expected to have in-depth knowledge about the projects were purposively selected. In the case of the Keyime and Ohawu projects, these were mainly the Volta Regional Manager of GIDA, the Director of Agriculture at the District Assembly level, the Principal of Ohawu Agriculture Training College and the Assemblymen of the project communities.

On the Dawa project, the District Assembly members, farmers, the former assembly man and GIDA representatives were purposively selected. All others were selected randomly and through snowballing technique.

In all, primary data were collected from twenty-two (22) people on the Keyime project; nine (9) on the Ohawu project; and 13 on the Dawa project. Tables 2 and 3 below summarize the characteristics of respondents interviewed in the project communities.

Table 2: Characteristics of respondents - Keyime and Ohawu projects

Project	Description	Number	Gender
Keyime	Volta Regional Manager - GIDA	1	Male
	Director of Agriculture - Agotime-Ziope District Assembly	1	Male
	Assemblyman	1	Male
	Chief	1	Male
	Community elders	10	6 Males 4 Females
	Head of Adzonkor Health Centre	1	Female
	Health Personnel	7	5 Females, 2 Males
Total		22	12 Males, 10 females
Ohawu	Volta Regional Manager - GIDA	1	Male
	Principal of Ohawu Agriculture College	1	Male
	Unit members	3	Males
	Opinion leaders	2	Males
	Assemblyman	1	Male
	Queen mother	1	Female
Total		9	8 Males 1 Female

Source: ACEP Field Visit, 2018

All respondents, except the agriculture and health sector workers are farmers who use the dam.

Table 3: Characteristics of respondents - Dawa project

Organization	Description	Number	Gender
Community	Former Assembly man	1	Male
	Farmers	4	3 Males, 1 Female
	Fisherman	1	Male
	Dam Committee Chairman	1	Male
District Assembly	District Chief Executive	1	Male
	District Coordinator	1	Male
	Director of Agriculture	1	Male
	Extension Officer Supervisor	1	Male
GIDA	Acting CEO of GIDA	1	Male
	Director in Charge of Planning	1	Male
Total respondents		13	12 Males, 1 Female

Source: ACEP Field Visit, 2018 A three-part framework was adopted in the analysis.

1.3.3.1 Situational analysis of project communities prior to the rehabilitation of the dams

This part of the framework buttresses previous findings of ACEP’s 2015 and 2016 VFM reports on the social, economic and environmental context of the Dawa dam, and the Keyime and Ohawu dams prior to the commencement of any rehabilitation works. It also provides the opportunity to improve existing information with new insights following the second field visits.

1.3.3.2. of the project at the time of previous field visit

This section of the framework highlights the information gathered by ACEP’s 2015 and 2016 VFM reports on the economic, social and environmental situation of the project communities whilst rehabilitation works were ongoing. The rationale for this is to identify any change that occurred in the lives of the people whilst work was ongoing. Again, this section allows for additional details that may not have been captured during the initial field visits.

1.3.3.3 of the project post completion

With ACEP's 2015 and 2016 VFM reports as the baseline, the last part of the framework sought to gather data on how the projects, post completion, have benefitted the project communities economically, socially and environmentally.

1.4 Structure of the paper

The rest of the report is structured in four main parts. The next part presents the economic, social and environmental outcomes of the Keyime irrigation dam to the project beneficiaries. Parts three and four do same for the Ohawu and Dawa projects respectively. The remaining part highlights the key findings of the report, conclusion drawn and the recommendations made to address the issues raised.

Part two

Economic, Social and Environmental Outcomes of Oil Funded Irrigation Projects – The Case Of The Keyime Irrigation Dam Project

2.1 The Keyime irrigation dam rehabilitation project – A brief background

The Keyime irrigation dam is located at Adzonkor rural community located in the Agortime-Ziope District in the Volta Region of Ghana. Adzonkor is mainly an agrarian community; its people cultivate food crops such as rice, maize, tomatoes and okra. The Keyime dam serves more than fifty (50) communities in addition to Adzonkor, for all their domestic, livestock rearing and farming applications. The community has a borehole but water from the borehole cannot be used for any meaningful purpose due to high salinity.

In 2007, the dam wall breached and could no longer hold water. Requests were therefore made to the Ghana Irrigation Development Authority (GIDA), through the district assembly, for rehabilitation works to be done. However, due to lack of funds, the request was not met at the time. In 2013, the project was earmarked for rehabilitation following persistent requests. Finally, in October 2014, the contract for rehabilitation of the dam was awarded to Grumah Twins Company Limited. Work on the dam began in 2015 and was expected to be completed by February 2016. However, as of the time of ACEP's VFM field visit in January 2016, it was found that the project was 90% completed and estimated to be completed in June 2016 due to the lack of funds.² In March 2017, the Ministry of Finance reported that the project was completed.

ACEP's June 2018 field visit shows that the dam is now ready for use but allocation of the irrigable land for farming is yet to be done.

² Africa Centre for Energy Policy (2016). Value for Money (VFM) Analysis of Oil-Funded Irrigation Projects in Ghana: The Case of Keyime and Ohawu Irrigation Projects in the Volta Region of Ghana. Available at <https://new-acep-static.s3.amazonaws.com/reports/VFm+report+KEYME+AND+OHAWU.pdf> Accessed July, 2018.

A land allocation committee, comprising of community members and opinion leaders will be constituted for the allocation of the irrigable land and management of the dam. It is expected that farmers who are allocated portions of the irrigable land will pay a service charge which will be used for maintenance of the dam. The allocation is expected to take place before the end of 2018.

2.2 Situational analysis of the Keyime irrigation dam project prior to rehabilitation works

The economic, social and environmental situation of the Adzonkor community, prior to rehabilitation works are discussed below.

2.2.1 Economic Situation

1. Low farm yield and low income

The economic situation for the Adzonkor community was abysmal. Being an agrarian economy, farming activities were not productive. It was difficult to access water for farming and so farmers had to rely on the rains. In view of this, farming was done twice a year. Tomato farmers were making GHC100 for every two and a half crates of tomatoes which they usually harvested in five days. Okro farmers were producing just about a crate,

which they sold for GH 100, during the okra season. Farming was therefore not seen as a lucrative venture and most young people resorted to providing transportation services by motor bikes in the community. To create additional income, members of the community engaged in charcoal production which they sold during the dry season.

2.2.2 Social Situation

1. Water scarcity for domestic application and health implication of alternative sources

Being the only source of water for all their domestic applications, the Keyime dam was in very high demand to the Adzonkor and neighboring communities. However, water from the dam was not adequate to meet their needs, especially during the dry season, due to leakages. Community folks had to depend on the rains, or dig trenches to get water in the absence of rains.

This was very unhygienic for them, especially as they had very traditional means of treating the water for use - usually by using alum to settle the impurities. Again, prior to rehabilitation works, water from the dam would overflow during the rainy season onto an adjacent road, thereby obstructing free movement of vehicles.

2. Low educational attainment and teenage pregnancies.

Most young people of school going age usually dropped out of school after junior high school (JHS) and, in some cases, upper primary. This is usually because parents, due to unviable farming business, were financially constrained to further the education of their children beyond JHS level. The young boys tended to join motor riding or farming while the young girls usually learned skills in hairdressing or dressmaking. Other young girls who chose not to learn any skill usually got pregnant. From discussions with the health personnel at the health centre, it was found out that, before 2017, there were at least ten (10) cases of teenage pregnancies reported at the centre every year.

2.2.3 Environmental Situation

1. Polluted and unsafe water

One major environmental concern the Adzonkor community faced was the growing of weeds around the dam site which usually bred mosquitoes. As a result, the community was plagued with malaria, making up 90% of the cases reported at the health centre. The drinking of water dug from holes also resulted in diarrhoea, mostly among children below the age of ten (10).

2. Environmental degradation

Again, the cutting down of trees for charcoal production contributed to environmental degradation whilst the use of charcoal contributed to carbon emission in the community and its environs.

2.3 of the Keyime irrigation dam rehabilitation project at the time of previous visit in 2016

This section of the paper evaluates the economic, social and environmental outcomes of the Keyime irrigation project on the host communities as at the time of ACEP's first site visit in January 2016. At the time of the visit, the Keyime project was at 90% completed and awaiting additional funds to be continued.

2.3.1 Economic

1. Direct employment and increased income levels

Outside the jobs they already had as farmers, the project provided a source of decent employment and additional income for over three hundred (300) people from the community, two hundred and ten (210) of whom were women.

Workers on the project earned between two hundred Ghana Cedis (GH¢200.00) and six hundred Ghana Cedis (GH¢600.00) every month depending on the services provided. These ranged from security services to trenching, supplying of water, carrying stones and stone pitching. The women earned thirty Ghana Cedis (GH¢30.00) daily for supplying water.

Employment was on a rotational basis so as to provide a fair opportunity for the many people who had expressed interest to work on the site.

2. Indirect employment

It also provided an indirect opportunity for some women to locate and provide catering services near the site for the duration of the project.

3. Spill-over effects on farm investments

Most workers invested some of the money they earned into the procurement of farm inputs – fertilizer, seedlings, pesticides for their farming business.

2.3.2 Social Outcomes

1. Sense of inclusion and ownership of the project

The employment of the Adzonkor community members on the project provided an immense opportunity for the community to participate in the project, giving them a sense of inclusion and ownership of the project.

2. Social cohesion

The social cohesion of the community was also increased by this project, as it provided a platform for the community to discuss how they can mobilize to solve other problems that they faced. The return and employment of some of young men from the community who live and prospect for work in the cities served as an opportunity for them to reunite with their families and community.

3. Increased trust for government

The project increased the faith that the community had for government to respond to its needs. It also served as a positive feedback to the community members that the socio-political process of engaging themselves

with government to have their problems solved works, as this is important for growth of democratic culture and national development.

4. Water for domestic application

The ongoing works on the dam will help to retain the water, thereby providing Adzonkor and other neighbouring communities with drinking water and water for other domestic purposes.

2.3.3 Environmental

1. Reduced incidence of land degradation and deforestation

Construction work for the project led to a reduction on the number of trenches that were being dug for the collection of water in farmlands and around the community. The employment that the project provided reduced the cutting of trees in the community for charcoal production. This, no doubt, had a positive on the environment as the flora served as carbon sinks. The reduction in charcoal production helped reduce deforestation and carbon emissions.

2.4 of the Keyime irrigation dam rehabilitation project post completion

This project was completed in 2017 and is in use by the community.

However, the 27-hectares irrigable land adjacent the dam is yet to be allocated to the farmers. The committee that would be responsible for this allocation is yet to be constituted. The committee will consist of the community elders, representative(s) of the chiefs and families that gave up their land for use as irrigable farms, representative(s) of GIDA, representative(s) of the Agricultural Department of the District Assembly. Until the committee equitably allocates the irrigable farms, farmers can only pump water from the dam to irrigate their existing farms.

2.4.1 Economic

2. Increased cultivation cycles

Before the completion of the project the farmers used to cultivate their farms twice a year. With the completion of the project, the farmers now cultivate their farms thrice a year using water from the dam. The farmers can grow more tomatoes, okra, garden egg, pepper, and maize with the help of the dam.

3. Increased farm yields and incomes

For every hectare of farm cultivated, the farmers earn at least two hundred Ghana Cedis (GH 200.00) every three days for two crates of okra; five crates of tomatoes every five days which normally sell for a minimum of two

hundred Cedis (GH 200.00) depending on the farming season and market supply and demand; two (2) NPK bags of pepper every two (2) weeks, and ten (10) to forty (40) bags of No.5 sacks of maize per farming season depending on farming inputs and other conditions that affect yield. The yields and revenue from the use of the irrigable farm promises to be enormous when the farms are allocated to the farmers.

4. Additional income from farm leases

Once allocation is done, the farmers will pay a service charge for the use of the irrigable farms. Part of this charge will be used for maintaining the irrigation dam, while the remainder will be paid to the land owners who freely gave their land to be used as irrigable farmlands. Already, native farmers and landlords are earning revenue from rent of farms and houses in Adzonkor from over 150 farmers who are non-natives but come to Adzonkor with their families to farm because of the completion of the project.

5. Opportunities for fishing

Fishing in the Keyime dam is yet to be allowed as the community

must first perform some rites to culturally open the dam for fishing. Once this is done, daily fishing cards will be sold to fishermen who wish to fish in the dam. These fees collected from the use of the dam by the community will be used for the development of other infrastructure in the community.

6. Limited farm inputs and on optimizing the use of the dam

The farmers were concerned that they will not be able to maximally utilize the entire 27 hectares of irrigable farmland without being assisted with farming inputs including fertilizers, sprayers, seedlings, and irrigation machines. The farmers are interested and willing to farm new crops such as lettuce, cabbage, onions, cucumber and beetroot on the farms to increase their income.

2.4.2 Social

1. Migration

The members of Adzonkor community are excited about the completion of the project as it has potential to improve the social relations of the community with over 50 communities that will be benefiting from the dam. Adzonkor has become more welcoming and hospitable in treating visitors who are mostly non-natives that come to the

community to farm. This social cohesion with neighboring communities and non-natives will contribute to building a socially progressive culture and prosperous community for Adzonkor. Importantly, they expect that more young people, especially the girls (JHS leavers) and women, from the community who currently reside in big cities and are without jobs would return home to become useful members of the community.

2. Stronger social cohesion

The social relationship of the community and GIDA is further strengthened as they have confidence in GIDA and government to provide them with the required assistance to maximally utilize the potential of the dam.

3. Abundant water supply for domestic use

The water from the dam adequately serves the domestic and livestock needs of the community and other neighboring communities all year round.

4. Free movement of people and goods

The completion of the project has also stopped the usual flooding of the road between the Adzonkor and other communities which means that movement of people, goods and services is no longer restricted at any time of the year.

2.4.3 Environmental

1. Improved biodiversity

The maximum utilization of the dam will improve the biodiversity and ecosystem of the community and the water body. Flooding that usually occurred during rainy season no longer takes place. The degradation of the environment through digging of trenches to collect water during dry season has stopped. Also, there has been a reduction in the production of charcoal during the dry season for alternative income as the farming in the dry season provides income for the farmers and their families.

2. Rising cases of Bilharzia

Unfortunately, accounts by the health center personnel indicate that there have been some health issues associated with use of the dam that has increased upon completion of the dam.

In the last quarter of 2017 the health center in the community recorded 8 to 10 cases of Bilharzia (schistosomiasis). Some community members report swollen and itching of the skin after standing in the dam water. Increase in malaria and other insect bites are also reported.

Part Three

Economic, Social And Environmental Of Oil Funded Irrigation Projects – The Case Of Ohawu Irrigation Dam Project

3.1 Ohawu irrigation dam rehabilitation project – A brief background

The Ohawu irrigation dam is located in Ohawu, a rural community located in the Ketu North District in the Volta Region of Ghana. Like Keyime, it is an agrarian economy and produces crops such as rice, maize, tomatoes and onions. Until it later breached, the Ohawu dam, constructed in the late 70's, served Ohawu and ten (10) other communities for all their domestic, livestock rearing, and farming applications. The Ohawu Agriculture College, which is focused on training human resources for the agricultural sector, also depended on the dam.

The Ohawu community requested for dam rehabilitation mainly for the reconstruction of the dam wall, extension of the dam canal and construction of a walkway along the ends of the dam. After several persistent requests from the community, a contract was awarded in 2014 to Grumah Twins Company Limited – the very contractor to whom the Keyime project was awarded - to undertake the rehabilitation works. It was expected to be completed in February 2016. However, when work began, that there was an unanticipated leakage in the dam wall which required more funds to fix. As of the time of ACEP's first visit to the project site in January 2016, the project had halted due to financial constraints. The progress of work at the time of visit was estimated by GIDA to be 60% completed.³

Although the 2017 Reconciliation Report on the Petroleum Holding Fund indicates that an amount of GHC2,037,858.73 was disbursed from the ABFA for its completion, together with the Keyime project,

³ Africa Centre for Energy Policy (2016). Value for Money (VFM) Analysis of Oil-Funded Irrigation Projects in Ghana: The Case of Keyime and Ohawu Irrigation Projects in the Volta Region of Ghana. Available at <https://new-acep-static.s3.amazonaws.com/reports/VFm+report+KEYME+AND+OHAWU.pdf> Accessed July, 2018.

ACEP’s June 2018 field visit disclosed that no progress has been made on the Ohawu irrigation dam since the initial survey in 2016. Further checks with GIDA disclosed that the quoted disbursement was for payments of contractor’s retention and interests accrued from delayed payments of previous works he had done in 2016. These payments were made to the contractor in 2017. Table 4 gives a breakdown of the payments.

Table 4: Breakdown of 2017 ABFA disbursement to Keyime and Ohawu projects

Item	Certificate Number	Issue Date	Amount (GHC)
Total amount of interest claims to date	Payment Certificate No. 6	11th November, 2016	1,465,563.37
Contractor’s Retention Release	Payment Certificate No. 7	21st April, 2017	572,295.36
Total Amount			2,037,858.75

Source: ACEP Field Visit, 2018

3.2 Situational analysis of the Ohawu irrigation dam project prior to rehabilitation works

The economic, social and environmental situation of the Ohawu and surrounding communities, following breach of the dam and prior to rehabilitation works are discussed below:

3.2.1 Economic Situation

1. Low yield and low income from farming

Following the breach of the dam, and before any rehabilitation work was done, agriculture in Ohawu was mainly rain-fed.

Farming was therefore done once or twice a year and farmers had very low yield. Farmers were constrained to mainly grow rice and maize because those were fruitful in the rainy season. Okra, which was lucrative in the dry season, fetching close to GH 5,000 per acre (average market price), could not be cultivated due to the lack of water. The average annual income of farmers in Ohawu typically ranged between GHC1,400 and GHC2,500 for both rice and maize farmers.

3.2.2 Social Situation

1. Water scarcity for domestic application

Social life in Ohawu was very similar to that of Keyime. Water was scarce, and most homes depended on the dam and rainfall for their domestic applications. Life in Ohawu remained that of the survival of the fittest as community people had no other option than to survive on the limited and only available water from the dam.

2. Low educational attainment and high incidence of teenage pregnancy

Like Keyime, most young girls and boys of school going age, hardly completed JHS. The young boys resorted to transporting people via motor bikes at a fee whilst the young girls learnt a trade; dressmaking or hairdressing. Teenage pregnancies were quite common, although the number of cases in a year could not be determined.

3. Negative on practical crop research work at the Ohawu Agriculture College

The failing condition of the dam also had adverse effect on the Ohawu Agriculture College. Prior to rehabilitation works on the dam, students of the Ohawu Agriculture

College who undertook practical research works had to periodically fetch water manually from the dam to irrigate their crops since the low level of the water made it difficult to pump. The tedious nature of research projects became a disincentive for students to undertake experimental research through which new and more efficient farming techniques could be discovered. Most students preferred to conduct social agriculture research than crop research.

3.2.3 Environmental Situation

1. Flooding due to breach and consequences on farming, transportation, and health .

The major environmental concern of the Ohawu community was the seepage of water from the dam which blocked footpaths and swamped up some farms. This made it difficult for community members to commute freely to other communities. Commuting sometimes resulted in injuries as they tried to jump puddles in the process. Through communal labour, the residents tried filling the puddles with stones but this effort was inadequate. The swamps also became breeding

sites for mosquitoes, and led to health implications.

3.3 of the Ohawu project at the time of previous field visit

3.3.1 Economic Outcomes

1. Direct employment

The Ohawu irrigation project provided employment and additional income for the people of the Ohawu community through the provision of services like trenching, supplying water, carrying stones and stone pitching. Like that of Keyime, the income earned by the workers employed on the Ohawu project was between two hundred Ghana Cedis (GHC200.00) to six hundred Ghana Cedis (GH¢600.00) earned monthly and thirty Ghana Cedis (GH¢30.00) earned daily.

2. Indirect employment

The rehabilitation works at the dam provided a lucrative motor bike business for some young men in the community, who transported some project workers to the project site.

3. Spill-over effects on farm investments

Again, like the Keyime project, it provided the workers additional funds that they invested in their

farming business.

4. Loss of yield and income due to continuous water seepage from the dam

Nearby farms water-logged due to water seepage from the dam. This created an uncondusive environment for the growth of some crops like tomatoes and pepper. The reduction in the yield of the crops resulted in the loss of income to the farmers.

5. Increased cost of crop research at the Ohawu Agriculture College

The halting of the project due to limited financing had an adverse effect on the Ohawu Agriculture College as it incurred high electricity costs to pump water needed for research activities. Due to the delay in the completion of the project, significant economic opportunities that could have resulted from research findings, had the dam been completed, were lost.

3.3.2 Social

1. Lack of trust for the government

The project offered the community the opportunity to be involved in the development of

infrastructure that benefits them. The challenges associated with the slow pace of work, as well as the seepages into the dam wall resulted to the eventual halt of the project due to lack of funds to rectify the problems and continue the project. This situation led to the members of the community becoming disgruntled and uncertain of government's ability to address their challenges effectively.

2. Inter-community disagreements

The commencement of the project also raised tension between Ohawu and another neighbouring community of what the name of the dam should be called and who was to take majority control, utilization and management of the dam once completed. Fortunately, the District Assembly intervened by mediating on the matter to call it by the name of the host community. The project therefore could not serve as a platform for social interaction, understanding and cohesion among community members, the Agriculture College and other users of the dam.

3.3.3 Environmental

1. Flooding

The seepages that surfaced and the halt of the project created channels

by which severe erosion of soil is most likely to occur in the area. This also posed potential environmental of flooding of the farmlands and the area around the dam if the seepage continued.

3.4 of the Ohawu project post completion

As at the time of ACEP's second visit in June 2018, no further work had been done on the Ohawu project since the first visit in January 2016. By this indication, the Ohawu project is still 60% completed.

3.4.1 Economic

1. Little evidence of economic value, particularly in agriculture

On the part of the Ohawu irrigation project, there is very little evidence that the dam serves any economic value to Ohawu, its neighboring communities, or the Ohawu Agriculture College. The water only serves domestic and livestock purposes as it did, prior to rehabilitation.

2. Financial relief to crop research by Ohawu Agriculture College through donor support

The Ohawu College has received sponsorship from the Spanish

government for the construction of a reservoir. This is what the college now uses for its research works since the dam is no longer reliable.

3.4.2 Social outcomes

1. Mistrust for government

The communities are dissatisfied with the State due to the delay in rehabilitating the dam. The people have lost hope that the problem will be resolved soon.

3.4.3 Environmental outcomes

1. Land degradation

They are also disgruntled the project contractor who scooped huge quantities of sand from a nearby farm to fill the pathway behind the dam which links Ohawu and the Vume communities. The contractor has failed to reclaim the land from which he scooped the sand, although he was only allowed to do so because he promised to restore the land. Further checks with the contractor indicate that he is still committed to reclaim that portion of land once he is paid to complete the project.

Picture 1: Land degraded by contractor



Source: ACEP Field Visit, 2018

2. Inaccessible road due to flooding

Footpaths continue to be flooded with water from the leaking dam, restricting movements. School children have had to use a longer route to school as the shorter route has become inaccessible due to the flooding.

Picture 2: Pathway linking Ohawu and Vume communities from the dam area



Source: ACEP Field Visit, 2018

Picture 3: Water seeping from crack in the dam wall



Source: ACEP Field Visit, 2018

3. Gullies created due to erosion from seepages

A disaster is waiting to happen as the seepages and other structural defects in the project are already causing erosion that keeps compromising the integrity of the dam. Already, the seeping water has created gullies which threatens safety of community members. Some of the erosion has been contained through communal labour and help from the District Assembly. Further work is required on the site as soon as possible to ensure that the situation does not get worse.

Picture 4: Seeping water creating gullies as it flows from the leaking dam wall



Source: ACEP Field Visit, 2018

Part Four

Economic, Social And Environmental Of Oil Funded Irrigation Projects – The Case Of The Dawa Irrigation Dam Project

4.1 Dawa irrigation dam project – A brief background

The Dawa community in the Ningo-Prampram district is predominantly a vegetable farming and cattle rearing community. Products grown include okro, tomatoes, pepper, onions and watermelons. The Dawa community was selected by the Ghana Irrigation Development Authority after a nationwide feasibility study to be a beneficiary of the irrigation dam. The Dawa irrigation dam was constructed between 2011 and 2012 to supply water to a farm area of about 55 acres to alleviate the negative of the dry season on farming activities in the Dawa community and its environs.

In 2013, after the completion of the dam during the defect liability period, heavy rains resulted in a breach of the dam. The water from the breached dam destroyed the farms and the irrigation system pipelines. The government decided to rehabilitate the project in 2013 through the Ghana Irrigation Development Authority. The rehabilitation process increased the original cost of the project from GH¢1, 696,014.75 to a total value of GH¢2,403,189.75. ⁴

In 2014 and 2017, GH¢570,903 and GH¢ 169,490.38 were recorded respectively as disbursement for the rehabilitation of the dam. These amounts were allocated from oil revenues through the Annual Budget Funding Amount (ABFA) priority area of agriculture modernization.

4.2 Situational analysis before the rehabilitation of the Dawa Irrigation Dam

This section highlights the social, economic and environmental state of the Dawa community before the construction of the dam. It also highlights the extent of the breach of the dam.

⁴ ACEP. (2015). Making every pesewa count in managing Ghana's oil revenues: the role of value for money audit.

4.2.1 Economic Situation

1. Seasonal harvests and low incomes for farmers prior to the building of the dam.

Farming only occurred in the rainy season and was limited to areas where the soil type was favourable. This implied that incomes were limited to seasonal harvests (rainy season). Farmers grew only pepper, watermelon and tomatoes. Since all farming activities were restricted to the rainy season, there were huge bumper harvests but this translated into low incomes due to over-supply of farm produce and high post-harvest losses.

2. Challenges with cattle rearing and fishing during the dry season prior to the building of the dam.

Cattle rearing was a challenge as farmers had to travel long distances to find enough water for the cattle during the dry season. Fishing was done on a very small scale only for domestic purposes since the water in the stream was too shallow.

3. Loss of farms and income post dam construction and during rehabilitation works.

The community had just begun to enjoy the benefits of the newly constructed dam when heavy rains in 2013 broke the dam wall.

The force of the water washed away the prepared farm land and some pipes connected to the irrigation system, forcing the farmers to stop farming for a period of 6 months. The destruction of the farms resulted in a loss of income to all the farmers for that planting season.

Furthermore, farming time was lost during the period of the rehabilitation. According to the farmers, the top soil, the most fertile layer, had been washed away by the water, leaving the land less fertile than in previous years. After the completion of the rehabilitation farming and fishing activities resumed.

4.2.2 Social Situation

1. Inadequate water supply for domestic and other application

Prior to the construction of the dam, the population was estimated to be about 2,800 people who were mainly natives of the area. Farming, cattle rearing, and fishing were the main occupations of the indigenes. The community depended greatly on the stream for their daily domestic activities as well as their livelihoods. The shallow stream however could not

adequately support their activities since it dried up during the dry season.

4.2.3 Environmental Situation

1. Water pollution and attendant health hazards

Before the creation of the dam, residents of the community shared the shallow stream with animals. In the dry season, when the stream dried up, residents were forced to travel long distances to find water for domestic purposes. Due to this, diseases such as typhoid caused by poor hygiene were rife.

4.3 Pictures of the Dawa irrigation project at the time of completion of rehabilitation works and previous field visit

In 2015, when ACEP visited the dam to carry out the value for money analysis, the rehabilitation works were complete and the dam was functional. This section explores the economic, social and environmental outcomes of the Dawa Irrigation Project. Below are pictures of the dam.

Picture 5: Dawa Irrigation dam wall



Source: ACEP Field Visit, 2018

Picture 6: Dam Overflow



Source: ACEP Field Visit, 2018

Picture 7: Irrigable land



Source: ACEP Field Visit, 2018

4.3.1 Economic

1. Introduction of new crops

Residents of the Dawa community are mainly, watermelon, tomato, pepper and okro farmers. After the rehabilitation of the dam, migrants from the northern region settled in the area to farm onions. An onion farmer reaps between 30 - 60 bags of onions per plot in a given season and sells each bag for at least GHC500. This translates into an income of GHC15,000- GHC30,000 per farming season. This is income which did not exist prior to the creation of the dam. There are about 20 to 25 farmers who farm on the 55-acre irrigable area seasonally.

There are other nearby parcels of land that benefit from the dam

2. Flourishing

small-scale/subsistence fishing activities

Fishing for tilapia and mud fish occurs in the dam though fishing is mainly for subsistence and small scale business.

3. Increased yield and higher incomes during dry season

Following the rehabilitation of the dam, farmers are not limited to cultivating pepper, watermelon, and tomatoes during the rainy season in areas where soil type is favourable. Farmers can now cultivate the entire irrigable land during the dry season, harvest produce after the supply glut from rainy season has been done away with on the market, and earn higher income than they do in the rainy season.

For instance, the farmers on the irrigable land sell a truck load of watermelons for GHC8,500 in March after cultivation in the dry season. By July the price falls to about GHC 3,500 per truck load due to the oversupply of watermelons after cultivation in the rainy season.

Similarly, the farmers sell a bag of pepper, popularly known as 'Number 5 sack', for about GHC350 before the start of the rainy season. The price falls to about GHC200 when the rainy season bumper harvest arrives. However, the soil does not adequately support pepper farming hence an average of 1 bag is reaped per season. Okro, in like manner sells at 8 fingers for GHC1 at the end of the dry season and 12 fingers for GHC1 at the end of the rainy season. The farmers take full advantage of the scarcity of produce after the dry season to increase their incomes. This was not the case in the past when there was no dam and when the dam was breached.

4.3.2 Social

1. Migration

The population of the Dawa community is estimated to be 3000 currently, an increase from 2,800 before the rehabilitation of the Dam. The fairly youthful population is made up of about 90% natives and 10% non-natives from other areas like Ashiaman in the Greater Accra Region and the Northern region who introduced onion farming in the area.

2. Reliable source of water for domestic and commercial application

The dam has provided a reliable water source for domestic purposes such as cleaning and washing, though many do not use the water for cooking since pipe borne water is available. However, on days when pipe borne water is unavailable, the water from the dam serves as a substitute in all domestic activities. It has also provided water for building construction, and cattle rearing. Reliable water supply the dam provides has resulted in a boost in annual farm and fishing produce, this has improved the level of nutrition in the community.

3. Unpaid compensation to expropriated farmers

During the construction of the dam 500 people were displaced⁵. Till date, none of these people who lost farmlands to the dam construction have been compensated by the government. However, out of goodwill, some people not affected by the construction agreed to share their farmlands with the affected people to help them fend for themselves.

⁵ See <https://www.modernghana.com/news/355519/dawa-irrigation-project-set-off.html>

4. Mixed outcomes on educational attainment

According to the former Assembly Man, many boys prefer to drop out of school and engage in farming after junior high school or senior high school because they believe there is greater financial security in farming since many do not get employed after completing school. However, girls have generally had little interest in farming over the years and have preferred to learn trades. In the past year, this has also reduced as many girls took advantage of the Free Senior High School opportunity. Some of the youth in the area have also been employed by the new factories and businesses in the area.

4.3.3 Environmental

1. Pollution of the dam water and resultant health implications

Cattle herders water cattle in the stream and at the dam while others wash clothing in it. Locals have been instructed by community elders, including the former Assembly man and the Dam Committee, on several occasions to avoid bathing and attending to nature's call in the stream or at the dam site. They have also been prevented from farming along the sides of the dam to protect it.

These instructions however are not always adhered to.

Due to poor sanitation practices and water pollution, the community records high levels of malaria and typhoid fever. Particularly, typhoid is attributed to the domestic use of unwholesome water from the dam and the stream when the pipe borne water is unavailable. These challenges, though important, cannot be wholly attributed to the rehabilitation of the dam.

4.3.4 Maintenance of the Dam

In 2016, the dam was formally handed over to the District Assembly by the Ghana Irrigation Development Authority (GIDA). The Agriculture Directorate of the District Assembly was tasked with the responsibility of providing technical support to the beneficiaries in maintaining and providing general oversight of the dam. However, there are no funds set aside by the District Assembly to cater for maintenance. A Dam Committee was constituted at the time of constructing the dam to ensure regular maintenance works on the dam. The committee monitors the use of the dam and undertakes measures such as

removing valve handles to prevent misuse of the dam.

To cater for maintenance all farmers pay a levy of GHC60 every planting season to the Dam Committee. These funds are used to pay for plumbing works done on the pipes and valves when the need arises. However, it was revealed during engagements with GIDA that the community stakeholders need to be more proactive in maintaining the dam. One way this could be done is to regularly cultivate and maintain the grass on the exterior of the dam wall to prevent erosion. This is particularly necessary in the face of funding challenges that confront both GIDA and the Agriculture Directorate which render them less capacitated to undertake regular maintenance.

An extension officer from the District Assembly Agriculture Directorate is assigned to the area to carry out regular inspection of the dam as well as activities of the farmers but this has generally been inadequate owing to insufficient funds and understaffing at the Directorate. This notwithstanding, he provides a quarterly report to the District Assembly.

It is important to note that since the completion of the installation of the irrigation system and the rehabilitation of the breached wall there have been no professional maintenance works carried out on the irrigation system.

Picture 8: The portion of the dam that was rehabilitated and already suffering from gulley erosion



Source: ACEP Field Visit, 2018

Picture 9: A section of the upstream wall of the dam breaking off



Source: ACEP Field Visit, 2018

Picture 10: Gully erosion on the downstream slope of the dam



Source: ACEP Field Visit,2018

Picture 11: Irrigation pump valve without the handle



Source: ACEP Field Visit,2018

Part Five

Summary Of Key Findings, Conclusion, And Recommendations

5.1 Summary of key findings

The key findings of the evaluation are summarized below

5.1.1 The Keyime irrigation dam rehabilitation project

Economic Outcomes

1. The project which received ABFA funds in 2015 and 2017 was completed in 2017 and is in use by Adzonkor and its neighboring communities. This is after it had suffered a time overrun of thirteen (13) calendar months. The delay in project completion delayed economic returns that could have accrued to the farmers if the dam had been completed earlier.

2. The Adzonkor community is very pleased with the completion of the project as it has brought economic relief to them and the other neighboring communities.

Farming is now done all year round. Farmers now produce five crates of tomatoes in five days for GHC200 and two crates of okra every three days, also for GHC200. This is twice the farm yield and returns prior to rehabilitation works.

3. There remains the need for government to complement the dam project with other essential farming inputs like fertilizer and weedicides. Farmers envisage that if they are supported with such farm inputs, their yield could triple.

4. What remains is for the irrigable land to be re-allocated to the farmers. This is expected to be done before the end of 2018, after the committee for the allocation is constituted.

Social outcomes

1. The social value is also enormous as it brings good cohesion among members of the Adzonkor community and members of neighboring communities. The cohesion, when properly fostered can lead to joint business ventures which could yield significant economic and social returns to the communities.

2. The dam continues to serve all the domestic applications of the communities. People no longer need to dig trenches to find water. Eventually, this will help reduce the incidents of diarrhea and other related diseases among the people.

3. The Adzonkor community is satisfied that government has heeded to their call to rehabilitate the Keyime dam. Hope is once again restored to the youth of Adzonkor community as farming has become more lucrative. The community is hopeful that more young people who have left home will return.

4. However, none of the respondents were aware that funds from the ABFA had been committed to the project. This shows a lack of inclusiveness of all relevant stakeholders in ABFA investments planning for development. Yet, this is important for inclusive governance and effective monitoring of ABFA utilization.

Environmental outcomes

1. The completion of the dam has helped reduce deforestation for charcoal production. It has also reduced carbon emissions which otherwise was caused by charcoal production and use.

5.1.2 The Ohawu irrigation rehabilitation project

Economic outcomes

Farming remains unprofitable as the dam is still not completed. The funds committed to the project in 2017 went to the payments of interests accrued because of late payments to the contractor rather than the execution of project work. In view of this, the dam which remains the only available source of water for Ohawu and ten (10) other communities is of very little economic value to the communities. The communities remain bedeviled with the same economic hardships they were faced with before rehabilitation works began on the dam in 2015.

Social outcomes

1. Ohawu and its neighboring communities continue to manage the little available water the Ohawu dam provides. The community is dissatisfied with how government has handled the dam rehabilitation process. They are not confident that the problem will be rectified any time soon.

2. Similar to Keyime, none of the respondents for the Ohawu project was aware of ABFA's

contribution to the project. This remains a challenge in promoting active participation of citizens in how oil revenues are utilized in the country.

Environmental outcomes

1. As seepage through the dam wall continues, flooding and erosion is inevitable. The community's safety is at risk because if not repaired anytime soon, the dam could collapse eventually.

5.1.3 The Dawa irrigation project

Economic outcomes

1. The dam has advanced economic activities and encouraged the introduction of new crops such as onions into the community.

2. Generally, the standard of living in the community has improved due to higher incomes from farming, especially during dry season. Farm produce are also sold at a higher rate as harvest coincides with the lean season.

3. Soil on the irrigable land is very clayey soil and does not adequately support the farming of vegetables such as pepper. Hence, high losses are incurred before the harvest. This does not enable the farmers to

maximize the economic benefit of the irrigation system.

Social outcomes

1. Land owners who were displaced to make way for the construction of the dam and irrigable area have not been compensated.

2. Nutrition of the community has improved as new crops are introduced and fishing catches are increased

3. Migration of people from the Northern Region to the Dawa Community for farming purposes has increased.

4. The dam has provided a reliable water source for domestic purposes such as cleaning and washing.

Environmental outcomes

1. The dam water is constantly polluted because cattle herders water cattle in the stream at the dam while others wash clothing in it.

2. High levels of malaria and typhoid fever have been recorded. This is attributed to the domestic use of unwholesome water from

the dam and the stream.

3. Three years after the rehabilitation, erosion has left the sides of the dam with deep gullies and visible breakaways of soil where the water meets the dam. There is a genuine fear that the dam will be breached once there are heavy rains. This poses as a safety risk to farmers and community members who use the dam as a walk way to their farms and the community on the opposite side of the river. It is insightful that GIDA acknowledges these fears and stressed that its initial plan to incorporate boulders to protect the upstream of the dam against waves of water was shelved due to funding constraints. It however plans to revisit that initial intent when there is funding.

5.1.4 Other findings on the Dawa irrigation dam

1. Lack of maintenance plan

There is no formal plan for maintenance of the dam. The District Assembly has handed over the responsibility of maintenance of the dam to the Dam Committee to ensure that the dam is maintained regularly using funds obtained from levying the farmers.

2. Misuse of the dam

There has been misuse of the irrigation system by some farmers forcing the dam committee to detach the valve that turns on the system. The valve is only attached when farmers formally request for the use of the system.

5.2 Conclusion

The analysis sought to determine the outcomes of the Keyime, Ohawu and Dawa dam projects on the project beneficiaries. Using ACEP's 2015 and 2016 VFM report on the above-mentioned projects as baseline information, a second field survey was conducted in 2018 to buttress the findings made in 2016 and provide further insights that were not captured during the 2015 and 2016 visits. For the purpose of this report, primary data were sourced through semi-structured interviews, questionnaires and observations. Secondary data were also sourced from the 2015 and 2017 Reconciliation Reports on the Petroleum Holding Fund. These data formed the basis on which the economic, social and environmental contexts of the three projects before, during and post rehabilitation works were assessed.

The analyses show that all but the Ohawu irrigation project have had more positive outcomes on project communities. By rehabilitating the Keyime dam, farm yields and incomes have increased; new crops have been introduced; opportunities have been created for subsistence and small-scale fishing; and water from the dams serve domestic purposes. There is also increased trust for government, and strong social cohesion.

However, some issues remain outstanding. Although farming is on-going around the Keyime irrigation dam, irrigable lands are yet to be re-allocated to farmers. Farm re-allocation will happen when a committee is constituted, at an unknown period, to do so. Also, farmers acknowledged that despite the dam, the lack of adequate farm inputs and knowledge of appropriate farming and agribusiness techniques could limit the optimal use of the dam.

It is important that the irrigable farms be allocated to the farmers as soon as possible so that the farms can be put to productive use. Significant of the dam can be achieved if the government made further necessary investments by

providing the farmers with the agriculture inputs they need. The Agriculture Department in the district must also provide extension services to these farmers especially in cultivating new market ready crops that will earn more income than what they currently do; and teach them other skills that they need to grow their business.

In the case of Dawa, the project generally had a positive on the Dawa Community. By providing a reliable source of water, farmers are able to continue farming in the dry season, fishermen can fish all year round and there is sufficient water supply to water cattle and carry out domestic activities. This has improved the standard of living of the people in the area as nutrition has improved and incomes are assured all year round.

Nevertheless, there is a genuine fear that the benefits of the dam would be short lived. Erosion occurring on the dam walls continues to increase the possibility of a breach of the dam if rainfall levels exceed the dam capacity. To prevent this the community must play an active role in securing the downstream

section of the dam by planting grass regularly while GIDA makes the effort to provide boulders to secure the downstream section of the dam wall. Additionally, the district Assembly must partner with the Dam Committee to find innovative ways of raising funds beyond the seasonal levy to cater for professional maintenance. This will ensure that the life span of the irrigation system is preserved.

It was worth noting that the Ohawu project has still not been completed because of lack of funds to pay for the increased project cost following discovery of seepages that were not initially flagged by GIDA during the pre-feasibility assessment of the dam. Again, the analyses show that although oil revenues remain relevant to national development, the manner in which oil funded projects are executed can curtail the extent to which such projects can become beneficial to the intended beneficiaries. This is highlighted in the case of the Ohawu project, which would have been prevented had GIDA taken necessary measures to ensure that its evaluation of rehabilitation works on the dam was professionally done, as our interaction with GIDA revealed.

Again, it is unfortunate that oil revenues that should have contributed to agricultural modernization through the rehabilitation of dams have been spent on interests accrued due to delayed payments of work done by contractor as was the case for the Ohawu project. Such inefficient utilization of the ABFA has contributed to the grim living conditions the Ohawu community is faced with today. It is therefore safe to conclude that the money spent on the Ohawu dam for rehabilitation has gone down the drain.

As was noted during interaction with different stakeholders, the stakeholders were not consulted for their inputs towards the planning and implementation of the project, which would have provided an opening for the scope of the project to be known before project commencement.

This shows that GIDA, the Ministry of Finance and agencies responsible for selection, budgeting and planning of projects implemented under the ABFA have a lot to learn from the successes and 'failures' of

ABFA-funded projects to serve as models for future projects. This is necessary as more projects will continue to be planned and implemented with funds from the ABFA.

5.3 Recommendations

Based on the findings, the following are recommended to ensure optimal utilization of the Keyime, Ohawu and Dawa irrigation dams:

5.3.1 Recommendations specific to the Keyime irrigation project

1. The agriculture department of the district assembly should design a training programme under the current Planting for Food and Jobs Programme that would train Keyime farmers on;
2. the cultivation of new crops such as cabbage, beetroot, onions, cucumber, lettuce that mature within a short time, provide more yield and earn more income;
3. integrated pest control and management methods that are efficient and cost effective;
4. how to increase the quality of their crop produce;

5. writing simple proposals for assessing funds and contracting fundamentals to fund and expand their businesses;

6. processing and packing of their produce for supply in certain high-end markets;

7. various approaches to improving their marketing strategies and exploring the export market.

8. As much as possible, the Ministry of Agriculture should work closely with GIDA, the district assembly, development organizations and investors to provide the farmers with financial assistance and farm inputs that they may need to maximize their use of the dam.

GIDA and the district assembly should expedite action in constituting the committee that will allocate the irrigable farmland.

5.3.2 Recommendations specific to the Ohawu irrigation project

Based on the findings, the following are recommended to ensure realization of rehabilitation of the Ohawu irrigation dam:

1. The government must commit funds to complete the Ohawu dam project. This must be done in a timely manner with periodic follow-up by GIDA and the Ministry of Finance to ensure that the project is completed effectively.
2. To clear any ambiguity of what ABFA disbursements have been used for, the Ministry of Finance must explicitly state in the reconciliation reports, the exact expenditure for which ABFA disbursements are made.

5.3.3 Recommendations specific to the Dawa irrigation project

Based on the above findings, the following are recommended for the Dawa dam irrigation project:

1. The District assembly must liaise with the Dam Committee to plan for and provide regular professional maintenance of the dam. Also, community stakeholders should own the dam and take charge of

minor maintenance works such as cultivating the grass along the downstream section of the dam wall to prevent erosion.

2. There must be innovative ways of raising funding for proper maintenance of the dam.
3. Security must be provided at the site of the dam to prevent misuse.
4. Erosion of the upstream portion of the dam must be catered for using boulders, gravel or concrete in the shortest possible time to prevent another breach of the dam.
5. Agric extension officers must provide guidance into the right types of crops that can be planted on the fields as well as good farming practices to reduce the incidence of poor harvests.

5.3.4 Other (general) recommendations for future ABFA investment decisions

Based on lessons learned from field visit to the Dawa, Keyime, and Ohawu projects the following recommendations are made for future ABFA investment planning and cost-effective

implementation:

To improve planning and implementation of future ABFA-funded Projects that are also cost-effective,

1. ABFA disbursements must be made to projects that have been assessed to guarantee high economic, social and environmental benefits to the communities where projects are allocated to. As much as possible, broader consultations should be held with the communities for whom projects are designed. This will increase value and utility of projects funded by government.

2. Government must allow for inclusiveness across all levels of the implementation of ABFA funded projects. This will ensure that stakeholders are aware of the contribution of oil revenues for national development. This will promote active citizen participation in the monitoring of ABFA investments across the country, and increase citizenry trust for the government.

3. For agriculture projects, GIDA must put up appropriate mechanisms to ensure that its evaluation of irrigation projects is

professionally done and credible for successful implementation of projects. Government should in turn provide the resources necessary for GIDA to adequately do its work. GIDA must be supported to plan and frugally implement cost-effective projects.

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Appendix

Picture 12: ACEP's field team with Volta Regional Manager of GIDA



Picture 13: Interactions with health personnel at the Adzonkor community health centre



Picture 14: Interactions with the Director of Agriculture of the Agotime-Ziope District Assembly



Picture 15: Site visit to the Keyime Dam with some Adzonkor community elders



Picture 16: ACEP field team with some Ohawu community elders at the Ohawu dam site



Picture 17: Ohawu dam site visit with the Principal of the Ohawu Agriculture College





Africa Centre for Energy Policy
Avenue D, Hse. No. 119D, North Legon
P.O. Box CT2121 Cantonment, Accra
Tel: 0302 900730
www.acepghana.com