MANAGEMENT OF VRA RESETTLEMENT TOWNS:

CASE STUDY, WEST KPONG RESETTLEMENT TOWN

by

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DECLARATION

Ihereby declare that this submission is my own work towards the Executive Masters of Public Administration and that to the best of my knowledge, it contains no materials previously published by another person or material which has been accepted for the award of the University, except where due acknowledgement has been made in that text

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Dean, IDLSignature Date

DEDICATION

I dedicate this work to my wife and the kids namely: Stanley and YaaOforiwaa.

ACKNOWLEDGEMENT

First and foremost, I am grateful to the Almighty God for his providence and grace to go through this course successfully.

I will like to express gratitude and appreciation to my better half Cynthia Kyei – Dompreh who supported me through thick and thin. Her encouragement and admonishment have pushed me this far.

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I also extend many thanks to all family members who supported me in prayers. May God richly bless all.

ABSTRACT

‘‘Property in land is capital; property in fund is income without capital; property in mortgage is both capital and income’’ – Lord Manfield.

Governments through the use of power of eminent control and compelled by state policy are able to move people involuntarily from their original home and relocated to another location. Governments in their quest to carry out developmental projects affect community’s and individual’s properties. People are displaced and therefore put pressure on their socio - economic, environmental and health issues. The Acquisition of Kpong Lands for the dam project and the creation of the resettlement town generated problems for the resettlement sites – West Kpong. These include, illegal sale of acquired lands, indeterminate boundary demarcation, poor amenities, non-payment of compensation to host communities and clashes/conflict between settler and host communities. The main objectives for the study are to evaluate the socio – economic and environmental significance of land acquisition for large dams, to identify the extent to which public participation is achieved during the planning stage of the dam construction and to assess issues that confront affected persons in respect of compensating and resettling communities by the VRA.For reasons of time and financial constraints, the case study strategy was adopted as the research method. Questionnaire was designed to encompass sustainable dam development and its management. There are three main parts to the questionnaire namely; measures of sample demography, measures of sustainable development, measures of public participation and lastly, measures of resettlement /compensation and management of the resettlement township. In this study data were collected in two stages thus: the pilot study and during the main study. In the main study, fifty questionnaires were sent out. Out of this, thirty – three useable questionnaires were obtained. Unstructured interviews were

also conducted. The main data analysis technique utilized is descriptive statistics. The study calculated parentages, means and standard deviations to analyze the data. The study revealed the following findings: The socio- economic status of the inhabitants was low. The majority of the people interviewed were petty traders, farmers, artisans and the unemployed. The policy of compulsory acquisition of land renders landowners landless. The VRA has a large portfolio of landed assets and because of that has become very difficult to continue managing resettlement towns. Residual resettlement management is a major challenge facing the VRA. The following recommendations were made: Acquiring Agencies should ensure proper parcellation and demarcation of plots for settlers. Secondly, there should be the need for security of tenure of holdings. The people uprooted from their original homes must enjoy crystallized interest and permanent rights of occupation. In as much way, settlers in host communities should have a title affording a maximum possible security of tenure

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CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Man has been settling in different places either because of his own volition or because of a threat of famine or natural disaster such as flooding or earthquake or compelled by state policy to relocate. In the event that he moves on his own volition he takes care to choose the place which suits him best having in mind all the location factors. Whereas a result of national policy, it will become necessary for people to move to make room for a development the relocation becomes a complex issue. It is usually expected that these projects benefit the society as a whole.

In such instances, the settler community expects and desires that arrangements should place them in a situation where they would not be made worse off but at least be placed in a similar condition as before. It is then imperative that the settler and the host community are provided with facilities that will satisfy their social, economic and other needs.

Currently, only 1,039 of the 45,000 large dams on the World Register of Dams (ICOLD, 1998) are located in sub-Saharan Africa and half of these are located in South Africa. The need for construction of more dams in Africa therefore seems clear. However, the recent review undertaken by the World Commission on Dams concluded that while large dams have made a significant contribution to human development, in the past they have often failed to live up to expectations and in many cases the environmental and socio-economic impacts have been unnecessary and, by current standards, unacceptable (WCD, 2000). It is now widely agreed that there is the need to improve the environmental and socio-economic management of dam impacts

in order to achieve sustainable development. As a result, considerable effort has been invested in developing approaches to lessen the most damaging effects of dams. However, experience indicates that the success of these measures is extremely variable and far from assured (Bergkampet al., 2000).

The Kpong Dam, in particular, was constructed to purposely generate electricity for industrial and domestic uses. According to Girmay (2006), at the time of its construction impact assessment was not a planning and management tool available in Ghana. Apparently, a number of environmental and socio-economic issues concomitant to the dam's construction were not considered under mitigation measures as should have been done to ensure the achievement of sustainable development. Yet, today, the hydropower industry is in a quest for improved project performance. In order to make hydropower a sound and sustainable energy alternative, increased attention needed to be paid to the environmental and socio-economic issues when dams are to be built. Thus, this study is to examine the environmental and socio-economic impacts that have arisen from the development of the Kpong Dam in Ghana.

1.2 The Kpong Hydroelectric Dam

Situated in the Eastern Region of Ghana, the Kpong hydropower plant was built in 1982 and placed approximately 25 km downstream of the Akosombo dam. The project involved the construction of a dam, power house, spillway, and dykes, which created a head-pond covering an area of about 12 sq km (Volta River Authority (VRA), 1996). The construction of Kpong Dam resulted in the resettlement of around 7,000 people. The hydropower plant has a capacity of 160 MW in 4 units (VRA, 1996). Table 1 summarizes the technical as well as general profiles of Kpong Dam. Importantly, the dam is managed by the Volta River Authority (VRA).

Established in 1961 under the Volta River Development Act (Act 46), the main task of VRA is to plan, execute and manage the development of the Volta River project. The key functions of VRA as stipulated under the Act included the identification of the hydropower potential of the Volta River and to generate electricity, above all for the development, construction and operation of a transmission system for the provision of electricity for industrial, commercial and domestic use (Agbemabiese, 2002; Girmay, 2006). The Authority is in charge of the Volta Lake as a source of fish and a mode of transportation of goods and passengers as well as for the management and well-being of the lake side settlements. Albeit the principal objective of VRA is to generate and supply electricity throughout Ghana, the Authority has sponsored a number of projects such as the Kpong Farms Limited, the Akosombo Hotel Limited and Volta Lake Transport Company Limited (VLTC).

Table 5: Technical Details of the Kpong Hydroelectric Dam

Period of Construction	1981 -1982
Dam Type	Earth-fill and concrete spillway
Maximum Dam height (m)	19 meters
Flooded Surface area sq km/hectares	12sq km
Number of people Displaced	7000
Installed powerhouse	160MW
Type of Impact Assessment Conducted	Cost-benefit-analysis

Source: VRA (1996)

The total installed hydropower capacity in Ghana is presently estimated at about 1,072 MW (VRA, 1996). One of the major consumers of the electricity is the Aluminium Company (VALCO), which operates an aluminum smelter at Tema, about 80 kilometres from Akosombo. The company and other industrial consumers make up to about two thirds of the total consumption, while the residential sector makes up to about 26% and the rest around 6% takes by the commercial sectors and other institution (cited by Agbemabiese and Byrne 2005 from Turkson and Amadu, 1999).

Albeit operating since independence, the VRA is projected not to have delivered the promises of the provision of electricity to the Ghanaian population (Girmay, 2006). Subsequently, most of the people affected by the construction of the Kpong hydropower project were not connected to the national grid system until recently (Girmay, 2006). It would seem that the authority neglected the majority of the people affected in favour of the urban dwellers. On the encouraging side, however, the authority has embarked on various programmes to manage the lake and the surrounding lake side villages (Agbemabiese, 2002). Some of these programmes include afforestation programme, weed controlling using both mechanical and manual clearing methods and to control bilharzia. There have also been dredging activities at Volta estuary and other kind of socio-economic impact mitigation measure such as Resettlement Trust Fund have been conducted by the Authority.

In summary, VRA has a lot of good environmental management programmes albeit these programmes and plans are only written in official documents (Girmay, 2006). This has led to lack of enforcement and follow ups of the outcome, with the implication that a lot of work needed to be done in order to achieve the set objectives.

In the 1977's the Government of Ghana embarked on the construction of a second Hydro Electric Power at Kpong. The VRA was established as the implementing agencies. Six (6) resettlement towns were created for the relocation of the victims in addition to various compensation packages provided.

Initially, the resettlement towns were arranged by VRA through governmental agencies such as the Social Welfare Department and the Ministry of Agriculture; each agency played a specific role. Management was coordinated by Town Managers where VRA employees worked closely with Headmen who were settlers considered as group leaders.

A critical function of the VRA is to be responsible for safe guarding the health and socio – economic well-being of the inhabitants of the communities alongside the lake, and management of any incidental issues including sustainability of the environment.

Over the years there have been lapses in the management of these towns. In recent times lots of complaints and representations had been made by the settlers, concerned groups, the media and major stakeholders .It appears the VRA had not been able to handle all the complex issues raised.

Most recent studies have sought to examine the sustainability of hydroelectric dam projects in Ghana in terms of their environmental and social impacts. However studies that simultaneously examine the sustainability of development projects along environmental, economic, social and cultural dimensions are hard to come by.

In this research attempts will be made to look at the VRA efforts to achieve the ends of development and social satisfaction in circumstances of limited resources. This encompasses a lot of considerations which include selection and location of town sites, construction of housing

and trunk roads, farm planning , evacuating of people from one area to another and the convergence of diverse ethnic background.

Records available will be examined and field investigation conducted to have first-hand information about the real issues. Officials of VRA and other stake holders will be interviewed.

It is the conviction of the writer that the investigation will unearth certain key issues for which appropriate recommendations will be made.

1.3 Statement of the Problem

Land acquisition for big projects has been a source of worry to many people, agencies and organizations. It has often been dealt with in a haphazardous and adhoc manner. Absence of clear objectives, consistent procedures and adequate resources for addressing resettlement issues had resulted in serious negative effects on the people displaced, and on the host population. Some pertinent problems at West Kpong resettlement town are stated below:

- Original land owners (host community) who have been fully paid compensation keep on coming back to the land to sell lands to unsuspecting buyers.
- Some settlers also sell the acquired lands to others. The illegal sale of lands by the host and the settler communities leads to constant conflict.
- There is the difficulty of giving out land titles to the settlers. Settlers born and unborn continues to be licensees'. The settlers are therefore not secured in terms of land ownership.
- Farmlands which have been reserved for the settlers for future use have been encroached upon.

- Settlers are regarded as strangers and are obliged to be subservient to the host settlers. Settlers on the other hand have refused to observe traditions and customs of the host community.
- Infrastructure and other amenities are in deplorable state of repair.
- Original owners claim compensation had not been paid and therefore cause insurrection on the land.

In view of these problems, the study is to examine the managerial challenges the emanate from the Kpong resettlement towns and other communities affected by the creation of the Kpong Dam.

1.4 Objectives of the Study

The study will have the following aims and objectives

1. To evaluate the socio- economic and environmental significance of land acquisition for large dams
2. To investigate what respondents consider to be negative impactsand set back in creating and managing resettlement sites at West Kpong.
3. To identify the extent to which public participation is achieved during the planning stage of the dam construction at West Kpong.
4. To assess issues that confront Project Affected Persons in respect of managing, compensating and resettling affected communities by VRA.

1.5 Research Questions

This study is designed around the main research question below:

- How does the construction of hydroelectric dams in Ghana affect the natural environment as well as the socio-economic and cultural wellbeing of the communities that are normally affected by the construction of these dams?
- How are such communities managed by the acquiring agencies?

For the purpose of answering this broad question, the following specific questions shall be explored:

1. How can the environmental and economic impacts of Kpong Hydroelectric Dam be assessed?
2. What are the negative impacts associated with creating managing resettlement sites in West Kpong?
3. How is public participation achieved in the planning phase of development interventions in the Kpong hydroelectric dam?
4. What are the emerging issues with respect to managing, compensating and resettling communities affected by development interventions by VRA?

1.6 Significance of the study

The study is to help The Volta River Authority map out strategies to dealing with the incessant clashes of settlers in the Six (6) resettlement sites around the Kpong Dam. It will serve as guiding information for resolving other teething resettlement issues in the handling of complaints from the Akosombo project and its 52 resettlement sites. The study will also help to assess the environmental, social and economic impacts associated with the Kpong hydroelectric dam and to investigate issues of public participation leading to the planning and construction of this dam.

Finally, the study will identify the issues associated with the scheme used in compensating and resettling of affected individuals and/or communities.

It is expected that Government and other acquiring agencies will use the recommendations from the study to put forward policies that will satisfy the socio – economic needs of project affected persons for all projects which require the evacuation of people form one place to the other.

1.7 Scope of the study

The scope of this study will be to look at the extent to which the VRA manages her resettlement towns; with a particular reference to West Kpong. It will consider the various preparations and facilities which the acquiring agency engineered in creating the town and the level of sustenance. The scope will also cover the socio-economic impacts of the acquisition on the settlers and how resettlement packages were handled.

1.8 Limitations to the study

At least there are two obvious issues associated with the study's methodology which may not be complementary to the study's implications discussed in the preceding sections. Therefore, it is cautioned that these implications be read in tandem with the study's methodological limitations discussed below. First, it is possible to question the generalizability of the results. As some scholars have argued case study represents a single example of a class or phenomena and therefore cannot provide reliable information about the broader class (see Abercrombie et al., 1984, p. 34). Although this study was able to provide an in-depth insight into a specific case (Kpong Hydroelectric Dam), the findings cannot be discussed in the context of the general population (e.g., all dams Africa, all dams in the world). The latter assertion points the need for further research based on, for instance, a large scale survey of all dams in Sub-Saharan Africa or

if possible across all the world's continents. Second, as was indicated under section 3.6.2, during the investigation, it was observed that some the respondents are illiterates and so an interpreter was recruited to translate the questions into the local Ghanaian language (i.e. Twi, Adda, or Ewe) most understandable to these people. Consequently, even though the researcher took steps to reduce problems associated with the interpretation –the translation was not systematic –the process does not guarantee perfect translation.

1.9 Organisation of the Study

The study is structured as follow: Chapter one introduces the whole study presenting a discussion on the research gap, the nature of the research problem, the objective of the study, the research questions and the significance of the research. Chapter two reviews relevant literature on dam management, discussing its useful contribution to sustaining human life and the threat posed to the environment and the socio-economic life of communities by the construction of dams. It discusses the subject of sustainable development focusing on the key experiences with dams and resettlements in Africa and also reviews literature on integrated approaches, discussing its evolution and frameworks. Chapter three describes methods undertaken in answering the study's research questions. It provides an overview of the research approach, justifies the choice of a case study design, specify the procedure followed to collect data and delineate the data analysis techniques. Chapter four presents and discusses the study's findings. It presents the major findings of the study using the study's research questions as framework. Chapter five concludes the study by summarizing its key findings with regards to the research questions, highlighting its managerial implications, and making some recommendations for further research on the basis of the study's implication.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature related to the research questions. The chapter provides available theories that are relevant to the study's four research questions that were introduced in chapter one, presenting them in an orderly manner. In particular, this chapter is organized into five major sections. Section 2.1 reviews the literature on dam management, discussing its useful contributions to sustaining human life and the threat pose to the environment and the socio-economic life of communities by the construction of dams. Section 2.2 reviews the concepts of sustainable development focusing on the key elements in the concept. Section 2.3 reviews the concept of impact assessment, discussing its evolution, the various approaches to integrated appraisal and the significance of public participation to give various understandings of the subject area. Section 2.4 synthesizes empirical studies to date on impact assessment to underlie the urgency of the present research, while Section 2.5 then contextualized these discussions within the framework of sustainable dam development in a developing country context.

2.2 Dams and Hydropower Projects

In this section some insights on the global trend in the distribution of dams, focusing especially on developing African countries, are highlighted (section 2.1.1). Subsequently, the issue discussed has to do with the benefits accruing from the construction of dams and the dangers or negative externalities associated with their construction and existence on the natural environment (section 2.1.2).

2.2.1 The Development of Dams in Developing Countries

In recent times, there has been growing focus on the development of infrastructure to assist in meeting future human water needs, particularly in Africa. It is estimated that 64% of the total population of Africa relies on water resources that are limited and highly variable and 75% of the continents cropland is located in arid and semi-arid areas, where irrigation can greatly improve productivity and reduce poverty (Vorosmartyet al., 2005; Smith, 2004). Additionally, only 4.8% of the continents potential hydropower is currently exploited (Gopalkrishnan, 2004). Of the 45,000 large dams worldwide only 1,039 are located in sub-Saharan Africa (WCD, 2000).

Table 6: Example of Dams under Construction in Sub-Saharan Africa

Name	Country	River	Primary Purpose
Rusumo Falls	Tanzania	Kagera	Hydropower
Bujagali	Uganda	White Nile	Hydropower
NphandaNkuwa	Mozambique	Zambezi	Hydropower
Bui	Ghana	Black Volta	Hydropower
De Hoop	South Africa	Steelpoort	Water supply to mines, irrigation, to maintain environmental flows
Skuifraam	South Africa	Berg	Water supply
Mutonga/Grand Falls	Kenya	Tana	Hydropower, irrigation, water supply and prevention of sea

			water intrusion
Merowe	Sudan	Nile	Hydropower
Tekeze	Ethiopia	Blue Nile	Hydropower
GildgelGhibe	Ethiopia	OmoGhibe	Hydropower
Tendho	Ethiopia	Awash	Irrigation
Kesem	Ethiopia	Awash	Irrigation

Source: McCartney (2007)

It is probable that investment in new dams in Africa will increase in the immediate future (World Bank, 2004). A cursory review of some of the large dams whose construction is currently underway is presented in Table 2 above. Dams and reservoirs have been constructed around the world as far back as 5000 years ago (Tortajada, 2001). One of the world's largest man-made lakes in terms of surface area is the Volta Reservoir created behind the Akosombo dam of Ghana with an area of 8,500 Sq Km and flooded around 4% of the country's land area (Moxon, 1984). The construction of a dam requires an investment of financial capital the result of which is a series of new entitlements that are distributed, either through political-administrative or market mechanisms, to members of society (Beekman, 2002). At the same time, the construction of a large dam has a profound effect on the natural and social landscape of the catchment in which it is located. These issues are discussed next.

2.2.2 The Impacts of Dams and Hydropower Projects

Dams are among the most important components of water resource systems. Although having far reaching benefits, they also exert a number of adverse impacts as a result of potential negative impacts from the construction of infrastructures (Tortajada, 2001; Ledec and Quintero, 2003). Both impacts, positive and negative are described in the ensuing section.

According to a number of dam proponents, dams enable better water management and that modest increases in water use, made possible by dams, could significantly reduce constraints on economic development, pollution and challenges to human health (Bartle, 2004; Commission for Africa, 2005).The water regulated by and stored in dams is essential to meet the development objectives of water supply, agriculture (i.e. irrigation and livestock), industry, and energy generation (Ledec and Quintero, 2003). In particular, hydropower is the most effective source of energy and has played a major role in the development of modern civilization (Ledec and Quintero, 2003). Many benefits have been linked to this technology, thus: it is a renewable source of energy with limited or no

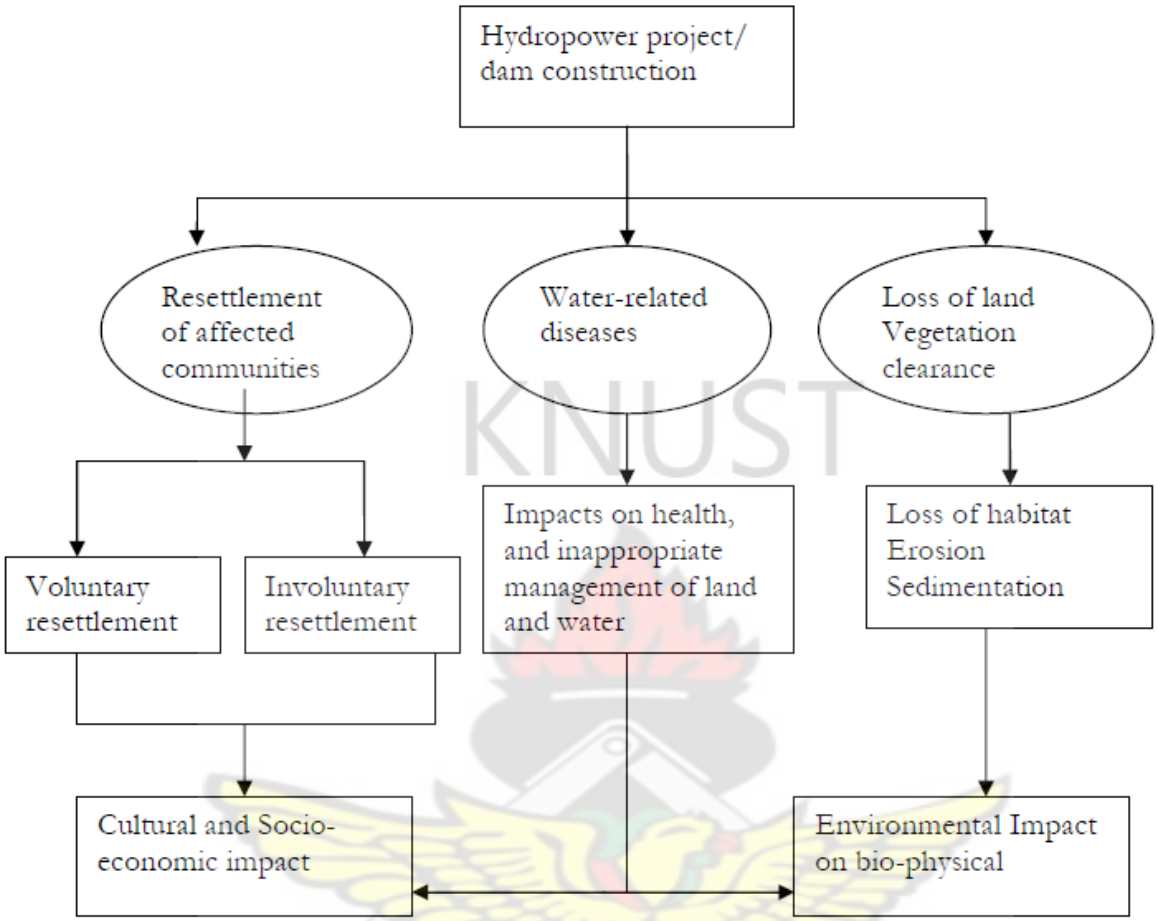
Figure 5: A Pictorial View of a Dam

Source: Ledec and Quintero (2003)

emissions of carbon dioxide in comparison to other forms of energy; it can be used for multipurpose use, such as irrigation, fishery, flood control and water supply; and can control river discharge (Goudie and Viles, 1997; Tortajada, 2001; Ledec and Quintero, 2003). Subsequently, they are believed to be extremely successful in meeting the needs of "surrounding communities" with millions of people depending upon them for survival, welfare and employment (Goudie and Viles, 1997). Therefore, it would seem that, with the appropriate management dams could improve the socio-economic state of local, regional as well as the national level welfare or livelihood condition.

Concurrently, due to inadequate foresight, dam construction often results in devastating effects for ecosystems and the socio-economic livelihoods of affected communities. Adverse impacts occur both directly and through effects on the environment (see Figure 2 below and subsequently Table 3 on page 23).These are discussed below along environmental and socio-economic trajectories.

Figure 6: A Framework of the Impacts of a Hydroelectric Dam



Source: Girmay (2006)

2.2.3 Impacts on the Environment

Dams have many environmental impacts that may or may not have been anticipated (Goudie and Viles, 1997). One of the most obvious environmental impacts associated with the construction of dams is the decrease in normal flooding. They also fragment ecosystems by isolating the river from its floodplain, shifting from a river ecosystem into reservoir ecosystem. The disintegration of river ecosystem has led to a reduction in the number of fish species in the world's watersheds (McCully, 1996). Goldsmith and Hildyard (1988) argued that dams severely affect downstream

ecosystems. They trap silt and thus hold back valuable nutrients, with a subsequent effect upon fisheries.

Girmay (2006) notes that mostly, dams tend to be built in remote and inaccessible areas, which open the area for more exploitation and destruction of the natural habitat. When dams are built in a forested area in many cases farmers displaced by a reservoir have had to clear forest further upstream of the valley to grow their crops and build homes. Generally, access to previously remote areas allowed by the construction of dams can also accelerate deforestation and promote other kinds of development. According to McCully (1996), environmental impacts of dams can generally be classified into two groups, due to the existence of the dam and reservoir and due to the pattern of dam operation. Subsequently, Ledec and Quintero (2003) suggest that the range of adverse environmental and related social impacts that can result from hydroelectric dams is remarkably diverse especially those resulting from complementary civil works such as access roads, power transmission lines, and quarries and borrow pits. Ledec and Quintero (2003) summarized two categories of environmental impacts of dams as follows:

2.2.4 Impacts due to existence of Dam and Reservoir

Challenges come in the form of: imposition of a reservoir in place of a river valley (loss of habitat); Changes in downstream morphology of riverbed, delta, coastline due to altered sediment load and increased erosion; Changes in downstream water quality or the effects on river temperature, nutrient load, turbidity, dissolved gases, concentration of heavy of heavy metals and minerals; reduction of biodiversity due to blocking of movements of organisms (e.g. salmon). Ledec and Quintero (2003) concur noting that over time, live storage and power generation are

reduced by reservoir sedimentation, such that much of some projects' hydroelectric energy might not be renewable over the long term.

2.2.5 Impacts due to Pattern of Dam Operation

It is during the dam operation phase - which can typically span 50 to 100 years - that the most severe impacts on fisheries and aquatic environments take place (Bernacsek, 2001). As noted by Ledec and Quintero (2003), although some impacts occur only during construction, the most important impacts usually are due to the long-term existence and operation of the dam and reservoir. These impacts, according to McCully (1996), include: changes in downstream hydrology; change in total flows or volume of water; change in seasonal flows (e.g. spring flood becomes winter flood); short-term fluctuations in flows (sometimes hourly); change in extreme high and low flows; changes in downstream morphology caused by altered flow pattern; and changes in downstream water quality caused by altered flow pattern (see also Ledec and Quintero, 2003).

2.2.6 Social and Economic Impacts

World Bank estimates that roughly ten million people are displaced each year due to dam construction, urban development, and transportation and infrastructure programmes (World Bank, 1996). This number is shockingly high, but it still fails to account for large numbers of the displaced. McCartney et al. (No yea) state that ill-planned resettlement of people from the area flooded by the reservoir is usually the cause of the impacts which have the most significant adverse social impacts of a dam construction. For example, the Tonga people displaced by the construction of the Kariba dam on the Zambezi River in the 1950s are still seeking adequate compensation for loss of livelihoods (Tremmel, 1994).

Displacement tallies almost always refer only to persons physically ousted from legally acquired land in order to make way for the planned project, ignoring those living in the vicinity, or downstream from, projects, whose livelihoods and socio-cultural milieu might be adversely affected by the project (Scudder, 1996). However, there are also many documented cases of dam operation adversely affecting the livelihoods and health of people, living not just in the immediate vicinity of the dam, but sometimes many hundreds of kilometers downstream (see also, McCartney 2007).

Resettlement issues can be classified into two categories namely, voluntary and involuntary. Involuntary resettlement has been a companion of major development projects or programmes throughout history, and has been permanently written into the evolution of industrial as well as developing countries (World bank, 1995). Over the years, roughly 80 million to 90 million people have been relocated as a result of infrastructure programmes for dam construction, sanitation infrastructure, urban upgrading, and transport improvement (World Bank, 1995). The construction of large dams which invariably create man-made lakes in Africa has been responsible for the relocation of large numbers of people. Around 50,000 people were displaced by the Kariba Dam and some 80,000 people by the Volta Dam. Also affected were over 100,000 people during the construction of the Aswan High Dam (Warren et al, 1968).

Table 7: African Examples of adverse impacts of dam construction and operation

Location	Impacts
Kafue Flats, Zambia	The construction on the Itezhi-Tezhi dam have resulted in (Acreman*et al.*, 2000): - loss of traditional flood recession garden systems - decreases in grazing resources as a result of changes to vegetation on the floodplain and increased dry season inundation - a change in fish species and increase in catch effort due to larger areas of dry season open water - a decrease in households supported by fishing from 2,600 to 1,150 between 1977 and 1984
Senegal Delta, Senegal	The construction on the Diama dam have resulted in (Duvail and Hamerlynck, 2003): - collapse of livelihoods dependent on fisheries - loss of livestock grazing through reduced flood dependent pasture - loss of vegetation previously extensively used for mat making
Tana River, Kenya	The construction on the Tana river have resulted in (JICA, 1997): - decline in riverine pasture - increasing pressure on common pool resources shared by farmers and Pastoralists - acceptance and increased reliance of local people on state authority which is rendering tribal and inheritance-based customary systems of regulated access to floodplain farm and grazing resources increasingly redundant

Atbara River, Sudan	The construction on the Atbara River in Sudan have resulted in (Abdel-Ati, 1992): - dereliction of traditional irrigation methods and increased share-cropping arrangements between farmers and diesel pump owners - decline in households involved in agriculture from 92% to 81% between 1964 and 1989 - disappearance of fishing and wood collection as livelihood strategies - greatly increased out-migration as result of the reduction in cultivable land
Hadejia-Jama.are Rivers, Nigeria	Reduction of flooding in the Hadejia-Nguru wetlands due to upstream dam construction, has resulted in (Barbier*et al*., 1993): - reduction in agriculture (e.g. rice) - loss of grazing resources (mainly cattle of the Fulani people), decrease in non-timber forest products, fuel wood and fishing for local populations - reduction in the economic value of production in the wetlands, which analysis indicates is in total many times greater than that derived from the irrigation schemes for which the river has been dammed.
Volta River, Ghana	Construction of the Akosombo dam in Ghana resulted in (Gyau-Boakye, 2001): - increased incidence of many water borne diseases including schistosomiasis, malaria and onchocerciasis, in lakeside villages and those downstream of the dam - increased salinity in water supply for some towns, downstream of the dam

	- decline in economic activities as a result of loss of agricultural land - breakdown in traditional social order, in part because of the loss of ancient sacred places.
Logone Floodplain, Cameroon	Construction of the Maga dam in Cameroon resulted in (Mouafo*et al*., 2002): - growing disputes between various interest groups, over access to water - collapse of fisheries due to loss of floodplain habitat - degradation of soils and pasture due to lack of silt inputs to the floodplain - 40% decrease in population of the floodplain as people have moved away

Source: McCartney (2007)

In general voluntary mobility, including rural-urban migration, has stimulated economic growth, reflecting the people willingness to pursue other new opportunities, which also helped in the design and implementation of settlement policies. On the contrary, involuntary or enforced resettlement does not include the choice to remain in place, and, if improperly carried out, the resettlers often may face more risk than opportunities (Tortajada, 2001). In this regard, Ledec and Quintero (2003) note that involuntary displacement of people is often the main adverse social impact of hydroelectric projects although it can also have important environmental implications, such as with the conversion of natural habitats to accommodate resettled rural populations.

Girmay (2006) similarly contends that inefficient resettlement plans has been most likely the result of inappropriate preparation to carry out social surveys of those who are to be relocated as well as of those in the host community, where people are to be resettled. In addition, the weak preparation of viable re-development alternatives may be the reasons why appraisals of

resettlement programmes have for the time being been inappropriate. Costs tend to be underestimated and even budgets not released on a time to facilitate the operation. Compensation payments to relocated people may be delayed significantly (Tortajada, 2001). This situation, adds more frustration to the already distressed and displaced population whose livelihoods are under a threat.

Furthermore, according to Ledec and Quintero (2003), cultural property, including archaeological, historical, paleontological, and religious sites and objects, can be inundated by reservoirs or destroyed by associated quarries, borrow pits, roads, or other works. In addition, it is widely documented that some infectious diseases can spread around hydroelectric reservoirs, particularly in warm climates and densely populated areas (McCully, 1996; Ledec and Quintero, 2003; Girmay, 2006). For instance, Ledec and Quintero (2003) state that some diseases (such as malaria and schistosomiasis) are borne by water-dependent disease vectors (mosquitoes and aquatic snails); others (such as dysentery, cholera, and hepatitis A) are spread by contaminated water, which frequently becomes worse in stagnant reservoirs than it was in fast-flowing rivers. All these pose serious challenges to the social as well as the economic wellbeing of communities were these dams are constructed.

In summary, the foregoing discussion raises the question whether the construction of dams contributes to the sustainability of the communities where they are constructed. For a better appreciation of what sustainable dam development is, an understanding of the concept of sustainable development is important. In this connection, the next section reviews the concept of sustainable development.

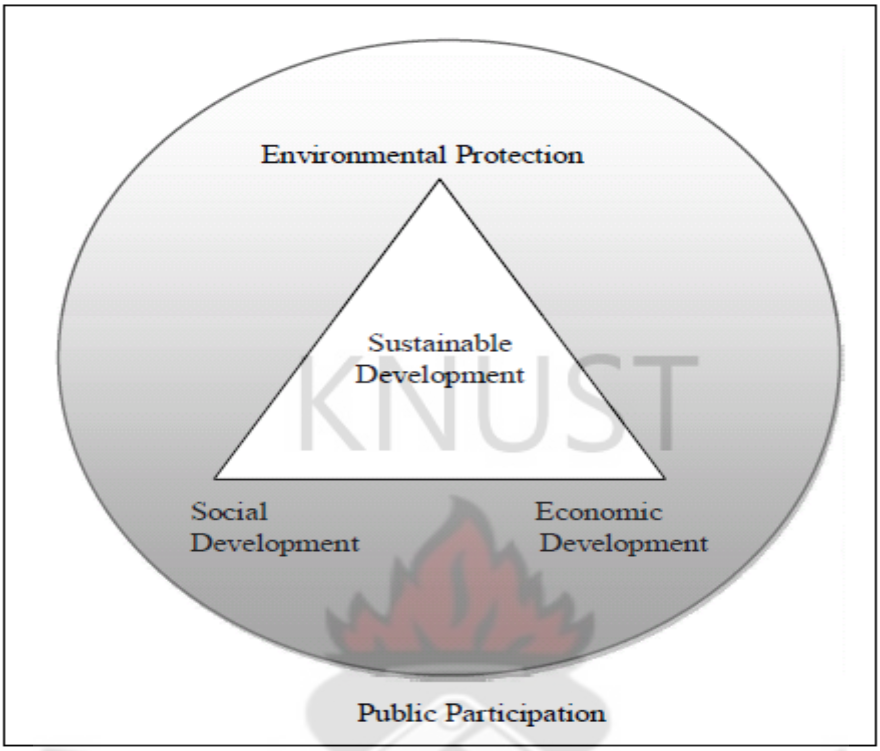
2.3 Sustainable Development and Managing Development

Sustainable development is the buzz-word today in industrialized countries and it has been absorbed into the lexicon of globalization (Seabrook, 2006), when the developing economies are aggressively after economic reforms (McDonald, 2005). The concept of sustainable development has its roots in the idea of a sustainable society (Brown, 1981) and in the management of renewable and non-renewable resources. The concept was introduced in the World Conservation Strategy by the International Union for the Conservation of Nature (IUCN, 1980). The World Commission on Environment and Development adopted the concept and launched sustainability into political, public and academic discourses.

The concept was defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987; Bojoet al., 1992). The various conceptions of sustainable development include several important elements. Some of these are that: Current policies should not impair the prospects of future living standards, i.e. economies should be managed in such a way that the assets base is improved and maintained to the extent that society is able to live on the dividends; the quality of growth and its benefits must be equitably distributed as a way of combating poverty; development must improve health care, education and social well-being as a basis for economic development and population stabilization; the development process must be participatory and involve the grassroots; wealth of countries should be redistributed and shared between the present and future generations and thus make access to resources more equal; societies must develop more efficient use of resources; and emphasis must shift to cleaner and more efficient technologies to fit local needs.

In the extensive discussion and use of the concept (Holmberg, 1992; Reed, 1997; Harris et al., 2001), there has been a growing recognition of three essential aspects of sustainable development. There is agreement that sustainable development involves a comprehensive and integrated approach to economic, social, and environmental processes (see Figure 3 on page 28). An economically sustainable system must be able to produce goods and services on a continuing basis, to maintain manageable levels of government and external debt, and to avoid extreme sectoral imbalances which damage agricultural or industrial production. An environmentally sustainable system must maintain a stable resource base, avoiding over-exploitation of renewable resource systems or environmental sink functions, and depleting non-renewable resources only to the extent that investment is made in adequate substitutes. This includes maintenance of biodiversity, atmospheric stability, and other ecosystem functions not ordinarily classed as economic resources. A socially sustainable system must achieve fairness in distribution and opportunity, adequate provision of social services including health and education, gender equity, and political accountability and participation.

Figure 7: Sustainable Development



Source: Author's construction

Although the recognition of the complexity of environmental, social and economic issues within the concept of sustainable development is generally unquestioned, the research done focuses on the environmental aspects, rather than on socio-economic ones (Potschin and Haines-Young, 2003). Discourses on sustainable development have focused primarily on the environmental dimension. The importance of social, economic, and cultural factors is only now getting more recognition (Potschin and Haines-Young, 2003). Consequently, obvious socio-economic impacts of a proposed development seem to be inadequately assessed in current impact assessment practice (Novek, 1995).

The minimal or non-consideration of socio-economic impacts within current impact assessment practice (Chadwick, 2002) reflects the traditional choice between environmental degradation (bio-physical costs) and socio-economic benefits (usually employment) which the concept of sustainable development and environmental management tools like environmental impact assessment aim to prevent (Hare, 1991). These observations has led to criticism of environmental impact assessment as a useful tool for examining sustainability of development interventions, resulting in statements that concept such as integrated impact assessment or simply integrated appraisal is more effective in gaining sustainability (Bond and Brooks, 1997).

2.3.1 Towards Sustaining the Development of Dam Infrastructures in Developing Countries

In the past, planning of dams and their operation focused primarily on meeting future demand (i.e., for water, power or irrigation) through identification of the least-cost option. Cost-benefit analysis (CBA) emerged between the 1950s and 1970s as the dominant economic tool for supporting decision-making on dam projects (Beekman, 2002). If the expected benefits of a dam were deemed to outweigh the predicted costs the project went ahead. The relatively narrow nature of the technical and economic analyses undertaken did not necessarily mean that decision-makers that chose dams as a development option were unaware of the social and environmental costs. However, often the sacrifices were deemed to be acceptable in light of the benefits that would accrue (McCartney, 2007).

McCartney (2007) note that in many cases decisions pertaining to dams have been made in isolation by governments and funding agencies without any form of public consultation. In many cases information was deliberately withheld from concerned groups and little or no consideration was given to objections of local people. In recent years this form of decision-making has fueled controversies and opposition and in some instances led to large-scale conflict which has resulted

in considerable delay, or even the abandonment, of major dam projects (WCD, 2000). Dam planning and operation can be characterized as an exercise in conflict resolution (Jamieson, 1986). Conflicts pertaining to dam planning and operation are primarily clashes of interest between human resource users with competing concerns. As such they are socially complex problems and typical of disagreements that arise from human distribution of limited natural resources. These conflicts are characterized by: divergence in values, needs and interests of individuals or social groups; different and subjective perceptions, valuations and interpretations of facts; and disagreements in which cultural, social, economic and ecological dimensions are intertwined (Bruckmeier, 2005; McCartney, 2007).

Such conflicts, according to McCartney (2007), can be very difficult to resolve. However, in relation to large dams there is wide-spread awareness of the need to mitigate conflicts as far as possible, in order to avoid bad publicity and the costs of delay (Bruckmeier, 2005). Subsequently, there is increasing understanding of the need for negotiation and participation based approaches that minimize conflict (see also McCartney, 2007). In addition, issues of equity have come to the fore and it is now widely accepted that a necessary condition for sustainable development is recognition of the entitlements and sharing of the benefits of schemes with directly affected people (WCD, 2000).

Table 8: Guidelines on Local Outcomes that should be Achieved by Large Dams

A	Provide affected communities with improved living conditions
B	Improve public health conditions for impacted communities

C	Ensure equitable distribution of the benefits of the project, particularly to affected and vulnerable communities, through process such as revenue sharing, training programmes and educational outreach
D	Ensure that the local knowledge of communities and stakeholders is utilized in project-planning
E	Support additional community infrastructure associated with the project, particularly water and electricity connection, where positive benefits to the community will result
F	Ensure that displacement is dealt with in a fair and equitable manner

Source: Modified from IHA (2004)

To this end, a key goal of any large dam must be to ensure that it provides a development opportunity for all (i.e., all individuals and communities affected by the development gain sustainable benefits). Similar sets of guidelines have been developed to articulate environmental safeguards (McCartney, 2007). McCartney (2007) contended that this requires that dams are planned and operated in a different way to the past, with much greater emphasis on meeting local needs and, as far as possible, with full consideration of all hydrological, ecological and socio-economic factors (see Table 4 above).

In short, in the wake of increasing global concern for sustainability (see section 2.4), it would seem that valuable dams will be the one that are sustainable such that they make immense contributions towards environmental stability, social and economic interests of the affected communities. In order to enable a proper assessment of the sustainability of the Kpong

hydroelectric dam in Ghana, an understanding of the generic issues in impact assessment was necessary. This is considered next.

2.4 Impact Assessment

Impact assessments address governance challenges like informed (or knowledge-based) decision-making, policy integration, improved strategic management, transparency and stakeholder participation (Berger, 2007). In recent times, one can witness an ever increasing interest in impact assessments (Brilhante et al., 2002). On the one hand, this development is driven, for instance, by concerns for better and informed policy-making, like the "better regulation" agenda of the EU, involving issues like increased effectiveness and efficiency in legislation, more transparency and better policy delivery (European Commission, 2005a; European Commission, 2001).

On the other hand, the growing acceptance of sustainable development as an overarching guiding principle for policy-making stimulated the use of impact assessments in order to evaluate the impacts of (cross-) sectorial policies regarding sustainable development (Bond et al, 2001). Therefore, one can assert that impact assessment is a tool (Brilhante et al., 2002) for facilitating sustainable development (Trousdale, 2001; Roy, 2002; Lenzem et al., 2003; Nieslony, 2004). While many different forms of impact assessments have been developed and applied in recent years (Roy, 2002; Lenzem et al., 2003; Nieslony, 2004; Ayalneh, 2004; Gerber, 2009), the following definition is general enough to cover most of them:

An impact assessment is an ex-ante evaluation of the potential impacts of projects, plans, programmes or policies (Berger, 2007). It mostly involves several systematic steps, including an identification and description of the problem, the definition of policy options and measures, an

evaluation/assessment of potential effects and impacts, and the description of options available to mitigate theses effects and impacts (Ecologic et al, 2007; Renda, 2006; Wilkinson, 2004). An impact assessment is, thus, a tool for informed decision-making that should help policy-makers to assess potential effects of decisions before they are taken (Berger, 2007).

2.5 Need for Resettlement Scheme

The gravity and the magnitude of displacement of settlements and farmlands are rife with the construction of large dams. According to the International Conference on Large Dams (ICOLD), a properly co-coordinated resettlement scheme is a basic requirement for an internationally accepted hydroelectric project. F.J. Dobson, a former Chief Executive of the Volta River Authority, could not have put it in a better way when he said**, "**Of all the ancillary activities of the VRA by far that of greatest magnitude has been the resettlement programme" It is on record that at one stage VRA had over15, 000 workers employed on the construction of towns and roads in connection with the Akosombo resettlement scheme about three times the people actually involved in the construction of the dam itself.

2.5.1 Long Term Results of Resettlement Scheme:

Resettlement does not automatically produce better health or a higher standard of living. It only provides improved conditions for enhancing better health. A number of other factors are involved and experience elsewhere has shown that the people can revert to old standards and lose the benefits of resettlements. One experience at Stockton-on–Tees in the United Kingdom may be worth quoting. It was observed that in spite of the better conditions offered by resettlement there was a higher death rate among the people. This was shown to be due to the fact that the demands of higher standards of living left the people whose economic state had not changed, very little money for food and other essentials.

The lesson learnt was that resettlement must be accompanied by a corresponding rise in the economic state of the people if they are to cope with and take advantage of the better conditions offered by it. One can envisage what the long term results should be but the actual results will be determined by the extent to which the improved agriculture and the presence of other industries are able to enhance the economic and financial state of the people over the years.

2.6 Resettlement Experiences in Ghana

- Akosombo Dam Resettlement Scheme 1962 – 1964

This resettlement programme involved the rehabilitation of 80,000 inhabitants whose farms and homes was inundated by the formation of the largest man- made lake in the world. It was estimated that over 3,275 square miles (about 3.36% of Ghana's land surface) was flooded. (Source:E.A.K. Kalitsi; Organisation and Economics of Resettlement)

Looking at the extent and propensity to which people had to relocate, the option of relying on self-help project was considered ineffective. Rather, an organized resettlement package was adopted. Under the scheme, 52 (refer to appendix A) resettlements townships were created. The sites were carefully chosen by considering the social, economic and physical features. This was done in order not disturb the socio-economic and environmental circumstances of host- settler communities

Settlers were given the chance to choose their areas of preference. Lands acquired for the resettlement were for three (3) purposes,

a) Township development sites
b) Farmlands
c) Areas reserved for future use and commercial activity.

Legal title to the lands is still held by government and no individual can claim any portion as of right.

By the end of December, 1964, 11,814 houses were completed and about ¢3,940,000 had been spent on housing and ¢330,000 on town latrines, schools and water supplies. Additionally, by the end of 1964, 10,174 families had got established in 44 settlements. (E.A.K Kalitsi)

Some pertinent problems resulting from the Lake Volta resettlement scheme was the issue of public health this problem resulted in two basic categories, that is the problem associated with village sanitary conditions, and the spread of diseases directly associated with the formation of the lake.

In terms of sanitary facilities, the resettlement villages were relatively provided with latrines and water supply. In cases where villages were provided with these facilities, maintenance of such amenities were a problem

The local districts councils whose responsibilities this is have encountered difficulties in maintaining high standards because of limited budgets and resources.

2.6.1 The Resettlement of Tema Fishing Village, 1952

This is the first major resettlement challenge to be tackled by the Government of Ghana and involved over 12000 people. The proposition was to acquire the entire land of Tema covering an area of 63square miles. The reasons for the acquisition were;

1) to build the TemaHarbour

2) to build a modern township of 12 communities with a town centre to house 200,000 people by 1970
3) to establish various factories and industries.

The Government was to pay to the Tema people through the Mantse, a total of ¢50, 000 over a period of 25 years, an annuity of ¢ 669 per annum.

The government adopted the usual official method of approaching the Mantse with the land acquisition. This approach was heralded with dispute, hostility and political tumult which delayed project for 7 years. As a result a special treatment was adopted – the inception of the 1959 Resettlement Team. The main objectives of the team were:-

i) to establish good relationship with the people to be moved
ii) to educate them on, and popularize the move
iii) to collate all necessary information, which is a sine qua non for effective decision making
iv) to resolve all difficulties
v) to plan and execute resettlement.

2.7 Experiences with Dams and Resettlement in Africa

The construction of large dams has resulted in the displacement or resettlement of many millions of people across the world. While a number of those dams may be seen to have achieved the main goals for which they were constructed (such as the provision of hydro-electricity, or irrigation), they have also been instrumental in causing severe socio-economic hardship for those people who have had to move to make way for those dams. They have been seen as 'people in

the way of progresses (Source: Chris de Wet, Rhodes University South Africa on Experience with Dams and Resettlement)

De Wet, a renowned Anthropology defined resettlement as a situation in which;

- "a development intervention, such as construction of a dam, is taking place people
- people who are in the path of dam are either moved away, or allowed to move away by themselves
- provision is made for the fact they have to move, by way of provision of houses, new lands, services ,etc.''

He distinguished resettlement form other types of resettlement such as simple expulsion from an area, or people being taken from one area to another, but with no provision being made for them. He further explain that resettlement involves displacement , in the sense that people are constrained to move but it is displacement with attempt to rehabilitate the moved people, and to provide reparation for losses they have incurred

Fahim 1981:45, 46 made a strong argument that;'' many dams in Africa nave been built in terms of set of national goals and programmes and it had been assumed that it is unfortunate, but unavoidable, that 'the few' such as settlers should suffer in the process. He particularly, indicated that settlers affected by the Aswan Dam undergone significant suffering in the name of achieving national goals which sometimes overrides the individual interests.

A decade after resettlement, many Egyptians were still feeling unsettled in their new areas and were longing for home (Fahim 1983: 116).Fahim postulated a number of sustainable outcomes that must come out of resettlement. These include;

- Income levels as well as diversity of income sources both agriculture and non-agriculture
- Increasing control, and autonomy, over their productive activities
- Inculcating property rights and security of tenure in their resettlement areas
- Improving access to service and infrastructure which should also be reflected in better health indices.

Below is a table of Dam-Related Resettlement in Africa: Table 5

Name Of Scheme	Number Resettled	Date
Aswan High Dam (Egypt/Sudan) Source: Cernea1990:331/Fahim 1983:45	100,000	1963-1969
Cabora-Bassa (Mozambique) Source:Lassily-Jacob 1996:189	25,000	1974
Kainji (Nigeria) Source:Ayemi et all 1992:111	44,000	1967-1968
Kariba (Zambia/Zimbabwe)	57,000	1958
Kossou (Ivory Coast) Source:lassaily 1996:189	75,000	1970

Source: Adu- Aryee 1993:133

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes, in more detail, the research methodology adopted for the study. The research methodology involves the systemic rules and procedures upon which this research agenda is based and against which the data collected is interpreted and the findings evaluated (Ahadzie, 2007). Subsequently, the relevant information on the potential respondents, sampling frame, the sample size and the data collection procedure is also described in terms of the field work. The final part of the chapter presents a commentary on how the data collected was edited and analyzed.

3.2 The study area

In the 1977's the Government of Ghana embarked on the construction of a second Hydro Electric Power at Kpong. The VRA was established as the implementing agencies. Six (6) resettlement towns were created for the relocation of the victims in addition to various compensation packages provided.

Initially, the resettlement towns were arranged by VRA through governmental agencies such as the Social Welfare Department and the Ministry of Agriculture; each agency played a specific role. Management was coordinated by Town Managers where VRA employees worked closely with Headmen who were settlers considered as group leaders.

A critical function of the VRA is to be responsible for safe guarding the health and socio – economic well-being of the inhabitants of the communities alongside the lake, and management of any incidental issues including sustainability of the environment.

Over the years there have been lapses in the management of these towns. In recent times lots of complaints and representations had been made by the settlers, concerned groups, the media and major stakeholders .It appears the VRA had not been able to handle all the complex issues raised.

Most recent studies have sought to examine the sustainability of hydroelectric dam projects in Ghana in terms of their environmental and social impacts. However studies that simultaneously examine the sustainability of development projects along environmental, economic, social and cultural dimensions are hard to come by.

3.3 Population and Sampling Technique

In good research, the contention is that the choice of research methods (instruments) for satisfying various research needs should be appropriate, reasonable and explicit (Denscombe, 2003). Ignoring these fundamentals can lead to very poor research. Above all, this may open the research findings to criticisms and doubt (Denscombe, 2003). Assumptions dictated that either; case studies, surveys and experiments would be most ideal as the research method (Ahadzie, 2007). However, experiments would not be an appropriate choice because they are carried out usually in a laboratory setting where the investigator can manipulate behavior directly, precisely and systematically (Yin, 2003). Thus, in view of the nature of investigation associated with this research, experiment was discounted as an appropriate option. In surveys, samples are examined while case studies involve an empirical enquiry that investigates a contemporary occurrence within a real life context (Yin, 2003).

In order to choose between these two research methods, (i.e. case studies and surveys), the research questions were also drawn upon by matching them to the choice of potential research instruments. The key research questions involved in the study suggested that either surveys or case studies could have been suitable as the research method (Yin, 2003; Ahadzie, 2007). For reasons of time and financial constraints, however, the case study strategy was adopted.

Furthermore, people have thought that the case study method required them to embrace ethnography or participant observation as data collection methods (Yin, 1993, p. 32). On the contrary, the method does not imply any particular form of data collection-which can be qualitative or quantitative (Yin, 1993, p. 32). Eisenhardt (1989) converges with Yin (1993) when he pointed out that case studies typically use data collection methods such as archives, interviews, questionnaires, or observations, or a combination of these. Therefore, in keeping with the quantitative focus of the study, a questionnaire was utilized in collecting the research data.

The construction of the Kpong Hydroelectric Dam resulted in the resettlement of people living in six villages. These villages are West Kpong, South Senchi, Old Akrade, Natriku, Fodzoku, and Togorme. As was alluded to earlier, about 7000 people living in these six villages were made to leave their land. These people are now settled in the new sites developed by Volta River Authority (VRA). Time and financial constraints would not allow the consideration of all the six villages and so choice had to be made on the ones to study. Subsequently, the study was focused on the West Kpong.Although the procedure adopted here is not scientific, it use is not without scholarly support. For instance, Yin (1994) asserts that “a multiple-case study can require extensive resources and time beyond the means of a single student or independent research investigator” (p. 45).

Given the purpose of the study, which was to assess the management of the Kpong Dam resettlement township related issues, the population of interest is the local people. In particular, the researcher considered only those people who have lived in the villages before and after the construction of the dam. This is important in view of the fact that respondents were requested to make comparison between past and present environmental conditions as well as their social and economic life. Moreover, as observed by Yin (1994), to a large extent, the success of case studies depends on the key informants.

Subsequently, in case studies, the literature rarely specifies how many people should be studied (Romano, 1989). Indeed, Patton (1990, p. 181) feels that "there are no rules" for sample size in case studies. According to Romano (1989), this decision is left up to the researcher to make. Bordens and Abbott (1988, p. 192) recommend a resource effective sample size, arguing that that the researcher should try to select an economic sample that includes enough subjects to ensure a valid analysis, and no more. This study adopted the latter perspective and set a resource effective sample size of 50 citizens of the three villages chosen. The sampling technique utilized is the non-probability sampling. This technique was chosen in that the study needed citizens who can clarify and deepen its understanding of the phenomena under consideration (Neuman, 2007). In particular, as outlined in the previous paragraph, the study needed informants who have been living in the resettlement villages being studied both "before" and "after" the dam was constructed. Therefore, the purposive non-probability sampling method was applied. As underscored by Neuman (2007, p.142), this technique is useful if the researcher uses it to select respondents that are especially informative.

3.4 Data Collection Technique

In this study, data were collected in two stages thus: the pilot study and during the main study. How and for what purposes these data were collected are articulated in the ensuing sections.

3.4.1 Pilot Study

In the questionnaire development stage, a focus group discussion involving four citizens of West Kpong was held at the VRA office in Accra. The duration for the discussion is one hour, and it took place in February 2012. The four participants were scheduled to come to the office for cheques pertaining to their compensation. How did the researcher get to know of this? The researcher is also a worker of VRA and is in Corporate Estates Section where the management of the compensation scheme forms part of the section's functions. The researcher had earlier reached an agreement with these people for the one-hour discussion immediately after they were presented with their cheques. Information obtained from the discussion facilitated the development of measures for the study. Additionally, the questionnaire was pre-tested on five citizens of South Senchi. The pre-testing took place between January and March when the researcher was on official assignment at the village. The pre-testing has helped in many ways to refine the questionnaire used in gathering data for the main study. Although both the two villages utilized during the pilot study did not form part of the main study, it is believed that these villages are similar to the affected villages used for the main study.

3.4.2 Main Study

In the main study, fifty (50) questionnaires were sent out to those who were nominated by the chiefs of the case study area. Upon enquiry, it became known that some of these people are illiterate (refer to Table 6 for educational background of respondents). Accordingly, a twenty-six year old man who is a high school graduate was recruited to act as an interpreter. Most of these

people who cannot read nor speak English could either speak Twi, Ga-Adangbe or Ewe, all of which the interpreter is fluent.

With the list of nominated individuals at hand, the researcher went to each person's house. Some of the respondents understood English up to the fluency level, given their educational background (see also Table 6). Therefore, for this group, the questionnaire was presented to them followed by a brief explanation of the purpose and how to complete the instrument (this was based on the person's request). Respondents were then given up to 24 hours to complete the questionnaire. In contrast, for the illiterate group, the questionnaire was administered and collected on the same day. Each respondent was approached in person and the essence of the study was explained. The questions were read out one after the other and this was immediately followed by an interpretation to the respondent in the language most understandable to him/her.

It is important to state that the researcher spent three days on the field for the data collection. Following the processes described above, thirty-three (33) useable questionnaires were obtained.

3.5 Research Design and Instrument

Drawing on the variables identified in the literature in respect of sustainable dam development, the appropriate dimensions for the questionnaire were operationalized. There are three main parts to the questionnaire plus a preamble that explains the purpose of the research and its expected outcome (see Appendix). The substantive parts of the questionnaire are described in the ensuing.

3.5.1 Measures of Sample Demography

The preamble apart, the first part of the questionnaire contained demographic information related to the gender, age, town of residence, and minimum qualification/educational background; how long they have been living in the case study area; their occupation before the construction of the dam; and their occupation following the construction of the dam. This background information was needed in order to establish the potential credibility of the data. Given the descriptive nature of the data that was being sought in this section of the survey instrument, descriptive statistics, (mainly percentages) were to be used to make meaning out of the data.

3.5.2 Measures of Sustainable Development

The second part of the questionnaire contained the indicators of environmental, social and economic impacts of dams. In developing these indicators, the researcher first thoroughly reviewed previous literature on impact assessment. Based on the review, some metrics used in assessing the impacts of development interventions were listed. Secondly, a focus group discussion was held with four natives of West Kpong (one of the affected villages). In this discussion, participants were asked to mention the main environmental, social, economic and management issues stemming from the construction of the Kpong Hydroelectric Dam.

A number of issues were stated by the participants and these were mapped with those identified in the literature. To a large extent, there was a convergence between those issues identified in the literature and those uncovered during the focus group discussions. Some of the indicators are soil fertility, soil erosion, aquatic wildlife, archaeology, nutrition, public health, eco-tourism, employment, and poverty. These indicators were used to develop a preliminary questionnaire, which was pre-tested on five natives of South Senchi (another affected village). The aim of the pilot study was to uncover ambiguous questions and to detect any difficulty that may be

encountered in executing the study. The pilot study has been very useful in that it helped the researcher to identify and reframed/dropped equivocal questions. Moreover, through the pilot study, the researcher became aware of the need to get someone to interpret questions to respondents who could not speak/read English. All, but one, of the questions generated were close-ended questions and respondents were asked to rank each question using a seven point Likert scale of -3= "Mostly negative" to 3= "Mostly positive".

3.5.3 Measures of Public Participation

The third section of the questionnaire sought to uncover whether stakeholders were involved in the planning stage of the Kpong Hydroelectric Dam. Here all the questions raised are newly developed measures. Eight close-ended questions were developed. They invited respondents to indicate the extent to which each statement reflects the actual situation based on a seven-point Likert scale ranging from 1= "To an extremely no extent" to 7= "To an extremely large extent".

3.5.4 Measures of Resettlement/Compensation and Management of the Resettlement Townships

The final part of the questionnaire addressed the twin issue of resettlement and compensation that have arisen as a result of the construction of the Kpong Hydroelectric Dam. Subsequently, 12-item measure was developed and respondents were asked to rank based on a seven-point Likert scale of 1= "To an extremely no extent" to 7= "To an extremely large extent". Pre-testing was also carried out to ensure that questions are not with ambiguity. In this section, some of the measures include: we were duly notified about the resettlement plan: the agreed date for resettlement was however not adequate: the government did not consider our interest in setting

up the terms of agreement on compensation packages: and it took the government unduly long to start disbursing the compensation packages.

3.6 Data Analysis

In this study, the main data analysis technique utilized is descriptive statistics. More specifically, the study calculated frequencies, percentages, means and standard deviations. The frequencies and percentages were used to analyze the demographic data, which mainly involve nominal variables/responses. The mean and standard deviations were used to analyze some of the research variables measured using Likert scale. In order to facilitate easy analysis, all questions were coded and all the variables studied were also coded. The codes together with their respective question numbers are used in the main analysis and discussions. The following codes and their associated interpretations are particularly useful for a better comprehension of the next chapter.

Table 9: Some Important Coding for Research Variables

Variable	Code
Environmental Impacts	ENI
Social Impacts	SOI
Economic Impacts	ECI
Public Participation	PP
Compensation Package	CP

Source: Survey Data, 2012

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

The main results of the study are analyzed and discussed in this chapter using the study's research questions as a framework. The key features of this chapter are: First, a brief on the demographic characteristics of the sample; Second, a commentary on the impact of the resettlement on the communities as result of the Hydroelectric Dam; Third, a discussion of the impact of the Kpong Hydroelectric Dam based on the average responses across of the three villages under investigation; Fourth, an analysis of the opinion of the respondents regarding public participation issues and management of the town; Fifth, a presentation of the findings with respect to resettlement and compensation emanating from the construction of the dam infrastructure.

4.2 Demographic Characteristic of the Sample

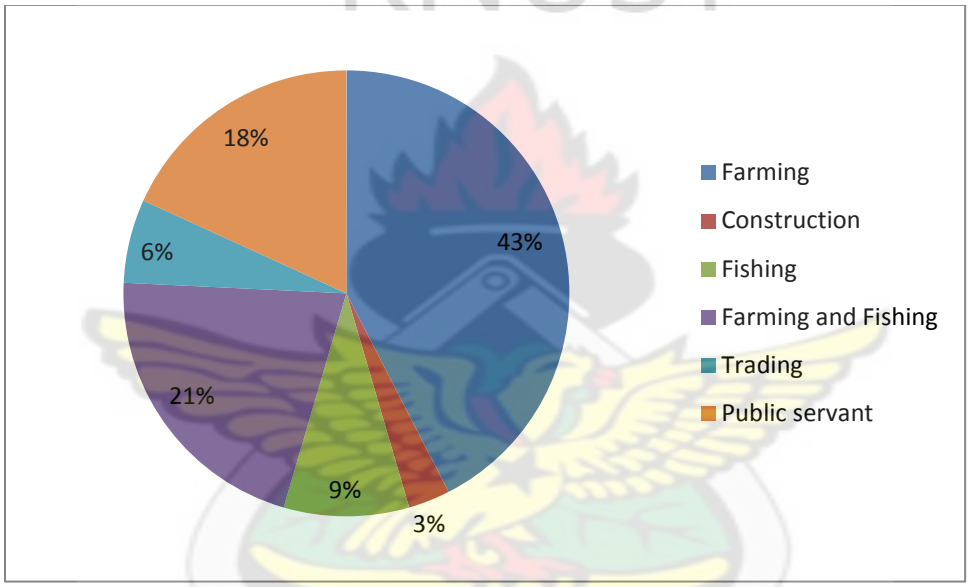
Table 7 summarizes all information pertaining to the background of the respondents. Of those who participated in the study, 42 percent stays around the river boundary, 30percent were captured from the Tema –Ho /Akosombohighwayand 27 percent captured from Somanya/Akusearea.Those found along the river are relatively bigger and perhaps more populated than the rest. In all, 81 percent of the respondents are male, while only 18 percent are female. This distribution should not be surprising in such traditional societies where female are given little room in leadership. In fact, for almost all the female respondents they were made to complete the questions because their husbands, who were nominated for the study, were not around as at the time the study was ongoing.

Table 7:Sample Distribution Based on Age, Gender and Occupation

Variable	Classification	Number	Percent
Gender	Male	27	81.8
	Female	6	18.2
Age	25 -35	3	9.1
	36 -45	4	12.1
	46 -55	10	30.3
	> 55	16	48.5
Occupation	Farming	14	42.4
	Fishing	3	9.1
	Farming and fishing	7	21.2
	Construction	1	3.0
	Trading	2	6.1
	Public servant	6	18.2
Duration of stay	21 -30years	4	12.1
	> 30 years	29	87.9
Education	High school	17	51.5
	Ordinary diploma	1	3.0
	HND	1	3.0
	MA/MBA/MSc	1	3.0
	None	13	39.4

The results indicate that agriculture (mainly farming and fishing) is the most dominant profession within the three villages under investigation. In this analysis, whereas 72 percent of the respondents are engaged into agriculture, there are only 3 percent, 6 percent and 18 percent into construction, trading and public (civil) services respectively. For the sake of emphasis, this information is depicted in the chart below.

Figure 8: Distribution of Sample by Occupation



This result regarding the profession of respondent seems to throw some light on the extent to which these villagers depend on the environment for their survival. Furthermore, the majority (approximately 79 percent) of the respondents are more than 45 years old. About 12 percent are between 36 to 45 years while 9 percent are aged less than 36 years but not below 30 years. This result for age distribution suggests that the respondents are likely to be around when the Kpong Hydroelectric Dam was to be constructed and, therefore, the information provided by the informants are likely to be reliable. The latter assertion is augmented by the fact that the majority (87 percent) of the respondents have lived in one of the three villages for more than 30 years.

Only12 percent of the sample have lived in at least one of these villages between 21 to 30 years. Therefore, given that the dam itself is only 20 years old, it suggests that respondents are likely to be especially informative.

4.3 Social and Economic Impacts of the creation of theKpong Hydro – electric Dam

The environmental, social and economic impacts of the dam under investigation were gauged by computing means and standard deviations for all the items within the 20-item impact assessment instrument. Relevant results of the analysis are presented in Table 8. Results presented in Table 9 suggest that the average impact on the environment of the construction of the Kpong Hydroelectric Dam is *negative*. In fact, all environmental indicators including soil fertility, soil erosion, aquatic habitat, aquatic wildlife, flooding, deforestation, sedimentation, irrigation/drainage, agriculture, and aquaculture generated means with negative absolute values. Specifically, the means range from -0.06 to -2.36. The average dispersions around the means range from 0.242 to 1.660. In effect, it is possible that the construction of the Kpong Hydroelectric Dam has resulted in unsustainable environment within the surrounding villages.

Table 8: Descriptive Statistics for Items Measuring Dam's Impacts

QN	Item	Item-to-total Correlation	Mean	SD	**QN**	Item	Item-to-total Correlation	Mean	SD
7	ENI1	.404	-2.36	1.168	26	SOI6	-.423	-.12	.484
8	ENI2	.211	-2.27	1.180	27	SOI7	.155	-.76	.436
9	ENI3	.361	-1.76	1.146	29	SOI8	.246	1.33	1.652
10	ENI4	.358	-1.91	1.071	30	SOI9	-.041	-.18	.727
11	ENI5	.205	-.55	1.660	31	SOI10	.368	.00	.661
12	ENI6	.286	-.88	.927	32	SOI11	-.301	-.06	.348
13	ENI7	.563	-.52	1.822	33	SOI12	.214	2.73	.761
14	ENI8	-.002	-.06	.242	34	ECI1	-.097	1.21	1.453
15	ENI9	.329	-.03	.770	35	ECI2	-.036	-2.18	1.310
16	ENI10	.343	-.12	.331	36	ECI3	.559	-2.52	.939
17	ENI11	.479	-.15	1.349	37	ECI4	-.079	-2.73	.674
18	ENI12	.433	-1.12	1.409	38	ECI5	-.314	-.09	.522
19	ENI13	.164	-.12	.600	39	ECI6	-.301	-.06	.348
20	ENI14	.246	-.06	.556	40	ECI7	-.217	-.12	.415
21	SOI1	.353	-.03	.637	41	ECI8	.007	-1.88	.740
22	SOI2	.480	-1.18	2.235	42	ECI9	.394	-.58	1.953
23	SOI3	.049	-2.3	1.531	43	ECI10	.466	2.3	1.262
24	SOI4	.149	-1.18	1.044	44	ECI11	.072	.12	.740
25	SOI5	.468	-.21	1.654					

Source: Fieldwork, April 2012

As can be observed in Table 8, two social indicators, namely transportation/rural accessibility and population, reported positive means of 1.23 and 2.73 respectively. Nevertheless, the majority of the indicators used in social impact assessment such as archaeology, nutrition, public health,

indigenous culture, infrastructure and pollution generated negative means. The mean values for these social indicators are between -0.03 and -1.33 in range. Only one item, urbanization (growth of villages into cities), has not been affected in any way given a mean of 0.00. With these results it seems that on the whole the impact on the social life of the surrounding villages is hardly sustainable.

Table 8 suggests that three economic indicators have been affected positively by the construction of the dam. These are eco-tourism, electricity, and the creation of industries/factories. These indicators respectively reported mean scores of 1.21, 2.3 and 0.12. However, like the items used within the social impact assessment, most of the economic impact assessment indicators like employment, income generation, poverty, food and water supply produced mean scores with negative absolute values. In particular, their means ranges from -0.06 to -2.53. By implication, the overall impact on the economic life of the communities of the construction of the Kpong Hydroelectric Dam seems unsustainable.

Apart from the closed-ended questions, the results of which have been discussed above, an open-ended question was posed asking respondents to state some of the problems they are facing which in their experience are caused by the dam infrastructure. Here, the majority of the respondents who attempted the question suggest that although they can admit impoverishment even before the construction of the dam, the level today is unabated. The reason for this, according to respondents, is that formerly when the dam was not constructed, they could enjoy abundant harvest be it in fishing or farming. In this argument, respondents claimed that the farm lands were very rich in fertility and agricultural in general was a lucrative venture.

In contrast, following the dam's construction, the aquatic animals have gone into extinction, while the new lands available for farming are barely arable. Respondents lament that these days, no matter how hard you work, the plants would not bear the fruits, resulting generally to low productivity. Cassava and fish farming happen to be the main source of food to balance the diet and generate some money for families living in the surrounding villages. With low productivity, therefore, the meal rarely get to be balanced, and the income is hardly generated because the hungry man is not satisfied to think of selling to generate revenue from the farm produce which could not even kill his hunger.

Consequently, although respondents agree electricity and pipe-borne water supply as well as the provision of public school are on the rise, most of these villagers are not able to afford potable water, electricity or fund their wards' education. Indeed, the study found that, in addition to living in the dark, most of these villagers especially those around the river compete with animals (mainly cows) to drink from the lake. This has in diverse ways contributed to the growing incidence of bilharzias and river blindness in these villages. To complicate matters further, the lack of development in the villages meant that the drainage system is extremely bad, with the implication that stagnant water take over open spaces especially when it rains. This water has provided breeding grounds for the insect that carries the malaria parasite and the result has been devastating; all the respondents concur that malaria is the number one killer disease in their towns.

4.4 Public Participation in Planning and Developing the Dam Infrastructure

The analysis of the public participation issues related to the Kpong Hydroelectric Dam is presented in Table 9. In general, the reported results suggest that relevant stakeholders in the

surrounding villages were contacted during the planning phase of the dam's construction. In particular, the mean score for all items measuring public participation range from 3.94 to 6.64.

Table9: Descriptive Statistics for Items Measuring Public Participation

QN	Item	Item-to-total Correlation	Mean	SD
45	PPI	.809	6.09	1.466
46	PP2	.806	6.15	1.372
47	PP3	.852	6.64	1.025
48	PP4	.837	3.94	.242
49	PP5	.628	3.97	.172
50	PP6	-.144	6.00	1.090
51	PP7	.247	4.36	1.558

Source: Fieldwork, April 2012

Therefore, by gauging the extent to which members of the surrounding villages including chiefs, farmers, fishermen, media, and NGOs were engaged in planning the construction of the dam on a seven-point Likert scale (1= "To an extremely no extent") to 7= "To an extremely large extent"), it seems that public participation was encouraged in the course of planning and developing the Kpong Hydroelectric Dam. In fact, with a mean of 4.36 in PP7, the results indicate that there was mass education to create public awareness regarding health dangers that could arise while the project is ongoing. Moreover, it seems from the result that the public was informed well-ahead of time before the project commenced. Despite what seems to look like some amount of public involvement in the planning stage of the dam, the result of an open-ended inquiry indicates that although chiefs and representatives of the communities were involved, these people were too ignorant as to comprehend some of the technical issues involved. For instance, respondents believe that village leaders by that time did not understand the broad picture and could not have

made insightful contributions toward sustaining the infrastructure. Interestingly, according to respondents, the leaders were overwhelmed by the fat promises of VRA, which to date has not been forthcoming.

4.5 Emerging Issues in the Management of West Kpong Resettlement Town

Emerging issues which serve as catalyst to fuel conflict in the resettlement site is presented on the table below. Among the various issues including; unwanton sale of acquired site, boundary demarcation and disputes, disputes between host and settler communities.

Table 10: Emerging resettlement issues ranked in order

Boundary demarcation and disputes	Disputes between host and settler communities	Unwanton Sale of resettlement lands	Power/authority rivalry	Threats and harassments
1st	2nd	3rd	4th	5th

Respondents were made to identify emerging issues which has heralded the management of the resettlement town. The Communities identified the various issues according to how they feel and affected by them. Generally, from the table, it is evidently clear that boundary demarcation and disputes came first, followed by Disputes between host and settler communities, then unwanton sale of resettlement lands and then threats and harassments.

The problem of boundary demarcation and disputes pooled the highest number. It is believed that most areas were demarcated several years ago. For that matter most demarcated areas has been

washed off. This has basically triggered all the other emerging issues. Acquisition maps are also difficult to come by. They are mostly kept by the Acquiring Authority. This makes it impossible for settlers to read and appreciate the extent of the acquisition area. Interviews conducted at the VRA Resettlement office indicated that some settlers would apply for the maps only to sell portions of the acquired areas .That is the main reason why the VRA does not often give out acquisition maps.

4.6 Compensation and Resettlement of Affected Communities

Relevant results of resettlement and compensation are reported in Table 11. RP1 to RP4 address resettlement issues. The mean of 6.75 relating to RP1 suggests that the surrounding communities were duly notified about the resettlement plan. The villagers reached an agreement with government officials (VRA) regarding the due date to relocate (this is depicted by RP2 with a mean of 5.81). As indicated by the 3.22 mean in RP6, respondents believe that the date set for resettlement was indeed adequate. Importantly, in setting up the terms of agreement, the government officials did, to some extent, considered the interest of the villagers (this is represented by the mean of 3.09 in RP4 in Table 11).

Table11: Descriptive Statistics for Items Measuring Resettlement and Compensation Issues

QN	Item	Item-to-total Correlation	Mean	SD
53	RP1	.412	6.75	.568
55	RP2	-.328	5.81	1.091
56	RP3	.151	3.22	1.539
57	RP4	.862	3.09	1.802
58	CP1	.302	6.19	1.306

59	CP2	.834	5.88	2.044
60	CP3	.412	6.44	1.216
61	CP4	.738	5.78	1.660
62	CP5	.734	5.88	1.996
63	CP6	.596	5.62	1.561

Source: Fieldwork, April, 2012

These procedures, according to respondents have contributed in the mutual understanding between VRA and members of the surrounding villages thereby minimizing the incidence of conflict between these two groups. Past studies have shown that, too often, the construction of the dams have resulted in conflicting disagreement between the original land owners and those in charge of the development intervention (Ledec and Quintero, 2003).

Still from Table 6, CP1 to CP6 are related to the management of compensation scheme following the construction of the dam. Given a mean score of 6.19, CP1 indicates that there was an agreement between VRA and the villagers for the former to compensate the latter for losses suffered to land and other properties. Nevertheless, a mean of 5.88 in CP2 suggests that VRA did not consider the interest of the villagers in setting up the terms of agreement regarding the compensation packages. CP3 recorded a mean score of 6.44, an indication that it took VRA officers unduly long to start disbursing the compensation packages to the villagers. Given this delay in executing the compensation packages, one would have expected the authorities in charge to at least factor in the inflation element. On the contrary, a mean of 5.78 in CP4 highlights that the time-value of the amount of compensation attributable to the villagers was not accounted for by VRA despite the unwarranted delays.

In fact, results of open ended inquiry suggest that some the villagers legally entitled to compensation only received their due amount in 2011, yet others are still not sure when their

own would arrive. Even unfortunate is the fact that respondents earnestly complaint about incommensurate amount they are being given by VRA. The reported mean of 5.88 for CP5 indicates that compensation packages being given to the villagers are significantly below what they have lost in land and other properties. Equally regrettable is the fact that these villagers are subjected to undue bureaucratic procedures in an attempt to retrieve their legally entitled amounts. In this conception, a mean score of 5.62 in CP6 suggests that, too often, the procedures one has to go through in order to obtain his/her share of compensation is overly bureaucratic and time wasting.

4.7 Responses to extent to which the VRA has managed the resettlement town

Respondents expressed their view on what the acquiring agency, the VRA, has done over the years to effectively manage the township. Inhabitants of the area suggest that they look up to the VRA in the provision of social and economic infrastructure. According to them the VRA is both their central and local government. Following from that they expect the Authority to handle 'everything': from the repairing of building cracks up to the provision of modern infrastructure after over 30 years of creating the town.

TABLE 12: How respondent feel about the Volta River Authority in the management of the resettlement town.

Responses	No. of Respondents	Weights	Weighted Average	Percentage
Maintenance of resettlement houses	10	7	70	26.2%
Provision of portable water	5	9	45	16.9%
Provision of electricity	3	8	24	8.9%
Construction and maintenance of road network	3	6	18	6.7%
Dispensing Primary Health care	12	10	120	44.9%
TOTALS	33	40	267	100

The variables were given weights to compare various provisions made by the VRA and to what extent this has contributed to the socio – economic lives of the inhabitants. Weights were given to the variables based upon how the respondents rated the provisions supplied by the VRA. Respondents were interviewed on which variable mentioned in the table, they consider more important. From the table, the community indicated that dispensing primary health care and availability of health facility is their priority. They contended that the Akosombo hospital which serves that catchment area has been of immense benefits coupled with occasional health education.

Construction and maintenance of roads scored as low as 6.7%.The apparent reason that was given was that, the central government and local Assemblies are responsible for maintenance of the Accra – Ho highway and other feeder roads that link the town.

4.8 Proposed Key elements of Strategy for Medium – Long Term Resettlement Management

To ensure a properly managed resettlement town in the context of a modern day community, respondents' views were gathered. Proposals which identify key strategies for medium – long term measures to effectively manage the resettlement town were derived.

TABLE 13:Proposals of solution to resettlement management

Responses	No. of respondents	Percentage(%)
ITEM A: Integrating the resettlement communities into district/regional Administration	**12**	**35**
ITEM B: Code of Conduct for the resettlement communities	**5**	**20**
ITEM C: Considering the host communities as potential beneficiaries of community assistance	**4**	**10**
Item D: Deepening partnership between VRA and townships	**12**	**35**
	33	**100**

Respondents indicated that it is about time the resettlement towns with all its resources were integrated into the district/municipal/regional administration. Others stated that rather than grafting the towns into the local government Administration, partnership between the VRA and the resettlement towns should be deepened. Views were split and equally expressed in that 12

respondents (in item A and item D each) representing 35% each were giving. A total percentage of 70%(item A and D) suggest that integrating the sites into the local government as well as deepening partnership between the towns and the VRA is crucial for consideration.

Item B and C recorded 10% and 20% respectively, indicating that the community does not regard the application of codes and rules in the resettlement town. They also do not agree that the host communities should benefit from any community assistance. Their stand was that they have been involuntarily removed from their original abodes and for that matter sacrificed a lot.

4.9 Handling of residual issues

Communities within the catchment area expressed varied opinion of the extent to which the VRA handled residual issues emanating from the construction of the Kpong Dam. Respondents expressed their views on residual issues such as boundary demarcation, outstanding compensation covering submerged lands and encroachment of reserved lands. Generally, respondents commended the VRA for rising to the occasion on when such issues are raised.

Table 14: Residual issues handled by VRA in the resettlement town

Residual Issue	**No. of respondents**	**Percentage**
Boundary Demarcation & settlement of disputes	**15**	**45.4**
Payment of compensation	**13**	**39.4**
Encroachment of Reserved Lands	**5**	**15.2**
	33	**100**

Though an Executive instrument (E.I. 35 of1980) was used to acquire the site and for that matter boundaries well demarcated, most respondents contended that most boundary pillars have been removed. This has resulted in persistent boundary disputes and incessant clashes between host and settler communities. 15 respondents representing 45% stated that the VRA has created a lot of platforms to address the issue. They commented that the acquiring agency over the years engaged its surveyors to demarcate areas of dispute.

With the payment of outstanding compensation, respondents were not too satisfied. 13 respondents representing 39% alluded to the fact that the kind of treatment given to claimants whose lands have been submerged by the river is not fair. They stated that these claimants have to produce site plans covering the submerged lands before their claims could be processed and it is not easy to come by the demands.

Both host and settler have connived to sell resettlement lands to private individual. Settlers have made a lot of representations to the VRA has responses have not been proactive. Respondents states that though the VRA has made some publications in the dailies warning encroachers but still the wanton sale and encroachment wage on. 5 respondents representing 15% indicated that the VRA has not done much to address the issue. Others indicated that the inability of the Authority to be present on the site is one cause of the problem.

4.10 Mode of Acquisitionof the Resettlement Town and Dam Site

Power of eminent domain (compulsory acquisition) was used to acquire both the dam site and the resettlement towns. This implies that affected persons were involuntarily resettled. Affected persons have no option than to comply with the government order. Displaced persons are only

entitled to compensation. The Kpong acquisition was thus acquired by an Executive instrument, E.I. 35 OF 1980.

Respondents' view were sought to evaluate their views on whether they would have preferred any other mode of acquisition other than Compulsory acquisition if their land were to be taken by the government today.

TABLE 15: Views on mode of acquisition of project site

RESPONSE	NO. OF REPONDENTS	PERCENTAGE
Compulsory Acquisition	8	24.2
Private Treaty	25	75.8
	33	100

A chunk of the respondents that is 25 out of 33 representing 75% stated that they wished the government acquired the site through a private treaty. This they said would have given them the chance to enter into a leasehold tenurial arrangement or would have allowed the community to have some form of equity shares in the dam forever.

The few, eight in number representing 24% who clearly sounded nationalistic indicated that governments require unimpeded access to project sites to carry out its developmental programs. For that matter resorting to private treaties will delay the project and add unnecessary cost to projects' budgets. They stated however that government in adopting compulsory acquisition as a means of acquiring should pay prompt compensation.

CHAPTER FIVE

SUMMARY OF FINDINGS CONCLUSIONAND RECOMMENDATIONS

5.1 Introduction

The purpose of this study was to evaluate how the VRA has managed its resettlement towns as a result of the creation of the KpongDam. This research agenda was presented together with other issues such as the research gap and the nature of the research problem in the study's general introduction presented in chapter one. Then chapter two reviewed the theories pertaining to the research agenda and presented the study's conceptual framework. In chapter three the focus was on the methodological approaches relevant toward achieving the research agenda, while chapter four analyzed the study's results. In this chapter, the study's implications for theory and practice are discussed, inherent in the research design are highlighted together with opportunities for further studies, and, finally, the study's major conclusions are drawn.

The emergence of the modern state and the progress of science and technology have brought in their wake the right of the state to acquire land for public purposes for example hydroelectric projects, railway system, roads, and administrative sites for the furtherance of town planning schemes.

5.2 SUMMARY OF FINDINGS:

The study made the following findings:

The socio- economic status of the people of Kpong was low. The majority of the people interviewed were petty traders, farmers, artisans, some were unemployed. Only a few were gainfully employed. This is due to the fact that most of them had lower or non- formal education

The policy compulsory acquisition of land renders landowners landless.

Although every settlement falls within the area of jurisdiction of some local Authority in the country these Local Authorities do not administer these settlements well. Technical departments such as health and education do not extend automatically.

The Volta River Authority has a large portfolio of landed assets and because of that has become very difficult to continue managing the resettlement towns. Residual resettlement management is therefore a major challenge facing the VRA up to today.

Albeit, a resettlement fund has been established to offer assistance to these towns, accumulated funds cannot match the needs of the towns and resettlements sites under the Kpong project do not enjoy this facility.

What makes a town grow is its ability to offer its inhabitants their means of livelihood. There is no agro- industrial base provided for these settlements and there are no possibilities in the near future for them to develop adequate industrial base.

It was realized that lack of community and local stewardship participation in decision- making for land acquisition management has generated intractable disputes between the state and the communities

The people are denied of their annual income from the land as a result of the acquisition of the land for the creation of the dam.

Most of the people who were affected by the Kpong Dam were originally living in villages and hamlets all over the Volta basins. A large number of them dwelled in mud houses with thatched roofs. The creation of the dam and the subsequent formation of the settlement towns afforded the

affected the opportunity to be transferred from a backward rural/ remote farmsteads to well organized and modern communities

The VRA resettlement scheme provided a number of farmers an improved Agriculture system: a far departure from the wasteful, fragmented and shifting cultivation of Agriculture.

There has been a spillover of investment opportunities to all the six resettlement sites located along the Lake Volta. Companies engaging in aqua – culture and resort beaches has contributed in no small way to the resettlement sites

The Land owners Association (Indigenous Krobos) make claims to certain portion of the Resettlement West Kpong. They alleged that compensation has not been paid. Others also claim that compensation paid was not adequate. About 50 billion is required to pay residual compensation on Kpong project.

Other steps taken by the land owners to stall effective management of the resettlement township include; Takeover of acquired lands

Unauthorized sale and allocation of acquired lands

Preventing settlers form farming on the lands acquired for the settlers

Threat of eviction from the site.

The Surveying and the Estate Department in 2007 re-demarcated the site to avert constant clash over land with the indigenes.

It was observed that the Council of Elders formed from within the settlers is indiscriminately selling portion s of the acquired site. A number of Publications has been made in the national dailies to warn and prosecute offenders.

There is teething problem of maintaining standard public health. There are problems with safe water, sewage disposal, refuse disposal and control of communicable and endemic diseases.

Too often, the development of infrastructure has led to the resettlement of people from one place to another(Tremmel, 1994; Ledec and Quintero, 2003; Girmay, 2006). In some cases, this situation has resulted in long standing conflicts between the original land owners, on the one hand, and development authorities, on the other hand. For instance, as reported by Mouafoet al (2002), the cconstruction of the Maga dam in Cameroon resulted in growing disputes between various interest groups over access to water. Similarly, as the finding of a case study in Nigeria would suggest, the conflict in the Niger Delta is aggravated anytime there is a proposal for a development intervention (Egbeleke, 2004). So, how can governments minimize the incidence of conflicts resulting from infrastructural development?

Findings from the present study seem to suggest that public participation was encouraged in the course of planning and developing the Kpong Hydroelectric Dam. Interestingly, those in charge of the intervention sponsored mass education to create public awareness regarding health dangers that could arise while the project is ongoing. This was followed by an agreement with the communities regarding the due date to relocate, the terms of which was set having considered the interest of the villagers. As the results indicate, the aforementioned procedures have contributed in the mutual understanding between development authorities and members of the surrounding villages thereby minimizing the incidence of conflict between these two groups. Therefore, it can be asserted that public participation coupled with proper resettlement planning can be the answer to conflicts which emanate from development interventions. In effect, this study recommends that governments need to encourage public participation, along with proper resettlement

planning, in impact assessment review because it can lead to substantial benefits for both the development authorities and affected communities. On the other hand, ignoring it can lead to conflicts and problems for project implementation, acceptability and sustainability (Appah-Sampong, 2003).

Indeed, most previous research conducted in Sub-Saharan Africa (Abdel-Ati, 1992; JICA, 1997; Barbieret al., 1993; Gyau-Boakye, 2001; Acremanet al., 2000) highlight that dam's construction in communities within the Sub-region often resulted into several negative impacts including: collapse of livelihoods dependent on fisheries; increased out-migration as result of the reduction in cultivable land; loss of grazing resources; decrease in non-timber forest products; increased incidence of many water borne diseases including schistosomiasis, malaria and onchocerciasis; and decline in economic activities as a result of loss of agricultural land.

Like the foregoing studies, the present research found some interesting results. Firstly, the construction of the Kpong Hydroelectric Dam has led to unfriendly environmental impacts due to increased incidence of soil erosion, decreased soil fertility, reduced aquatic wildlife, poor state of aquatic habitat, high sedimentation, increased incidence of flooding, poor air and water quality, and poor drainage systems. Secondly, the social impacts of the dam are overwhelmingly negative.

It is important to add that while economic activities such as electricity and pipe-borne water supply are on the rise, most cannot afford the charges that come with their consumption, leading this people to continue to drink from the lake in addition to living in darkness. Even much, there is general lack of development in the communities. In addition, the study has shown that the way compensation is being managed by those in charge with development interventions is highly

detrimental to those entitled to receiving it. All these are areas requiring serious attention from governments and other partners in development. This study recommends that, communities whose lands and lakes are used to construct dams be provided with electricity at relatively cheaper rates particularly in villages like the ones studied in this research where the average person is very poor. More importantly, it is recommended that when development intervention such as dam infrastructure is being built in poor communities like the one studied by this research, the authorities administering the project need to collaborate with government and non-governmental bodies to take the provision of other basic amenities such as potable water, public toilets, clinics and schools to the communities. It is believed that this approaches coupled with strict environmental measures can help to ensure development trajectories that are sustainable.

Finally, on the management of compensation packages for settlers, government and other partners in development are urged to not only consider their own interest when setting up terms of agreement but also that of the affected people (i.e., the beneficiaries). In this regard, the amounts of compensation should be disbursed to the people on time, and, where there is any delay, the inflation element must be adjusted. Moreover, the procedures for collecting ones compensation should not be overly bureaucratic as to inconvenient the beneficiaries and that authorities are urged to be fair when fixing the amount to be given to each person in relation to land and properties lost by the person. This echoes the need to involve the public while planning the development project. It is hoped that when adhered to, the above suggestions can help to push the development of dam infrastructures away from anarchy toward sustainable development.

5.3 CONCLUSION

Based on the presentation and recommendation above, it is expected that Government and acquiring agents funds promptly for payment of compensation. It is expected that the lessons discussed and recommendation made will serve as a guiding principles in the acquisition of land for power schemes.

As the world gets closer and closer, it is crucial that challenges of land, as a resource in any part of the world be appraised and conscious efforts made to address these challenges. In a nutshell, it is being re- echoed that access to land is now a major issue and its consideration must be seen as a priority in power schemes designs and must not be downplayed.

5.4 RECOMMENDATIONS

The following recommendations are made:

There should be the need for security of Tenure of Holdings. The people uprooted (from their original homes) enjoyed crystallized interests and permanent rights of occupation in respect of building plots and farm land. In as much way, settlers in host communities should have a title affording a maximum possible of security of tenure for their children and grandchildren.

Rules regulating transfer, assignment and fragmentation in the interest in the land should be constantly communicated to the settlers and their off springs.

Resettlement is proving more expensive to Government than would have been the case if the inhabitant being resettled had had to undertake the construction of their own houses. Government should therefore in subsequent project give equivalent replacement value of properties to be destroyed.

Presently land values are high and given that land owners have become assertive these days, and adequate arrangements should be made to secure financial and other supports necessary for the payment of all rights affected by the project.

Proper arrangements should be made to ensure that residual issues of resettlement and environmental problems are dealt with prompt attention and in professional manner.

Acquiring Agents should ensure proper parcellation and re-demarcation of plots for settlers.

Land for Agricultural Schemes should not necessarily be 'acquired'. Government instead should negotiate and design the land for agricultural development scheme. The various interests, i.e. extent of the holdings of the original owners of the land should be recorded. Allocations will then be made to the various persons being resettled in accordance with acceptable rules devised to ensuring fairness as to size of holdings.

Test of Income Levels. Since enough agricultural land of equivalent acreage could not be found to replace even all the cultivated land in the basin being flooded, it is essential that other services or means should be found where by the income levels, at least, of the inhabitants being re-settled should not fall below the level prevailing within the areas they per force had to move.

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APPENDIX

QUESTIONNAIRE

Preamble

Dear respondent (s),

Management of VRA Resettlement Townships; Acase study of West Kpong Resettlement Town

This instrument is designed to elicit data to complete a research as part of my school's requirements for completing a degree programme.

The purpose of the research is to examine the impacts of the Kpong hydroelectric dam on the environment, social and economic wellbeing of the affected communities and the extent to which the VRA manages the affected communities.

You are invited to complete the questionnaire, noting that your participation is voluntary and that you can withdraw from the study at any time.

Any information provided will be used purely for the purposes of the academic work and be held confidential.

Your corporation at completing the research instrument is extremely appreciated.

Thank you!

Frederick Kyei Dompreh

IDL - KNUST

KUMASI

SECTION A

This part of the questionnaire requests from you your background information, which is particularly crucial for establishing credibility of the research data. There are multiple answers to each question please tick the one that best describes you.

1. Gender

a) Male [ ]

b) Female [ ]

2. Age in years

a) Less than 25 [ ]

b) 25 -35 [ ]

c) 36 -45 [ ]

d) 46 -55 [ ]

e) More than 55 [ ]

3. What is your occupation?

……..

4. What is the town of your residence?

…….

5. How long have you been living in this place?

a) Less than 1years [ ]

b) 1 -5 years [ ]

c) 6 -20 years [ ]

d) 20 -30 years [ ]

e) More than 30 years [ ]

6. What is your minimum qualification/educational background?

a) High school [ ]

b) Ordinary diploma [ ]

c) HND [ ]

d) BA/BSc./BE [ ]

e) MA/MBA/MSc [ ]

f) None [ ]

7. Who traditionally or customarily owned land in this community?

8. Do these people still own this land? Yes [ ] No. [ ]

9. What has affected their land ownership rights?

10. How did you come by the land you farm on?

11. Is the plot allotted to each household enough to sustain the family and offspring? Yes [ ] No. [ ]

12. Has the boundaries of the resettlement site been properly demarcated? Yes [ ] No. [ ]

13. If no how has it affected the community.

14. Do you face any form of harassment from the host community? Yes [ ] No [ ]

SECTION B

In this section, some surrogates measures of environmental, social and economic impacts of dams are summarized below. You are requested to rank each variable based on the scale provided, thus:

Mostly Negative	***negative negative***	***slightly negative***	***Not Effect***	***slightly positive***		***Positive positive***	***Mostly positive***			
–3	***–2***	***–1***	***0***	***1***		***2***	***3***			
				–3	–2	–1	0	1	2	3
	Environmental Impacts									
15	Soil Fertility			[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
16	Soil Erosion			[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
17	Aquatic habitat			[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
18	Flood control			[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
19	Sedimentation			[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
20	Agriculture			[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
21	Aquaculture			[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
	Social Impacts									
22	Public health (i.e. incidence of diseases such as billharzia, cholera, malaria and river blindness).			[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
23	Infrastructure (schools, road, public toilets, clinics, etc)			[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
	pollution (air, water, noise, dust making)			[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
24	land tenure system			[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
25	Transportation and rural accessibility			[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
26	Recreation			[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
27	Urbanization (growth of villages into cities)			[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
28	Population size (out-migration or in-			[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

migration)

	Economic Impacts							
29	Employment	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
30	Income generation	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
31	Impoverishment	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
32	Conversion of land use	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
33	Water supply	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
34	Electricity and fuel supply	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Please any further specific comment about the impact of the project may be articulated below:

……

……

……

……

……

……

……

SECTION C

This section seeks to uncover whether stakeholders were involved in the planning stage of the hydroelectric dam. For this purpose, some statements have been modeled below and you are supposed to rank the extent to which each statement reflects the actual situation, noting that:

1=To an extremely no extent ***2=To a very no extent***

3=To no extent ***4=Not sure***

5=To some extent ***6=To a very large extent***

7=To an extremely large extent

		1	2	3	4	5	6	7
35	The fishermen operating in the community were involved in planning the project	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
36	The farmers in the community participated in the planning stage of the project	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
37	Representatives and chiefs of the local community were actively engaged in the process of planning the project	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
39	The public (i.e. communities in the area) were adequately informed before the project began	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
40	There was mass education to create public awareness regarding health dangers that could arise while the project is ongoing	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
41	The public was given adequate time to prepare ahead of the project	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Please in short sentence, can you elaborate on how the public was made to participate in the planning stage of the project.

……

……

……

……

……

……

SECTION D

The aim of this section is to take account of the twin issue of resettlement and compensation arisen as a result of the project. Here again you are requested to rank the extent to which each statement is a true reflection of the situation, noting that:

1=To an extremely no extent ***2=To a very no extent***

3=To no extent ***4=Not sure***

5=To some extent ***6=To a very large extent***

7=To an extremely large extent

		1	2	3	4	5	6	7
42	We were duly notified about the resettlement plan	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

43	There was a conflict between us and the government when information reached us that we should relocate	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
44	An agreement regarding the due date to relocate was reached between the government and us	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
46	The government did not consider our interest in setting up the terms of agreement on the deadline for relocation	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
47	An agreement was reached between us and the government on what we should receive by way of compensation for lost of land and other properties	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
48	The government did not consider our interest in setting up the terms of agreement on compensation packages	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
49	It took the government unduly long to start disbursing the compensation packages	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
50	The time-value (i.e. present value factor) of the compensation packages has not been accounted for	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

51	The compensation packages are not commensurate to the value of the properties we have lost as a result of the resettlement	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
52	The procedures one has to go through to get his/her compensation is overly bureaucratic and time wasting	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
53	We sometime have to bribe the government officers in charge of the scheme in order to get things done	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
54	Centering the compensation scheme' in the VRA office in the capital away from the village is our major headache as it is consuming our resources due to transportation and other costs (e.g., lodgment, food, etc.)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]