

Sustainable Livelihood Adaptation in Dam-Affected Volta Delta, Ghana: Lessons of NGO Support

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Abstract

The costs of the multiple benefits of large-scale dam development are disproportionately borne by displaced people upstream and downstream riparian communities whose livelihood strategies have depended on the flood regime of rivers and resources in their natural surroundings. Downstream dam-affected populations are compelled to adapt to post-dam flood plain ecosystems in order to rebuild their livelihoods. However, they are usually confronted with many challenges due to limited local capacity, levels of vulnerability and impoverishment and, very often, inadequate and slow governmental and institutional support. In this paper, we examined the support of an international non-governmental organisation for four island communities of the Volta Delta in Ghana whose livelihoods were disrupted by the damming of the Volta River upstream at Akosombo, 80km from its mouth. The study was situated within the context of the sustainable livelihood analysis framework and the methodology adopted involved discussions and interviews with project beneficiaries and implementers. The study findings indicated that there were initial benefits from the livestock component of the project but that could not be sustained as the beneficiaries could not buy feed on regular basis. However, the communal agroforestry undertaken by the groups provided the impetus for establishment of individually-owned woodlots which are harvested for fuel. A key lesson from the project is that local leadership is crucial in the success of community livelihood support programmes. Also, adequate sensitization and education about the project along with re-orientation of peoples' minds are essential ingredients for achieving acceptability of the project by local communities and ensuring project sustainability.

Keywords: adaptation, community, dam-affected, sustainable livelihood, Volta Delta

1. Introduction

Experiences associated with dam construction from many parts of the world since the 1950s have made dam development a highly contested issue in sustainable development (World Commission on Dams, 2000). In spite of the significant contribution of dams to human development, the social and environmental impacts of particularly large dams are enormous. For example, the costs of the multiple benefits of damming are largely borne by displaced people upstream and downstream riparian communities (Survival International, 2010), whose livelihood strategies are the result of intimate engagement with the flood regime of rivers and resources in their natural surroundings.

The downstream impacts of dams are complex and can be categorized as material losses, changes in water quality and damages to riverine ecology (Adams, 2000; Collier, 2000; Dao, 2001). According to Richter et al., (2010), the most common effect of large dams on downstream river-dependent communities is the loss of food security that stems from changes in the flow regime, especially the loss of seasonal flooding. These major (and long lasting) changes disrupt the ways of life of indigenous communities and create problems for them compromising the future productivity of their resources. The dam-affected populations (including the displaced and those who settle near created reservoirs) are often confronted with adverse health problems (World Commission on Dams, 2000).

It has been estimated that 472 million downstream potentially river-dependent people have been affected by alterations in river flows and other ecosystem conditions by 7,000 large dams (Richter et al., 2010). These riparian populations are compelled to adapt to the "new" flood plain ecosystem in order to rebuild their livelihoods.

However, they are usually confronted with many challenges due to limited local capacity, levels of vulnerability and impoverishment and, very often, inadequate and slow governmental and institutional support (Richter et al., 2010). These conditions lead to increased poverty and widened gender gaps with women usually bearing the disproportionate share of the social costs (World Commission on Dams, 2000). As a result, there have been attempts to assist such communities to develop alternative sources of livelihoods, with most of these efforts through national, international and non-governmental organizations (NGOs).

In this paper, we examined one such institutional support for four island communities of the Volta Delta in Ghana, whose livelihoods were disrupted by the damming of the Volta River at Akosombo, 80km from the mouth of the river. The study evaluated the intervention after its implementation between 2003 and 2008 and highlighted its implementation procedures and the benefits of the various components of the project. More importantly, the study came out with some lessons that could guide community livelihood support programmes.

The paper begins with the geographical and historical context of the Volta River Project and the NGO support for the dam-affected communities. This is followed by the theoretical section that presents the conceptual framework for the study, the study methodology and empirical findings. The final section of the paper discusses the lessons learnt through the successes and/or failures of the project, and policy implications.

2. The Setting

2.1 The Volta River Damming and the Lower Volta Basin

The construction of the Akosombo dam on the Volta River in 1964 (and subsequently a lower dam at Kpong in 1982) drastically changed the ecological conditions of the Lower Volta Basin (Figure 1). This led to the collapse of the pre-dam flood-recession sustainable farming and vibrant fishing activities which depended on the flood regime of the river and its subsidiary courses (Hilton, 1967; Lawson, 1972). The modified river hydrology also resulted in proliferation of aquatic plants and incidence of water borne diseases, particularly schistosomiasis (Volta Basin Research Project, 1997). The economic stagnation and widespread poverty that followed the ecological changes led to mass exodus of the economically productive population who were attracted by the extensive fishing grounds of the newly formed lake upstream and other potentially good fishing areas within and outside Ghana (Geker, 1999; Yeboah, 1999; Kalitsi, 1999; Ayivor, 1999).



Figure 1. The Volta Delta

The downstream ecological changes of the damming of the river were anticipated and programmes such as irrigation schemes were designed to address the problems to enable the riparian population adapt to the changed conditions (Volta River Project 1956; Kaiser Engineers and Construction Inc., 1965). Unfortunately, these programmes were not implemented. In response to the “new” ecological order therefore, activities which during the pre-dam era were considered as minors and local resources that were under-exploited, gained economic importance and social prominence (Ofori, 2000). Examples of such activities are large-scale exploitation of reeds and sedges for mat weaving, and commercial harvesting of mangrove for smoking fish, baking bread and biscuits, distilling local gin (*akpeteshie*), and livestock keeping (VBRP, 1996; Kufogbe, 1997; Ofori, 2000; Ayivor, 2014).

Following incessant complaints by the people of the Lower Volta Basin of the adverse effects of the damming on their livelihoods, the Volta River Authority (VRA) in 1996 commissioned the Volta Basin Research Project (VBRP), a multidisciplinary research unit of the University of Ghana, to investigate the impact of the damming on the downstream riparian communities. The study, Lower Volta Environmental Impact Studies (LVEIS), came out with many findings including ecological changes resulting from the damming and the human responses to the post-dam conditions (VBRP, 1997). LVEIS also identified some local initiatives of the people that hold promise for supporting household livelihoods. Additionally, VBRP formulated specific proposals for implementation aimed at addressing the problems and challenges associated with the damming and for effective and sustainable utilization and management of the resources within the basin (VBRP, 2002).

2.2 Lower Volta Ducks Project (LVDP)

The agroecology component of LVEIS identified duck and geese rearing as one of the post-dam livelihood support activities in the Volta Delta. The community members sold their birds and eggs at the local market

centres and also took advantage of Koreans and Chinese who travelled from the port town of Tema (95km away) to buy the birds (Volta Basin Research Project, 1996). On the basis of this local initiative, VBRP and Heifer International (HI), an international NGO whose mission is to work with resource constrained communities to end hunger and poverty and care for the earth (Heifer International, 2013), implemented the Lower Volta Ducks Project (LVDP) in four communities in the Volta Delta: Azizakpe, Alorkpeme, Pediatokope and Afrive (Figure 1). HI works in over 125 countries and partners with many organizations to make impact (Aaker, 2007). Thus, LVDP was not a wholly new concept to the communities. The project was conceived by VBRP and funded by HI.

The overarching goal of LVDP was to improve upon the local adaptive capacity of the people for livelihood improvement. By this project, VBRP's vision was to make the Volta Delta the 'ducks/geese village' of Ghana. VBRP also believed that the project could be replicated in other riverine communities in the country. The aims of the project as spelt out in the project document were:

- Ensuring improved livelihood among beneficiaries through the promotion of ducks/geese raising;
- Enhancing the quality of the environment of the communities through the development of agroforestry; and,
- Increasing the level of HIV/AIDS and schistosomiasis awareness among beneficiaries through education and sensitization.

The specific objectives of the project were:

- To provide 100 families with 11 improved ducks/geese (at point-of-lay) each in order to improve household income and nutrition.
- To reduce the high poultry mortalities in the communities often caused by Newcastle disease by encouraging the use of the recently *Thermo stable I₂* vaccine.
- To train and sensitize the beneficiaries on the need to establish woodlots and rehabilitate degraded mangrove patches using locally available mangrove propagules with the view to ensuring sustainable wood supply and restoring fish breeding ground.
- To sensitize and educate project beneficiaries on HIV/AIDS and bilharzia, especially among school children, through the use of booklets and local songs developed by VBRP with the view to increasing knowledge of transmission patterns of the diseases.
- To capacitate project beneficiaries through gender sensitization and training on Participatory Self Evaluation (PSE) in order to ensure sustainability of the Project.

The project first targeted two large communities namely Azizakpe and Alorkpeme, and a cluster of three smaller communities on the Pediatokope Island (Kewunor, Kpestupanya, Anazome). Later the sixth community, Afrive, was brought on board. The working project groups were: Azizakpe Agricultural Development Society (AADS), Pediatokope Women in Development (PWD), Mawalehaano Group-Alorkpeme (MAGA) and Afrive Mawumatsou Agriculture Society (AMAS).

3. Conceptual Framework

This study is situated within the context of the sustainable livelihood approach or framework (SLA/SLF). The SLA which was highlighted at the 1992 United Nations Conference on Environment and Development, among other things, advocated for the eradication of poverty (Krantz, 2001). Since then, governments and development agencies have increasingly been employing the SLA as a tool for tackling poverty reduction (McNamara & Acholo, 2009). According to the Department for International Development (DFID), SLA 'provides an analytical framework that promotes systematic analysis of the underlying processes and causes of poverty' (DFID, 1999). Thus, SLA addresses poverty-focused development activities which aim at building the capacities of groups of people to improve upon their living status in the face of shocks and stresses (DFID, 1999; McNamara & Acholo, 2009).

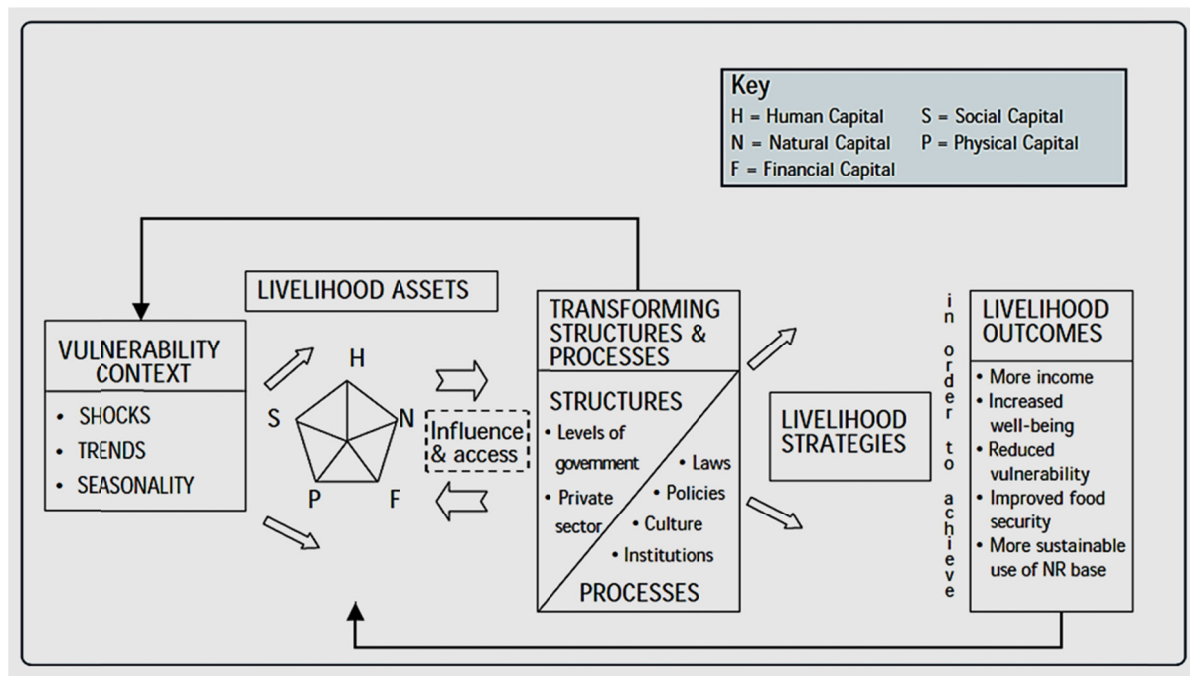


Figure 2. Sustainable livelihood framework. (Source: DFID, 1999)

Though SLA framework is used variously by different agencies, the main focus is on poverty reduction on sustainable basis by dealing with the underlying resources and capacities of communities. According to DFID (1999), the model provides a holistic way of thinking through complex issues at various levels for designing programmes and evaluating the strategies. It draws on the main factors that affect poor people's livelihoods and the typical relationships between these factors. The model highlights the variety of assets at the disposal of the group, the knowledge, skills and abilities as well as the structures that are needed to take people out of poverty (Figure 2). The structures and conditions include institutional arrangements and power relations that define access to livelihood assets, help shape individual creativity to cope with stresses, build trust and confidence among people and ensure mutual support and cooperation. The vulnerability context is understood as the factors that create and perpetuate poverty which can be conceived at the level of the individual and in the broader social context (DFID, 1999; Hamilton-Peach and Townsley, 2004). Understanding the context-specific processes is necessary for the design of appropriate policies and strategies to enhance progress towards poverty reduction and elimination. The strategies adopted are expected to transform existing structures and processes that create the conditions of poverty.

The SLA is viewed as versatile and can be used under different circumstance and at different levels. At the lowest level it lends itself to the adoption of participatory approaches in understanding the causes and dimensions of poverty, thereby enabling people to examine their circumstances and provide their own definition of poverty. When employed at the level of programme planning and policy analysis, it unravels the impacts of different policies and institutional arrangements upon households and the dimensions of poverty.

In spite of its usefulness Krantz (2001) contends that there are some difficult methodological and practical issues relating to the definition of poverty and who the poor are. This is essential for prescribing and designing interventions. Though the 'poverty line' and 'wealth ranking' methods could be adopted in defining poverty, DFID (1999) suggests that it should be part of the very process of analysing livelihoods. The understanding here is that the whole socio-economic, cultural and institutional milieu of the group should be clear before the identity, characteristics and circumstance of the poor is established. This difficulty is underscored by the fact that there are complicated informal structures and relationships, though difficult to observe from outside, that influence access to resources and livelihood opportunities (McNamara and Acholo, 2009). The challenge is that these issues are sensitive to talk about during participatory discussions since community leaders themselves are often present (Mosse, 1994). An example is how to get vulnerable groups including women to genuinely express their opinions about their conditions and other issues.

In the Volta Delta, the basic livelihood assets of the communities are the land, water and biological resources which have been the bases or foundations of their livelihoods. The vulnerability context is explained by the dam-induced alterations of downstream ecosystems resulting from cessation of environmental flows. This means that the local populations would have to adjust to post-dam ecological conditions and redefine their livelihood strategies. But this has remained a major challenge in view of low capacity, widespread poverty, and limited attention from the dam operators, the government and a low level of institutional support in general. However, there have been some interventions by NGOs to support some communities to improve on their livelihood strategies. The extent to which the community members have responded to, and taken advantage of, an NGO support to shape their livelihood strategies is the focus of discussions in subsequent sections of this paper.

4. Study Methodology

As mentioned above, the main thrust of this study was to seek the views of beneficiaries of the LVDP on its implementation and benefits to them. Therefore, the principal methodology adopted for the study sought to engage the project beneficiaries in discussions and one-on-one interviews using an interview schedule and questionnaires. Focus group discussions (FGD) were held with the four beneficiary groups and a total of 36 individuals who were project beneficiaries were interviewed during November 2014 (Table 1). The one-on-one interviews were adopted in order to gain in-depth and realistic insights into the individuals' own assessment of the project. On-the-spot observations were also undertaken to assess the status of the agroforestry plots of the groups. Other unintended consequences of the project, such as individual woodlots, were also observed and where necessary, clarifications were sought from the community members. Additionally, officers of project implementation agencies were interviewed. Project reports were also reviewed for relevant information.

Table 1. Group members of project beneficiaries interviewed

Community	Group	Membership		Beneficiaries interviewed
		Male	Female	
Azizakpe	AADS	6	43	10
Alorkpeme	MAGA	3	15	13
Pediatorkope	PWD	2	12	6
Aflive	AMAS	5	19	7
<i>Totals</i>		<i>16</i>	<i>89</i>	<i>36</i>

Notes: AADS (Azizakpe Agricultural Development Society) PWD (Pediatorkope Women in Development)
MAGA (Mawulehaano Group-Alorkpeme) AMAS: (Aflive Mawumatsou Agriculture Society)

5. Findings and Discussions

This section presents the project implementation phases as well as the outcomes. First, it highlights the working principles and philosophy of HI. Secondly, it outlines the key activities that were carried out under the project by the project holder and project beneficiaries. Thirdly, it presents the views of beneficiaries on project implementation and the benefits to them. Finally, highlights how the project implementers also perceived the project.

5.1 HI Philosophy

HI's activities around the world are built on twelve core values and principles (HI Cornerstones) for achieving just and sustainable development (Heifer International, 2013). The cornerstones (Table 3), are captured by the acronym "PASSING on the GIFTS" which emphasises sustainability of projects (Aaker, 2007). For each of the cornerstones, a set of indicators have been developed in order to measure performance, but project participants can set their own local indicators for their self-defined values (Aaker, 2007). Thus, HI cornerstones constitute helpful guide for project development and implementation and can be adopted by other entities to suit different settings.

HI describes its strategy for sustainable community development as "values-based" and "holistic" which assert that "the self-defined values and vision of the people in project communities are the best foundations upon which to plan and manage projects and build organisational capacity" (Aaker, 2007: 26). In line with the cornerstones,

the value-based approach involves training of community members and instilling in them the sense of fairness, belongingness and commitment to each member. HI believes that sustainability of community development can best be achieved by addressing the structural challenges of the social, environmental, economic and political systems of communities through successful application of its cornerstones.

Table 3. HPI cornerstones

	Cornerstone	Description
P	Passing on the Gifts	The beneficiary family agrees to pass on the gift of animal(s) received from HPI to another needy family along with training and skills.
A	Accountability	Project beneficiaries are screened, and their activities are monitored and evaluated according to a set of guidelines to achieve project goals. This implies submission of periodic reports to HPI.
S	Sharing and Caring	This principle emphasizes commitment to share resources and care for others to solve global problems.
S	Sustainability and Self-reliance	HPI encourages groups to devise strategies for continuing with the project after its period of planned support and funding.
I	Improved Animal Management	HPI provides training for project beneficiaries in the field of good animal husbandry to promote good animal health and productivity.
N	Nutrition and Income	Apart from providing livestock products for direct consumption in households, the products can be sold to boost incomes. Animals could be used for transportation, provide draft power and their droppings enrich the soil for better crop production.
G	Gender and Family Focus	HPI expects all household members, both male and female, to fully participate in its projects and encourages them to equally share in decision-making, role responsibilities, animal ownership, labour, and benefits of projects.
G	Genuine Need and Justice	HPI programmes focus on community members who are disadvantaged, marginalised and genuinely need assistance irrespective of race, gender or ethnicity
I	Improving the Environment	The introduction of HPI project should positively impact on the environment soil fertility, biodiversity, sanitation and avoid or reduce devegetation, soil erosion, and pollution.
F	Full Participation	HPI projects are community owned and therefore every member is connected in one way or the other to ensure the success of the project and thus considered important. Group members are involved in decision making.
T	Training and Education	There is the effort at building the capacity of the beneficiary group to ensure the success of the project. Group members are given orientation and skills training in animal husbandry and other areas such as environmental conservation, food processing and marketing.
S	Spirituality	This value seeks the total well-being of the individual as linked to that of the group and the earth. Heifer's belief lies in the value of all life, a sense of connectedness to the earth and a shared vision of the future just like any religious belief.

Source: (Aaker, 2007)

The HI model is consistent with the SLA as they all seek to tackle the structural challenges of the community. The two models address structural transformations in the society through capacity building of the members for achieving sustainable livelihoods. They also encourage people to examine their circumstances through

participatory approaches in order to understand the causes of their poverty and be involved in designing project(s) to address them. Above all, the indicators that are developed for the HI cornerstones can be likened to the “livelihood outcomes” of the SLA which define the ultimate livelihood improvements.

5.2 Project Inception and Activities

5.2.1 Group Formation and Organisation

In line with HI principle of working with community groups, the project targeted two existing local groups. The first group, MAGA (on the island of Alorkpeme), was formed in 1999 and had 21 active members who engaged in mat weaving using locally available sedges (*Cyperusarticulatus*) and reeds (*Typhadomingensis*). The group members received financial support from Growth Integrated Development, a local NGO known in the communities as GROWTH. To ensure effective management of the micro-credit scheme, GROWTH organized a book-keeping training programme for the group. GROWTH also supplied the group with 300 seedlings of acacia which were planted on a piece of land reclaimed by the VRA dredging team. The land was allocated to the group by the chief of the village. The second group, PWD, was based at Kewuse and with the support of GROWTH had established a two-acre acacia woodlot and initiated a vegetable farming venture. Through key contact persons on the islands of Azizakpe and Aflive, the Project Holder and HI encouraged and facilitated the formation of two additional groups: AADS and AMAS respectively.

Series of meetings and discussion sessions were held with the groups during which the potential project beneficiaries were briefed on HI programmes and the LVDP. The discussions were participatory and participants shared their experiences on ducks/geese rearing. The discussions also focused on local environmental challenges and how they could be addressed in other to improve livelihoods. The group members paid registration fees and membership dues regularly. They had bank accounts with the local Ada Rural Bank. They also held regular meetings to discuss issues of common concern and interest.

5.2.2 Training

Training programmes were organized for the project beneficiaries which centred on HI cornerstones, gender issues, HIV/AIDS, feed compounding (using locally available ground oyster/clam shells and selected aquatic weeds), and general animal husbandry including, poultry housing, feeding and health management. The resource persons were officers from HI, VBRP, GROWTH, Adidome Farm Institute and the Ada office of the Ministry of Food and Agriculture (MOFA). An indigene of the area who had acquired 11-month training in livestock production and agroforestry under the Leventis funded programme at the University of Ghana was appointed as the local project supervisor/coordinator (LPS). A simple two-chamber model housing structure made of locally available materials was adopted for the birds. The groups adopted a common slogan, “*Kpākpāēewaweku*”, meaning “duck/geese rearing helps the family”. Since the concept of gender was one of the key principles in HI projects and as part of capacity building, one person each from the first three groups attended a 4-day Gender Training Programme at the Presbyterian Women’s Training Centre at Abokobi, near Accra, the capital of Ghana. Refresher trainings on poultry husbandry were also held periodically with the added objective of bridging any knowledge gap that may exist, especially amongst the new project participants.

5.2.3 Placement of Birds and Animal Husbandry

A key condition that had to be fulfilled by the group members before receiving birds was the completion of the housing structure. Each member received 11 point-of-lay geese (2 males and 9 females) after signing a contract agreement. The birds were bought from nearby local market centres. The local veterinary officer of the Ministry of Food and Agriculture (MOFA) provided assistance to the beneficiaries in administration of the *Thermo-stable I₂* vaccine (against the New Castle disease) to their birds. The vaccination covered ducks/geese and chicken in the localities because the project beneficiaries indicated that, from experience, the geese are not good brooders and therefore they needed the ducks and chicken to hatch the geese eggs.

Each beneficiary received 2 bags wheat bran as initial feed stock. Additionally the animals were fed on household food remains. A feed purchase scheme involving an amount of GHC4,350 (Note 1) was instituted for the groups so they could buy feed at a lower price than what was obtained at the local market. The profit margins on the sale of the feed was expected to be ploughed back to increase the capital base of the feed purchase fund.

5.2.4 Agroforestry

Three groups (MAGA, AADS and AMAS) established communal woodlots. AADS planted over 400 mangrove propagules in 3 locations of degraded mangrove swamps on the island. The group aimed at restoring the mangrove vegetation and spawning grounds for fish. However, majority of the mangrove propagules/seedlings were ravaged by pigs, leaving about 80, which were noted (through on-the-spot observation) to have grown into

matured trees. The growth performance of the trees subsequently encouraged some individuals of the community to plant and nurture their own trees which they harvest for fuel wood.

AMAS planted 500 mahogany (*Khayasenegalensis*) and over 1,000 *Acacia magium* seedlings. However, majority of the mahogany could not survive which they attributed to high salinity level of soil moisture during FGD. The group members however described the acacia as very adaptive to the local conditions. They indicated that in 2008 they harvested the trees and sold a proportion and the rest distributed among group members for use as fuel. The second harvest was done 2010. Again, it was observed that that some individual community members had also planted the acacia trees on their compounds.

The group on Alorkpeme island, MAGA, planted 500 *Acacia magium* and 500 acacia seedlings. In 2007, the group harvested wood and sold a proportion to settle an outstanding commitment with GROWTH. The remaining stock was shared among the individual group members, which could take care of a week's cooking. During FGD the group members revealed that because they lacked security to the land, other community members planted coconut seedlings upon realizing the healthy growth rate of the trees. As a result they were compelled to harvest almost all the trees. They however indicated that the group members as well as about 40 residents of the cluster of communities on the islands planted their own *Acacia magium* trees ranging between 10 and 90 per individual.

During the first two years of the project, PWD undertook vegetable farming which involved tomatoes, onions, carrots and cabbage, and later sweet pepper. The group received a foot water pump from GROWTH but, according to the women, they found its use rather cumbersome and abandoned it. They indicated that they discontinued with the vegetable farm because of poor harvest. Furthermore, they explained that they could not sustain the project mainly because of the lack of unity among members and weak leadership.

5.3 Assessment of Project

5.3.1 Beneficiaries

A total of 36 beneficiaries (26 females and 10 males) were interviewed for their assessment of the project. Thirty two (32) of them participated in the maiden meeting organised by HI and VBRP that introduced the project to potential beneficiaries in the communities. Fourteen of them (14), representing 39%, were above 60 years and could recount pre-dam conditions and experiences. Nineteen (19), representing 55% of the 36 beneficiaries, had no formal education. Out of the 10 men interviewed, 8 (representing 80%), engaged in either fishing or farming or both. Only 5 out of the total number of 36 individuals interviewed carried out some form of farming, which is indicative of the limited land available for farming in the communities. Out of the 26 women interviewed, 9 (representing 35%) were engaged in fish processing. Other activities that the women engaged in were mat weaving and petty trading. At the time of the survey, only 5 (nearly 14%) of the 36 project beneficiaries interviewed still had some geese.

One objective of the project was to reduce the high poultry mortalities by the use of the *Thermo Stable I₂* vaccine. Twenty one (21), representing 58% of the respondents, indicated administering the vaccine to their birds with 20 of them confirming its effectiveness.

One of the obvious outputs of the project was egg production. Review of project reports and records showed that yearly egg production over the six years period (2003-2008) was 14,499 in 2003, peaked at 35,645 in 2006, and decreased to 25,650 in 2008 (Table 3). Average yearly egg production was 23,733 and consumption averaged 9% of production figures. On the average, 3.5% of the eggs produced were hatched leaving 87.5% available to be sold. However, all the beneficiaries interviewed indicated that they could only sell limited quantities of eggs at the local markets. This shows that there is low demand for geese/duck eggs within the project catchment area.

The project beneficiaries cited their inability to buy feed as the major problem that they faced. The feed purchase scheme that was instituted did not succeed largely as a result of poor management by the group leaders and non-payment of feed obtained by group members. The inability of some project participants to feed their birds properly led to low egg production rates. At Aziakpe, the situation was further compounded by disease outbreak resulting from poor sanitary conditions in the entire community which led to the loss of birds. To guard against further losses through death, many project participants sold their stock and used the proceeds to support themselves, apparently without the approval of the PH. In all, a total of 653 birds were sold between 2005 and 2008 whereas 390 were consumed (Table 4).

Table 3. Yearly egg production

Year	Total eggs produced	Eggs consumed		Eggs hatched		Eggs available for sale	
		Number	% of production figure	Number	% of production figure	Number	% of production figure
2003	14,499	No data	-	No data	-	No data	-
2004	12867	No data	-	No data	-	No data	-
2005	27,825	1,768	6	532	2	25,525	92
2006	35,645	2,844	8	914	3	31,887	89
2007	25,910	2,922	11	1,342	5	21,646	84
2008	25,650	2,566	10	1,099	4	21,985	86

Table 4. Number of birds sold and consumed during the project period

Year	No of birds sold	No of birds consumed
2003	No data	No data
2004	No data	No data
2005	89	4
2006	237	46
2007	201	72
2008	132	268
Total	659	390

The inability of the beneficiaries to continuously provide feed for the birds explains their limited capacity to support themselves. Also, it is indicative of their perception about the whole project in the sense that, perhaps, they expected the external support for their livelihood improvement to be continuous and long-lasting.

During focus group discussions, members of MAGA and AMAS emphasized that the woodlot component of the project was an important intervention as it contributed to their woodfuel needs. Members of MAGA emphasized that struggle for and conflicts over naturally growing neem trees have drastically subsided in the cluster of communities on the Alorkpeme island since individuals now own acacia trees which they harvest as fuel wood. They explained that the natural growing neem tree is regarded as common resource and could be harvested by any community member even on farmed lands which the individual does not own. Members of AMAS also cited other benefits of the *Acacia magium* as providing shady conditions for individuals who have planted them on their compounds and the use of the dry leaves as mulch on farm plots.

On the basis of their experiences and living conditions, 97% respondents wished the project was on-going and would like to see the project replicated in other communities. They affirmed their commitment to the project.

5.3.2 Project Implementers

This section presents the views of the project implementers on the project activities and the conduct of the beneficiaries.

The local project supervisor (LPS) mentioned that rumours were rife in the communities that the beneficiaries did not own the animals and that they were keeping them for the project implementers. According to him, the misinformation was fueled by non-project beneficiaries and, unfortunately, some of the beneficiaries were left in doubt, which may have accounted for their low level of commitment to the project. This was in spite of the initial meetings held with the community members and the sensitisation and education about the project that were given to them. He also lamented on poor attitudes of the beneficiaries towards disclosing egg production by the birds, quantities consumed and sold by the household, as well as, the conditions of the birds. Again, he could not understand why the beneficiaries were reluctant to fulfil the passing-on-the-gift principle of the project.

Furthermore, he emphasised that the success of individual performance depended on how well the animals were fed. But unfortunately, the feed purchase scheme did not succeed which, according to him, led to progressive decline in egg production. He attributed the failure of the scheme to weak leadership among the beneficiary groups and poor attitudes of the individuals towards the project. Thus, the strengths and weaknesses of existing leadership was not critically assessed by the project implementers and properly addressed.

In support of the LPS, the Project Holder wondered whether the expectations of the local community members from the project were properly managed. This was against the backdrop of the fact that the programmes and projects that were planned as part of the Volta River Project to address the anticipated problems of the damming were never implemented. Indeed, people from the Lower Volta feel short-changed by the Government of Ghana and they have been talking about their predicament incessantly and at the slightest opportunity. The Project Holder maintained that, for this reason, the inhabitants of the Lower Volta feel the Government owes them and perceive such livelihood interventions as 'free gifts'. Regrettably, no effort was made to work on this mind-set and the negative notions they hold about their current circumstances, and to encourage them to focus on post-dam opportunities that could be harnessed to support their livelihoods.

Again, the Project Holder lamented on logistical challenges that prevailed and which could not promote effective monitoring of project activities. Specifically, it was mentioned that throughout the project period officers had to use ordinary canoes to move from the mainland to the project communities on the islands which was slow and risky. The LPS also faced the same problem and this affected the frequency of visits in order for him to respond quickly to the challenges that the beneficiaries encountered.

The above narration by the Project Holder was shared by HI. However, HI expressed the view that much could have been done by the Project Holder to ensure that the project deliverables were achieved. The gaps in records, as reflected in Tables 3 and 4 for example, are indications of lapses in project monitoring. Furthermore, HI contends that if a market survey had been carried out prior to the implementation of the project, it would have been known that duck/geese eggs were not widely consumed within the project catchment areas, hence the comparatively low prices that the surplus eggs from the project attracted in the major markets in the area. The low market price of the eggs eventually compromised the ability of some project participants to feed the birds adequately.

6. Summary, Lessons and Conclusion

This paper has examined how dam-affected communities of the Volta Delta in Ghana are adapting to the changed ecological conditions using NGO support for a ducks/geese raising project as the example. The project was based on the LVEIS which identified duck and geese keeping among individual community members as a post-dam initiative. The project therefore aimed at improving the local adaptive capacity of the people for livelihood improvement.

Two of the project beneficiary groups lauded the agroforestry component of the project as it has contributed to their woodfuel needs and helped reduce conflicts among community members over harvesting of naturally growing *neem* trees. With respect to the livestock component of the project, the beneficiaries emphasized that they could not sustain the activity because they could not buy feed on regular basis for the birds. This was largely due to the low demand for eggs on the local market and the resultant low income generation from the eggs produced. Moreover, the beneficiary groups could not effectively manage the feed purchase scheme that was instituted under the project. The project also faced the problem of weak leadership among the beneficiary groups, poor orientation of the local communities towards the project, and misinformation and rumour mongering among community members which portrayed the project as belonging to the implementers and not the beneficiaries.

A key lesson from the project is that adequate sensitization and education about the project along with reorientation of the minds of local populations are essential ingredients in achieving acceptability of the project by the local people. Livelihood support projects ought to be accepted not only by the target population and potential beneficiaries but also the entire community membership. Thus, community entry ought to be approached cautiously so the entire members buy into the whole project idea. This would help avoid misinformation about the project and promote project sustainability.

Also, it is important the community members appreciate the spectrum of resources available to them, their local human capacity and the opportunities available under their environmental conditions and prevailing socio-economic milieu so they can take advantage of them to improve upon their livelihoods. In this regard, the intended project ought to be presented as one of the several options available to the community members and they ought to be given the chance to make inputs into the project. This will instil a sense of ownership and

belongingness. They could possibly be exposed to success stories of similar projects elsewhere in order to heighten their enthusiasm to embrace the intervention.

In conclusion, the views expressed by the beneficiaries suggest that local leadership is crucial in the success of community livelihood support programmes. Every effort should therefore be made to build the capacity of the local leaders who will take their respective groups along. Good leadership can engender effective cooperation among group members.

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Note

Note 1. 1USD equals GHC 3.80

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