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Rural livelihoods and large scale land acquisition for development projects in Ghana: Experiences from the Bui Dam Construction

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Abstract
In Ghana, the phenomenon of 'land grabbing' also called large-scale land acquisition is not new. Yet, it has not received all the attention it deserves. This paper essentially examined whether the land acquired in the Bui catchment area for the construction of the Bui Dam Project was a threat to rural livelihoods or an opportunity for promoting growth and development in the affected area. The methods employed were interviewer questionnaire administration and unstructured interviews. The data collection tools included interview schedule, in-depth interview, observation and focus group discussions. The data collected was subjected to both descriptive and inferential statistics. The results showed that the land acquired for the Bui construction has had dire consequences on the local food security and income levels of affected communities, but at the same time, the construction of the dam and the subsequent provision of infrastructure such as road networks, educational and health facilities have contributed to improving the physical assets base of the local people. It is therefore recommended that the Lands Commission and the Stool Lands Administration must develop comprehensive guidelines that would ensure that all large-scale land transactions in Ghana lead to a win-win situation.

Keywords
Land grabs; Rural; Livelihood; Development; Strategy

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Contents

1. Introduction

The concept 'land grabbing' describes the large-scale purchases or leases of agricultural or forest land on terms that are detrimental to the interest of the people already living on the land (Cotula, 2012). The phenomenon of large-scale land transaction is not new (Gilbert, 2016). Throughout literature, there is the consensus that any form of land acquisition that undermines the livelihoods of the affected persons and communities is termed a land grab. Therefore, land grabbing as used in this study does not refer to forceful dispossession of land, but the threat it poses to livelihoods generally. In the views of Teklemariam et al (2015) for example, if a land acquisition has a negative impact on the food security status and the overall livelihoods of the host communities, such an acquisition qualifies to be called a grab. Land as we know is a critical livelihood asset, particularly to rural dwellers so any form of land takeover whether in hundreds or thousands of hectares threatens livelihoods and the general well-being of people. In this study, land grabbing is technically used in the context of the 444km2 land acquired for the Bui Dam construction and its attendant effects on livelihoods and rural development generally.

Globally, there are abundant examples of such cases of land dispossession throughout human history, especially during the era of colonialism where vast lands were taken through territorial wars (Cotula et al., 2009). The current trend of land grabs, for example, is not essentially different

from the previous struggles over land. What is different is the scale and speed at which they are occurring now (White et al., 2012). Not long ago, many rural African dwellers could boast of having land as one of the most tangible assets that they could utilise in perpetuity, but today many livelihoods are insecure because such assets such as land are becoming lucrative for investors (Muleke and Nalule, 2013; Cotula, 2012; Toft, 2013). As a result, several nations and wealthy individuals are currently purchasing poor countries' livelihood resources such as land and water at rates that are low compared to the livelihoods that can be generated from the land for the local residents (Hall, 2011). Today, Africa is considered by many investors as a continent with unused lands by local inhabitants (Antonelli et al., 2015; Dyer, 2009). It is important to note that whether the acquisition of large-scale land is carried out by either transnational or domestic governments or corporations, the poor local farming communities become marginalized in many ways.

The view of the proponents of this phenomenon of large-scale land acquisition also termed land grabbing is that a responsible investment in acquired lands could offer several opportunities such as the provision of farm and off-farm jobs, and the construction of rural infrastructure including schools and health posts for the poor rural dwellers (Haralambous, Liversage and Roman, 2009). According to the proponents, other potential benefits arising from land deals could also be the provision of resources to improve agricultural technologies and practices as well as increased production of food crops to improve food supply to both local and international consumers (World Bank, 2010). Again, it is argued by proponents such as the World Bank that such investments have the potential to facilitate rural economic development via the creation of processing industries, livelihood diversification and employment generation (Haralambous, Liversage and Roman, 2009: World Bank, 2010).

The negative implications of land grabbing on rural livelihoods have been highly amplified. Several studies such as (Cotula et al., 2009; Einzeberger, 2015; Andrews, 2018; Acheampong and Campion, 2014; Acheampong and Campion 2013) have alluded to the fact that large-scale land acquisition has had detrimental effects on the livelihood situations of affected households and communities. Studies, however, have been very salient on the benefits and opportunities that households and communities can derive if their lands are acquired by either individuals, corporations, domestic governments or transnational governments. Against this backdrop, this study sought to reinforce and strengthen existing knowledge and discussions on the effects of large-scale land acquisition also termed land grabbing on the livelihoods and well-being of affected people as well as explore the opportunities and benefits of such land acquisitions by using the land acquired for the Bui Dam project as the case in point.

1.1 The Effects of Large-Scale Land Acquisitions on Rural Livelihoods in Africa

Proponents of large-scale land acquisitions believe that it could become a 'win-win' deal (World Bank, 2010). To the World Bank, investing such lands in agriculture can be a growth opportunity. From the perspectives of Sheppard and Mittal (2009), when productivity on such lands is increased through the application of modern farm techniques it will benefit the country of the investors as well as the host country financially. The World Bank (2010), a supporter of large-scale land transactions is optimistic that through land deals, there would be significant productivity improvement. In countries where there are large tracts of suitable farmland coupled with a greater percentage of smallholders with very low productivity, the inflow of foreign investment and technology could provide a variety of benefits to local populations. Local communities can learn new production methods from foreign investors' expertise to utilise their own resources more efficiently and become more productive (World Bank, 2010). However, the World Bank (2010) was also quick to add that "the risks associated with such investments are immense since the demand for land is focused on countries with weak governance and insufficient legal frameworks.

Opponents of the phenomenon of large-scale land acquisition, however, hold the view that these benefits or opportunities as argued by the proponents are needless, considering the challenges that such acquisitions present to people's livelihoods. Robertson and Pinstrup-Andersen (2010) for example, believe that, if the risks associated with land acquisition are not properly handled, it would not bring the desired development opportunity to the host countries. These risks according to Robertson and Pinstrup-Andersen (2010) include natural resource degradation, loss of traditional farming techniques and increasing food insecurity. Makutsa (2010) addressing the effects of large-scale land acquisition on food production indicates that there will be a severe food deficit in the Tana Delta in Kenya, which has witnessed cases of land acquisitions if all the proposed agricultural investments on all grabbed lands take off in the region. One critical effect directly associated with the acquisition of vast tracts of land is the potential loss of residential-based assets. This becomes worse when the land is acquired forcefully without any form of negotiation (Cotula, 2012). Land grabbing, instead of facilitating rural development, rather deprives the host country of the natural resources that constitute the assets upon which rural livelihoods are drawn (Cotula, 2012).

As a result of large-scale land acquisitions, women in Zambia who were traders were displaced thereby compelling them to travel a long distance from their homes to the public market to carry out their businesses (Cotula, 2012). For nine years, FIAN, an International NGO has investigated and documented a land grabbing case in

Uganda, as the government of Uganda leased a land to a German coffee trader to establish a plantation under its local subsidiary, Kaweri Coffee Limited. The outcome of the investigation was that 401 families, comprising roughly 2,041 individuals were evicted with their houses and crops such as cassava, demolished by the army without adequate consultation and alternative arrangements (Gardner, 2019). Behrman, Meinzen and Quisumbing (2012) and Mutopo and Chiweshe (2014) view the effects of land grabbing and food production from the perspective of gender. Using the bio-fuel plantation land deal in Chimubanje in Zimbabwe as a case in point, they argued that women are always at a disadvantage in all land deals since displacement and land reallocation that emanates from such land transactions often put undue pressures on their already tenuous land rights. Mutopo and Chiweshe (2014) posit that, as a result of land grabbing, the land upon which women rely for firewood and livelihoods is mostly given away for foreign investment leading them to directly bear the costs of exorbitant food prices that result from the commercialisation of staple foods. Mutopo and Chiweshe (2014) addressing the effects of large-scale acquisition indicated that such acquisitions threaten women's access to water for domestic use. The case in point is the bio-fuel plantation land deal in Zimbabwe which was accompanied by water appropriation. Daley and Englert (2010) stressed that the activities of land grabbing often neglect women in the distribution of benefits from such large-scale transactions in land because benefits such as compensation, employment and income generation opportunities often go to the men, thereby increasingly marginalising women-headed households. While some scholars share the view that responsible investment in grabbed lands potentially can improve upon food production and the physical assets base of affected communities, several others also hold the view that the effects of large-scale land acquisition on rural food production and the well-being of affected households and communities are severe.

2. Materials and Method

The study relied on both primary and secondary sources of data such as field data and journal articles both print and electronic sources. The mixed method of research approach was employed with a cross-sectional study design. The mixed method of research basically describes a type of research that employs the use of both qualitative and quantitative tools and data. Under mixed methods, one data set tends to support another type of data (Creswell, PlanoClark et al., 2003). It is primarily hinged on the assumption that a single data set is insufficient to address all questions in a study since each question type demands a unique set of data (Creswell, PlanoClark et al., 2003). Mixed methods, according to Morgan (1998); Tashakori and Teddlie (1998), are very useful when there is the need for researchers to include a qualitative aspect within a quantitative design. (Greene, 2007) In short, the use of mixed methods does not necessarily imply replacing the quantitative or qualitative method of research, but essentially, it is rather to draw from the strengths of these approaches and minimise possible weaknesses (Greene, 2007). Mixed methods were employed in this study because it is underpinned by pragmatism as a research philosophy. From the perspectives of Tashakkori and Teddlie (1998), for example, pragmatism is the research approach that is connected to mixed methods of research. Thus, pragmatic researchers advocate for the convergence of quantitative and qualitative research methods. Against this backdrop, this study was approached from the mixed method point of view so that the issue under investigation is addressed from its length to the width.

A cross-sectional design helped to generalise from a sample to a population. This is because in a cross-sectional survey, samples are taken from the target population and the views of the selected sample are used to make broad generalisations of the entire population in the discussion of results. This design thus takes a snapshot of the proportion of individuals in the population at one point in time. Fundamentally, this design helped to determine how many people are affected by the land taken for the Bui Dam project and whether the frequency of the occurrence varies across the groups or population characteristics. It also allows researchers to look at numerous characteristics such as age, income, gender and so on at once (Morgan, 2007). This design was considered the most appropriate for this study because it made it possible to collect data from a population or a representative subset of a population at a specific time.

To gather data from both the primary and secondary sources, the simple random and purposive sampling procedures were adopted. The simple random procedure offered each unit of the target population equal chance of being selected. Fundamentally, the sample random sampling technique employs the lottery approach in the selection of research participants and as such, all the participants have the same opportunity to be included in the study. This was done to avoid being biased in the selection process. In the application of this technique, the house numbers of each house in the communities were written on pieces of paper which were then folded and selected at random. The last house selected became the starting point for the data collection. In houses where there was more than one household head, an alphabet was also written on a piece of paper which was folded together with other blank pieces of paper. The household heads were then asked to pick at random so that the household head that picked the piece of paper that bore the written alphabet was interviewed. Also, the purposive sampling technique was employed to select key informants relevant to this study. This was done by purposively se-

lecting certain key personalities in the communities who lost their land to the Bui Dam project by virtue of their knowledge and volumes of experience on the issue under investigation. This technique was ideal because according to Kumar (2019), it provides an opportunity to focus on a unit of enquiry that could provide the needed data (Kumar, 2019).

In all, eight communities were selected using the census approach because they were the only communities whose lands were taken to construct the Bui Dam. These included Bui Village, Bui Camp, Bator Akanyakrom and Dokokyina all of the Banda District and Dam Site, Lucene, Brewohodi and Agbegikuro of the Bole District. The sampling frame for this study included the list of the total number of household heads of he communities. The sample size for this stdy was determined using the formula;

$$n = \frac{N}{1+N(e)^2} \quad (1)$$

where "n" is the sample size, "N" is total number of household heads of the eight communities studied (219) and "e" is the margin of error which was 5% with 95% confidence level (Yamane, 1967). A total sample size of one hundred and forty-two (142) was arrived at when the total number of household heads was substituted in the formula above. The data collection methods were interviewer-administered questionnaire, unstructured interview, observation, in-depth interviews and focus group discussions. The interview method was used because of the low levels of education of the respondents. Interview schedule, an interview guide, and observation were the data collection tools. The data was then subjected to descriptive and inferential statistics. The t-test was used to test the hypothesis of the study. Direct quotations from interviewees were also used to support the descriptive statistics.

2.1 Site Description

2.1.1 History of Bui Dam

The first to conceive the idea of the Bui Dam was a British-Australian geologist by the name Albert Ernest Kitson in 1925. With support from the World Bank and Australia, the planning commenced in 1960 but failed to see the light of day. In 1992 and 1997, Coyne et Bellier and the University of Aberdan conducted the first ever feasibility and ecological investigations on the proposed dam respectively. In 1999, there was an authorisation from the Volta River Authority to Halliburton, Brown and Root to construct the dam, but in 2001, the project was held back by the Government of Ghana. In the year 2005, with funding from the Chinese Ex-Im Bank, the project eventually took off by Sinohydro Corporation. When the Bui Power Authority was established in 2007, it further gave impetus to the project. After field investigations were over in 2007, the actual preparatory works started in January 2008.

2.1.2 Location, Size, Generation Capacity and Cost of Project

The Bui Dam is situated in the Bui National Park and it is a gravity roller-compacted concrete dam. Generally, the dam occupies a total land area of 444km2 which displaced 1,216 people within the project area. The generation capacity of the dam is 400MW of power. The project does not only supply power, but also facilitates the irrigation of about 30,000ha of land. The dam is owned and managed by the Bui Power Authority. The initially projected cost of the project was 622 million dollars. However, upon a cost review analysis in 2012, the cost of the project was raised to an amount of 168 million dollars.

2.1.3 Phases, Height, Volume and Spillways of the Bui Dam The initial phase of the project involved detailed field studies and preparatory works, while the second phase comprised the construction of the main dam, powerhouse and transmission lines. The height of the dam is 108m above the foundation and 90m above the riverbed. The overall structural volume is one million cubic metres. The dam has five spill gates that regulate the flow of water with a spillway capacity of 10,450 metres cubic a second. Also, the project comprised the construction of a bridge across the Black Volta River downstream of the dam to connect two regions namely the Bono and Northern regions. Following the successful diversion of the Black Volta in December 2008, the project was completed and commissioned in December 2013. There was massive concern from environmentalists following the relocation of fishes and animals such as the hippopotamus (water-technology.net/projects/bui-dam-hydropower-ghana).

3. Results and Discussion

3.1 Background of respondents

The results of the study show that the average age of respondents was 39 years (Standard deviation, SD= 6.51) while the minimum age was found to be 20 years with the maximum age being 50 years. The results imply that majority of respondents were within the age range of 41-50 years. The age distribution shows that; 60 percent of respondents were mature to provide relevant responses to questions (see table 1). Also, the study revealed that more male respondents were captured than females in the study areas. As shown in Table 1, out of the 142 respondents, 70 percent were males. Generally, the study revealed that the majority of the respondents have had formal education. However, the level of education was found to be low generally. A total of 55 percent of respondents had Junior high and primary school education. With such low levels of education, such people would depend on the natural capital such as land, forest and water bodies for their livelihoods. Therefore, depriving them of their land is disastrous to their livelihoods. Also, as regards

the occupational distribution of respondents, the study found that the majority of the respondents have their livelihoods tied to the land. The results in Table1 show that 73 percent of the respondents live on farming as their main occupation. The implication here is that the loss of land for the construction of the Bui Dam Project in Ghana has had dire consequences on the livelihood situation of the affected inhabitants.

Table 1. Demographic Characteristics of Respondents

Variable	Response	Frequency	Percentage
	20-30	7	5
	31-40	50	35
Age	41-50	85	60
	Total	**142**	**100**
	Male	99	70
Sex	Female	43	30
	Total	**142**	**100**
	Tertiary Education	13	9
Educational	Senior High	40	28
Status	School/Vocational		
	Junior High School	67	47
	Primary Education	11	8
	Never Schooled	11	8
	Total	**142**	**100**
	Farming	73	51
Occupational	Fishing	34	24
Distribution			
	Petty Trading	17	12
	Hunting	5	4
	Wood gathering	13	9
	Total	**142**	**100**

3.2 Effects of Land Grabbing on Food Production in Rural Ghana

The study revealed that the large tracts of land acquired as a result of the Bui Dam project have adversely affected local food crop production in the study communities. As shown in Figure 1, 95 percent of the respondents indicated that the land grabbing activity in the study communities has generally worsened local food crop production due to its adverse consequences on farming. This result substantiates the views of the Pacific (2010) that land grabbing or large-scale land acquisition undermines and ruins small-scale farming that is otherwise built on local, indigenous and gender-based knowledge, oftentimes employing biodiversity-based techniques. This result equally corroborates the views of Food (2008) that, high-quality land may be diverted from local food production and income generation activities previously carried out by the rural communities. The reasons ascribed for the decline in local food crop production included the view that the majority of the people have been made landless, while others have had their farm sizes significantly reduced after the dam construction. For instance, it was found that 57 percent of the respondents totally lost their farmlands to the dam construction at their original location. Another significant reason ascribed for the worsening food crop production in the study communities was that current farmland in the resettled communities is not suitable for

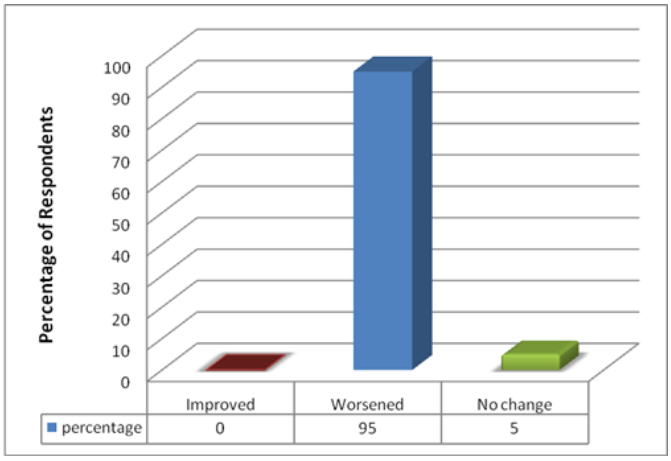


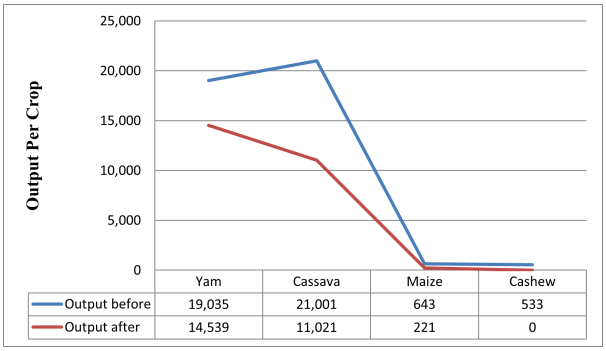
Figure 1. Respondents' views on local food crop production after the land grabs. Source: Field Survey, 2015

farming because it has been used by the host community for a long time before it was allocated to them. The respondents indicated that the current land made available to them is unsuitable for farming. According to the local inhabitants in the resettled communities such as Akanyakrom, the evidence on the ground is that crops such as yam sometimes get rotten before they are harvested. This, the respondents believed is as a result of the poor nature of the farmland allocated to them.

Significantly, by quantification, the results in Figure 2 show that the output of yam for example, dropped from 19,035 tubers before the land grabs (2005-2006) and the subsequent construction of the Dam to 14,539 tubers after the project (2013-2014). Also, the output of maize fell from 643 bags for the periods before the land grabs (2005-2006) to 221 bags afterwards (2013-2014). The same downward trend in production cut across the other crops such as cassava and cashew; but cashew production ceased completely after the Bui Dam project. This implies that the land acquired for the Bui Dam project has undermined agricultural productivity. Given this situation, it is common knowledge that food prices in the resettled communities would be high, hence, many poor households would struggle to obtain adequate food for their survival. These results reinforce the views of the respondents on food production in Figure 1.

To ascertain the extent to which the large-scale land acquired for the Bui Dam construction has affected the local food crop production of the affected communities, the study hypothesised that;

> H_o: There is no statistically significant difference between output levels for major crops before and after land grabbing.
>
> H_1: There is a statistically significant difference between output levels for major crops



	Yam	Cassava	Maize	Cashew
Output before	19,035	21,001	643	533
Output after	14,539	11,021	221	0

Figure 2. Trends in Food Crop Productivity for Major Crops Before and After Land Grabbing. Source: Field Survey, 2015

before and after land grab

To determine whether there was a difference in output levels before and after the local people's land was grabbed to construct the Bui Dam, the level of production of the commonly cultivated crops such as yam, cassava; maize and cashew for the period before the land grab (2005-2006) and after the grab (2013-2014) were identified. To establish the difference using the t-test, the output levels of yam, cassava, maize and cashew for after were held constant. From the test statistics, it is found that there is no significant difference in the output levels of the crops before the land was taken to construct the dam, which represents the periods 2005-2006. This is because from the test results the significance value of .753 is greater than 0.05. On the other hand, per the t-test statistics, it is established that there is a significant difference in the output levels of yam, cassava, maize and cashew after the land was taken to construct the Bui Dam, which represents the periods 2013-2014. This is because the test results show a significant value of .035 which is greater than the alpha value of 0.05. Hence, the null hypothesis that there is no significant difference between output levels of major crops before and after the land grab was rejected while the alternative hypothesis that there is a significant difference in output levels of major crops before and after the land grab was accepted. In a simpler and more lucid language, the test results in Table 2 completely affirm that the large tracts of land taken by the Bui Power Authority and for that matter government for the development of the Bui Dam have had devastating effects on the levels of food production in the communities affected by the Bui Dam construction.

Further, the study also sought to find out the effects of the Bui Dam project on fishing as a livelihood activity of the inhabitants of the study communities. It must be stressed that by effects of the Dam project on fishing activities, the emphasis is not on the effects created by the construction of the dam, rather on the effects due to the land (which by extension encompasses the water bodies and other biodiversity) which has been taken away and thus, no longer available to them for their usual fishing activities. It was revealed that not only has the construction of the Bui Dam undermined food crop production in the affected communities but also, the quantity of fish catch has drastically reduced after the project. What this implies is that before the land was grabbed from them, they had access to the entire land and all its water resources which were also very close to their communities. They could go fishing at every part of the river and at any time convenient to them. Proximity and accessibility to the riverside which became a major obstacle to their fishing activities were never a problem when the land belong to them. From Figure.3, it was found that 62 percent of the respondents indicated a worsening situation in terms of the quantity of fish caught after the construction of the dam due to its dire consequences on fishing. This finding contradicts the views of the proponents of large-scale land acquisition that such investments have the potential to boost the agricultural sector and stimulate rural economies (Haralambous, Liversage and Roman, 2009). The reasons ascribed by the fishermen were that they lack adequate knowledge and skills to fish in a lake as they are used to fishing in rivers. Alternatively, competition from bigger fishing boats from Yeji, Bamboi and Krachi and the difficulty in accessing the river due to the long distance created by the construction of the dam, the constant blocking of the river during the day, making it impossible for fishermen to go fishing were reasons ascribed for the decline in the quantity of fish caught after the Bui Dam project.

Considering the concerns raised by the local fishermen in the study communities, clearly, it shows that the general interest in fishing as a livelihood activity among the local fisher folks has dwindled; hence it is not amazing that the quantity of fish catch has fallen. The low fish catch according to the respondents, has led to an increase in the prices of fish thereby hindering the local people's ability to afford fish which is an important source of food and protein needs to them. This means that most of the local people who depend on fishing as a livelihood strategy now experience worsening living conditions. At Bator Akanyakrom, this is what one of the respondents had to say:

> *"for me, if you ask of my opinion on the status of fishing in this community, that is Bator Akanyakrom, my simple answer is that it is (sic) almost collapsed. This is because to go fishing, a fisherman will now have to cover a distance between three and four kilometres, and getting means of transport is difficult. So, for us in this community, in particular, fishing as an economic activity is no more popular here. Initially, the Bui Power Authority promised to convey us to and from the*

Table 2. T-test Results

Model			Unstandardized Coefficients	Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	920.061	2552.76		0.36	0.753
	Output levels after land grab	1.456	0.28	0.965	5.203	0.035

a. Dependent Variable: Output levels before land grab

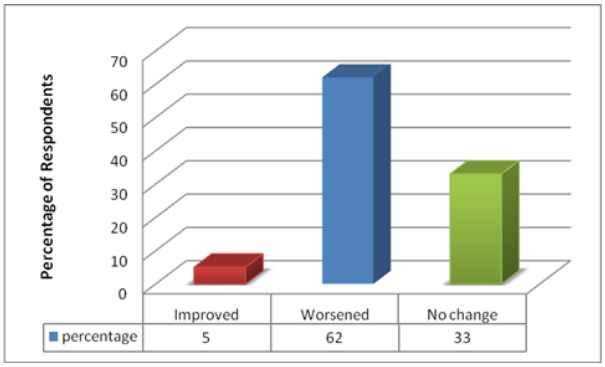


Figure 3. Respondents' Views on the Quantity of Fish Catch After the Dam Construction. Source: Field Survey, 2015

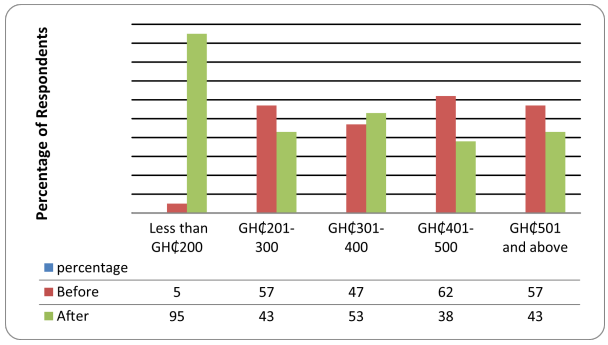


Figure 4. Household Annual Income Level Before and After the Land Grabs. Source: Field Survey, 2015

> *riverside so that we could continue our fishing business but they conveyed us for about three months and stopped"* (In-depth interview, March 2015).

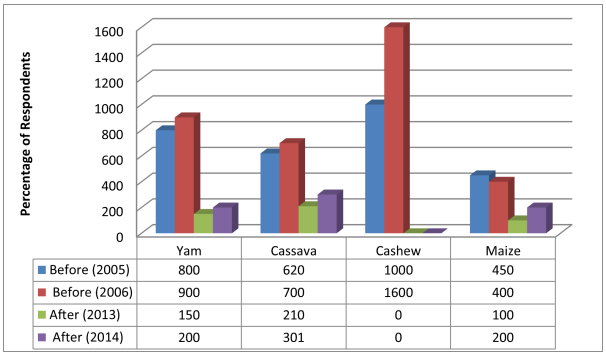
A closer look at this assertion is a clear indication that the large-scale land taken for the construction of the Bui Dam has deprived the inhabitants of the affected communities of their means of sustenance. Individuals whose means of survival are tied solely to fishing as an economic activity would struggle to maintain their families.

3.3 Effects of Land Grabbing on Household Income Levels in Rural Ghana

As regards the income levels of the affected people, the results showed that there have been significant changes in household's annual income levels before and after the land grabbing incident in the study communities as a result of the Bui Dam project. This is shown in Figure 4. The data in Figure 4 represents the households' annual income level before and after the land was acquired as well as the percentages of households (people) in the respective income levels.

It was found that before the land grabs (Thus, the period 2005-2006) only 5 percent of the respondents or households were earning an annual income of less than GH₵200. However, the number of households or respondents earning an annual income of less than GH₵200 shot up to 95 percent after the land grabs (Thus, the period 2013-2014). This shows a significant rise in the percentage of people earning lower than GH₵200. Also, 62 percent of the respondents were earning within GH₵401-500 as annual income before the land grabs but this reduced to 38 percent after the land grabs. This means that majority of the households in the study communities are within the lower income levels relative to the situation before the dam construction. Thus, there has been a fall from higher income levels to lower income levels amongst some households affected by the land deals. These results are consistent with the views of Mann and Smaller (2010) that since land grabbing leads to loss of livelihood assets; it also means that local food crop farmers have equally lost their source of income. The generally low income levels of the affected people (households) after the land grabs in the study communities were attributed to the reduction in the average size of farmland, low crop yield due to poor soil quality and the frequent blockage of the river during the day for power generation in the night, making fishing business unpredictable and not lucrative. A respondent at Agbegikuro for instance had this to say:

> *"before our relocation to this very place, my income level was high, because I could earn over one thousand Ghana Cedis annually since fishing was very lucrative and the farmland was also very fertile, extensive and supported both food crops and cash crops such as cashew. However, at our resettled location, the average farmland is smaller in size and also of poor quality. Fishing is also flooded by many big*



	Yam	Cassava	Cashew	Maize
Before (2005)	800	620	1000	450
Before (2006)	900	700	1600	400
After (2013)	150	210	0	100
After (2014)	200	301	0	200

Figure 5. Average Annual Income of Farmers Per Crop Before and After the Construction of the Bui Dam. Source: Field Survey, 2015

> *fishing boats from Yeji and Bamboi. Now, after the dam construction, the river surface is widened making fishing dangerous. In fact, as fishermen here, we lack the skills to fish on the wider river surface since we are used to fishing in the narrow river channel. Many of us do not fish anymore, leading to low-income levels"* (In-depth Interview, March 2015).

The dramatic fall of many households from higher income levels before the land was taken for the Bui Dam project to lower income levels after the land grabs have had dire consequences on the living conditions of the inhabitants in the study communities. Households in lower-income brackets are unable to save money or meet adequately their households' basic socio-economic needs. This undermines their quality of life.

Furthermore, in order to determine whether indeed in real terms, the average income earnings of the local people affected by land grabbing were within the income levels identified in Figure 4, the study assessed the average annual income earnings of farmers per the major crops they grow such as yam, cassava, cashew and maize before and after the land grabs. The results are shown in Figure 6.

It was found that before the land grabbing incident; farmers in the study communities were making substantial incomes from crops such as yam, cassava, cashew and maize. For instance, in the years 2005 and 2006 (before land grabbing) farmers' average annual earnings from cashew production was GH¢1000 and rose to GH¢1600. Thus, among the commonly cultivated crops, cashew generated the highest income for farmers. In contrast, after the land grabs, farmers' average earnings from cashew reduced to zero (2013 and 2014 = after land grabbing). The reason according to the people was that their cashew farms which used to offer them higher income fell within the land area grabbed for the Bui Dam project. Also, the affected people reiterated that their land sizes reduced after the land grabs, hence, if they use the remaining land to cultivate cashew which is a cash crop, they would not be able to grow food crops to feed their families. This implies that farmers whose only source of income was through cashew plantations were experiencing worsening living conditions after the land grabs. Similarly, about the average income earnings of farmers for yam production, it appreciated from GH¢800 to GH¢900 before the land grabs (2005 and 2006) but decreased to GH¢150 in 2013 after the land had been taken.

Generally, the findings in Figure 6 depict a drastic fall in the average annual income earning of farmers for those identifiable crops. This outcome further substantiates the views of Mann and Smaller (2010) that since land grabbing leads to the loss of livelihood assets; it also means that local food crop farmers have equally lost their source of income. The findings in Figure 6 however, reaffirm that of Figure 4 that, indeed the inhabitants (households) of the study communities have fallen from higher income levels before the land grabs to lower income levels after land grabbing. If the unveiling effects of the land grabbing deal on the livelihoods and incomes of the indigenous people are anything to be given attention to, then one can conclude that the unfair treatment of the local people by the company should never be entertained. Better still, there must be alternative livelihood activities for the people which must be provided and sponsored solely by the company before such large tracts of land are taken forcefully from them.

3.4 Land Grabbing and Rural Development in Ghana

Despite the devastating effects that the large-scale land acquired for the construction of the Bui Dam in Ghana has had on food security, income levels and the general livelihood situation of the affected communities as discovered by this study, the project has also produced some positive outcomes capable of transforming lives and championing rural development generally. For example, during the focus group discussions, it was revealed that the land grabbing situation as a result of the Bui Dam project has brought about improvement in the physical asset base of the people in the study communities. During the interviews, this is what one male respondent had to say:

> *"Although we acknowledge the devastating effects brought on our livelihood situations by the loss of land for the Bui Dam Project, it is equally important to say that the project has come to relieve us from the long distances we had to endure to seek healthcare. Previously, one had to go to the (sic) either Banda or Bole before you (sic) can access proper healthcare which was a herculean task. After the land acquisition, chips compounds have been built in our communities by the Bui Power Authority (BPA)".*

Figure 6. School Building at Bui Village

This finding substantiates the views of the proponents of land grabbing such as the World Bank (2010) that large-scale land acquisition and its responsible investment has the potential to bring along several benefits for the rural poor such as the provision of rural infrastructures like the construction of schools and health posts. Observations on the ground showed that there has been the construction of new roads, particularly in the resettlement communities, educational and health facilities as well as the provision of improved water systems such as boreholes which previously did not exist. The respondents asserted that the construction of roads has helped to open up the area to the neighbouring districts, while the provision of educational and health facilities has equally helped to provide the people with access to quality education and improved healthcare delivery. Some of the communities where these facilities were found comprised Dokokyina, Bui Village, Bui Camp, Dam site, Akanyakrom and Lucene. Observation on the ground revealed that the local people's access to educational and health care facilities has improved. According to the respondents, the construction of roads, for example, has made their communities now very connected to other districts. This has the likelihood of boosting trade and other commercial activities in the study communities. The photograph below, for example, shows the basic school that serves all the resettled communities in the Banda district. This, therefore provides ample evidence to the effect that the phenomenon of large-scale land acquisition is not entirely negative as argued by opponents, typically the Non-governmental Organisations such as the Friends of the Earth (FOE), Genetic Resources Action and International Network (GRAIN), Action aid international as well as authors like Cotula and his comrades. The issue of land grabbing per this study tends to facilitate rural development if the investors are committed to it.

4. Conclusion

Generally, the paper investigated the threats land grabbing poses to rural livelihoods as well as the opportunities it creates. The study results showed that the land acquired following the Bui Dam Project has seriously undermined food crop production, general income levels as well as the quantity of fish caught in the affected communities. Notwithstanding these, it was also found and admitted by the respondents that the acquisition of land has equally brought about some level of improvements in the physical assets base of the people in the affected communities. This included the construction of schools, provision of improved water systems, road networks, health facilities and chips compounds. It can, therefore, be said that if the investments on grabbed lands are carried out in a more responsible and committed manner, it has the potential to create several opportunities that could be a life-changer for the affected communities aside from the livelihood challenges associated with it. It is, therefore, recommended that the Lands Commission and the Stool Land Administration must design a comprehensive document that will detail the guidelines base on which large-scale land can be acquired so that alternative livelihood strategies would be created for the affected communities if their existing livelihoods would become precarious. Also, the project on the acquired land must be undertaken in a much more responsible manner in order not to jeopardise the existing livelihood strategies of the occupants of the area. Rather, it must transform and improve upon the existing conditions of the affected communities.

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