UNIVERSITY OF CAPE COAST

RESETTLEMENT PLANNING AND SUSTAINABLE LIVELIHOODS:

A STUDY OF THE BUI RESETTLEMENT SCHEME IN GHANA

MUSAH MORDZEH-EKPAMPO IBRAHIM

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BY

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Thesis Submitted to the Department of Geography and Regional Planning of the Faculty of Social Sciences, College of Humanities and Legal Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Doctor of Philosophy Degree in Geography and Regional Planning

APRIL 2019

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Signature……Date……..…

Name……..

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on the supervision of thesis laid down by the University of Cape Coast.

Principal-Supervisor's

Signature……Date……...

Name……..

Co-Supervisor's Signature…….Date……

Name……

ABSTRACT

This study examined the effects of the Bui resettlement scheme on the livelihood of the resettled, host and adjoining households. The study used descrptive study design and employed the mixed method. Cluster sampling was used to select the study communities. The sample size was 283 respondents. Data was collected using interview guide, observation guide, focus group discussion guide and interview schedule. The analyses of data involved the application of descriptive statistics, paired-sample t-test and thematic analysis. The study established that the implementers did not follow laid down guidelines in the planning process of the resettlement scheme. It was observed that core housing units of the resettled households had improved compared to their livelihood activities. There was a decline in the risks associated with the resettlement scheme over the ten year period with the host and adjoining households being equally affected. The study further established that income levels declined in all the communities but more in the host and adjoining households. The limitation of the study was mainly the inability of the researcher to measure the well-being and the rate of diffusion of an innovation in the affected communities. It was concluded that the resettlement scheme did not improved the livelihoods of the affected communities especially, the host and adjoining communities. It was recommended that Bui Power Authority should collaborate with Ghana Irrigation Development Authority to implement the irrigation component of the Resettlement Planning Framework to address the concerns of the affected communities.

KEY WORDS

Livelihood

Participation

Planning

Resettlement

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DEDICATION

To my family

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LIST OF ACRONYMS

AfDB	African Development Bank
ADB	Asian Development Bank
BDA	Banda District Assembly
BDA	Bole District Assembly
BDC	Bui Development Committee
BDS	Bui Development Secretariat
BNP	Bui National Park
BOT	Build-Operate and Transfer
BHP	Bui Hydro-Power
BPA	Bui Power Authority
CARE	Care International
CDA	Community Development Assistant
DDP	Dams and Development Project
DDT	Dichloro, Diphenyl-Tricloro-ethane
DFID	Department for International Development
DID	Development-Induced Displacement
DURs	Department of Urban Roads
DFRs	Department of Feeder Roads
DPs	Displaced Persons
EC	Energy Commission
EPA	Environmental Protection Agency
ESIA	Environmental, Social and Impact Assessment
ESRSP	Environmental, Social, Resettlement and Safety Plan
EIA	Environmental Impact Assessment

EPA	Environmental Protection Agency
ERM	Environment Resource Management
EQs	Equator Principles
FGDs	Focus Group Discussions
FAO	Food and Agricultural Organisation
GIS	Geographic Information System
GIDA	Ghana Irrigation Development Authority
GNPC	Ghana National Petroleum Corporation
GSS	Ghana Statistical Service
GWCL	Ghana Water Company Limited
GoG	Government of Ghana
GWh	Giga Watts per hour
GDD	Ghana Dam Dialogue
GHA	Ghana Highway Authority
GLVB	Ghana Land Valuation Board
HHs	Household Heads
IDPs	Internally Displaced Persons
IMF	International Monetary Fund
IADB	Inter-America Development Bank
IHA	International Hydro power Association
ICOLD	International Commission on Large Dams
ILO	International Labour Organisation
IRN	International Rivers Network
IFC	International Financial Corporation
IRB	Institutional Review Board

IRR	Impoverishment, Risk and Reconstruction
Km	kilometer
KVIP	Kumasi Ventilated Improved Pit
LAP	Land Administrative Project
LRP	Land Restoration Project
LI	Legislative Instruments
LEP	Livelihood Empowerment Programme
Mw	Megawatts
MLGRD	Ministry of Local Government and Rural Development
MoT	Ministry of Transport
MRT	Ministry of Road and Transportation
MMDAs	Metropolitan Municipal and District Assemblies
MP	Member of Parliament
mm	Millimetre
m	metre
m^2	Square metre
NDPC	National Development Planning Commission
NLP	National Land Project
NGO	Non- Governmental Organisation
OECD	Organisation of Economic Corporation and Development
OP	Operational Policy
OASL	Office of Administrator of Stool Land
RAP	Resettlement Action Plan
RPF	Resettlement Planning Framework
RCC	Regional Co-coordinating Council

RRP	Restoration and Re-vegetation Plan
PNDC	Provisional National Defence Council
SLF	Sustainable Livelihood Framework
SPSS	Statistical Package for Social Sciences
TCPD	Town and Country Planning Department
UN	United Nations
UNEP	United Nation Environmental Programme
UNDP	United Nation Development Programme
UNESCO	United Nation Economic, Social and Cultural Organisation
UNHRC	United Nation Human Rights Commission
USAID	United State Agency for International Development
USD	United State Dollar
UCC	University of Cape Coast
VALCO	Volta Aluminium Company
VRA	Volta River Authority
VRP	Volta Resettlement Project
WATSAN	Water and Sanitation
WCD	World Commission on Dams
WRM	World Rainforest Movement
WB	World Bank

CHAPTER ONE

INTRODUCTION

Background to the Study

Resettlement, with its varying manifestations, has always been associated with the physical movement of people and the transfer of entitlements over resources with competing uses (Chowdhury & Kigpen, 2013; World Commission on Dams [WCD], 2010). Such relocation of people is not a new phenomenon, neither is it peculiar to the contemporary age (Mariotti, 2015; Terminski, 2013). Nonetheless, its manifestation has taken novel dimensions today; firstly, through the extent of systematicity that it has assumed in recent times and secondly, its theorisation in academic discourse on how to manage and control its effects on the population (Biswas, 2012; Cernea, 2000).

The construction of large-scale development projects such as dams, transport and energy infrastructure among others that often require the displacement and involuntary resettlement of a number of communities are driven by modernisation view (Connell, 2015; Courtland, 2003). Although these lead to an improved quality of life in many regions, they also lead to deterioration of living conditions of a greater part of the indigenous population (Dawson & Farber, 2012; De Wet, 2006).

Between the 1950s and 1970s, the view of modernisation theorists on economic development was focused on advancing the welfare and well-being of people rooted in the political economy of the developed countries (Clark, 2000; Killick, 2010). Such a paradigm was characterised by how the global south could accelerate its industrialisation through the provision of cheap

energy for domestic and industrial requirements (Bugalski & Pred, 2013; Isaacman & Isaacman, 2013).

The net effect of that rate of (re) incorporation is the impoverishment of the affected population through how they are connected to the dynamics of capitalism and power relations (Bui, Schreinemachers & Berger, 2013). Loss of livelihood is then produced by incorporating the affected people into the development process. With such terms of incorporation adversely affecting the already disadvantaged strata occupied by the majority of the poor and the powerless, a vicious cycle of poverty is generated and reinforced (Cernea, 1993; 1996; Picciotto, Van Wicklin & Rice, 2001).

By the 1980s, the conception of economic development transcended the narrow emphasis on development that was limited to accelerating industrialisation to promoting the welfare of the disadvantaged society (Courtland, 2003; Todaro & Smith, 2010). This led to the "reformist-managerial" paradigm which was propounded by the World Bank (WB) and other International Financial Institutions to manage the fallout of such development projects (Dwivedi, 2002; Gwazani, Gandiwa, Mhaka, Hungwe & Muza, 2012).

The "reformist managerial" philosophy views resettlement as a "pathology" of development which can be sustained through effective planning and implementation of resettlement schemes (Mariotti, 2015, p.23). Other philosophies argue that discourses on displacement and resettlement are better understood by the "movementist" paradigm (Oliver-Smith, 2010) which focuses on the "social cost" or "risks" of resettlement based on the "recognition of rights and assessment of risks" for an equitable distribution of

benefits (Bisht, 2009; Vandergeest, Idahosa, & Bose, 2006; WCD, 2000a, p. 206). Thus, a combination of these paradigms can explain the nexus of challenges that resettlement schemes encountered over the period.

The two schools of thought are dominant discourses relating to the philosophical foundation of resettlement planning and sustainable livelihood (Dwivedi, 2002; Pankhurst, 2004; 2009). The differences in these paradigms make it difficult to quantum leap large populations onto such a modernisation trajectory that requires mega-projects. Surprisingly, such infrastructure development projects have become symbols of economic development in Africa, Asia and Latin America (Obour, Owusu, Agyemang, Ahenkan & Madrid, 2016; World Bank [WB], 2002; WCD, 2000b).

Consequently, the challenges of persons displaced by development projects in countries that undertook large projects were characterised by deeply entrenched social divisions and poverty (Neef, 2014; Neef & Singer, 2015). Over the years, such groups have paid and are still paying the largest individual and community costs of such developmental projects (Colchester, 2000; WCD, 2000c; Pankhurst, 2009).

Thus, many writers (Cernea, 2000; De Wet, 2001; Scudder & Colson, 1982) have explained the fallout of resettlements using various theories and models. Some of these explanations are traceable to spatial diffusion theory, four-stage model, inadequate inputs and inherently complex theory and Impoverishment, Risks and Re-establishment (IRR) models. The main argument in the spatial diffusion theory is its focus on the diffusion or spread of phenomena over space and time (Kuhn, 1970; Rogers, 1983).

De Wet's inadequate inputs and inherently complex theory of resettlement focuses on the planning process of resettlements and the limitations imposed on the affected people due to inadequate inputs (De Wet, 2009. On the other hand, the four-stage model asserts that resettlement should focus on resettlers' stress and the behavioural dimensions of physiological, psychological and socio-cultural factors that resettled households have encountered (Chmabers, 1970; Scudder & Colson, 1982). This diachronic model makes analyses of resettlements problematic under different environments.

The Impoverishment, Risks and Re-establishment (IRR) model posits that the socio-economic and cultural risks during and after physical transfer to new resettlements need to be examined (Cernea, 1990). According to Cernea (2009a; 2009b), the variations in the kind of projects and local conditions could increase the intensity or severity that affected populations are likely to encounter in the resettlement process.

In spite of the many theories and models explaining resettlement, this study situates the analysis of resettlement within the domain of inadequate inputs and inherently complex theory, diffusion theory and the IRR model of resettlement schemes. These were chosen because the theories address issues concerning the planning process and the spatial spread of the effects of the resettlement scheme while the model looks at the risk factors associated with resettlement in the host, resettled and adjoining households.

Surprisingly, dam displacement is not common in industrialised countries like Europe and North America. However, the Cree in Canada's James Bay Power Project (Scudder, 1996), Grand Coulee Dam Project in the

United States (Ortolano & Kao-Cushing, 2000) and the Garrison Dam, also, in the United States in the 1950s (Berman, 1988) are commonly cited examples. The resettlement schemes of all these projects encountered problems, confirming earlier studies in other parts of the world (Stanley, 2004; WB, 2002).

Comparatively, Latin America and the Caribbean are less affected than the industrialised countries. Nevertheless, these regions, as well, have experienced a large number of controversial displacement and resettlement operations without adequate resettlement planning involving local stakeholders (Cohen, 2015; Mathur, 2006). Conversely, Asia is home to many of the most contentious resettlement schemes and the world's largest displaced population (Wilmsen, & Wang, 2015; Zhang, He, Lu, Feng, & Reznick, 2013). According to WCD (2000), dam projects have displaced about 200 million people worldwide with China and India accounting for a large part of such displacements and resettlements due to high population densities and rapid development processes.

Confirming earlier studies (Price, 2009; Qinq, 1998), the World Bank (2004) reports that its projects in China accounted for 24.6 percent of people displaced in Bank-assisted projects while that of India accounted for 49.6 percent. A similar worrying trend in Indonesia and Sri Lanka necessitated the need for the World Bank (2010) to review its assistance to beneficiary countries undertaking dam projects.

In Africa, dam displacements have affected fewer populations and territories than Asia (MacQueen, 2014; Stanley, 2004; Terminski, 2013). The impacts of the Kariba and Aswan dams in Egypt have created a wedge

between nomadic herdsmen and indigenous people with competing interests in the natural resources and, consequently, caused their impoverishment (Colchester, 2000; De Wet, 2006; WCD, 2000).

In Ghana, resettlement programmes undertaken by both state and private firms have recorded mixed results (Chambers, 1970; Obusu-Mensah, 1996). The state-organised resettlements began in 1956 and involved the resettlement of the Grunse ethnic group in the Northern Region of Ghana (Amarteifio, Butcher & Witham, 1966; Hart, 1980). The second displacement and resettlement was the Tema resettlement initiated due to the need to build a habour and a modern township (Chambers, 1970; Moxon, 1969).

According to Chambers (1970), the Tema experience influenced policies adopted for the Akosombo resettlement scheme on compensation. Thus, the commencement of the Volta River Project (VRP) in 1961 brought in its wake an attempt to incorporate the experiences from earlier resettlement programmes (Hart, 1978). Notwithstanding such experiences, studies revealed that poor planning still characterised the resettlement phase of the Akosombo dam (Kalitsi, 2008; Obusu-Mensah, 1996; Tsikata, 2003). This is because more often than not, the negative impacts of dam-induced resettlements are not totally envisaged or are completely disregarded at the planning phase (McCully, 2001; Perera, 2014). Therefore, a study of the Bui Hydroelectric dam resettlement scheme serves as an important project that demands further investigation.

Statement of the Problem

Construction of hydroelectric dams for power and other purposes constitutes one of the most important investments for Ghana's economic development (Obour *et al.,* 2016; Hesengerth, 2011). So far, about six resettlement schemes have been implemented with diverse effects in Ghana (Diaw & Smitchdt-Keller, 1990; Environmental Resources Management [ERM], 2007a; Tsikata, 2008). The resettlement at Akosombo and Kpong dams left untold socio-economic and environmental problems on the inhabitants of these areas (Alhassan, 2008; Kalitsi, 2008).

Extensive studies (Cernea, 1996, 2000a; 2000b; Connell, 2015; Choi, 2015) have been conducted over the past decades about failures in the implementation of resettlement schemes (Mathur, 2006; 2011). These failures have been attributed to two main reasons: one, the projects were either partially implemented or not implemented at all and two, they were probably implemented but did not yield any result (Alemu, 2015). In all these instances, resettlement schemes did not prevent the affected people from experiencing a reduction or alteration in their livelihoods and a drift to poverty (Cernea, 2000; Obour *et al.,* 2016).

Attempts to resolve these failures have been explained through policy debates that focus on management of resettlement schemes (Cernea, 2009a; 2009b; Mariotti, 2015). Such an approach has recommended cash compensation and seeking resettlement as a development project that requires complementing the traditional mode of cash transfer with investments that could yield sustainable livelihoods.

Due to the effects of earlier resettlement programmes, the construction of the Bui dam brought an intense debate between the opponent and the proponents of the project about the possible effects of the resettlement on the livelihoods of affected communities (Ampratwum-Mensah, 2011; Hensengerth, 2013). Despite the potential of enhanced energy security, the construction of a "Bui city", the development of a 30,000 hectare irrigation scheme and an improvement in social infrastructure, both national and international environmentalists resisted its construction (Boateng, 2014; Okoampa-Ahoofe, 2009). This is because of the huge anticipated negative environmental, health and social impacts of the project on the local population and the last hippopotamus habitat at the gorge as well as the animals at the Bui Game Reserve (Boateng, 20014; Hensengerth, 2011; International Rivers Network [IRN], 2011).

A comprehensive Resettlement Planning Framework (RPF) was, thus, developed to address the needs of the affected people. Unfortunately, while BPA says it has implemented all the recommendations of the RPF, the affected people think otherwise. In theory, all affected people were expected to be moved to a new locality called the "Bui City". However, as at 2015, the "city" was neither in existence nor scheduled for construction (Obour *et al.,* 2016). Ten years after the resettlement scheme, several concerns have been raised about the effects of the resettlement on the livelihood and socio-cultural life of these people (Acheampong, Ozor & Sekyi-Annan, 2014; Obour *et al.,* 2016).

Some empirical studies (BPA, 2011; Diaw & Schimidt-Keller, 1990; ERM, 2007b; Tsikata & Yaro, 2014) have reported that fisher folks were

resettled on far away dry land, certain species of fish became extinct and restrictions were placed on fishing rights. Furthermore, both the resettled and adjoining households compete for the same limited fertile lands which were hitherto used by the host households. Similarly, they alleged that the support for land preparation was insufficient because the GH¢100.00 promised as initial consultation fee was reduced to Gh¢50.00 (BPA, 2011; Mettle, 2011).

In addition, the excavation of the gorge and the hills during the construction of the dam exposed substantial gold deposits along morphological fault lines. This has made the prospect of gold mining by illegal miners more rewarding. The precursor has been the in-migration of Fulanis and foreign migrants from neighboring countries with the prospect of trading in gold. The net effect was an upsurge of social vices and changes in the livelihood of the adjoining households (Banda District Assembly, 2014; Bole District Assembly, 2014). This worrying development raises questions about the planning process of the Bui resettlement scheme as far as the livelihoods of affected communities are concerned.

However, available studies (Biswas, 2012; Mathur, 2008; Obour *et al.,* 2016; Tsikata, 2008; Tsikata & Yaro, 2014) give much attention to the resettlers without considering the host and adjoining communities which are equally affected by the project. In addition, earlier studies (Cernea, 1996, 2000a; 2009a; Chambers, 1970; De wet, 2009 WCD, 2000) failed to categorise the affected communities properly as host, resettled and adjoining communities.

This has, therefore, created a knowledge gap of the true picture of the effects of the resettlement scheme on affected communities. Thus, raising the

question of how the planning process of the resettlement scheme affected sustainable livelihoods of the resettled, host and adjoining households. Hence, this study seeks to bridge this knowledge gap by examining the planning process of the resettlement scheme and its effects on the livelihoods of the resettled, host and adjoining households as far as the Bui Dam project is concerned.

Research Objectives

The general objective examined the planning process of the resettlement scheme and its effects on the sustainable livelihoods of the resettled, host and adjoining households. Specifically, the study sought to:

i. Examine the planning process of the resettlement scheme.
ii. Analyse the risks affected households encountered after the resettlement.
iii. Examine the livelihood strategies of affected households.
iv. Analyse assets that support livelihood activities in the affected households before and after the resettlement.
v. Assess the improvement in the livelihood outcomes of affected households.

Hypotheses

1. H_0: There is no significant difference between the incomes of households before and after the resettlement scheme.
2. H_1: There is significant difference between the incomes of households before and after the resettlement scheme.

Research Questions

The issues identified raise a number of questions that need to be answered including:

i. What is the nature of the planning process of the resettlement scheme?
ii. What risks did affected households encounter after the resettlement?
iii. What were the livelihood strategies of affected households before and after the resettlement?
iv. To what extent has the resettlement scheme improved the livelihood outcomes of affected households?

Significance of the Study

Resettlement schemes are common among development induced displacements in Ghana, especially large-scale dam projects. In light of this, the findings of this study would help improve the planning processes of resettlement schemes to minimise the impacts of such projects on the resettled and host households in Ghana.

Secondly, the study would assist various institutions responsible for compensation and resettlement to identify the needs of all the people affected by such projects in Ghana. This would help inform policymakers to review the legal framework governing compensations and allow more expeditious access of beneficiaries to their entitlements after they have been displaced or affected by development projects.

The study is, also, expected to provide valuable information for the Bui Power Authority and the District Assemblies (Banda and Bole District Assemblies) on the role socio-cultural variables play in livelihood sustainability in affected households. Furthermore, it will serve as a decision-supporting guide for governments and dam funders in the design and implementation of future resettlement schemes which should not be by-products of large-scale development induced displacements but an integral part of the funding process.

Besides, the research will contribute to existing literature or knowledge on holistic and integrated approaches to resettlement programmes which will enhance the operationalisation of resettlement schemes. Finally, it will serve as a reference material for academics, students and scholars alike.

Scope of the Study

The basic intention of this study was to analyse the resettlement planning-livelihood nexus of the resettled, host and adjoining households in Banda and Bole districts. Geographically, the study focused on the two regions of Ghana, the Brong-Ahafo and Northern Regions, between which the Black Volta straddles and serves as a boundary. Within these two regions are the Banda and Bole Districts which are adjacent to each other in the Mid-Western part of Ghana. This study limits itself to only the resettled, host and adjoining households of the two districts. A detailed description of the two districts has been extensively discussed in the methodology.

The study covered the period between June 2016 and April 2017. Follow-up visits were, however, made to the various communities during the write-up period which spanned between May and June 2017.

The target population of the study includes the household heads of the resettled, host and adjoining communities that were affected by the resettlement scheme. The host communities were Jama in the Bole District and Bongase in the Banda District. The resettled communities, on the other hand, were Jama New Town 'A' (Lucene, Agbegikro, Bator, Brewohodi, Dam site) and the Bui resettlement 'B' (Akanjakrom, Dokokyina, Bui Village and Game and Wildlife) in the Bole and Banda Districts respectively while the adjoining settlements were Bongase-Nsuano in the Banda district and Jama Nsuano in the Bole district.

Organisation of the Thesis

This thesis consists of nine chapters. Chapter one, which is the introduction, comprises the background, statement of the problem, research objectives and questions, significance of the study, scope of the study and organisation of the thesis. The theoretical and conceptual review constitutes chapter two. Chapter three focuses on the empirical overview, lessons learnt and the conceptual framework while the fourth chapter covers the methodology; specifically, the profile of the study areas, research design, study population, sampling procedures, data collection, instrument design, pretesting, ethical considerations, fieldwork, data processing and analysis.

The fifth chapter concentrates on the planning and implementation processes of the resettlement scheme with particular attention on the background characteristics of respondents, participation in the resettlement

planning process, information sharing and consultation during the resettlement. Chapter six follows with a discussion on risks and coping mechanisms while chapter seven centres on livelihood strategies: sources of livelihood as well as off-farm and on-farm activities. The eighth chapter, however, covers livelihood resources that focus on the elements of the assets pentagon. Chapter nine, which is the final chapter, presents the summary, conclusion and recommendations of the study.

CHAPTER TWO

THEORETICAL AND CONCEPTUAL PERSPECTIVES

Introduction

This chapter focuses on the review of literature on theories and models of resettlement planning and sustainable livelihood. The first part deals with major theories that shape impoverishment associated with resettlement schemes. These theories/models of resettlement include the diffusion theory, De wets inadequate inputs and inherently complex theory, Scudder and Colson four-stage model and the Cernea's Impoverishment, Risk and Re-establishment (IRR) model. It, also, analyses the conceptual framework employed and its relevance within the context of the study. Empirical literature on the effects of resettlement on the socio-economic lives of resettled people is examined to confirm the applicability of the theories and models.

The second part explains the various concepts that dwell on ideas from both theoretical and empirical literature to guide the study. The literature review seeks to enable the researcher to identify his research niche through the identified gaps in the literature (Kumar, 2011). It would also help the researcher to obtain a clear focus on how to go about the study in a systematic way (Creswell, 2009).

Theoretical Framework

The diffusion theory, De Wet's inadequate inputs and inherently complex theory, Scudder and Colson's four stage and Impoverishment, Risks and Re-establishment (IRR) models form the theoretical framework of the

study. The use of these theories and models was very vital because each one of them alone is insufficient for explaining the effects of resettlement planning and sustainable livelihood. Thus, such complementarities help to critically analyse them.

Diffusion Theory of Resettlement

This theory was postulated by Tarde (1903) and has been applied in the natural sciences, mainly in plant and animal studies. The diffusion of hybrid corn seed study by Ryan and Gross (1943) played a pivotal role in shaping the evolution of the theory of diffusion. Scholars who picked up on the work of the European diffusionists most directly were anthropologists from the United States in the 1920s (Kroeber, 1937). The theory is of interest to spatial planners in geography, medical sociology, education and communication because of its focus on the diffusion or spread of phenomena over space and time (Brown & Cox, 1971; Kuhn, 1970). For geographers and planners, it is spatial diffusion of a phenomenon that is of special interest (Blaikie, 1978). Brown (1981) and Gregory's (1985) studies focused on the interaction, spread, contact, change and growth of resettlement patterns and the physical distances separating the original settlements from the resettlements.

Woube (2005), also, applied the theory to the analysis of resettlement and compared the local economic resources of the new sites with the old one. Kassahun (2004) applied the diffusion theory to the studies of resettlement and how socio-economic variables affect individuals over space. It was observed that the diffusion theory was inadequate in explaining the risks of resettled households after displacement.

In an earlier application of the theory, Woube (2005, p. 23) recommended that resettlement or population displacement manifests in four stages: (a) the physical transfer of resettlers to the new settlement sites (b) the adaptation process to the biophysical and human environments (c) the achievement of socio-economic development by the resettlers and (d) the resettlers' ability to manage the biophysical and human environment.

Similarly, in Rahmatos' (2003) application of the theory, it was observed that three (3) stages were involved: a) movement of the people to their new location, b) adaptation to the new environment and c) establishment of livelihoods. This, they argued, may be impeded by geographical barriers such as lakes, mountains, water bodies, deserts, distance, language, culture, ethnicity, income and bureaucracy.

Diffusion theorists explain spatial distribution by comparing the process of human settlements to the process of competition in plant/human ecology. The basis of such argument is that as plant species have places of origin and agents of movement, people who are required to move and resettle in new places also ought to have agents of movement. Such movements should take place in three stages: a) organisation b) movement to re-establish new sites; and c) adaptation to the new environment.

However, the unilineal analysis of biological species comes with a lot of limitations. The fact that biologically derived principles do not apply to human settlement patterns which are often centrally planned rather than being arranged randomly as the case in plant ecology is a challenge. Therefore, the diffusion theory may not be fully applicable to institution-sponsored resettlement schemes since the theory is not appropriate for planned

resettlement schemes (Mariotti, 2015; Kaplan, 2003; Kassahun, 2004). Secondly, the application of a theory in plants/animal species to humans comes with inconsistencies due to the differences in their biological and environmental conditions. Due to these limitations, the theory would not be suitable for the analysis of this study; but, the stages identified by Kaplan (2003) could help in shaping their livelihood construction.

Inadequate Inputs and Inherently Complex Theory

De Wet's (2004) inadequate inputs and inherently complex theory was postulated to address limitations encountered by displaced populations in Africa. The theory's main focus was to explain why things often go wrong in any resettlement project. These inputs, it was argued, are the "inadequate inputs" and the "inherently complex" nature of risk factors that affect displaced populations. That is, it is posited that resettlement goes wrong basically because of the lack of appropriate inputs into the programme. The second variable is the complex and problematic nature of resettlements themselves as bi-products of development discourses (De Wet, 2005; Dwevidi, 2002).

According to the theory, the frequent failures of planned resettlement schemes are fundamentally related to the uniqueness that characterises the changes in socio-economic and political access to resources; this rate of socio-economic acceleration may be beyond the coping capacity of people. In its application in Africa, De Wet (2009) concluded that the success of a resettlement programme depends on due consideration of both "inadequate inputs" and "inherently complex" variables inclusively. It was stated that the "inadequate inputs" variable assumes that a resettlement programme can go

wrong in the absence of proper inputs like resettlement planning that incorporates all elements in the planning process, policies, politics and finances.

According to De Wet (2009), a lack of these inputs leads to the eight impoverishment risks identified by Cernea (2000a & 2000b) in addition to loss of education which is also an impoverishment risk. It was concluded that if the resettlement programme was designed and implemented poorly, then relocation could exacerbate the harm and negative consequences on resettlers. De Wet (2009) observed that the combination of all these factors tends to lessen people's material wellbeing, increase the level of social tension and conflict and reduce their control over their changed circumstances.

In the light of these observations by De Wet (2009), Asrat (2009) stated that resettlement schemes cannot be adequately planned before the relocation of resettlers. It has been observed that resettlements impose forces and conditions on people that may completely transform their lives, evoking profound changes in the environment, productive activities and social organisation. Furthermore, the profound alteration of culture, political leadership and ideology cannot be adequately planned for. Moreover, the various actors involved in resettlement schemes together with the different interests, motives and varied circumstances under which resettlements take place may slow the success of resettlement schemes. Lastly, the alteration in relations between various stakeholders and other factors could contribute to the failure of resettlement schemes.

Four Stage Model of Resettlement

Scudder and Colson (1982) developed a multidimensional four-stage model to explain the stresses and risks in the resettlement process. This model was an improvement over the earlier models developed by Chambers (1970) and Rawl (1971). This diachronic model was built around the concepts of "stages" that were developed earlier. It focuses on resettlers' stresses and behavioural dimensions of physiological, psychological and socio-cultural factors that the resettled households have to encounter (Scudder, 2009).

The model was initially applicable to only voluntary resettlements but was later applied to successful involuntary resettlements that passed through all the four stages of the resettlement process. It was observed that relocation, whether voluntary or involuntary, is a stressful experience. According to (Chambers, 1970; Rawl, 1999; Scudder & Colson, 1982), people who undergo relocation react in a predictable and similar manner "partly because the stress of relocation limits the range of coping responses of those involved" (Scudder, 1985, p.85). Scudder explains that settlers could overcome these stresses and risks only when there is successful implementation of settlement processes. Otherwise, they have to struggle with these stresses for longer periods. In addition to dealing with stresses, the model assumes that any resettled community has to pass through four different stages as discussed below:

1. *Planning and recruitment stage*

The most stressful period is the information and decision-making phase of a planned relocation. This is the stage which focuses on the pre-resettlement activities such as selection, transporting/movement and

rehabilitation of the resettled people. According to Scudder (1985), to make a resettlement scheme successful, it is crucial to engage the displaced people in the planning and decision-making processes of resettlement programmes. Based on empirical evidence from different countries, Scudder and Colson (1982) argue that the levels of stress of displaced people increase, particularly, at the beginning of the resettlement. To reduce or eliminate these stresses, adequate involvement of displaced people during the planning process is vital. Therefore, the model gives special attention to adequately involving the affected communities in the planning stage of the process.

2. *Adjustment and coping stage*

The second stage begins with the initiation of the physical transfer of people to resettlement areas. This stage is a transition stage and thus, the most painful stage as it takes a number of years to reconstruct livelihoods. At this stage, it is expected that the living conditions of the majority of resettled people would reduce due to the physical transfer. This reduction in living standards could be due to various reasons such as new habitats, new neighbours, new socio-economic activities and their relationship with the host communities. It is argued that at this stage, for many resettlers, labour resources are inadequate as everyone is expected to fulfil labour requirements for building, constructing social networks and clearing new fields. Due to the reduction in social capital, expenditures also increase. There is, also, the tendency of majority to fall into the vulnerable group and be unable to recover for a long time. Therefore, this stage is difficult for institutions/organisations that are responsible for resettlements. Furthermore, policymakers including government and NGOs may be unable to sustain the intended support for the

affected people to overcome their challenges. The third and fourth stages are also identified as crucial for improving the socio-economic and cultural condition of the people.

3. Community formation and economic development stage

This stage shows the change in resettled people's behaviour from risk aversion to a stance of risk taking. This dramatic change in behaviour among resettled people could be associated with two conditions. The first requires resettled people to change their behaviour radically and the second, appropriate infrastructure and social services that they can adapt to. At this stage, majority of resettled people take risks by different livelihood constructions such as investing in education, micro businesses, hiring the services of labour or exploring alternative livelihood sources. They, also, tend to buy new furniture, add more rooms to their houses and use agricultural tools and inputs to improve productivity.

Moreover, resettled people pay more attention to community formation activities such as identifying burial sites, groves, shrines and sacred sites. According to Scudder (1985), the involvement of resettlers in collective activities at the community level and economic development at the household level could eventually not only improve the living standards of resettled people but also minimise the dependency syndrome.

4. Handing over and incorporation stage

This stage involves the second generation of resettled people. According to Scudder (2005, p.40), this stage "brings the resettlement process to a successful end as project areas and populations are integrated into the

political economy of host communities, region and nation". For this to happen, Scudder emphasises three conditions that must be fulfilled. Firstly, assets are to be handed over to settler communities from economic and social sectors such as agriculture, health, education, water and other relevant institutions. Secondly, the living standards of resettled households are to be continually improved, at least, to be at par with the neighbouring areas. Thirdly, community members must have the political and institutional strength to compete for their fair share of community, district and regional resources.

One of the key weaknesses of this model, however, is its generalisations. The model does not adequately address the range of behavioural and socio-economic variations associated with resettlers. The model assumes that resettlers are homogenous groups. However, depending on the capabilities and skills of resettled people, some may cope successfully with different dimensions of stresses while others may not.

Another weakness of the model is the construction of the "stages" in the model that spontaneously follow one another. The model does not explicitly describe the reasons why resettled people transit from one stage of the model to the other, especially from stage three to four as these two stages could occur in any order. Taking these drawbacks into consideration, some scholars (Cernea, 2008; Muggah, 2008) argue that Scudder's model is incomplete and confusing to explain the resettlement process.

The ensuing is the model suggested by Cernea (1990) to address the challenges that the earlier theories and models could not resolve.

Impoverishment, Risks and Re-establishment (IRR) Model

This theory was formulated and developed by Cernea (1990). It was a move from the "stress centered" model to an impoverishment-reestablishment model. As a senior policy advisor at the WB, Cernea (1990) undertook series of studies on displaced populations and came up with the IRR model which is the outcome of risks people encounter when they are displaced.

According to Cernea (2000a; 2000b), resettled people could encounter socio-economic and cultural risks during and after physical transfer to new settlements. Cernea (2003) observed that the variations in the kind of projects, local conditions and sector or type of displacement could induce the intensity or severity faced by resettlers. According to the model, unless these risks are reduced, if not eliminated, by different implementing sectors, the outcome of resettlement schemes could be disastrous.

The model by Cernea (1990; 2000a; 2000b; 2005) proposed eight interlinked potential risks that are intrinsic to displacement and resettlement. The models' broad frame of references that constitute the risks are homelessness (loss of shelter), joblessness (loss of employment and job opportunities), landlessness (loss of productive land), increased morbidity and mortality, marginalisation, food insecurity, loss of access to common property and social (community) disarticulation. These impoverishment risks are briefly described as follows:

- *Landlessness:* According to Cernea (2000a), transferring displaced people/communities from their original settlement to new locations would likely affect the economic base of their livelihood activities and production systems. This process could be a major factor of

impoverishment. The loss of such livelihoods could increase poverty as the resettled people lose their assets unless efforts are made for them to acquire or have access to natural resources that would help them to reconstruct their livelihood.

- *Joblessness:* The risk of losing employment/job opportunities due to various disaster-related or development-related projects is significant in both rural and urban resettlements. This is because creating job opportunities in the new resettlement sites is very difficult as it requires substantial investment activities in livelihood reconstruction. However, joblessness can often be noticeable among resettled people in urban areas than rural areas. To overcome this risk, Cernea (2000a) believes that it is crucial to focus on creating opportunities for resettled people by developing their skills, providing access to credit and establishing new income outcomes.
- *Homelessness:* Although loss of housing and shelter may be only temporary for most of the displaced during a transition period, homelessness remains a chronic problem. In a broader cultural sense, homelessness is also "placelessness" (Cernea, 1999, p.59). In other words, loss of the group's cultural space and identity or cultural impoverishment as argued by Downing (1994) and "place attachment" (Colchester, 2000). Impoverishment through homelessness can definitely be avoided by proper planning through combining replacement cost compensation with housing grants, benefit sharing and stakeholders' involvement of the affected people.

- *Marginalisation*: This occurs when families lose economic power and slide down on a "downward mobility" path (Mathur, 2000). Middle-income farm households do not become landless, but become small landholders. Craftsmen downsize and fall below poverty thresholds as well. Economic marginalisation is often accompanied by social and psychological marginalisation expressed in a drop in social status, loss of confidence in society and in themselves (Cernea, 1995). Marginalisation exists since many individuals cannot use their previously acquired skills at the new location (Mathur & Marsdsen, 1998).
- *Food insecurity*: Uprooting people from their previous income sources increases the risk of people falling into temporary or chronic food insecurity. Sudden drops in food crops and incomes are predictable during physical relocation, and hunger or undernourishment tends to linger as long-term effects (Cernea, 1995). In agrarian and water basin societies, crops are grown to provide food for the family all year round (Lobo & Kumar, 2009).
- *Increased mortality and morbidity*: Mortality and morbidity is another potential risk variable that can affect the resettled, host and adjacent communities. Health status is a sensitive indicator of development. The weaker segments of the demographic spectrum – infants, children and the elderly are vulnerable to diseases (Cernea, 1995). Diseases such as diarrhoea, dysentery, malaria and schistosomiasis occur due to poor hygiene, unsafe water supply and inadequate sewage systems (Arp & Baumgatel, 2004). Such potential outbreaks may lead to a decline in

health levels resulting from displacement-induced social stress and insecurity (Diaw & Schmidt-Keller, 1990).

- *Loss of access to common property*: For the displaced people, particularly for the landless/migrants, a lack of assets and limitation of access to common properties (forests, pastures, water bodies) result in significant deterioration in income and livelihood levels (Cernea, 1995;Diaw & Schmidt-Keller, 1990). Usually, governments do not compensate for losses of common property/assets, but a significant share of the income of poor households comes from edible forest products, firewood and common grazing areas (Mahapatra, 1999; Pankhurst, 2009). Resettlement planning should, therefore, be done with a sense of social justice both in terms of natural resources and public services (Rawls, 2006).
- *Social (community) disarticulation*: Resettlement tears apart the existing social fabric, dismantles production systems and puts people's sense of cultural identity at risk (Faas *et al.,* 2015; Price, 2015). By this, life-sustaining informal social networks of mutual help among local people, voluntary associations and self-organised service arrangements are dispersed and rendered inactive. This is a net loss of valuable "social capital" that compounds the loss of natural, physical and human resources (Quetulio-Navarra, Niehof, van der Host & van der Vaart, 2014; Singer & Hoang, 2015).

All these represent a massive loss of unquantified and uncompensated facilities. Such "elusive" disintegration processes undermine livelihood in ways unaccounted for by the planners (Biswas, 2004; Cernea, 1995; McCully,

2001). In such cases, it is very difficult for the ousted to reconstitute similar social structures and networks. This act is one of the hidden and serious causes of impoverishment. It is difficult and time-consuming to reconstitute similar social networks among resettled, host and adjacent communities (Downing, 1996; Molle, 2009).

The inflow of the resettlers increases pressure on local resources, reduces the lifespan of social services and increases competition for economic space. This turns to create tension among people with competing interests (Mathur, 2013; MacQueen, 2014), prolonging cultural clashes and social tensions. Recognising the specific risks to hosts, resettlers and adjacent communities are integral to the use of IRR theory (Cernea, 1995).

Relevance of the Model to the Study

As a theoretical framework, the model addresses not only the economic but also, the socio-cultural dimensions of impoverishment. The model indicates that during resettlement, people are deprived of natural, man-made, human and social capitals (Ellis, 2000; Ellis & Freeman, 2005). This model shows a relationship between the socio-economic and cultural re-construction of displaced people. It, also, provides an insight into likely outcomes should its warning be ignored. In this way, the theory provides a matrix directly suitable for planning (Lucas, 2008). Alemu (2015) and Johnson et al. (2014) indicate that it is a working tool for preparing resettlement plans and monitoring impact. In clarifying the model, Cernea (2003) explains that impoverishment from displacement is not inevitable but preventable. In addition, it focuses on resettlement planning processes and integrates the interlinked tenets in the model into real life situations (Abong'o, 2015; Worku,

2011). This model alerts the planners of displacement and resettlement to the kind of targeted actions that are needed (Fernandez, 2011).

The risks can be minimised if they are seen as risks in the first place. Hence, this model a research tool which helps resettlement planners to organise their enquiry, build and test hypotheses and formulate conclusions based on their findings. Thus, the socio-economic theory precisely tells us what must be the heart and soul of any resettlement planning.

Thangaraj (1996) employs the model to analyse resettlement schemes in two Indian projects while Lassailly-Jacob (1996) looks specifically at land-based resettlement strategies in African dam projects. He argues that such strategies must include not only land on which to resettle but also common lands, adequate productive farmland, full title for lands (rather than tenant arrangements) and resettler-directed (rather than top-down imposed) development programs. On the other hand, De Wet (2002) casts some doubts on the capacity to ever formulate a process that will ensure that all, or at least a large majority, of those affected by resettlement projects, benefit from them. While recognising the thoroughness of the IRR model, he concludes that the model's assumption that resettlement problems can be erased by improvements in planning is overly optimistic.

Downing (2002, p. 206) points to the importance of recognising the complexities inherent in the resettlement process, such as "non-rational" political motivations, difficulties with financing and institutional capacity. He added loss of access to public services, disruption of formal education activities and loss of civil and human rights as some of the latent risks. De Wet

(2002) advocates an open-ended flexible approach to resettlement planning, which recognises that projects rarely proceed according to plan.

Contextually, the concept of resettlement planning associated with the IRR model aids the exploration of how a resettlement planning process imbibes the practical relevance of effective resettlement planning with project-affected people's livelihood outcomes. It is, specifically, relevant for addressing research questions (ii) to (v). This is because the thematic issues involved in the present study range from the effect of the resettlement on the livelihoods of the resettled and host communities to how socio-cultural frames of references influence livelihoods of the communities as stipulated in the model. This study uses Cernea's IRR model and how it influences sustainable livelihood.

Conceptual and Empirical Overview

This section presents a review of the major concepts that emerged from the reviewed theories and models and their empirical applications.

Conceptualising Resettlement

The concept of resettlement lends itself to many names and definitions (Dwivedi, 2002; Terminski, 2012). According to Chambers (1969, p.11) defined resettlement as "the planned and controlled transfer of people from one area to another". Woube (2005, p.18) also well, defined resettlement as the "process by which individuals or a group of people leave spontaneously or un-spontaneously their original settlement sites to resettle in new areas where they can begin new ways of life by adapting themselves to the biophysical, social and administrative systems of the new environment". That is, a planned

project involving the transfer of people, most probably through selection and control, from one location to another is referred to as resettlement scheme.

The process of resettlement begins with identifying and recruiting the settlers to transporting and resettling them at an already planned destination. The process of resettlement should incorporate consultations with both the settlers and the host communities (Kaplan, 2003). If anyone of these procedural settings is missing, then the consequence of the scheme will be harmful in terms of ecological, socio-economic and institutional aspects (Desalegn, 2003).

According to Woube (2005), resettlement could be classified into four types within two main categories. The first category is non-planned resettlement comprising spontaneous resettlement and emergency or forced resettlement. The second category, on the other hand, is planned resettlement which comprises voluntary and involuntary resettlements.

Alemu (2015), also, asserts that a planned resettlement consists of voluntary and involuntary resettlement. The voluntary resettlement is a process whereby settlers move to a destination willingly. If the settlers are well-informed about the new site and how they will be resettled and are involved in the planning and implementation of the programme, a voluntary resettlement could be successful in achieving its objectives (Cernea, 1997).

The involuntary resettlement, however, is the process of resettlement which considers issues of legality, not the best interest of the people who are resettled (Desalegn, 2003). The International Financial Corporation [IFC] (2002) and the WB (2010, Operation Policy [OP].4.12) recognise the extent to

which involuntary resettlement dislocates the lives of people if they are not well managed.

The spontaneous resettlement in the unplanned category refers to those resettlement types that are accomplished by a desperate movement of people from their place of origin (because of push factors like land scarcity, recurrent drought and loss of productivity due to land degradation) to new settlement areas with better potential to sustain life (pull factors such as availability of uncolonised and productive land) (Alemu, 2015; Worku, 2011).

Planned resettlements are initiated and/or supported by governments and aid agencies due to the introduction of a megaproject that may alter the condition of the affected people negatively. Such projects have been undertaken with the aim of relieving population pressure and promoting land consolidation and sound agriculture in areas of high population density (WB, 1998). Similarly, Abraham and Piguet (2004) stated that planned resettlement schemes involve legal management and administration of new settlement sites as well as legal government bureaucracy of implementing such projects, including legitimate and legal right of settlers to use and possess natural resources. Settlements have, frequently, been planned to rehabilitate populations that have been adversely affected by natural disasters and unfavorable climatic conditions and/or political conflicts as well (Desalegn, 2003). Others refer to people displaced because of natural calamities as environmental refugees (ADB, 2012).

Resettlement programmes have predominantly focused on the process of a physical relocation rather than on the economic and social development of the displaced and other negatively affected people (Clark, 2000; UNHCR,

2011). This has severely eroded the development of effective resettlement and rehabilitation programmes and heightened the impoverishment risk of the resettlers (Cernea, 2000; WCD, 2000).

According to Cernea (1998), risks which adversely affect people are not a component of conventional project analyses. The key economic risks to affected people are the loss of livelihood and changes in access to and control of productive resources. This loss of economic power with the breakdown of complex livelihood systems results in a temporary or permanent, often irreversible, decline in living standards leading to marginalisation (Cernea, 2009, De Wet, 2000). Higher risks and uncertainties are introduced when diversified livelihood sources are, also, lost. As Cernea notes (1998), forced displacement tears apart the existing social fabric and leads to socio-cultural disarticulation.

Conceptualising Resettlement Planning

According to Davidoff (1973, p.142), "planning is the process for determining appropriate future action through a sequence of choices". It was argued that the choices which constitute the planning process are made at three levels. These include the selection of ends and criteria, identification of alternatives and the guidance of action towards determined ends. It is contended that the environment surrounding planning should take into account the knowledge of the community and people who benefit from such processes.

Planning is also seen as a response to uncertainty in the future and amounts to decision-making (Conyers & Hills, 1984). This involves the identification of problems and the ranking of needs as well as the mobilisation, allocation and utilisation of scarce resources to meet competing needs

(Kendie, 2000). Planning, in this regard, is seen as an integrative, participatory, problem solving and a continuous task (Healy, 1999). Even amid grave poverty, individuals, the public, private and Non-Governmental Organisations [NGOs] undertake some form of planning. Such an example shows that planning touches almost every aspect of our daily lives as everybody is involved in one form of planning or the other.

Fainstein (1995, p.47) used the "systems approach" to explain the concept of planning that the "system" which planners have to deal with are the human activities which are linked by livelihoods and settlements. Central to the systems view is the fact that planning was never seen as ever being entirely completed (Cusworth & Frank, 1993). Only specific stages of the plan can be completed since development is an endless process which involves a cyclical approach in planning, with the completion of each stage being the beginning of the next process (Dansoh, 2005).

Within the context of this discussion, it is better to adopt Conyers and Hills' (1984) explanation of planning as a continuous process which involves decisions or choices about alternative ways of using available resources with the aim of achieving particular goal(s) at some time in the future. Thus, planning is seen as a tool for efficient allocation of resources and, also, as a future concept. The main aim of adopting this explanation is to move towards a greater integration of the several parts of the planning process in resettlement planning.

How site-specific resettlement can incorporate the various socio-economic systems for sustainable resettlement that do not lead to impoverishment will be the focus of such effective planning (Cernea, 2000).

The planning process is a logical flow of steps from initial formulation of the scope of the process through intermediate stages until decisions on a course of action are made and implemented (Kanshahu, 2000; Kerzner, 1992). Planning for involuntary resettlement can be an enormous and complex task depending on the magnitude of the project. Therefore, planning for a sustainable resettlement must ensure that the objectives of the resettlement are achieved (WB. 2000; IFC, 2012).

Project Stakeholders

In tracing the project spiral, I need to situate clearly the understanding of people who are affected by the project. Amponsah (2007) opines that there are those effecting a change in the community and those affected by it. He argued that the list of stakeholders should depend on the projects, conflicts and/or issues to be addressed and should be as inclusive as possible. Dugbenu (2007), in furtherance of this explanation, also argued that project stakeholders are individuals and/or organisations that are actively involved in the project or whose interests may be affected as a result of project execution or completion and may exert influence over the project objective and outcomes.

The importance of stakeholder groups identified above for the dam planning process varies considerably. Some stakeholders are of central importance as they have a lot of influence or are affected severely by the effects of the project while others, in comparison, play quite a marginal role (Gordon, 2006).

In a democratic society, participation in the overarching processes of government affords one a level of potential stakeholder participation. But to consider how stakeholder participation and consultation can be most effective

in applied resource planning, we must look at groupings of people according to roles or interests that are distinctive as with water-related planning (Nichols & Von Hippel, 2000). One cannot identify or predict all stakeholder groups that may be relevant, but one can indicate the general importance of involving the following stakeholders in planning: Key stakeholders, Primary stakeholders and Secondary stakeholders.

The study agrees with all the definitions of stakeholders offered and adds that stakeholders are persons, groups or institutions with interest in a project. With this categorisation, the primary stakeholders are seen here as the indigenous people whose contributions are pivotal to the success of the resettlement scheme. Recognising the need for the role of the secondary stakeholders, in my view, is ephemeral because the sustainability of the projects will invariably depend on the affected people. What is really important is an efficient planning that integrates all the needs, interests and aspiration of the local people.

The Concept of Participation

The concept of participation varies with its application and usage (WB, 2002). Its definition depends on the context of its usage and occurrences. According to the WB (1995, p.43), for some, it's a matter of principle; for others, practice and others, an end in itself. Often, the term is modified with adjectives such as community, citizen, people, popular and public (WB, 1994). Susan (1996, p.83) described participation as a means to educate citizens and to increase their competence. It is a vehicle for influencing decisions that affect the lives of citizens and an avenue for transferring political power.

Some people use the term to mean active participation in political decision making. For certain activist groups, participation has no meaning unless the people involved have significant control over the decisions concerning the organisation to which they belong. Bacho (2001) tends to define participation by the poor in terms of the equitable sharing of the benefits of projects. These diverse perspectives truly reflect the differences in the objectives for which participation might be advocated by different groups.

Einstein's (1969) typology of various rungs is a source of persistent reference throwing more light on citizen's participation. His euphemistic description reveals the central issue of such a debate on community participation, the locus of power is to bring about change. The ladder's rungs are grouped into three generalised grades of participation for effectiveness, non-participation/manipulation and therapy. The degree of tokenism in the second grade is for information, consultation and placation. The final level is the degree of power, consisting of partnership, delegated power and citizen control.

This view is also shared by Midgley and Hall (1989) who opine that participation is advocated as an organised effort to increase control over resources and institutions on the part of groups hitherto excluded from such control. Bacho (2001) drew inspiration from Paul (1987) and Hillery (1995) and contends that all of such descriptions include, in some measure, the notion of contributing, influencing, sharing or redistributing power and control, resource benefits, knowledge and skills to be gained through beneficiaries' involvement in decision making. The underlying concern in the above

discussions is the need to involve the marginalised and the oppressed groups in society to participate actively in the development process

This study agrees with all the explanations provided; however, under this context of study, I argue that community participation is a voluntary process by which people, including the disadvantaged, influence or control the decisions that affect them. In other words, community participation is an active process by which beneficiary client groups influence the direction and execution of a development project with a view to enhancing their well-being in terms of income, personal growth, self- reliance or other values they cherish.

Despite the differences in the degree or extent of participation at various levels of the development process and the composition of participants at those phases, most definitions have looked at communities as homogenous entities. Community participation has, thus, been advocated, not only because it facilitates social services delivery by lowering cost and smoothing implementation, but because it also fosters a sense of belonging and integration.

Conceptualising Sustainable Livelihood

Literature on livelihood offers a variety of definitions such as "the means of gaining a living" (Chambers & Conway 1992:6). Olaughlin (2004, p.385) described livelihood as a "recognition of the complexity, diversity and historical specificity, particularly in rural life". Scoones (2015, p.6), as well, defines the concept of livelihood as "comprising the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover

from stresses and shocks and maintain or enhance its capabilities and assets, while not undermining the natural resource base. This definition has a number of elements that are basic to Sustainable livelihood framework (SLF), though with different meanings and interpretations by different authors (Ellis, 2000; Ellis & Freeman, 2004). These include assets or resources, capabilities, strategies and outcomes. The framework maps out how livelihoods are achieved through access to a range of livelihood resource "capitals" whose combination translates in pursuit of different livelihood strategies that result in livelihood outcomes (Scoones, 2009).

Numerous explorations on livelihoods are focusing on reasons that allow people to migrate in and out of poverty, raising new questions about vulnerability, capabilities and social capital. The "sustainable livelihood" framework emerged recently as a way of understanding poverty reduction, including its context, focus and objectives. This sustainable livelihood approach examines the basic aspects of life by viewing livelihoods in both the micro (household) and macro (community, regional etc) contexts.

Several frameworks have been proposed for the analysis of livelihoods. These include the Sustainable Livelihood Framework (SLF), the Framework for Thinking about Diverse Rural Livelihoods, Bebbington's Capitals and Capabilities Framework and the UNDP's Sustainable Livelihoods Diamond. These frameworks have different emphases rather than fundamental conceptual differences. They all attempt to integrate assets, constraints and human capabilities in a logical and comprehensive manner to analyse the status, form, nature and condition of livelihoods over space and time.

Among these frameworks, however, the SLF by DfID has been the commonest, partly because of its robust analytical ability and its widespread promotion by many researchers and donor agencies (Alemu, 2015; DfID, 1999; Ellis, 2000). The SLF links inputs (capitals or assets) and outputs (livelihood strategies) and connects in turn to outcomes (food security, wellbeing and sustainability). According to Scoones (2009), a sustainable livelihood is a composite of many ideas and interests, the coming together of a number of different strands in the development debate. Similarly, McDowell (2002) posits that the sustainability of livelihood has three main components: a) a sustainable improvement in livelihood measured by the reduction of poverty and livelihood enhancement; b) ecological sustainability and c) long-term resilience for future shocks and stresses.

However, central to a sustainable livelihood analysis is the recognition of the key conditions for improvement in sustainable livelihood and the submission of which institutions mediate people's access to and control over the resources necessary to pursue those strategies in the reconstruction phase (Carney, 2003; Ellis & Freeman, 2004). When explaining the framework, it is evident that assets: natural capital (water, land, mineral resources), physical capital (energy, transport, water, production equipment, communication, shelter), financial capital (household income, savings, credit facilities, remittances), human capital (education, health, skills and knowledge) and social capital (household composition and arrangement, networks, organised groups, institutions, information and markets) are the foundation for an individual or a household's livelihood nexus (Alemu, 2015; Carney, 1998).

Livelihoods are influenced by the vulnerability context within which people live. In other words, people's livelihood and their assets are fundamentally affected by critical trends, shocks and seasonality over which they have either limited or no control. On the other hand, access to assets is also influenced by structures and processes such as formal and informal institutions/organisations, policies and legislation etc., that shape the livelihood of individuals or households. Depending on the vulnerability context, individuals or households consistently employ various strategies in order to adjust to the changing environment and asset portfolio. These strategies or "actions" finally produce certain livelihood outcomes such as well-being or livelihood security as positive results or ill-being or vulnerability as a negative outcome (Alemu, 2015, p.59).

Vulnerability Context

This represents the vulnerability wherein people's livelihoods are affected, mainly owing to various shocks (health, natural hazards, epidemics, pollution, conflicts or other resettlement-related issues), risks (unemployment, conflicts between host, adjoin and resettled, disease or injury, violence including domestic violence and criminal), trends (resource stocks, demographic, technological, political and economic) and seasonality (change of prices, employment opportunities etc.) (Cernea, 2000b; Ellis, 2000; McDowell, 2002).

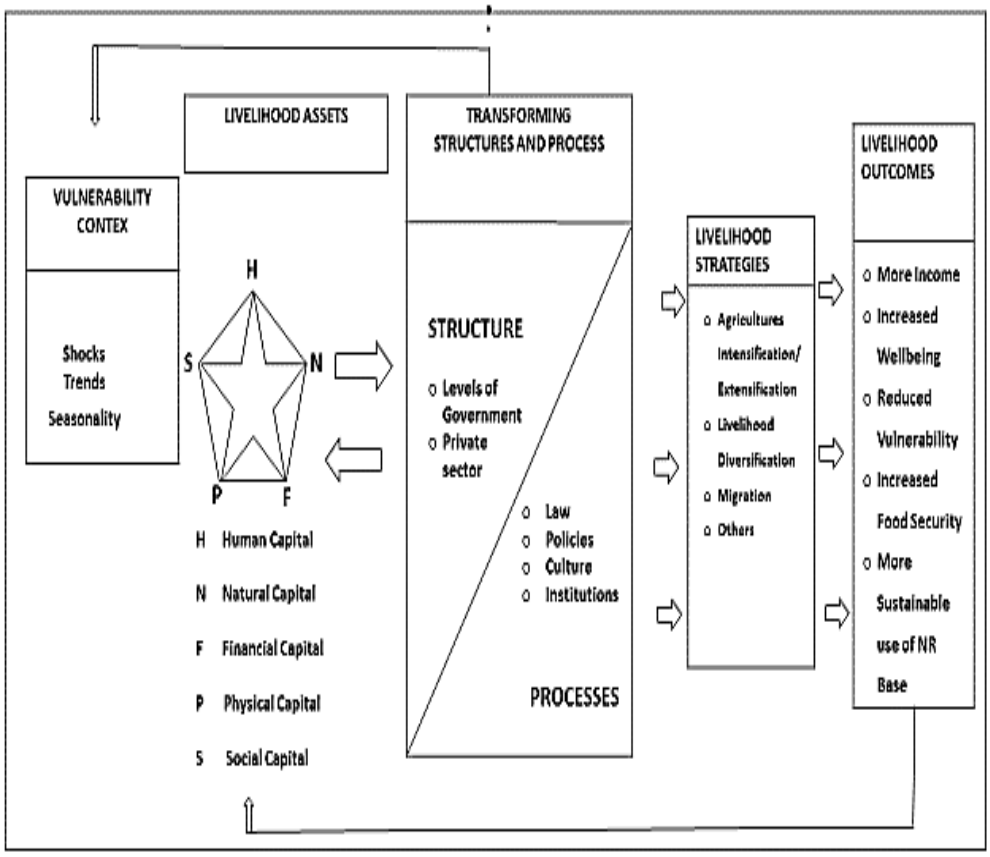

Figure 1: Livelihood Framework
Source: Adapted from Scoones (2015)

Some social groups or individuals may also be at risk due to inherent vulnerabilities such as gender, ethnicity, location of residence and occupation. What is important to mention is that people can expect some of these risks and shocks, although some are unexpected (Figure 1).

Livelihood Assets

The term "asset" is interchanged with capital and resource in most livelihood literature (Ellis, 2000; Scoones, 2015). To a large extent, livelihood analysis focuses on asset status of households based on the belief that people require a range of assets to achieve desirable livelihood outcomes. Households and individuals are considered to possess assets which they seek to nurture and combine in ways that will ensure survival.

A clear understanding of the configuration of the assets available to people, therefore, is an important step in livelihood analysis. It is an indicator of people's capacity to generate a viable livelihood at the present time and in the future as well as their potential resilience to shocks and stresses in the environment (Ellis & Freeman, 2004; McDowell, 2002).

At all levels (individual, household, community and society), available assets constitute a stock of capital which can be stored, accumulated, exchanged or depleted and put to work to generate a flow of income or other benefits. Some assets are tangible (labour, food stocks, gold jewelry, cash savings, land, water and equipment) while others are intangible (household relationships). Thus, the five most commonly used household assets as noted by Hussein and Nelson (1998), Jaratney (2007) and Schreinemachers and Bui (2011, p.77) are discussed below, particularly in relation to the context of voluntary resettlement.

Natural capital: This refers to the stock of natural assets such as land, forests, wildlife and water resources from which people derive resource flows and services useful for their livelihoods. In the context of the rural economies of the developing world where most people derive their livelihood from natural resource-based activities, natural capital seems to be a very essential asset category (Alemu, 2015). Variations in the endowment of and access to natural capital among households generate perceptible differences in household choice of livelihood strategies and the associated outcomes.

Physical capital: These are assets that include housing, basic infrastructure (transport, energy, water and communication), production equipment (fishing nets, boats, hoe, cutlasses, etc) that people own, rent or use

to engage in their livelihood activities. Some of these are individually produced or owned while others qualify as public works. This distinction is important as both the origin and ownership of physical capital can have a major impact on the opportunities open to individuals. While public goods are not under the direct control of individuals, they do have an enormous impact on diversity and viability of potential livelihood activities.

Financial capital: This denotes the monetary resources people have access to, including stocks of money such as savings, access to credit facilities and flow of money such as remittances and wages. Access to credit from formal institutions such as banks has remained limited for the poor. Therefore, their ability to take financial risks in order to diversify their income strategies is limited. In line with this study, it is crucial to examine how the income earning activities of relocated households have been affected on one hand and how they use their financial capital to employ various livelihood strategies on the other.

Human capital: This refers to the skills, knowledge and good health that have the ability to exert physical and mental efforts on production processes of an individual or household. These help the individual to pursue different livelihood strategies in order to achieve desirable livelihood outcomes. The effectiveness of the other capitals depends on the viability of the human capital so as to maximize the benefits of the former. It can be argued that availability and access to health, education and other facilities are important to maintain the quality of household level human capital.

Social capital: Finally, this refers to people's shared behaviour of networks, connectedness, relationships of trust, reciprocity, exchange,

community membership and accepted social rules, common norms and sanctions. Carney (1998) analyses social capital in relation to livelihood as networks, membership in community-based organisations, relationships of trust and reciprocity and access to wider institutions in society on which people draw in search of livelihood. Considering the above definitions, it is clear that social capital is less tangible when compared to other types of capital as it exists among personal relationships and is a resource available through social networks.

The five categories of capital are not mutually exclusive as some aspects may belong to different categories. Also, there are assets that do not fit into any of the five categories. It is, therefore, essential to analysis to find a flexible definition for livelihood assets which captures the full meaning of these assets at the same time.

Institutional Processes and Organisational Structures

According to Millar (2004), institutions refer to the collectively agreed upon social arrangements that govern the interactions among members of a given group of people. As structures or mechanisms of social order, they govern the behaviour of a set of individuals within a given community. Institutions are identified with a social purpose transcending individuals and intentions by mediating the rules that govern living behavior (Scoones, 2015). It is commonly applied to both informal institutions such as customs or behavior patterns important to a society (religion, family, marriage) and to particular formal institutions created by entities such as the government and public services (lands commission, BPA, VRA).

On the other hand, an organisation is an entity comprising multiple people such as an institution or an association which has a collective goal and is linked to an external environment (MacDowell, 2009). An organisation is basically concerned with the structure that constitutes the interaction between two or more people. Under this study, both institutions and organisations are viewed as a set of widely shared values and interests pertaining to areas of strategic and social importance.

The combination of these institutions and organisations influences sustainable livelihood construction of displaced people in Ghana. They, also, form the basis of the legal framework for land acquisition and compensation. The legal framework describes all laws, decrees, policies and regulations relevant to the resettlement activities associated with a project (Kalitsi, 2008; Tsikata, 2008).

The legal and institutional framework in Ghana over land administration, land tenure, and land expropriation is complex, which is why the National Land Policy [NLP] (1999) and Land Administration Project (LAP) seek to streamline the myriads of laws regulating land administration and/ or establishing mandates for different land administration agencies in the country (Alhassan, 2008; Bebelleh, 2009). Some of the numerous land-related laws passed in the last 50 years are discussed in chapter three of this study.

Thus, in planning resettlement schemes, the state, implementing agencies and regulatory bodies must identify, review and abide by all laws applicable to land acquisition and compensation of a displaced population by considering the sustainability of their livelihood (Hussein & Nelson, 1998; Kalitsi, 2008).

Livelihood Strategies

Livelihood strategies are the range and combination of activities people employ in order to achieve their livelihood goals. People belonging to different categories of households (poor and not poor) develop and pursue different livelihood strategies on the basis of their personal goals, resource bases and past experiences of unsuccessful livelihood strategies. Livelihood strategies include agricultural extensification (increasing farm size) and intensification (raising farm yields) as well as income diversification (off-farm economic activities such as daily labour, petty trade, food for work programme, handicrafts, etc.) (Ellis, 2000; Scoones, 2015).

Livelihood strategies can be positive, which helps households to become more resilient and less vulnerable; or negative, when they result in the further erosion and decrease of the asset base. It is, also, a process of failure and success in terms of outcomes of these strategies. However, livelihood strategies that are employed by the poor to increase their security are often complex, diverse and difficult to simplify.

When exploring prerequisites for successful livelihood strategies of the poor, it is necessary to mention the importance of examining the mechanisms and structures that promote or prevent the successful livelihood strategies and capabilities of the poor to participate in the decision making processes and the rights available to them to claim options for such strategies Adu-Aryee (1993). This study explores livelihood strategies employed by resettled and host households in order to secure their livelihood from various resettlement related stresses and risks.

Outcomes

Outcomes are the achievements gained as a result of employing various livelihood strategies in relation to a given vulnerability context (Ellis, 2000; Ellis &Freeman, 2004). These outcomes can be both positive (increased wellbeing, reduced vulnerability or increased food security and wise use of natural resources) and negative.

Under this study, vulnerability refers to the exposure to various resettlement related stresses and risks (generated mainly due to income and expenditure related issues, poor quality housing and a lack of common infrastructure and fragmented relationships with the host community). On the other hand, risk refers to uncertain events that can make households insecure as a result of resettlement schemes, while stress means gradually emerging/unfolding harsh conditions due to the process of relocation. Moreover, household security here refers to the combination of secure basic income, access to common infrastructure and services (transport, education, health facilities), secure housing conditions (properly constructed houses) and security from threats from other communities (both old and new).

In Africa, planned resettlement schemes have been tried in countries as diverse as Kenya, Tanzania, Sudan, Ghana, Senegal, Burkina Faso, Egypt and Ethiopia. While several of these schemes did, in fact, improve the well-being of resettled and host communities, in general terms, these efforts have fallen short of expectations. Nonetheless, the expectations themselves may have been unrealistically high in many cases (Alemu, 2015; Scudder, 2005; Woube, 2005; Worku, 2011). The nexus of these concepts would be the basis of this study.

Empirical Case Studies of Resettlement Schemes in Africa

By the 1950s, the process of decolonisation and the growing population became the driving force for increased energy demands in many African countries. The increasing demand for her energy needs led to the construction of large dams imperatively (Moxon, 1969). By the 1960s, construction of dams had become an objective for most African countries. Particularly well-known examples of dam constructions that led to involuntary population resettlement include the Aswan High Dam in Egypt, the Akosombo Dam in Ghana and the Kariba Dam on the Zambezi river on the border between Zambia and Zimbabwe. The construction of these dams (Lake Nasser, Kariba and Volta lake) created the four largest artificial water reservoirs in the world (Adu-Aryee, 1993; Obusu-Mensah, 1996).

The construction of these major dams led to the displacement of many populations across Africa. Table 1 shows selected dam projects in Africa which are associated with high magnitudes of involuntary resettlement.

Table 1: Dams and their Displaced Population

Country	Dam	Date completed	Displaced popu.
Zambia/Zimbabwe	Kariba	1959	57,000
Ghana	Akosombo	1965	82000
Nigeria	Kanji	1968	50,000
Mozambique	Cabora Bassa	1969	25,000
Egypt/Sudan	Aswan	1970	12,000
Ivory Coast	Kossou	1973	75,000
Sudan	Merowe	2009	55,000

Source: Adapted from Cernea (1997) and Terminski (2012).

Kariba Dam of Zambia/Zimbabwe

The construction of the Kariba Dam on the Zambezi (1955-1959) led to the displacement of 57,000 Gwembe Tonga People. This involuntary resettlement created many significant economic, demographic, health and social consequences in the community (Dowson & Farber, 2012). The Gwembe Tonga resettlement was one of the earliest resettlement schemes included in the World Bank-funded project. The dam construction, in the end, had an irreversible environmental impact on the delta and agriculture of the Zambezi River (Lassailly-Jacob, 1996).

Pandey's (1998) study provides an example of impoverishment as a result of displacement. He studied several villages along the Zambesi river where the project resulted in large-scale displacement. It was found that in each of these villages, the number of landless people increased after the displacement. In some of the villages, the number of the landless increased from 20.97 percent to 90.37 percent while in others, it increased from 36.42 percent to 84.77 percent (Jaratney, 2007).

Aswan Dam of Egypt/Sudan

The construction of the Aswan High Dam between 1960 and 1971 led to the involuntary resettlement of between 100,000 and 120,000 people, including 50,000 in Egyptian territory (Fahim, 1981). The construction of this dam brought significant economic benefits, especially in the context of rising energy and food needs caused by dynamic population growth in Egypt (Terminski, 2012). The most socially costly development projects realised in recent years in Sudan were those that created the Merowe and Kajbar dams. The construction of Merowe Dam, completed between 2003 and 2008, led to

the displacement of 55,000 – 70,000 inhabitants of the country, mostly belonging to the Manasir, Hamadab and Amri tribes (Faas *et al*., 2015).

In most of these resettlements schemes in Egypt and Sudan, though a "land for land" option was the main principle followed in the rehabilitation policy, landlessness still occurred due to displacement. In Sudan, the number of landless households increased from 24 percent to 38 percent. Among the nomadic herdsmen, there were no rehabilitation policies so no steps were taken to prevent landlessness (Stanley, 2004).

Other Dams

The construction of the Cahora Bassa dam began in the late 1960s by the Portuguese colonialists in the Overseas Province of Mozambique led to the displacement of 25,000 local people (Cohen, 2014). Another project that caused a significant scale of displacement was the creation of Kainji Dam in the northern part of Nigeria (1964- 1968). It is estimated that this project resulted in the flooding of more than 200 villages and displaced between 42,000 and 55,000 people (Terminski, 2012).

Cernea (2000) studied these resettlement schemes and found that the people displaced lost their jobs in small private enterprises like workshops, food stalls, artisans' units etc. Although they were not entitled to any compensation under the local law, some resettlers were given vocational training. These provided skills, but not necessarily jobs. Similar findings are available from developed countries. In the Churchill – Nelson Hydro Project in Manitoba in Canada, indigenous economic activities like fisheries, waterfowl capture, fur processing etc. were curtailed (Terminski, 2012). Joblessness occurred after a long delay because in the short run an

"employment boom" is created by the new construction, which dropped towards the end of the project (Price, 2012). These compounded the incidence of chronic or temporary joblessness among the displaced population.

Similar evidence abounds in dam projects in Brazil, India, Togo and China (Cernea, 2000). A sociological study conducted in Kenya's Kiambere Hydro-power Project found that the average land holdings of the farmers dropped from 13 to 6 hectares, livestock was reduced by more than one third, production of maize decreased by 68 percent and that of beans by 75 percent per hectare. The family income, consequently, dropped by 82 percent (McCully, 2001).

Similar problems have been reported from dam-related resettlements in Thailand, Victoria Dam reservoir in Sri Lanka and the Three Gorges dam in China (Berman, 1988). The lack of proper information and precautionary measures, also, resulted in 106 deaths by drowning at Saguling Lake (Indonesia) during the first 14 months of operations at the Cirata Reservoir (Indonesia). Ten persons drowned in the first ten months after impounding (Bisht, 2009). At Nam Pong reservoir in Thailand, monitoring confirmed that local rates of morbidity were higher than provincial levels due to deteriorated living conditions and poor waste-disposal practices (Biswas, 2012). Exposure to the "social stress" inherent in forced relocation was highlighted as having differential consequences on mental health across age, gender and marital and occupational status (Scudder & Colson, 1982).

Conceptual Framework on the Effects of Resettlement Planning Schemes on Sustainable Livelihood

This section describes the researcher's position regarding how the interrelated construct of ideas, concepts and variables derived from the reviewed theories and empirical evidence are operationalised in order to address the identified research niche (Kumar, 1999). It is, basically, informed by IRR and sustainable livelihood framework (Alemu, 2015; Ellis, 2000; McDowell, 2002; Scoones, 20015). Adopting these approaches suggest that there is a direct relationship between the IRR model and sustainable livelihood approach within the context of effective resettlement planning as indicated in Figure 3.

Understanding the effects of resettlement schemes on the livelihood of displaced populations requires a framework that takes into consideration the view of Ellis (2000) and Scoones (2009). McDowell (2002) and Alemu (2015) suggest that the sustainable livelihood approach to understanding the rural development process and livelihood strategies could be applied to situations of resettlement. McDowell's (2002) analysis integrates both elements of sustainable livelihood with Cernea's (2000a) IRR model. Their integration requires an understanding of the relationships between potential impoverishments and livelihood reconstruction.

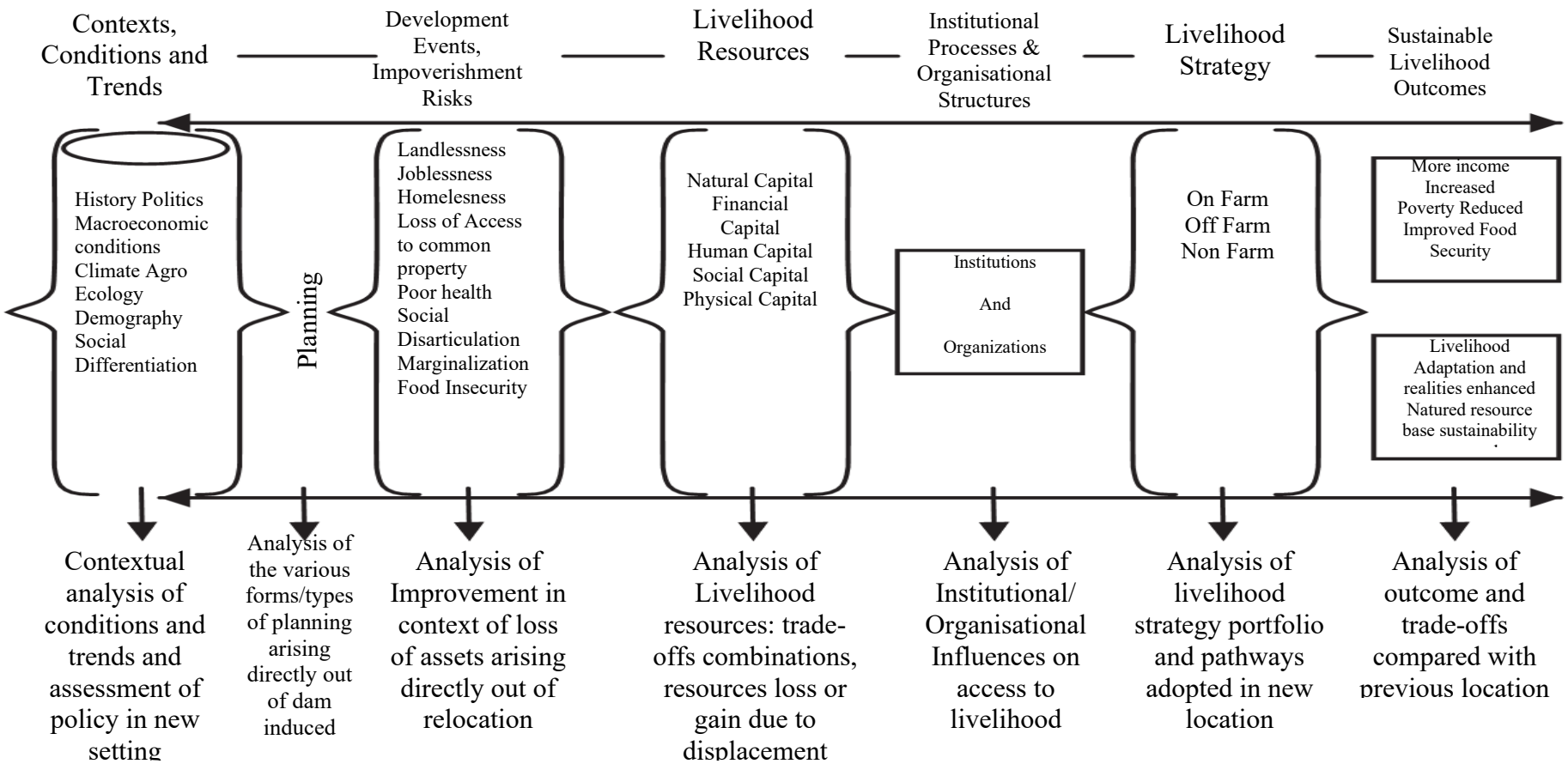

Figure 2: Resettlement Planning and Sustainable Livelihood Framework
Source: Adapted from Alemu (2015), Ellis (2000), McDowell (2002) and Scoones (2015)

However, the above integration would not be adequate without De Wet's (2012) proposition of planning as a core element between SL approach and the IRR model. Thus, the three concepts of planning, potential risks and SL regard institutional and organisational processes as central to sustainable resettlement and livelihood.

Figure 2 shows that within a particular context, conditions and trends, there are displacement events and impoverishment risks that require the "combinations of livelihood assets to reconstruct livelihood" (Alemu, 2015, p.35). This invariably affects livelihood strategies (on-farm, off-farm and non-farm activities) and outcomes (ensuring livelihood security and environmental sustainability).

De Wet (2002, p.84) suggests that planning within the context of resettlement should be "open-ended" because of changes that occur over time. Similarly, Scoones (2015) stated that the construction of livelihood is an ongoing process as the assets and activities can change and people would have to adapt to those alterations. In the conceptual framework, it is the household that is the social unit of analysis on how to assess people's livelihood security. The analyses are based on the context, the impoverishment risks, the livelihood assets, the effects of institutions/organisations, livelihood strategies and outcomes as a result of the resettlement schemes in the affected households.

Summary

The chapter explained the major theories that were relevant to the study. In doing that, it focused on the major theories that shape impoverishment associated with resettlement schemes. These theories/models

of resettlement included: the diffusion theory, De wets inadequate inputs and inherently complex theory, Scudder and Colson four-stage model and the Cernea's Impoverishment, Risk and Re-establishment (IRR) theory.The various sub themes that are relevant to the understanding of theories and their applicability were explained.

Furthermore, concepts that were relevant in the study were explained. Case studies were examined to allow an in-depth discussion of the current area under study. It also analysed the conceptual framework employed and its relevance within the context of the study. Empiricalliteratures on the effects of resettlement on the socio-economic lives of resettled people were examined to confirm the applicability of the theories and models.

CHAPTER THREE

OVERVIEW OF RESETTLEMENT SCHEMES IN GHANA

Introduction

The chapter examines the earliest state planned resettlement schemes of Damongo and Tema in the Northern and Greater-Accra regions of Ghana respectively. Non-state resettlement schemes in the mining sector have also been examined. It looks at Ghana's main river system which contains all the three hydropower dams. Furthermore, it describes the Bui resettlement scheme and brings to light lessons learnt by implementing agencies and findings of some researchers on the previous challenges with respect to improper resettlement planning.

Inception of State Resettlements in Ghana

Since the 1950s, there have been two major state-sponsored resettlement schemes in Ghana: the Damongo and Tema resettlement schemes. These schemes are discussed in the ensuing sub-headings.

The Damongo Resettlement Scheme

Damongo and Tema resettlements constitute the earliest state involvement in resettlement schemes. The Damongo resettlement was described as the policy of villagisation in 1956 as part of a development strategy under the colonial regime to minimise the effect of frequent occurrences of famine and malnutrition in the north-eastern portion of the Gold Coast (Chambers, 1969). Launched initially as a voluntary program, the villagisation campaign became compulsory in 1958 to 1959. It is estimated

that the program of villagisation caused the involuntary resettlement of about 200 families to Damongo (Sachs, 2001).

The policy direction was to resettle ethnic groups with marginal lands to sparsely populated Damongo area (Grischow & Weiss, 2008). This involved the resettlement of some Grunse ethnic groups who had faced years of drought and the outbreak of worms which caused destructions to their crops (Lokko, 1995).

Surprisingly, despite the provision of land, a house, a bullock and a plough as an incentive to heads of households, it was difficult to persuade the people to leave the security of their indigenous and traditional areas for the unknown. By 1958, only 149 families had moved and even those who had moved still sent their dead back "home", two hundred miles away, for burial (Chambers, 1970; Mettle, 2011). Other challenges included land tenure, the relationship between settlers and local traditional authorities and political resentments resulting from the displacement of populations from their area of origin.

The Tema Resettlement Scheme

The second resettlement programme was the Tema village resettlement scheme which "was a great success" (Chambers, 1970, p.106). This resettlement scheme was as a result of the need to build a harbour and a modern township at Tema, 18 miles east of Accra. There was strong resistance from the local people described as "the turbulent Tema fishermen" (Moxon,1969, p.161). The people objected to their traditional home being used to build a township for "strangers"; they felt they would lose the traditional protection of their village site and would become landless

(Chamber, 1965). “They were unsure their gods could be moved and did not understand why the government thinks their community was ‘unfit’ to live in the proposed new township. They argued that they were not ‘chickens to be driven into already-built coops’ or ‘cassava trees’ to be uprooted and planted anywhere” (Chambers, 1970, p.106).

After six years of delay due to hostility and suspicion, in January 1959, a resettlement team was appointed. It consisted of a resettlement officer (a senior Administrative Officer), a Social Welfare Officer, and twenty (20) Community Development Assistants (CDAS). The objective of this office was to build a good relationship with the people which worked well for the resettlement to take place through the “Personal-friend-trusted-guide-and-counsellor” relationship. Unfortunately, the delay in resettlement increased the problems of house allocation in the new village because the population doubled from 6,000 in 1952 to 12,000 in 1959 (Mettle, 2011). Due to this, some families had to live in temporary aluminium sheet houses. A programme was introduced to train the affected people on how to use the modern amenities provided for them like flush latrines, toilet rolls and dustbins. According to Chambers (1970), the Tema experience influenced policies adopted for the Akosombo resettlement.

Non-State Actors in Resettlement Schemes

Non- State actors have also played various roles in the resettlement schemes in Ghana due to mining activities. These were the mining sectors, and recently, the energy sector such as the petroleum subsectors. The Tarkwa, Akyem and Ahafo mines are some of the noted locations where resettlement

had taken place. Similarly, in the energy sector, one can mention the Akosombo and the Kpong resettlement schemes.

Resettlement in the Mining Sector

According to Akabza and Darimani (2001), it was estimated that more than 30,000 people were displaced between 1990 and 1998 in the Tarkwa district of Ghana by gold mining operations. At least several hundred people, each year, are resettled in the regions where mining operations tend to be expanding. Mining activities led to the destruction of 14 communities between 1990 and 1998 (Terminski, 2012). According to Akabzaa and Darimani, the mass displacement has led to the large-scale migration of young people to urban centres in search of non-existing jobs.

The second planned mining project in Ghana (the Akyem project) to destroy surrounding habitats and move hundreds of people from their initial places of residence. One of the most controversial projects in Ghana, however, is the Ahafo gold mine. Since its commencement in 2006, the mine has been faced with allegations of human right abuses committed by the security forces in protecting the mine and the displacement of 10,000 people. Inadequate compensation and environmental disruption due to cyanide spillage in October 2009 exacerbated their plight (Hilson & Nyame, 2006; Terminski, 2013). As Akabzaa and Darimani noted, "Compensation policy also did not consider the tenant status of many local people. This led to the impoverishment of the women and the vulnerable groups who irk their living mainly by selling firewood from the forest or performing various jobs at illegal mining or 'galamsey' sites".

The Akosombo Resettlement Scheme

Land ownership within the basin is basically traditional except for areas demarcated for control by government agencies such as the VRA, forest reserves, wildlife and national parks. About 3.6 percent of Ghana's total land area was submerged by the reservoir created through the construction of the Akosombo dam (Chambers, 1965; 1969; VRP, 1961; 1963). This changed and modified the existing physical, biological and socio-economic environment of the people above and below the dam (Chambers, 1970; Diaw &Schmidt-Keller, 1990). It was estimated that about 740 villages were submerged by the lake displacing about 82, 000 people (1 percent of the country's population) (Mettle, 2012). Out of these displaced people, about 70, 000 were resettled in newly constructed settlements (Tetteh, 2012). The remaining people were compensated by monetary means (Kalitsi, 2000).

Unfortunately, most of the resettlements had major problems arising from the poor design of the houses, inadequate water supply, lack of land title as a form of security and poor soil (Gyau-Boakye, 2001). Although valuation was done by the Lands Department, affected people complained about inadequate coverage and pricing of properties.

Socio-culturally, different ethnic groups were put together in the same standardised houses in settlements much larger and more compact than their original villages (Tetteh, 2012). The cultural problems created include the abandonment of gods, shrines, graves of ancestors, church buildings and other fondly remembered places. Notwithstanding the provision of construction material and technical assistance for the completion of the houses, most

resettlers did not confer with these “self-help housing projects”, showing a dispirited mentality due to the relocation (Kalitsi, 2000).

Within four years, a majority of the people had resettled elsewhere. Besides, the people who were forced to resettle from areas adjoining the river and the new lake were the most affected. Both resettled and host settlements lying within the catchment area that was promised electricity in exchange for their kind cooperation were not provided the said electricity. However, this promise was fulfilled decades after the construction of the dam (Arp & Baumgartel, 2004).

It was, further, observed that the resettlement forced tribes that relied mainly on fishing to switch to agriculture for their main sources of income and food. On the other hand, settlements that previously lived far away from the river basin and were engaged in farming were suddenly at the lakeside and had to switch to fishing to compensate for the lost land and agricultural production (Gyau-Boakye, 2001).

According to Kalitsi (2000), the resettlement challenges further included inadequate time scheduled for planning and implementation, shortage of administrative capacity, insufficient political will and finance, the absence of meaningful local involvement and commitment prior to its development. Further contributory factors included failure to implement the recommendations of the preparatory commission and failure to consolidate the engineering and the social aspects of the project. Of the originally planned £26 million for compensation of those affected by the construction of the dam, only a fraction was used for this purpose (VRP, 1961; 1963).

Speaking to an international audience of specialists at WCD, Kalitsi (2000, p.208), stated that "soon after evacuation into the first township, it was observed that the people were already leaving that town for other villages or drifting back closer to the water to set up fishing camps. The specter of ghost resettled towns hangs over every settlement we have built". Due to these socio-economic problems, the VRA was put under increased pressure to set up remedial measures and to revive rural industries. One of such initiatives was the implementation of artificial shrimp farms, though this has met limited success (Fobil & Attaquyefio, 2003).

The Establishment of VRA Trust Fund

Due to the above challenges and the failure of attempts to resolve them, the Government of Ghana and the VRA in 1996 established the VRA Resettlement Trust Fund with an initial seed contribution of the Cedi equivalent of five hundred thousand dollars (USD $500,000.00) annually, mainly from VRA. The main focus of the Fund was to improve the quality of lives of 52 resettlement communities through the carrying out of socio-economic projects such as the provision of educational, social, health and sanitation facilities, reliable and potable water and economic empowerment through enhanced livelihood options. The objective of the Fund was to ensure the socio-economic empowerment of the communities by helping raise their standards of living to levels similar to or better than what existed before the resettlement (VRA, 2003).

Details of the Fund is expressed and defined in a Trust Deed which, among others, requires VRA to provide the Trust Fund with an annual grant to be used for developmental projects for the 52 resettlement townships. This, to

date, is the main source of revenue for the Trust Fund. The Regional Co-ordinating Councils in the four affected regions of Ghana: Volta, Eastern, Northern and Brong Ahafo are the appointing authorities of the MPs to serve on the Board according to the following distribution pattern. The Secretariat of the Trust Fund is headed by the executive director and is responsible for implementing all the decisions of the managing Trustees and working directly with the resettlement communities and other stakeholders. At the local level, Town Development Committees have been established in all the 52 resettlement townships to perform liaison functions between the secretariat of the Trust Fund and the respective communities for the prioritisation and effective execution of development projects within the resettlement communities (VRA, 2010).

Kpong Resettlement Scheme

Due to the challenges of Akosombo, the resettlement scheme at Kpong was properly organised. It affected a total population of 5,697 persons (Raschid-Sally *et al*, 2008). This resettlement scheme was planned early and designed to fit into the original lifestyles of the resettled communities (Kalitsi, 2008). Core housing units incorporated both the traditional and modern architectural design with modern amenities. The livelihoods of the women which involved pottery and fish processing were carefully preserved. Better village infrastructure and the introduction of electricity also helped reduce labour-intensive tasks traditionally done by women (Arp & Baumgartel, 2004; Tsikata, 2000).

In spite of all these, some host and adjoining communities still have poor access to markets and firewood. Disputes were initially minimal but later

deteriorated among the host and resettled communities due to competing claims over land (Tetteh, 2012). Disputes over non-maintenance and frequent breakdown of infrastructure were the second key point of dissatisfaction expressed by the resettled communities and their host.

The challenges observed with the Kpong resettlement scheme was due to inadequate community participation in planning the livelihood of the people. Where socioeconomic/baseline surveys were carried out, they frequently lacked conceptual clarity (Hilson & Nyame, 2006). Lack of early attention to planning the project's agricultural component including cultivation practices and the amounts of land required was not addressed before the resettlement scheme. Thus, services to support their livelihood activities were left to a post-project phase that never materialised (Raschid-Sally *et a*l., 2008).

Experiences of Resettlement Schemes in Ghana

An analysis of lessons learnt from both the state and privately sponsored resettlements show a not too good situation for resettled populations in Ghana. With the exception of the Tema resettlement, the Damongo resettlement showed a grim picture of success. The Akosombo resettlement also revealed a myriad of challenges ranging from environmental to socio-cultural and economic dimensions. The creation of the Lake and the regulation of the floodwaters of the Volta River brought numerous negative impacts on the lives of the communities living upstream and downstream along the banks of the river. The major impact was socio-economic. In order to properly mitigate the environmental and socio-economic concerns of hydropower developments, the following lessons learnt must be noted.

There is a need for detailed and extensive studies during the planning phase before the implementation of resettlement projects. The environmental data gathered during the ESEIA should take into consideration the alteration of the flow regimes of the main river and its effect on distant settlements. Such planning should not be static but adjusted as new conditions arise. During the Akosombo resettlement, in spite of the initial environmental and socio-economic impact assessments before the dam construction, it became clear that the available information was inadequate. This was how VRA found itself compelled to provide the affected people with similar core housing units which were not adequate for the household dynamics of some of the affected people.

To ensure effective mitigation of environmental consequences, environmental costs should always be factored into costs of producing power and reflect in the price of electricity. This is because tropical reservoirs create conditions for the increase in waterborne diseases such as bilharzia. The cost-benefit analysis of dam projects should take into consideration the social and long-term environmental consequences.

Additionally, it has been observed that the benefit of energy generation tends to benefit urban centres, neglecting settlements directly adjacent the rivers whose livelihood depends on the dynamics of the water basin. According to Kalitsi (2000), the on-going thinking is that those who sacrifice must be fully compensated by those who benefit. Since it is not easy to fully define these costs and the distribution of the benefits, it is better to err on the side of generosity to the local communities affected. Achieving this calls for a continuous assessment of the sharing of benefits and the assessment

of costs. Concurrently, reservoirs create opportunities for irrigation, urban water supply, navigation, fishing and other development activities which can contribute to improve the lives of affected communities (Raschid-Sally *et al*., 2008).

Forty-five years after resettlement, settlers, host communities and downstream communities in the lower Volta are, by and large, dissatisfied about the resettlement process and package (Tsikata, 2012). During the project development, efforts were made to enhance public awareness of the project and involve local communities in aspects which affect them. These were done partly through discussions at the legislature and at special purpose committees incorporating as many stakeholders and interested participants as possible and through public education campaigns in the local communities (Kalitsi, 2003).

In spite of all these preparations and efforts, people relocated still feel their needs have not been adequately addressed. They feel urban communities and industries have taken more of the project benefits in the form of cheap electricity while the affected people are left with the bane of public health problems and inadequate compensation. Some of these people have suffered low incomes from reduced farm and fishing activities due to restrictions and accessibility to the reservoir sites. Thus, the affected people should be targets of intensive consultation and detailed planning for preventive and improved measures as envisaged by (De Wet, 2002). Three categories of communities need to be factored into the development of any mitigation measure. These should be the host, resettled and adjoining communities, with their corresponding watershed areas and downstream the dams.

Furthermore, time is a critical factor in the development of river basins. Policies for resettlement and compensation should be developed well ahead of dam construction. That is, all persons adversely affected by the construction of the reservoir should be properly and appropriately compensated in cash and in kind. The resettlement costs should, also, cover all inundated properties including houses, farms and public facilities with a well-archived evidence of compensation maintained. In addition, all land encumbered for resettlement should be appropriately compensated. The proper legal title must also be given to each resettled family for houses and farmlands allocated to it. This will prevent and minimise post-resettlement claims and further conflicts between the host communities and the settlers as experienced in Akosombo.

One of the lessons learnt is that after implementation, there is a tendency for developer's fatigue to set in. During the Akosombo resettlement, once the people were relocated and power production began, the enthusiasm which characterised the initial socio-economic activities waned; meanwhile, this should have been the time for such activities to be accelerated. Hence, the displaced did not benefit from the planned projects and these planned projects, with time, went down the drain causing financial losses to the state and the intensification of the already vulnerable conditions of the displaced.

Vulnerable groups such as women and children who bore the brunt of the resettlement did not benefit from any enhanced livelihood packages because they were not the heads of households. Hence, it is expected that for any other dam-related resettlement, proper planning and implementation processes should be the core. Also, adequate livelihood strategies must be

developed to integrate all the potential people that are likely to be affected by the project.

Legal Framework for Land Acquisition and Compensation

Over the years, resettlement schemes for displaced populations have not taken into consideration the legal and institutional framework for land acquisition and compensation. The legal framework describes all laws, decrees, policies and regulations relevant to the resettlement activities associated with dam projects that affect the livelihood of the affected people (Kalitsi, 2008; Tsikata, 2008). Among the numerous land-related laws passed in the last 50 years, the most relevant to the resettlement planning schemes are as follows:

1. The Volta River Development (1961) Act 46;
2. The State Lands Act, 1962;
3. Administration of Lands Act 1962 Act 123;
4. Survey Act 1962, Act 127;
5. The Land Title Registration Act 1986, PNDCL 152;
6. The Constitution of the Republic of Ghana, 1992;
7. Office of the Administrator of Stool Lands Act 1994, Act 481;
8. The Lands Commission Act 2008, Act 767;
9. The Ghana Land Policy, 1999;
10. Bui Power Authority Act (2007) Act 740;

Many countries have legislation and policies governing land expropriation and compensation for affected assets. However, in most countries, a policy governing resettlement is often poorly defined if not altogether lacking (IFC,

2002). The planning must identify, review and abide by all laws applicable to land acquisition and involuntary resettlement (Kalitsi, 2008).

The Volta River Development (1961) Act 46

The Volta River Development (1961) Act 46 established the VRA and charged it with the responsibility of "generating electricity by means of water power of the Volta River and by other means" and supplying electricity through a transmission system (Chambers, 1965; 1969; 1970; Diaw &Schmidt-Keller, 1990). The Act specifically mandated VRA to construct a dam at Akosombo and create the Volta Lake by damming the Volta River (Volta Basin Research Project, 1963). Furthermore, the VRA was charged with the responsibility of managing the Volta Lake and facilitating and assisting the development of the lake as a source of fish and as a transportation route among others (Kalitsi, 2008; Tsikata, 2006). Additionally, the Authority is enjoined to take measures aimed at controlling floods downstream from the dam.

The VRA, by this Act, is empowered to compulsorily acquire lands for various projects (Tsikata, 2006). With the exception of lands for resettlement which are vested in the President, all other lands acquired for the Authority's work are vested in the VRA. The Act prescribes compensation and resettlement as mitigation or restoration measures for people affected by the Akosombo and Kpong projects (Chambers, 1970; Moxon, 1969). It places on Central Government the responsibility to finance expenditures on the Akosombo compensation and resettlement (Gordon, 2006; Kalitsi, 2008).

Survey Act 1962, Act 127

The Survey Act 1962, Act 127 relates to geological, soil and land survey. Part II of the Act deals with demarcation and survey of lands. Under the law, the sector minister may appoint official surveyors and the Chief Survey Officer (Director of Surveys) may license private surveyors. It is the official surveyor or licensed surveyor that shall certify plans for attachments to instruments of conveyance, leases, assignment, charge or transfer (Asante, 1969; Appiah-Opoku & Mulamootti, 1999). Under the law, it is an offence to damage, destroy or alter any boundary mark.

The Act 127, with its amendments, gave legal backing to the Director of Surveys to carryout cadastral and other surveys through official surveyors who work directly under him at the Survey Division of the Lands Commission. It, also, gave authority to the Director of Surveys to recommend from time to time experienced surveyors to the Minister responsible for Lands to be licensed to undertake surveys. Licensed surveyors did all survey works carried out under the resettlement schemes.

The State Lands Act, 1962 (Act 125 as amended)

The State Lands Act, 1962 (Act 125) vests in the President of the Republic the authority to acquire land for the public interest. The President "may, by executive instrument (EI), declare any land specified in the instrument ... to be land required in the public interest" (Sect. 1-1). The Act details the procedural requirements to be followed and further provides that "on the publication of this instrument..., the land shall, without any further assurance than this subsection, vest in the President on behalf of the Republic, free from any encumbrance whatsoever" (Sect. 1-3).

The State Lands Act also places responsibility for registering a claim on the affected party and details the related procedure (Antwi & Adams, 2003). The State Lands Act, 1962 details the different elements to be taken into consideration when calculating compensation:

1) "Cost of disturbance" means the reasonable expenses incidental to any necessary change of residence or place of business by any person having a right or interest in the land.
2) "Market value" means the sum of money which the land might have been expected to realise if sold in the open market by a willing seller to a willing buyer.
3) "Replacement value" means the value of the land where there is no demand or market for the land by reason of the situation or of the purpose for which the land was devoted at the time of the declaration made under section 1 of this Act, and this shall be the amount required for reasonable reinstatement equivalent to the condition of the land at the date of the said declaration.
4) "Other damage" means damage sustained by any person having a right or interest in the land or in an adjoining land by reason of severance from or injurious affection to any adjoining land."

The State Lands Act, basically, provides for an "automatic" process of compulsory acquisition, whereby at the publication of an instrument declaring land needed for the public interest, it is automatically vested in the President of the Republic. It is important to observe that although the 1992 Constitution is much more "human-rights oriented", it does not repeal this Act but only supersedes it (Asante, 2003).

This Act paves the way for a process widely practiced just after Independence and afterwards, where the State takes land by powers of eminent domain and pays no compensation unless required doing so by a Court ruling which needs to be triggered by a claim from the affected landowner (Alhassan, 2008; Appia-Opuku & Mulamootti, 1997; Asiama, 2003).

Administration of Lands Act 1962 Act 123

Act 123 of 1962 was enacted to facilitate the management and administration of stool lands (and other lands). The Act empowers the Minister responsible for lands to manage stool lands in accordance with the provision of the law (Addo-Fening, 1990; Antwi, 2006; Millar, 2004).

By section 7 of the Act 123, the President of the Republic may, by Executive Instrument, declare any stool land to be vested in trust and, accordingly, the state could administer such a land as a trustee for the stool involved. In such situations, the legal rights to sell, lease, collect rent, litigate and manage, generally, is taken away from the customary landowners and vested in the state (Bebelleh, 2009). However, the equitable right in the land, which is the right to enjoy benefits, is retained by the landowner.

Similarly, the Act provides in section 10 that "the President may authorise the occupation and use of any land for any purpose which, in his opinion, is conducive to public welfare or the interest of the state". It is a requirement that a public notice shall be published in the Gazette giving particulars of the lands to be taken and the use to which it will be put (Allot & Gordon, 1985; Alden & Hammond, 2001). Persons whose interests are affected by "reasons of disturbance as a result of the authorization" so made are entitled to compensation. The entitlements are, however, to be assessed by

giving due consideration to the values of the land (and other losses suffered) and the benefits to be derived by the people in the area (by way of the use to which the state is going to put the land).

The difficulty of this law is that the nature of interest taken is not expressed in definite terms. Again, stakeholder consultations and community involvement are not highlighted (Amanor, 2001; 2006). It must be observed that the state does not normally use this section of the Act and, thus, the occupation of lands is rarely exercised.

Land Statutory Wayleaves Act 1963 (Act 186)

The Lands Statutory Wayleaves Act (1963), Act 186, facilitates the acquisition of right of ways for public utilities. It provides for compensation payment for affected rights in lands subjected to statutory wayleaves.

Public Conveyance Act 1965 (Act 302).

The Public Conveyance Act 1965 is also used to compulsorily acquire land, whether private or a stool land, but for certain specified purposes. Upon the publication of the EI, any area duly stated in the EI shall be so taken.

The Land Title Registration Act 1986, PNDCL 152

The challenges arising from the registration of instruments under the Land Registry Act 1962, Act 122 led to the promulgation of the Land Title Registration Act 1986 and the PNDCL 152 which sought to improve on the registration of deeds. The Law, with its amendments, provides for accurate parcels or cadastral maps which would reduce fraud and multiple registrations as well as litigation. It, also, provides for publication and adjudication of

conflicts (Alhassan & Manuh, 2005). The certificate of title to the land is indefeasible and can only be cancelled by a court of law.

The Land Title Registration Law provides for the registration of all interests held under customary law and also the common law. Under this law, the registrable interests include (i) allodial title, (ii) usufruct/customary law freehold, (iii) freehold, (iv) leasehold, (v) customary tenancies and (vi) mineral licenses.

The Constitution of the Republic of Ghana, 1992

In line with principles of the Universal Declaration of Human Rights, the Constitution of Ghana, adopted in 1992, includes a number of provisions aiming at protecting the right to private property and at setting principles under which citizens may be deprived of their property in the public interest (Ghana, 1992). For instance, Article 18 provides that "Every person has the right to own property either alone or in association with others."

In Article 20, the Constitution describes the circumstances under which compulsory acquisition of immovable properties in the public interest can be done: "No property of any description, or interest in, or right over any property shall be compulsorily taken possession of or acquired by the State unless the following conditions are satisfied":

a) The taking of possession or acquisition is necessary in the interest of defence, public safety, public order, public morality, public health, town and country planning or the development or utilisation of property in such a manner as to promote the public benefit.

b) The necessity for the acquisition is clearly stated and is such as to provide reasonable justification for causing any hardship that may result to any person who has an interest in or right over the property.

Article 20 of the Constitution provides further conditions under which compulsory acquisition may take place: no property "shall be compulsorily taken possession of or acquired by the State" unless it is, amongst other purposes, “to promote the public benefit" (Clause 1).

Clause 2 of Article 20 further provides that: “Compulsory acquisition of property by the State shall only be made under a law which makes provision for”:

(a) The prompt payment of fair and adequate compensation.

(b) A right of access to the High Court by any person who has an interest in or right over the property whether direct or on appeal from any other authority, for the determination of his interest or right and the amount of compensation to which he is entitled.

Clause 3 adds that: “Where a compulsory acquisition or possession of land affected by the State in accordance with clause (1) of this article involves displacement of any inhabitants, the State shall resettle the displaced inhabitants on suitable alternative land with due regard for their economic well-being and social and cultural values.”

It can be observed that Ghana is one of the few African countries whose legislation requires resettling people that may be displaced as a result of public interest projects (Alhassan & Manuh, 2005; Amanor, 2001). This requirement is enshrined in the highest level law of Ghana, the Constitution (Ghana, 1992). It is, also, worth noting that the Constitution requires the “prompt” payment of

"fair" and "adequate" compensation, but does not require this payment to be "prior". In effect, there are numerous examples in Ghana of land having been compulsorily acquired without compensations being paid "promptly", "fairly" and "adequately" (Alden, 2003). However, AfDB (2012) and IFC (2002, 2013) clearly requires compensation to be paid prior to land entry.

Office of the Administrator of Stool Lands Act 1994, Act 481

The Act establishes the Office of the Administrator of Stool Lands as enshrined in Article 267 (2) of the 1992 Constitution. It is responsible for the establishment of a stool land account for each stool, the collection of rents and the disbursement of such revenues (Addo-Fening, 1990; Asante, 2003). The Administrator is charged with the management of stool lands, and in accordance with provisions in the 1992 Constitution, ten (10) percent of the gross revenue goes to the Administrator of Stool Lands for administrative expenses while the remainder is disbursed as follows:

1) 25 percent to the stool through the traditional authority for the maintenance of the stool;
2) 20 percent to the traditional authority and
3) 55 percent to the District Assembly, within the area of authority of which the stool lands are situated.

The Ghana Land Policy 1999

The Government of Ghana in 1999 put in place the above policy to serve as a broad framework and policy guidelines for land administration and utilisation (Amanor & Diderutuah, 2001). The main objective is to provide guidelines aimed at enhancing land management systems, land use,

conservation of land resource and enhancing environmental quality (Tsikata & Yaro, 2008). All these are intended to ensure coordinated and orderly use of land, a vital resource, by present and future generations. Ultimately, the policy seeks to give protection to proprietary rights and promote the concept of prompt payment of adequate and fair compensation for compulsorily acquired lands and also create the enabling environment for community participation in sustained land management (Antwi & Adams, 2003; Asante, 2003).

The Minerals and Mining Act 2006 (Act 703) 10

The Mineral and Mining Act 2006 (Act 703) revised and consolidated the laws relating to Minerals and Mining operations in the country. Act 703 re-emphasises that every mineral in its natural state within any part of Ghana is vested in the President on behalf of the people. The Act empowers the President to acquire lands or authorise the occupation of lands required for the development or utilisation of mineral resources. Again, the Minister responsible for Mines can grant mineral rights over lands in the country in accordance with this Act (Addo-Fening, 1990; Allott, 1985).

Under the law, an owner or lawful occupier of land subject to a mineral right is entitled to claim, from the holder of such mineral rights, compensation to make up for disturbance of his surface rights. The amount of compensation payable shall be by an agreement between the parties. In the case of an inability to reach an agreement, the Minister, in consultation with the governmental agency responsible for valuation, shall determine the amount of compensation to be paid (Appia-Opoku & Mulamootti, 1999).

On the other hand, where the affected people prefer to be resettled on account of being displaced physically by a proposed mineral operation, the

Minister is to ensure that the affected communities are settled on suitable lands with due regard to their economic wellbeing and social values. The cost of such resettlements shall, however, be borne by the holder of the Mineral rights. An agreement on or determination of compensation to which an owner or lawful occupier is entitled shall take account of past and future payments to the owner including annual ground rents payable, cost of resettlement and works undertaken or promised damages.

The Bui Power Authority Act (2007) Act 740

The Bui Power Authority Act (2007) Act 740 establishes the Bui Power Authority (BPA) whose main responsibility is to develop a hydroelectric power project on the Black Volta River at Bui and other potential hydroelectric power sites on the Black Volta basin (BPA, 2011). The Act, thus, takes out the Black Volta from the jurisdiction of VRA and places same in BPA. The BPA has similar functions and powers as VRA in so far as it relates to the Black Volta basin development (Obour *et al,* 2016, Kalitsi, 2008). The Act prescribes the following farmlands to be acquired: Bui reservoir and Township areas, resettlement lands and other lands as necessary. The Government of Ghana has the responsibility to finance the total losses of all acquisition, compensation and resettlement measures

The Lands Commission Act 2008, Act 767

The Lands Commission Act 2008 establishes the Lands Commission to integrate the operations of public service lands institutions in order to secure effective and efficient land administration to provide for related matters. The objectives of the Commission include among others:

1) Promoting the judicious use of land by the society and ensuring that land use is in accordance with sustainable management principles and maintenance of sound eco-system and
2) Ensuring that land development is effected in conformity with the nation's development goals.

Currently, the Commission has the following divisions:

1) Survey and Mapping
2) Land Registration
3) Land Valuation
4) Public and Vested Lands Management

Ghana's Institutional Framework

The key governmental institutions responsible for the administration of government lands and/or resettlement schemes are listed below.

1. The Public and Vested Lands Management Division of the Lands Commission
2. Land Valuation Division of the Lands Commission
3. Land Registration Division of the Lands Commission
4. Survey and Mapping Division of the Lands Commission
5. Ministry of Transport
6. Environmental Protection Agency
7. Office of the Administrator of Stool Lands
8. The Local Authorities or Assembly
9. Department of Town & Country Planning

The Public and Vested Lands Management Division of the Lands Commission

The Public and Vested Lands Management Division of the Commission (established by the Lands Commission Act, 2008, Act 767) is the principal land management organisation of the government. All public lands are vested in the President of Ghana and held in trust by him for the people of Ghana (GHA, 2007). The Public and Vested Lands Management Division manage all public lands on behalf of the President. In each of the ten regions of Ghana, a branch, known as the Regional Lands Commission, performs the function of the Lands Commission. In addition to managing public lands on behalf of the government, their other mandates include:

1) Advising the government and local authorities on policy matters and ensuring that the development of individual parcels of land is consistent with area development plans.
2) Advising on and assisting in the execution of a comprehensive program for land title registration.

The acquisition of any rights of exclusive possession over public lands would necessitate discussions with the relevant Regional Lands Commission for a lease over the selected site.

Land Valuation Board (LVB)

This was established in 1986 (PNDC Law 42) as Land Valuation Board (LVB) through a merger of valuation divisions operating within different ministries. However, the LVB was brought under the Land Commission as the Land Valuation Division with the promulgation of the new Lands Commission Act 2008, Act 767. The LVB is responsible for all valuation services for the

government, including assessing compensation to be paid as a result of land acquisition or damage to an asset in view of a government project.

This Division keeps rates for crops, which are applicable nationwide. The LVB has offices in all the ten regions of Ghana and 44 districts. The district offices are, however, involved only in "rating valuation". Any other valuation taking place has to be undertaken by the Regional offices which have certified valuers. The LVB, also, keeps records of private sector certified valuers.

Land Registration Division of the Lands Commission

This Division was established in 1986 as the Title Registration Advisory Board under section 10 of the Lands Title Registration Act, 1986. However, it was brought under the Lands Commission as the Lands Registration Division with the promulgation of the Lands Commission Act 2008, Act 767. The Division ensures registration of title to land and other interests in land, maintains a land register that contains records of lands and other interests in land and ensures the registration of deeds and other instruments affecting land among other functions.

Survey and Mapping Division of the Lands Commission

It was established in 1962 under the Survey Act 1962, Act 127 as the Survey Department. The Department was brought under the Lands Commission as the Survey and Mapping Division with the promulgation of the Lands Commission Act 2008, Act 767. This Division supervises, regulates and controls the surveys and demarcation of land for the purposes of land use and land registration. It also supervises, regulates, controls and certifies the

production of maps (BPA, 2011; ERM/Lonrho, 2012). It is responsible for planning all national surveys and mapping among other functions.

Ministry of Transport (MoT)

Until March 1997, the Ministry of Roads and Highways was responsible for road infrastructure and the Ministry of Transport and Communications for the road transport services and other transport modes. The two ministries were amalgamated to become the Ministry of Roads and Transport (MRT) in that year, and later, following the re-designation and realignment of functions, became the Ministry of Transportation (MoT). The MoT has responsibility for the:

1) Formulation and implementation of integrated transport policy and planning;
2) Promotion of strategic investment in the sector;
3) Development, implementation, monitoring of road projects and
4) Regulation of standards.

The MoT has the specific task of coordinating and guiding the activities of the executing agencies in the road sector under the ministry. These are the Ghana Highway Authority (GHA), the Department of Urban Roads (DUR) and the Department of Feeder Roads (DFR).

The other related organisations under the ministry include the Driver and Vehicle Licensing Authority, the Road Safety Commission, the Metro Mass Transit Limited and the Road Fund Secretariat. The MoT has a Road Safety, Environment and Social Unit under the Policy and Planning Office manned by a Deputy Director who has a direct responsibility to monitor the resettlement.

Environmental Protection Agency (EPA)

The EPA, established under the EPA Act, 1994 (Act 490), is responsible for the protection of the environment, and this includes the human/ socio-economic environment as well. Its functions include the following amongst others:

1) Advising the Minister on the formulation of policies on all aspects of the environment and, in particular, making recommendations for the protection of the environment;
2) Ensuring compliance with any laid down environmental impact assessment procedures in the planning and execution of development projects, including compliance in respect of existing projects;
3) Acting in liaison and co-operation with government agencies, district assemblies and other bodies and institutions to generally protect the environment and
4) Promoting effective planning in the management of the environment.

The EPA is the main government body for receiving and reviewing all Environmental and Social Impact Assessment reports including LRP reports. Currently, LRP reports sent to the EPA for review are usually attached to the mainstream Environmental Impact Assessment (EIA) Report.

The Environmental Assessment Regulation 1999 has listed the developments that require clearance with the EPA. Development of a port is one of the undertakings that require the issuance of an environmental permit before construction could commence. The EPA has offices in all the ten regions of Ghana and some districts such as Tamale and Sunyani. The Agency will monitor the resettlement/rehabilitation operations.

Office of the Administrator of Stool Land

This institution was established by the Office of the Administrator of Stool Land Act, 1994. It is intended to manage revenue drawn from stool/skin lands, by establishing a stool land account for each stool, collecting revenue into this account and disbursing these monies to the stool, the traditional authority and the related District Assembly. It is placed under the overall control of the Lands Commission.

The District Assembly and Local Administration

The Bui Dam project is within the jurisdiction of the four district Administrative Districts. The current local government structure or the district assembly system is established by two main Acts, namely Act 462 and Act 480. Both Act 462 and Act 480 designate the Metropolitan/Municipal/District Assemblies (MMDAs) as the planning authority charged with the overall development of the district. Both Acts provide that local people (communities) must participate in the formulation of the District Development Plan.

A key feature of this Assembly System is the involvement of communities or zones or whole villages who elect their representatives (Assemblymen) to the Assembly. The structure of the Assembly comprises Unit Committees which are usually formed at the community levels and the Urban/Town/Area Councils. The District Assemblies would have to provide a technical support in land acquisition, compensation and livelihood restoration planning processes.

Town and Country Planning Department (TCPD)

CAP 84 of Town and Country Planning Act, 1945 is an act provided for the orderly and progressive development of land, towns and other settlements to preserve and improve their amenities and related matters. Established in 1945, the Department is responsible for designing plans (planning schemes) and controlling settlements. It is no longer an independent department as it currently forms part of the Assembly Structure. The Town and Country Planning Department have limited roles in the process of land acquisition but is responsible for designing plans and controlling settlements.

Traditional Authorities

In the 1992 Constitution, chieftaincy together with its traditional councils is guaranteed and protected as an important institution in the country. In Ghana, land is predominantly owned by customary authorities (stools, skins, clans and families). Together, they own about 78 percent of all lands while the State owns about 20 percent, with the remaining 2 percent owned by the state and customary authorities in a form of partnership (split ownership) (Asante, 2003). Article 267 (1) of the 1992 Constitution avers that all stool lands in the country shall be vested in the appropriate stool on behalf of and in trust of the subjects of the stool in accordance with customary law and usage (Amanoh, 2001; Asiama, 2003). All revenue from stool lands is collected and disbursed by the Office of the Administrator of Stool Lands (OASL).

Customary land represents all the different categories of rights and interests held within traditional systems and which includes stool lands, skin lands, clan lands and family lands. Any decision taken by the custodian that affects rights and interests in the land, especially disposition of any portion of

the communal land to non-members of the landholding community, requires the concurrence of the principal elders. The state, nonetheless, exerts a considerable control over the administration of customary lands. All grants of stool lands to non-subjects of the stool require the concurrence of the Lands Commission to be valid. No freeholds can be granted out of stool lands, and foreigners cannot own more than 50-year leases in stool and state lands (Article 267(5) of the 1992 Constitution).

Land Tenure and Transactions in Ghana

Land tenure refers to the way in which rights to land are obtained and distributed among people (Bebelleh, 2009; Millar 2004). Land tenure in Ghana comprises a dual system governed by a title registration system (legislative framework) and a customary system. The following section presents a brief outline of land tenure and administration systems in Ghana.

Interests in Land

Ghanaian laws recognise four interests in land; these are discussed below.

a) Allodial title

In the Ghanaian context, this is the highest interest capable of being held in land. The allodial title is customarily communally owned and is generally held or vested in stools or skins. In some traditional areas, it is held by clans, families or individuals depending on areas and the ethnic group. Being generally in the form of communal interest in land, it accrues to the entire community and is administered by the recognised traditional authority. The owner of the allodial title has complete and absolute freedom to use and

dispose of the land only subject to the restrictions or limitations or obligations as may be imposed by the general laws of the country (Bebelleh, 2009). The mode of acquisition of the allodial title is through discovery by hunters or pioneers of the stool of unoccupied land and the subsequent settlement thereof and use by the subject. It can also be acquired through conquest or purchase or as a gift (Asante, 2003).

b) Customary Freehold

Customary law freehold is a perpetuity interest vested in members of the community that hold the allodial title (Alden, 2003). Customary law freehold implies that the holder can occupy the land and derive economic use from it. It is an interest which is held as of right by virtue of being a member of the community. It is of indefinite duration and, thus, potentially exists forever (Amanor & Didenutrah, 2001). The member who holds such interest has the right of beneficial occupation and unfettered use (also subject to the laws of the country). Upon death, the interest devolves on his/her successors in title and infinitum. This interest prevails against the whole world including the allodial title from which it was derived (Alhassan, 2008). The customary freehold may, however, be terminated by the occurrence of any of these occasions: failure of successors, compulsory acquisition by the state, sale or gift by owner and abandonment or forfeiture, in rare circumstances, where, for example, the holder's deny the absolute title of the allodial owner.

c) The Common Law Freehold

Common law freehold is an interest in land acquired through a freehold grant made by the allodial owner either by sale or gift to another person out of his interest (Bebelleh, 2009). This grant requires the parties to

agree that their obligations and rights will be regulated by common law. The grantor may, thus, impose terms on the grantee, provided such terms are reasonable and not contrary to public policy or unconscionable. Currently, the laws of the land forbid non-Ghanaians from acquiring freehold in lands in Ghana.

d) The Leasehold

This type of interest is also a creation of the common law and not Ghanaian customary law. It is an interest in land for a specified period. The leasehold may be granted by the allodial holder in respect of lands in which no conflicting interest exists or by a customary freeholder or common law freeholder (Annor, 1985; Millar, 2004). In Ghana, leasehold may be for a maximum duration of 99 years (but non-Ghanaians can only acquire leases up to 50 years). Various terms and conditions may be imposed by the grantor including the payment of rent as consideration for the grant.

Existing forms of land ownership

Land in Ghana belongs to two broad categories:

1) Customary land (including stool land and family land)
2) Public land (including state land and vested land)

(i) Stool land

Stool land is land for which the allodial title is vested in a stool. Although under customary law, stool land has a customary custodian (the chief of the stool), the 1992 Constitution has created the Office of the Administrator of Stool Lands which is in charge of collecting fees and royalties amounting to land taxes.

(ii) Family land

Family land is vested in the head of the family. These lands are not placed under the control of the Government as stool lands are and are less regulated.

(iii) State land

State land is land that the State has compulsorily acquired for public purposes or in the public interest. State Land is administered by the Lands Commission.

(iv) Vested land

The vested land is still owned by a customary landowner, typically a stool, but has been "vested" in the Government which manages it on behalf of the customary owner. This means that the customary owners still retain the economic benefits of land while the Government, through the Lands Commission, manages the land (i.e. has a right to sell or lease it).

The level of permutations of the legal and institutional framework influences or determines how livelihoods are constructed in the resettled and host communities in Ghana.

International Financial Institutions (IFIs) and Development Partners (DPs)

The World Bank, Asian Development Bank, The Inter-American Development Bank and African Development Bank constitute the main financial institutions that support the financing of large-scale developmental projects. These Banks also have an Operation Policy (OP) that serves as guidelines for their operations.

The World Bank (WB)

Due to the effects of large dams on the livelihoods of people affected by WB funded projects in 1980, the WB developed an Operational Manual on involuntary resettlement. Its main objective was to focus on regulating the effect of resettlement associated with dam construction. It was reviewed in 1990 and became Operative Directive 4.30. After years of implementation, the policy was reviewed in 2001 as Operational Policy on involuntary resettlement (OP 4.12).

According to WB (2001), the objectives of the Operational Policy 4.12 are:

i) To avoid involuntary resettlement where feasible or minimise it, exploring all viable alternatives on project designs.

ii) Where it is not feasible to avoid resettlement, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable the persons displaced by the project to share in project benefits. Displaced persons should be meaningfully consulted and should have opportunities to participate in the planning and implementation of resettlement programs.

iii) Displaced persons should be assisted in their efforts to improve their livelihood and standards of living or, at least, to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.

Notwithstanding the stated objectives of the OP 4.12 above, two observations can be made. Firstly, the policy focused only on the direct economic and social impacts resulting from WB-financed projects which

caused involuntary resettlement. Secondly, the policy is concerned with the effects arising from:

1) the involuntary taking of land resulting in relocation or loss of shelter, loss of assets or access to assets or loss of income sources or means of livelihood, irrespective of whether the affected person must move to another location or not.
2) The involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of the displaced persons OP 4.12.

Thus, the policy introduces a substantial revision of the concept of displacement for which the element of the geographical relocation of their habitations is no longer a necessary condition. In fact, people are also considered as displaced in the eventuality of a restriction of access to the sources of their livelihood, which translates into an economic and occupational dislocation (Mariotti, 2012, p.24). Due to these limitations, Cernea (2011) emphasised the need to revise the OP 4.12. Following these observations, the OP 4.12 was complemented with a sourcebook (WB, 2001, p.23).

Despite the laudable initiatives over these years of WB OP 4.12, it has been criticised by some NGOs and academic scholars. As indicated by Cernea (2011) and Perera (2011), the main criticism has concerned the articulation of the objective of the policy in terms of improvement or at least restoration of the livelihoods and standards of living of the displaced persons. Using income restoration as a minimum benchmark, the policy diverges from its second objective (which is to "conceive and execute resettlement activities as

sustainable development programs") and implicitly justifies itself in case the latter is not achieved.

Another important critique revolves around the actual ability of the Bank to enforce its policy given its silence over controversial displacement and resettlement practices undertaken by some of the borrowing countries (Bartolome *et al.*, 2000). Based on these configured criticisms, the Board of Directors of WB directed the establishment of an inspection panel to accept requests and inspect cases of the WB's failure to implement its own OP 4.12.

The Asian Development Bank

Following the fallout of WB OP4.12, the Asian Development Bank (ADB) as an international financial institution also dedicated its attention to the issue of involuntary resettlement. In 1995, it adopted its own policy following the guidelines by the World Bank's Operational Directive 4.30. The policy focuses on compensation for loss of assets and physical resettlement of the affected people. It, also, deals with government budgetary planning for resettlement and compensation, the institutional framework for involuntary resettlement and interactions with civil society concerning resettlement (ADB, 2007, p.48). In 1998, it released a Handbook on involuntary resettlement within the Bank's project cycle.

Its objectives and principles include the following:

1) That involuntary resettlement should be avoided whenever possible, and if unavoidable, population displacement should be minimized.
2) Compensation and assistance for affected people after relocation should guarantee a better economic and social future than the one that would have been expected in the absence of the project.

3) Information and consultation of the affected people are required; hence, the project authorities should seek to involve and interact with the existing social and cultural institutions of resettlers and their hosts.
4) It is, also, stated that the absence of a formal legal title to land should not be a bar to compensation.
5) Special attention should be given to households headed by women and other vulnerable groups such as indigenous peoples and ethnic minorities.
6) Involuntary resettlement is requested to be conceived and executed as a part of the project with its full cost included in the presentation of project costs and benefits. It should, therefore, to be considered for inclusion in Bank loan financing for projects (ADB, 1998, p.2).

What makes the ADB policy unique is that it devotes additional attention to issues related to the estimation of compensation by integrating guidelines which were already present in the WB's Policy. This is seen in an ADB (2007, p.25) publication on investigating the issues of Compensation and Valuation in resettlement following the observed failure of three of the Bank's borrowing countries (Cambodia, China and India) to comply with the ADB's requirement for compensation for lost assets to be paid at a "replacement cost." The document explicitly identified the lack of appropriate valuation and compensation as one of the major factors leading to the impoverishment of the affected population (Mariotti, 2012; Terminski, 2013).

The ADB policy also stressed the following points:

1) That compensation for lost assets is paid in such a way that the affected people see an improvement in their economic and social perspectives.
2) That the absence of formal legal title to land should not constitute an impediment to adequate compensation.
3) That the affected people are to be fully consulted about the compensation and should have basic access to mechanisms for enforcing their entitlement to just compensation.

The Inter-American Development Bank (IADB) and the African Development Bank (AfDB)

Due to the WB policy on involuntary resettlement as a pacesetter in 1980, the Inter-American Development Bank, also, developed and adopted a set of operational guidelines in 1991. The most recent update is (OP, 10) developed in 1998. These guidelines are almost synonymous with those of WB and ADB. However, two new guidelines appear under the heading "Special Considerations" for the preparation of the resettlement components:

1) An Impoverishment Risks Analysis is recommended if the affected population belongs to marginal or low-income groups. If this is the case, cash compensation can only be offered as an option, provided the socio-economic characteristics of the population make it a viable alternative.
2) Displacement of indigenous communities can only be supported by the Bank if certain conditions are met.
    i. Resettlement must provide direct incremental benefits to the displaced population.

ii. Customary rights must be recognised and compensated with land-based compensation offered as an option.

iii. The affected people must have given their consent to resettlement and compensation activities.

These guidelines are similar to the African Development Bank adopted policy on involuntary resettlement of 1995 revised in 2002.

The Organisation for Economic Cooperation and Development (OECD)

The OECD, in 1991, saw the need to develop its own guidelines on dam-affected people due to the growing intensity of the proponents regarding the effects of dam assisted projects. Thus, Cernea (1991) was mandated to develop a policy on involuntary resettlement. The process resulted in adopting, in 1992, guidelines which appeared as part of a wider set of "good practices" on Aid and Environment promoted by the OECD. The policy focuses on:

1) The need for special resettlement provisions for women whose specific needs and preferences should be considered.
2) A recommendation that the primary responsibility for resettlements should be the government's while donors have the duty to mitigate the size and the impact of displacements.

Summary

Resettlement schemes in Ghana started during the colonial period in 1956. Both state and non-state actors have played various roles in resettlement schemes with mixed success in Ghana. Though the mining sector has displaced communities in Tarkwa and Ahafo belts of Ghana,the most profound resettlement schemes are those associated with the Akosombo and

Bui dam projects. The challenges observed with the Akosombo resettlement schemes led to the establishment of VRA trust fund which focuses mainly on improving the quality of life of the 52 resettled communities.

Similarly, the construction of the Bui Dam project led to the resettlement of communities in both Bole and Banda Districts. It has been suggested that proper legal titles be documented for families, houses and farmlands to be properly acquired so as to allow resettled and host communities live peacefully.

The legal and institutional framework for land acquisition and administration must be followed to establish the mandates for different agencies responsible for land expropriation. For a successful resettlement scheme, planning must identify, review and abide by all laws applicable to land acquisition for involuntary resettlements and sustainable livelihood construction. In doing this, compensations must take into consideration cost of disturbance, market value, replacement value and other damages that may affect the livelihood of the host and resettled communities.

Government institutions must be responsible for the administration of government lands and resettlement schemes. The office of the administrator of stool lands, local authorities or Assembly and Department of Town and Country Planning must, accordingly, be integrated into the resettlement process. International Financial Institutions have played a crucial role in developing and adopting operational policies and guidelines that have assisted in streamlining the activities of involuntary resettlement of dam-affected people. The question, however, is “how do beneficiary countries integrate all these national and international laws and policies to the benefit of the people

CHAPTER FOUR

METHODOLOGY

Introduction

This chapter focuses on the various methods that have been employed in gathering relevant data for the analysis. The study begins with the profile of the study areas followed by the research design and the study population. It presents the positivist, interpretivist and pragmatist paradigms. The sampling procedure, data collection and research instruments that were used are presented as well. The concluding part deals with pre-testing, ethical procedures, actual field work as well as data processing and editing. It concluded with the limitations of the fieldwork.

Profile of the Study Area

The Bui hydroelectric dam is located on the borders of the Northern and Brong- Ahafo Regions of Ghana. It is located in the south-western part of the Northern Region and North-Western portion of Brong-Ahafo Region (GSS, 2014). The Bui National Park [BNP], which is the third largest protected area in Ghana, measuring about 1,820 km^2 straddles the Black Volta River and the two regions (GSS, 2014). The Bui dam is built on the Black Volta River at the Bui gorge on the southern end of the Bui National Park. The Banda and the Bole Districts are hosts to the Bui dam project and the resettlement schemes.

Banda District

The Banda District lies within latitudes 8º 45` north and longitudes 2º 52` west. In terms of land area, the district covers a total of 2,298.3 square kilometres out of the region's size of 39,558 square kilometers. This district shares boundaries with the Bole District (Northern Region) to the north, Tain District to the south, La Cote d'Ivoire to the West and Kintampo South District to the East (GSS, 2014).

The Banda District lies within the Moist Semi-Deciduous Forest and the Guinea Savannah woodland vegetation zones. Its transitional location permits the cultivation of a variety of crops and the rearing of animals. Timber species that were found in the district are in competition with land space for crop cultivation (Banda District Assembly [BDA], 2014). Wildlife like the deer, hippopotamus and antelope, which are found in the Bui National Park, are under threat due to the activities of man (Water Resources Management [WRM], 2001). The forest reserves and the few groves around the water bodies in the district help protect the Black Volta and Tain river from excessive evapotranspiration (ERM, 2007a).

The district is endowed with a few tourist attraction sites such as the Bui National Park, series of mountains and hills, Bui Dam and the Banda Cave. The people are mainly farmers who cultivate yam, pepper, cassava, groundnut, cowpea and plantain in large quantities. Apart from these food crops, the district is also a major producer of cashew for export. Others are engaged in services such as carpentry, trading, teaching, masonry, weaving, tailoring, craftsmanship, blacksmith and brewing (BDA, 2014).

Both legal and illegal mining activities exist in the district. The legal mining potentials are being explored on small scale by Birim Goldfields (GSS, 2014) while the illegal mining is practised along the corridors of the reservoir at Akanjakrom and Dokokyina. The activities of illegal mining became widespread during the excavation of the hills that formed the Bui gorge.

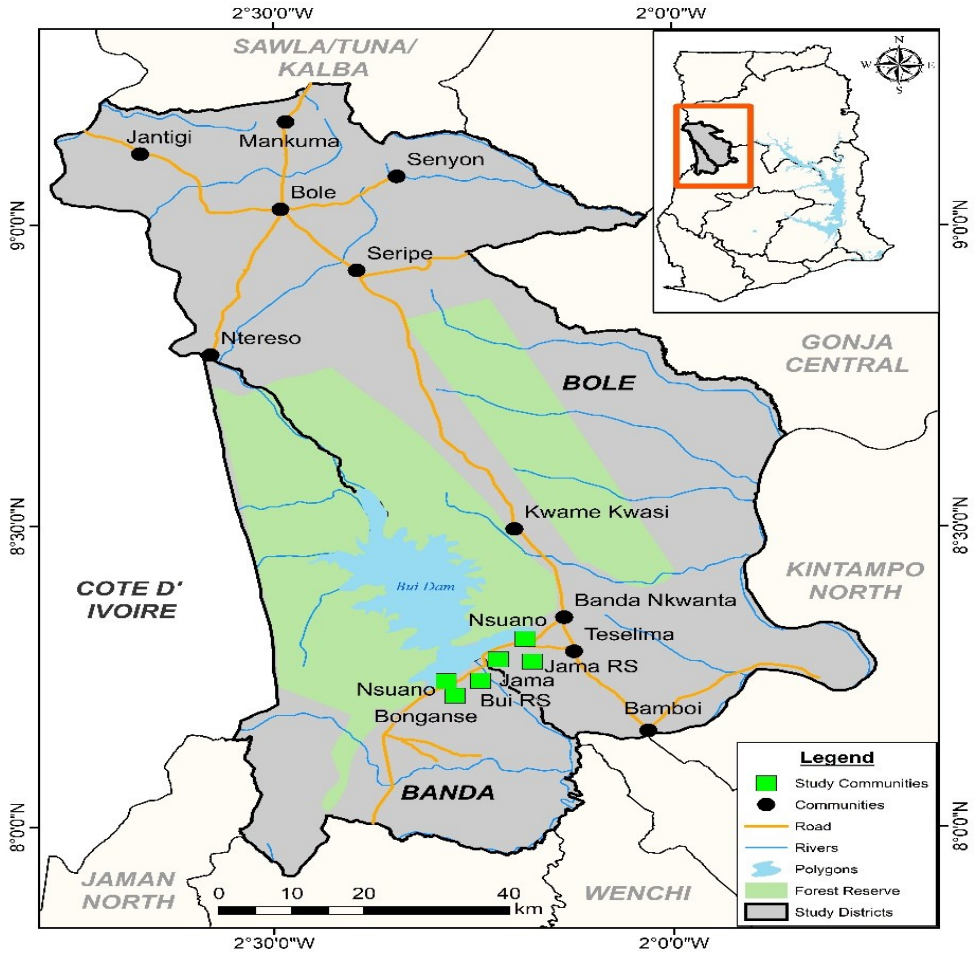

Figure 1: Map Showing the Study Communities
Source: UCC, GIS (2016)

Bole District

The Bole district is located at the western part of the Northern region and is situated between latitudes 8^0 09' East and longitude 1.5^0 2.45' W. It is bordered to the north by the Sawla-Tuna-Kalba district and the west by the Republic of Cote D`Ivoire with the Black Volta as the boundary. It, also,

shares boundaries with the West Gonja district on the East and to the south, the Kintampo South district in Brong Ahafo Region (Bole District Assembly [BoDA], 2014). The population is sparsely distributed with a population density of 10 persons per kilometer (GSS, 2014).

The vegetation of the district consists of savannah woodland, with economic trees such as sheanut, dawadawa, teak, kapok, baobab and mango. These trees support the socio-economic lives of the people when they are processed (BoDA, 2014). Besides, the district has an agrarian economy which is indicative of the large quantities of agricultural products produced every year. A wide variety of crops are cultivated such as: maize, yam, cassava, guinea corn and groundnuts.

Notwithstanding this, marketing of the agricultural produce is quite a problem since the markets are few. Consequently, majority of the farm produce are sold along the main trunk road that traverses the district from Bamboi to Bole. Petty trading is concentrated at Bole, Bamboi and Tinga. The district has potential tourist areas such as The Deng festival, architectural & lifestyle at Sonyo, the Hippo Sanctuary in Ntereso and the Mankuma royal mausoleum where the Kings of Gonja Kingdom are buried.

Illegal small-scale mining activities (galamsey) have, in recent times, assumed an un-proportional dimension in settlements such as Kui, Dakrupe, Gbombiri, Banda-Nkwanta and “Camp”. The intensification of illegal mining has increased migrant populations in their thousands, coming from all parts of the country including some neighboring countries like Burkina-Faso, Togo, Mali, and Nigeria (GSS, 2014). This has brought about security concerns with

armed robbery being on the increase in the district as well as prostitution with its attendant consequences (BoDA, 2014).

Research Philosophy

The basic philosophical paradigms that form the fulcrum for social science research are numerous. The commonest ones that encapsulate such research include positivism, pragmatism and interpretivist (Creswell, 2003; Creswell & Plano Clark, 2007; Prowse, 2010). This philosophical worldview in social science research informs the epistemology, ontology, methodology and methods a researcher employs and constitutes the building block of the study. This study employed the pragmatist paradigm in the analysis of the data gathered.

Positivist Paradigm

Positivist perspective is, generally, seen as an approach of the physical sciences. It is associated with the French sociologist Auguste Comte (1798-1857). The central thesis of the positivist view is that science must concern itself only with empirical questions and not questions about human values and intentions (Cresswell, 2003). This means that science is concerned with reality or with objects that can be sensed, and that it is not possible to go beyond what is sensed to some deeper reality (Marsh, 1984; Cresswell, 2014). Thus, positivists maintain that human behaviour can be explained through probabilistic causal laws, behind which forces are behaving similarly to laws of natural sciences (Johnston, 1983). Positivists argue that science is value-free, neutral, impartial and objective.

Therefore, research in a positivist paradigm uses the quantitative research approach (Alatinga & Williams, 2016). The study designs that are used in the positivist paradigm include the experimental and quasi-experimental designs (Creswell, 2003; Fowler, 2002). Positivists collect data by using questionnaire or interview schedules (Hughes, 1990). Their analyses of data involve statistical methods such as descriptive statistics, parametric and non-parametric methods (Creswell, 2003). Critics of positivism accuse it of the intensification of methods from the natural sciences to social sciences (Mckenzie, 2011). In this perspective, it has been accused of its attempt of reducing "people" to "numbers" and focusing on abstract laws that are irrelevant in human lives (Easterby-Smith *et al.*, 2002).

This study uses a positivist approach based on descriptive research and quantitative analysis, seeking relations between resettlement planning and sustainable livelihoods through answering research questions. Calculations on risks encountered by households, their main sources of livelihoods and their financial as well as physical resources were done with this approach.

Interpretivist Paradigm

The origin of the interpretative perspective is identified with the German sociologists Wilhelm Dilthey (1833-1911) and Max Weber (1864-1920). With this view, causal, model and mechanistic processes of explanations of measurements are not reliable for studying human beings. Interpretivists posit that the actions of people are not determined by natural forces (Kothari, 1990; Easterby-Smith, Thorpe & Lowe, 2002). This approach requires the researcher, as a human being, to access the social world of others through imaginative reconstruction (Kothari, 1990).

The research techniques that are associated with the interpretative approach are case study, phenomenology, hermeneutics and ethnography (Dick, 2002). Methods that are employed under interpretivist approach includein-depth interviews, focus group discussion and observation (Easterby-Smith, et *al.,* 2002; Kothari, 1990). The crux of data analysis includes the researcher making his agenda and value system explicit from the outset. The critic of the approach is its inability to uphold the principles of objectivity and generalisation (Cresswell, 2006; Mckenzie, 2011).

This study used this paradigm because of its applicability by researchers in earlier resettlement scheme studies, especially dams that have displaced indigenous minorities (Cernea, 1999, 2002, 2006; De Wet, 2002, 2006). Thus, it allowed the study to explore the real feelings of the adjoining households who were not considered in the resettlement scheme. It, also, allows the views of the landless migrant peasant farmers who lost their lands due to the displacements to be explained with respect to the degree of impact on their livelihoods. In effect, it created an opportunity to incorporate the views of the fisher folks who lost their livelihoods because they could not afford bigger fishing gears due to the volume of water in the reservoir. Finally, marginalised groups' views were incorporated because it offers an opportunity for them to express their views.

Pragmatist Paradigm

The current study is more tilted towards the pragmatist paradigm. This is because it allows for the selection of techniques and procedures of investigation that are able to address issues of concern in the study. That is, it allows for the application and analysis of the study by the use of statistical and

non-statistical methods. On the basis of its flexibility, the study focuses on the pragmatic paradigm as its philosophical basis.

In the pragmatist paradigm of social science research, knowledge claims arise out of actions, situations and consequences rather than antecedent conditions (Creswell, 2003; Alatinga &Williams, 2016). This paradigm is not bound to any system of philosophy and reality (Creswell & Plano Clark, 2007). To the pragmatists, the truth is what works at the time; therefore, they reject any form of dualism (Fay, 1987; Creswell, 2014). The pragmatists believe in an external world independent of man and embedded in the mind. Basically, studies conducted in this paradigm use the mixed methods approach since researchers can draw freely from both qualitative and quantitative assumptions (Field & Hole, 2003; Creswell, 2003).

Alemu (2015) and Alatinga and Williams (2016) argue that mixed-method is the most effective method when researching livelihoods and poverty. This strategy allows the use of many approaches in answering the research questions instead of constraining the choice of the study (Mariotti, 2015). Thus, the concurrent mixed method was used for the study since such an approach allows the combination of both quantitative and qualitative data in the analysis of the research problem (Creswell, 2003).

Objectives one to five involved the analysis of both data. However, in the course of the analysis, some of the questions tilted more towards quantitative than qualitative. The use of this approach improved the validity and reliability of the data and their explanation. Similarly, a number of studies (Mariotti, 2015; Obour *et al.*, 2016) on resettlement employed mixed methods

as their research approach. This really enhanced and authenticated the researcher's study.

With respect to the study design, before and after study design was used. This allows for the recall of past and present events that relate to the responses required (resettled, host and adjoining) (ERM, 2007a, 2007b). By this, the baseline data of the adjoining and host communities depends on the respondents' recall of the situation before and after the resettlement scheme.

The alternative design and double control design are other examples of a study design (Bryman, 2006). These designs have the power to quantify the effects of extraneous variables which help to ascertain the full impact of an intervention. However, they also have limitations such as regression effect, conditioning, the Hawthorne effect and historical effects among others (Blalock, 1985). Hence, the before and after design was appropriate for this study since the baseline data on the affected communities were available in the targeted communities. Interview schedules were designed to consider the before and after situations of the resettlement scheme in order to gather adequate data. Similarly, in order to determine the impact of the resettlement scheme, affected communities responded to questions on whether their livelihood situations were entirely due to the resettlement scheme or not.

Study Population

The study population was made up of two host, two resettled and two adjoining households from the two districts. The entire population of the households was 1,236. They were made up of 737,364 and 112 households in the host, resettled and adjoining communities respectively.

The key informants included people at the national, regional, districts and community levels. At the national level, one person from BPA/VRA and the one Members of Parliaments (MPs) were interviewed. At the regional level, 2 paramount chiefs, officials from five departments of the lands commission and four officers from Ministry of Food and Agriculture were considered. Others at the district level included two Assembly members from the two electoral areas and the district planning officers of the two districts as well two non-governmental organisations (NGOs) representatives engaged in the resettlement scheme. Finally, at the community level, six chiefs and eight (8) FGDs from the community's youth and associations were held. These categories of people were assumed to have adequate and in-depth knowledge of the resettlement scheme. They were purposively selected to provide detailed information because they were seen to be the opinion leaders and a focal point of analysis.

Sampling Procedures

The sample size for the households was determined using Yemane (1967) statistical method, which was: $n = \frac{N}{1+N(e)^2}$; Where: N =Population of Households (HHs); e=Level of significance 5 percent (0.05); n=Sample size of the entire study communities

Thus, applying the formulae for 1,236 households,

$n=1236/1+1236(.05)^2$

≈**304**households

The sample size, therefore, was 304 households.

Cluster sampling was used in selecting the categories of communities (resettled, host and adjoining). The reason for using the cluster sampling was because settlements in the two districts were naturally occurring groups. The affected households were made up of two each from the host, resettled and adjoining communities. Due to similarities in their natural occurrences, they were considered as clusters with potential variations in the level of impact of the resettlement scheme had on their livelihoods.

After the clustering, simple random sampling was used in selecting the appropriate sample for each of the clusters on a proportional basis. The selection process of the respondents involved the lottery method which was possible with the aid of the sample frame from ERM, GSS and BPA in the two districts. The sample distribution was presented in Table 2.

Table 1: Sample Distribution in the Communities

Districts	Communities	No. of HHs	Cal. Sample
Bole	Jama	256	63
	Resettlement 'A'	189	47
	Nsuano 'A'	45	11
Banda	Bongase	481	120
	Bui Resett. 'B'	175	43
	Nsuano 'B'	97	20
Total		1,243	304

Source: Field Survey (2017)

Besides, purposive sampling was employed in choosing the key informants because they have in-depth knowledge about the resettlement

scheme. They were key stakeholders of the scheme at the national,regional, district and community levels. In all, Table 4 constituted the key informants for the study.

The management of these resettlements revolves around regulatory, district and community levels. Therefore, engaging key informants can play a key role in the provision of adequate information on the resettlements and the livelihood of the affected communities.

Research Instruments

In line with the mixed method philosophy underpinning the study, a combination of quantitative and qualitative research instruments was used. These research instruments were interview schedules for the quantitative and the observation guide, interview guide and focus group discussion guide for the qualitative (Kothari, 2004; Kumar, 2011). A detailed description of these research instruments as used in the study are as follows.

Interview Schedules

For household's data collection, interview schedules were used for the sampled households. The reason for employing this instrument is to enable the researcher and the enumerator to administer them since some of the respondents were not literate. The interview schedules covered issues on the planning process of the resettlement scheme, risks encountered after the resettlement, assets that support livelihood and livelihood outcomes.

The researcher constructed the interview schedule according to the objectives of the study. The interview schedule had eighteen (18) sections indicated with alphabets A to R consisting of both closed and open-ended

items (APPENDIX A). The measurement variables were based on the nominal and ratio scales (Table 3). Section A or one (1) dealt with the demographic information of the respondents while section B or two (2) covered the planning process of the resettlement scheme. It focused on the participation process, stakeholders' involvement, information dissemination and the participation of the affected households in the planned livelihood restoration of the resettlement scheme.

Observation Guide

I used an observation guide to collect qualitative data from the resettled, host and adjoining households of the resettlement scheme. The issues captured were their living conditions and their on-farm, off-farm and non-farm activities. Equally important was the need to observe the distance from the resettlements to their various sources of livelihoods. Observing the physical setting, people's actions and behaviour and social differences provided important information that added to the understanding of the topic (APPENDIX B). The information from the observation guide was recorded in a field notebook and, where necessary, photographs were taken. Data from this instrument helped to validate the data collected through the interview schedules.

Similarly, section C or three focused on the risks encountered during the planning process of the resettled, host and adjoining households. Section D to P, however, looked at the resources that were vital for sustainable livelihoods that reflected the various objectives. The final sections, Q and R of the interview schedule, focused on sustainable livelihood outcomes and the challenges the communities are encountering after the resettlement scheme.

Interview Guide

Thirdly, an interview guide was employed in collecting the qualitative data as indicated in Table 3. This instrument, also, contained themes based on the objectives of the study (APPENDIX C). Like the others, the interview guide covered issues that were a reflection of what the research objectives sought to achieve. Data on stakeholders' participation, implementation and households' involvement in monitoring and evaluation of the resettlement scheme were collected. Of particular interest in the use of this instrument was the assessment of the risks that the host, resettled and adjoining households encountered. The final section of the interview guide focused on objectives 3, 4 and 5.

Focus Group Discussion Guide

Finally, the focus group discussion guide was employed to gather data from the various groups included in the study. A total of 6 focus group discussions (one FGD in each community) were conducted. Between eight to ten participants of each of the group categories were selected. Nominations were by the group leaders. Discussions lasted between 45 minutes to one hour. Efforts were made to ensure maximum participation of all representatives and to avoid the domination of the discussion by a few persons. This is to ensure that results were representative of the group. These also promoted accuracy and reliability (APPENDIX D). Themes that were discussed were a reflection of the objectives one to five. Section A focused on the planning process as discussed above with probing and leading questions for control and eliciting more responses on gray areas relevant to the objectives. The ensuing sections

focused on the risks, livelihood assets and outcomes of the resettled, host and adjoining communities.

Data Collection

I collected data on issues such as the planning process of the resettlement scheme, risks, livelihood strategies, assets that support livelihoods and the livelihood outcomes of the resettled, host and adjoining households. The primary and secondary data that were collected were a reflection of objectives one to five in the households. Similarly, both qualitative and quantitative data were collected as shown in Table 3 which provides a summary of the sources, methods and instruments used in the collection process.

Table 2: Summary of Study Objectives, Type of Data, Measurement Scale, Source of Data, respondent, Instruments and Analysis

Specific Obj.	Type of Data	Variable	Measurement scale	Source of Data	Respondents	Instrument	Analytical Method
1.Examine the planning process of the resettlement scheme	Qualitative	Planning process No. of views	ordinal	primary	BPA, EPA, DAs, Heads of Lands commission, Associations/groups	FGDs guide	Thematic analysis
2. Analyse the risks the affected households encountered before and after the resettlements	Quantitative	Forms of risks	ordinal	primary	Household heads	Interview schedule	Descriptive statistics
	Qualitative	Social disarticulation, access to common pool resources			Chiefs, associations/groups	Interview guides	Thematic analysis
3.Examine the livelihood strategies of the affected households	Quantitative	Farming activities Non-farm activities	Ordinal/interval	Primary	Household heads	Interview schedule	t- test, Descriptive statistics
	Qualitative	Off-farm activities					

Table 3 Continued

4. Analyse assets that support livelihood activities in the affected households	Qualitative	Socio-political (networks) Human physical	Nominal	Primary	Youth groups/associations Chiefs,	Interview guide	Thematic analysis, Descriptive statistics
	Quantitative	financial	Ordinal Ratio	Primary	Household heads	Interview schedule	Descriptive statistics
5.Assess the improvement in the livelihood outcomes of the affected households.	Quantitative	Livelihood security	Nominal	Primary	Household head		Descriptive statistics
	Qualitative	Livelihood sustainability	Nominal	Primary	Youth groups/associations.	FGDs guide	Thematic analysis

Source: Author's Construct (2017)

Table 3: Hierarchical Levels of Key Informants at the National, Regional, District and Community levels

Type(s) of key informant(s) (A)	No. of Respondents
Member(s) of Parliament	1
Paramount chiefs	3
Community chiefs	6
Bui Power Authority	1
Lands Commission	2
District Planning Officer(s)	2
District Agriculture Ext. Officers	2
Ghana Irrigation Development Authority	2
Environmental Protection Agency	1
Assemblymen	3
Total	23
Focus Group Discussions (B)	
Resettled Communities	4
Hosts Communities	2
Adjoining Communities	2
Total	8
A+B	31

Source: Field Survey (2017)

Pre-testing

The pre-testing of the interview schedule was at Bole and Banda Districts. A total of 18 interview schedules were administered to the communities (resettled, host and adjoining). Three instruments were administered in each of the community. The pre-testing was done to determine the suitability of the instruments and to ensure face, content and construct validity. Thus, the researcher and the enumerators were able to identify weaknesses and ambiguities in the instruments. This helped to reframe some of the questions.

Firstly, one of the weaknesses identified was the volume of data the instruments sought to achieve. Thus, more of the items in the instruments were omitted. Secondly, it was difficult for the respondents to quantify root and tuber crops in kilograms. These were omitted with size and monetary calculations, adopted.

Finally, some of the respondents complained of the time taken to administer the interview schedules. While fishermen at the adjoining and resettled communities suggested that the evenings should be used to administer the instruments, the host settlements wanted it done in the morning or afternoon. To solve this, the adjoining and resettled communities had their instruments administered in the evening while the host had theirs done in the morning and afternoon.

Fishermen who had migrated far upstream for fishing were targeted for market days. This allowed the researcher and the enumerators to meet them in the evenings. It was, also, observed that the category, “other, specify”, was ticked by many of the respondents. As such, those questions that contained these items were reduced and made open responses before the administration of the instruments.

Ethical Considerations

In order to effectively carry out the data collection and the writing of the research report, the following relevant ethical principles were followed. The University of Cape Coast Institutional Research Board (IRB) states that there are three main ethical considerations in relation to any research project, and these together with other principles were duly followed in this study. Approval was sought accordingly.

The researcher initially informed UCC of his intention to embark on a fieldwork at IRB with an introductory letter from the Head of Department. Informed consent was also sought from the respondents. At the start of each instrument with the respondents, it was repeated to make sure that they understood it. Similarly, key informants, also, had letters requesting their informed consent. They were assured that their rights were protected. While chiefs were ready to offer detailed information, BPA requested for the final copy of the work as a reference material.

The main reason for the study was disclosed to all the respondents. They were notified that the study was not in any way an attempt to disclose any perceived secrets about them. Especially when there was a simmering tension between BNP and the illegal miners within the national park on one hand and BPA on the other due to the effect the illegal mining has on the sustainability of the dam. In the case of key informants, acronyms were used to protect the respondent's identity. All respondents were guaranteed the confidentiality of the data provided during the study.

Field Work

Data were gathered from 15thDecember 2016 to 3rdFebruary 2017. Since the two districts shared boundaries with well-developed communication networks, it was easier collecting the data simultaneously at the households within the two districts.

A total of nine research assistants were recruited and trained for two days for the data collection exercise. The research assistants were natives of the study communities; this helped to address any language barrier. Each

clustered community had three research assistants who administered the instruments. The second-day, training lasted for only three hours.

Such training was to equip the research assistants so that they could interpret the items on the instruments clearly and uniformly to reduce burden and enhance quality during the process. While they collect the data, I monitored their progress of work as I also conducted they key informants interviews and the focus group discussion (FGD).

January was full of activities due to the national elections. Thus, the actual FGD was stooped from5th to 10thJanuary2017 due to the political situations. This was necessary to reduce interferences during the discussions of election issues. Therefore, the actual data collection by both research assistants and the researcher started again on 15th January2017. The summary of activities of the entire fieldwork is indicated in Table 5.

Table 4: Summary of Activities During the Fieldwork

No	Date	Activity	Duration	Facilitators	Location
1	15/12/16	Training of research assistants,	2days	Researcher	Banda Dist.
2	16/12/16 to 28/02/17	Interview schedule administ'n	32 days	Research Assistants	Banda and Bole Districts
3	16/12/16 to 27/02/17	Key informant interview	15 days	Researcher	Sunyani and Tamale
4	15/01/17 to 02/02/17	FGD	17 days	Researcher	Banda and Bole Districts

Source: Authors Construct (2016)

Data Processing and Analysis

The analysis was carried out within the framework of both qualitative and quantitative procedure. The quantitative data were edited, coded and imputed into SPSS version 21 and cleaned before analyses were undertaken. The analyses involved the use of statistical techniques such as descriptive statistics and paired-sampled t-test. The analyses were presented in tables and figures.

The qualitative analyses were done by a manual thematic analysis. Such qualitative data were categorised into themes and sub-themes during the analysis and were presented in the form of texts. However, both the quantitative and the qualitative analyses were integrated under each of the objectives to enable a clear and vivid picture of the analyses. The objectives were analysed as follows.

Firstly, objective one was analysed using descriptive statistics and thematic analysis. Data were analysed on participation and consultation as well as information dissemination. This involved frequencies, percentages and cross-tabulations. On the other hand, qualitative data from key informants and FGDs were analysed regarding the planning process using thematic analysis.

Similarly, the analysis of the second objective combined descriptive statistics and the thematic. Issues on risks of the communities over the period of the resettlement were analysed by the use of cross-tabulation, frequency, percentages, arithmetic means, line and bar graphs. The qualitative data collected through the key informant interviews, focus group discussions and observations were coded by a categorical system and analysed thematically

together with the quantitative analysis. The remaining three objectives were analysed in the same pattern as indicated in Table 5.

Table 5 shows, on each stage, where the analysis was done. It allowed the reporting of summarised results in numerical terms with a specific degree of confidence. These procedures allowed easy comparison of "before" and "after" the resettlement scheme. The ordinal variables were designed and collected by a Likert-scale on the various levels captured in the interview schedule. The level of responses corresponding to the scale helped in the analysis and interpretation of the results. The index for responses include "strongly agree""agree", "neither nor", "disagree" and "strongly disagree".

Table 5: Scale index and its interpretation in the analysis of the responses

Scale	Interpretation
1	Strongly agreed
2	Agree
3	Neutral (Has no effect)
4	Disagree
5	Strongly disagree

Source: Authors construct (2016)

Where testing was required, as in objectives three and four, the alpha level was 0.05. Using the p-value approach, the decision rule is that if the p-value is less than or equal to the level of significance ($p \leq \alpha$) then p is rejected. This means that there is a significant difference between the groups on the dependent variable. If the p-value is greater than the level of significance ($p > \alpha$), then p is accepted. This means that there is no significant difference between the groups on the variable.

Challenges from the Fieldwork

Numerous challenges were encountered during the fieldwork for the study. The first was the 2016 political campaigns and election which made it difficult to have access to the two Members of Parliament in the two Districts. However, this was resolved when one of the MPs was interviewed during his campaign visits to the study communities. The second MP requested the interview guide and responded to them in writing. Where gaps were detected, it was resolved through the minutes of the various meetings held over that period by the resettlement coordinating unit.

Another challenge was research fatigue that had set in as a result of local, international and academic institutions who visited the study households frequently for data. This was skillfully addressed by employing the services of research assistants who were residents in the various communities and could speak the local language.

A major challenge identified was the lack of large-scale maps to show topographic details of the adjoining communities. The only maps available were those that could show the host and the resettled communities without showing the location of farms or community boundaries. This was also resolved by contacting the GIS unit of UCC who assisted in drawing those maps.

Finally, the activities of the illegal miners and hunters both within the BNP and the Volta River made the respondents suspicious and afraid to reveal some vital information. This was addressed by explaining to them the essence of the study and showing them the introductory letter from UCC. These

boosted their confidence and made them willing to provide transportation services on the reservoir to the hinterlands.

Summary

This chapter explicitly outlines the selection of the study areas and reasons for choosing them. It gave a detailed description of these study areas and the research methodology employed in the study. It, also, provided the philosophical foundation and sources of data.

In addition, the chapter described the research design and sampling procedure employed and touched on the sample size determination as well as data collection instruments. It concludes with the various ethical principles used in the study.

CHAPTER FIVE

PLANNING PROCESS AND IMPLEMENTATION

Introduction

This chapter focuses on the research findings from the primary data collected from the study area. The findings were presented to address the first objective which focused on examining the planning process of the resettlement scheme. The first section discusses the demographic characteristics of respondents in order to have a fair idea about them while the second part deals with the planning process of the resettlement scheme. It explored the extent of the resettled, host and adjoining communities' participation in the process, information dissemination, consultation strategies and stakeholders' involvement in the resettlement.

Socio-Demographic Characteristics of Respondents

In order to have adequate background knowledge of the respondents involved in the study, a number of socio-demographic variables on the respondents were considered in the study. These variables include age, level of education, ethnicity and marital status. These variables are important since the literature has revealed that they play important roles in the livelihood activities of individuals, a main focus of the study.

In terms of sex composition, the analysis of the data showed that 75.8 percent of respondents were males and 24.2 percent were females in the resettled households. These high numbers of male-headed households were due to cultural reasons where most of the economic activities were male dominated in the study area. In comparison, however, the host had 57.7

percent male and 42.3 percent female-headed households. Similarly, in the adjoining households, there were 61.5 percent male and 38.5 percent female-headed households. That is, the male-headed households were more than the female-headed households in the study area. These percentages are, however, higher than the national average of male and female-headed households (GSS, 2014). The high number of female-headed households is an indication that any intervention or assistance programme should take into consideration females in the study area.

Educational attainment is recognised as one of the determinants for the success of an intervention and its rate of adoption. Generally, the study revealed that in the resettled households, there were respondents with no education (43.6 %), basic education (32.3%) and Sec/Tec education (17.7%). In the host households, there were respondents with no education (32.4%), basic education (49.5%) and Sec/Tec education (12.6%). Likewise, there were those with no education (46.2%), basic education (38.5%) and Sec/Tec education (10.3) in the adjoining households.

The study also revealed differences in the level of educational attainment in the three set of communities as indicated in Table 6. The combined trend confirmed earlier studies by ERM (2007a; 2007b) that majority of the affected people within the study area either do not have any education or have attained basic education. This also confirms studies by Mettle (2011) and Obour *et al*. (2016).

The low literacy rate among household heads could affect livelihood activities in the study communities through the rate of adoption of innovations

and their understanding of how they manage their environments and participation in decision making.

With respect to age, as indicated in Table 7, majority of the respondents from the resettled households were within the ages of 30-39 (35.5 percent), 40-49 (35.5 percent) and 50-59 years (14.5 percent). Similarly, in the host households, the age groups of 30-39, 40-49 and 50-59 recorded 28.0 percent, 28.6 percent and 20.9 percent respectively. These distributions of respondents in the households is similar to the adjoining households where the highest respondents of 41.0 percent, 35.9 percent and 20.5 percent were within the age group of 30-39, 40-49 and 50-59 respectively. With the exception of age groups between 60-69 and 70+ who are economically inactive, all the remaining age groups were economically active. This means that most of the respondents constitute the labour force and are economically productive.

Table 7: Socio-Demographic Characteristics of Respondents

		Resettled (n=62)		Host(n=182)		Adjoining(n=39)	
		(f)	(%)	(f)	(%)	(f)	(%)
Sex	Male	47	75.8	105	57.7	24	61.5
	Female	15	24.2	77	42.3	15	38.5
	Total	62	100.0	182	100.0	39	100.0
Education	No Education	27	43.6	59	32.4	18	46.2
	Basic	20	32.3	90	49.5	15	38.5
	Sec/Voc	11	17.7	23	12.6	4	10.3
	Tertiary	4	6.5	9	5.0	2	5.1
	Others	0	0.0	1	0.6	0	0.0
	Total	62	100.0	182	100.0	39	100.0

Sources: Field Survey (2017)

Table 7: Continued

		Resettled (n=62)		Host(n=182)		Adjoining(n=39)	
		(f)	(%)	(f)	(%)	(f)	(%)
Age	20-29	2	3.2	25	13.7	1	2.6
	30-39	22	35.5	51	28.0	16	41.0
	40-49	22	35.5	52	28.6	14	35.9
	50-59	9	14.5	38	20.9	8	20.5
	60-69	5	8.1	8	4.4	0	0.00
	70+	2	3.2	8	4.4	0	0.00
	Total	62	100.0	182	100.0	39	100.0
Ethnicity	Guan	7	11.3	50	27.5	7	18.0
	Ewe	24	38.7	8	4.4	23	59.0
	Akan	4	6.5	8	4.4	2	5.1
	Grunse	0	0.0	3	1.7	0	0.0

Sources: Field Survey (2017)

Table 7: Continued

		Resettled (n=62)		Host(n=182)		Adjoining(n=39)	
		(f)	(%)	(f)	(%)	(f)	(%)
Ethnicity	Mole-Dagbani	10	16.1	5	2.8	4	10.3
	Banda	16	25.8	107	58.8	0	0.0
	Others	1	1.6	1	0.6	3	7.8
	Total	62	100.0	182	100.0	39	100.0
Marital Status	Married	46	74.2	120	65.9	30	76.9
	Divorced	3	4.8	14	7.7	5	12.8
	Widowed	5	8.1	11	6.0	1	2.6
	Single	8	12.9	35	19.2	3	7.7
	Total	62	100.0	180	100.0	39	100.0
Religion	Catholic	40	64.5	56	30.8	8	20.5
	Protestant	0	0.0	2	1.1	1	2.6

Sources: Field Survey (2017)

Table 7: Continued

		Resettled (n=62)		Host(n=182)		Adjoining(n=39)	
		(f)	(%)	(f)	(%)	(f)	(%)
Religion	Islam	8	12.9	55	30.2	7	18.0
	Traditional	4	6.5	15	8.2	3	7.7
	Pentecostal/Charismatic	7	11.3	17	9.3	15	38.5
	Other Christian	1	1.6	31	17.0	5	12.8
	No religion	1	1.6	4	2.2	0	0.0
	Others	1	1.6	2	1.1	0	0.0
	Total	62	100.0	182	100.0	39	100.0

Sources: Field Survey (2017)

There were variations in the ethnic composition within the resettled, host and adjoining households. Specifically, Ewes are the largest ethnic group constituting 38.7 percent followed by the Banda of 25.8 percent and the Mole-Dagbani, 16.1 percent in the resettled households. In the host households, Banda recorded 58.8 percent followed by Guans, 27.5 percent and Mole-Dagbani, 10.3 percent compared to the 59.0 percent Ewe and 18.6 percent Guan constituents of the adjoining households.

Generally, the distributions are clustered along these ethnic groups: Ewe, Guan, Banda and the Mole-Dagbani. While majority of the respondents who are indigenous ethnic groups such as the Banda and Guans are found in the host households, the Ewe and Mole/Dagbani ethnic groups who are migrant settlers are found in the adjoining and resettled households. This implies that the ethnic minorities who were in the resettled and adjoining households could be vulnerable because of a lack of resource ownership. This could affect their livelihoods in the future as there is a continuous exploitation of competitive resources.

One of the reasons for unsuccessful resettlements in Ghana had been the inability to give title rights to the migrant populations. This goes a long way to affect livelihoods (Cernea, 2006) and could lead to conflicts over access to resources (Chambers, 1970; 1983). The study revealed that similar ethnic groups who previously were under the same traditional authorities were maintained, and this could reduce conflicts within the communities.

The analysis from Table 7 shows that the marital status of the respondents exhibited similar characteristics. About 74.2 percent, 65.9 percent and 76.9 percent were married in the resettled, host and adjoining households

respectively. With respect to divorce, 12.9 percent, 19.2 percent and 7.7 percent in the respective households were single. The potential effect of higher numbers of married people is a resultant large household size. This implies that intervention policies should take into consideration the livelihoods of large households since they are vulnerable to poverty.

With respect to the religious background of the respondents, the study revealed that Christianity dominated the study communities. Among the various religions 64.5 percent, 30.8 percent and 20.5 percent were Catholics in the resettled, host and adjoining households respectively. Muslims were equally many with 30.2 percent in the host households. Pentecostals/Charismatics were, however, dominant in the adjoining households, constituting 38.5 percent. According to GSS (2014), the Banda and Ewes were mostly Christians while the Guans and Mole-Dagbani groups proffer to Islam. This validates the data from ERM (2007a; 2007b) on the ethnic compositions of households during the baseline report.

Participation in the Resettlement Planning Process

The participation process of the resettlement involved information dissemination, consultation and stakeholder engagements during the resettlement process. These have been discussed in the ensuing sections.

Information Dissemination

Accesses to information about the commencement of the resettlement scheme were very critical during the planning process of the resettlement (ERM, 2007b; IFC, 2012). As can be seen in Table 8, respondents attest to receiving information through the FM/TV 39.7%, 58.8% and 59.0% for the

resettled, host and adjoining households respectively. This was closely followed by meetings with 25.8%, 27.5% and 25.6% mentioning it respectively in the resettled, host and adjoining households.

These revelations confirm what the BPA (2011) and Alemu (2015) said in their analyses of information dissemination on the Bui resettlement scheme and planned resettlements in the Canberra region of Ethiopia respectively. They argued that the commonest sources of information about resettlement schemes are mainly the radio/TV stations, whether public or private. They also validate Wilmsen and Wang (2015, p.47) analysis of information dissemination by positing that "a false dichotomy" exists between the displaced and the project implementer through information dissemination to the affected people where most were grapevine in nature.

A key informant at a resettled household pointed out on the 20th of January 2017 in a further probe that politicians spread the information faster because of the assertion that the resettlement was a complete city named Bui City, and that such city would consist of an educational institution of higher learning. This shows how the resettlement scheme was politicised and the likely effect it had on the sustainability of introducing livelihood strategies. It was concluded in focus group discussions held on the 20th of December, 2016 at Jama that the low responses in the households were because BPA was interested in informing the stakeholders rather than entire households.

Table 8: Sources of Information Dissemination on the Resettlement Scheme

Source	Reset. (n=62)		Host(n=182)		Adjoining(n=39)	
Information	(f)	(%)	(f)	(%)	(f)	(%)
FM/TV	24	39.7	107	58.8	23	59.0
Brochures	8	12.9	8	4.4	2	5.1
Meeting	16	25.8	50	27.5	10	25.6
Written	10	16.1	8	4.4	4	10.3
Others	4	6.5	9	5.5	0	0.0

Source: Field Survey (2017)
*Reset.=Resettled

Furthermore, in a probe during a FGD held on 22nd January 2017, the people of Bui resettlement stated: "Our previous location (old Dokokyina) was far away and the only means by which BPA informed us about the resettlement scheme was through FM/TV and information from our market women when they returned from weekly markets from Banda". To validate the reasons that led to more respondents mentioning FM/TV and meetings, a key informant on the 1st February 2017 affirmed: "Information centres were opened at Banda–Ahenkrom and Bamboi traditional areas. These were initially to inform the people about the Bui Dam project but it later served as an information centre for the resettlement scheme. Such centres were very effective in conveying information on the resettlement scheme to the households.

Information about the resettlement generated debates in the media; issues were raised by radio presenters and panelists. Further clarifications were made by some FM stations at the regional and district capital towns.

These methods provided early and accurate information which allayed the fears and misconceptions of displaced about the project and built trust between the implementers and the affected households. These assertions confirmed the findings of various studies (Cernea, 2000b; 2006; Gordon, 2007; IFC, 2012; Biswa, 2012) about the inadequacy of information and education on the resettlement schemes of affected households.

Participation during the Resettlement

Participation during the resettlement was divided into four main stages. These stages were pre-feasibility studies, selection of resettled households, preparation of infrastructure and movement to the site (BPA, 2011). According to IFC (2002), WB (2004) and AfDB (2012), participation in pre-feasibility studies is central to the sustainability of resettlement schemes. As shown in Table 8, the pre-feasibility stages of the resettlement process consist of site identification and selection.

Out of the 218 multiple responses in the resettled households, site identification, constituting 13.3% and site selection, 13.7% were the main activities that required the participation of the households during the resettlement process (Table 9). Similarly, out of the 318 multiple responses in the host households, site identification had 41.0% while site selection had 42.0% participating in the resettlement process. In the adjoining households, however, site identification was recorded by 30.7% of the respondents while 50.7% participated in site selection.

The level of household participation in site identification and selection have been argued by Fink (2005) and Gordon (2006) in their analysis of stakeholders of the Bui project as a factor affecting participation at the onset

of dam projects. They contended that due to power differences, the ability of the affected households is usually limited to equitable participation. GDD (2008) focused on stakeholders who would not have hitherto been part of the resettlement process to be actively involved in the pre-feasibility stage.

Furthermore, the host and adjoining households exhibited the same characteristics as the resettled households. This confirms studies by Bartolome et al. (2000) and Bennet and McDowell (2012) on displacements. They observed that due to the effects of resettlement on livelihoods, most affected populations are critical of the location of resettlement schemes. An in-depth interview with a key informant on the 15th of January 2017 at Banda revealed that during the site identification and selection phase, both resettlements (Resettlement 'A' and Bui resettlement 'B') proposed two different locations for their resettlement in consultation with the host, but were rejected by BPA.

As shown in Figure 4, the proposed site P3 and P4 that were selected by both the resettled and the host households for Resettlement 'A' was considered not suitable and was not accepted by BPA. To validate the reasons for the rejection of P3 and P4, a discussion was held with a key informant at the Bui generating station on the 19th of January 2017. He said:

> *The proposed P3 and P4 sites were not ideal for settlements because the topography was close to the downstream river P4 and the reservoir site P3 which made them prone to flooding. Moreover, both sites are host to the black fly that can cause onchocerciasis. The rejection of P1 and P2 proposed sites for Bui Resettlement 'B' were also due to the similar reasons. Proposed*

sites P1 and P3 were also areas that were located within the BNP. (A key informant at the Bui generating station)

An FGD participant stated that: "there were short field visits by high officials to the resettlement sites with the traditional authorities and technical officers. In some instances, they could not even move to the location they wanted to go" (FGD held on the 22nd January 2017 at Bongase). This submission points to the fact that the suitability of the land for agricultural purposes was not considered, and this could create problems for food security and sustainable livelihood rather than a solution. This, also, confirms the assertion by Coyne and Bellier (1995) and ERM (2007b) on the feasibility studies' final report on the Bui Dam project. They stated that a resettlement is supposed to be located on high grounds far from the lowland areas to avoid potential disasters.

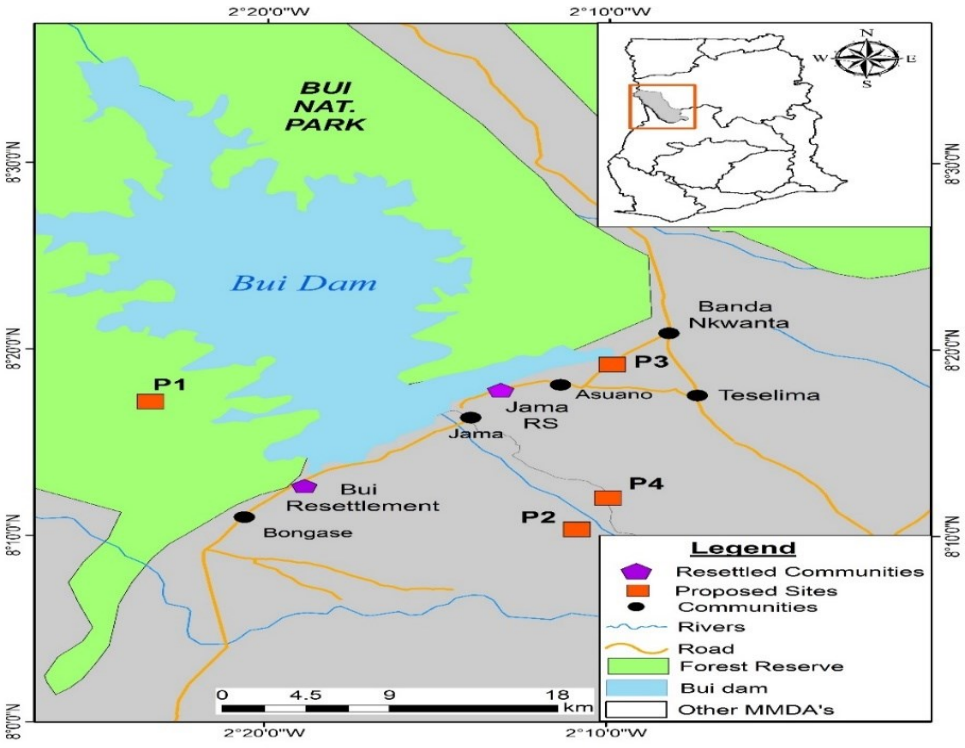

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Figure 4: Proposed Sites for the Resettlement Scheme by the Affected Households

Source: UCC, GIS (2017)

Table 9: Resettlement Stages and Participatory Activities

Activities	Resettled (n=62)		Host (n=182)		Adjoining (n=39)	
	(f)	(%)	(f)	(%)	(f)	(%)
Site identification	29	13.3	156	41.0	23	30.7
Site selection & preparations	30	13.7	160	42.0	38	50.7
Due to construction	11	5.1	0	0.0	0	0.0
Due to potential disaster	18	8.3	0	0.0	0	0.0
Housing Units	2	0.9	43	11.2	8	10.6
Other infrastructure	4	1.8	22	5.8	6	8.0
Allocation of housing units	62	28.4	0	0.0	0	0.0
Chosen day(s) for movement	62	28.4	0	0.0	0	0.0
Total	218*	100.0	381*	100.0	75*	100.0

Source: Field Survey (2017)
*> than sample size due to multiple responses

Another critical determinant of access to livelihoods is distance. It can be deduced from P1, P2, P3 and P4 that the proposed sites are close to either the reservoir (P1 and P3) or the river (P2 and P4). The distance between Resettlement 'A' and the river is 4km and 2km from the reservoir or the landing site. Bui resettlement "B" is also located 1.2km away from the river and 6km away from the reservoir but 8km from the landing site. This has constrained their fishing activities and reduced their capacity to engage in other livelihood activities which they, hitherto, did.

A BPA representative, in a further in-depth discussion on the 26th of January 2017 indicated that:

> *After the Survey department submitted its reports on the suitable sites for resettlements, a meeting was held with both parties (opinion leaders and chiefs). There were disagreements and misunderstandings among the parties on the proposed sites. This stage marked the beginning of hostilities between BPA and communities leaders. This led to the organisation of the parties to the sites but the parties still disagree with them on the sites.* (BPA representative)

However, an FGD participant intimated that: "We did not know what was contained in the various reports and never read them either" (FGDs held on the 20th January 2017 at Bui and Jama).

These submissions should be taken as major setbacks on how the resettled, host and adjoining households participated in the planning process of the resettlement scheme. Furthermore, an assessment of state legislation brings to the

fore limitations during consultations on the type and kind of information that was conveyed to the affected populations (Dugbenu, 2007; Gordon, 2006).

Selection of resettled communities was based on two variables: constructions and potential disaster (Table 9). Out of the 218 multiple responses in the resettled households, constructions recorded 5.1% and potential disaster, 8.3%. The responses reveal that potential disaster influences the resettlement of the households than the construction of the dam. Such a revelation was captured in ERM (2007b) and BPA (2011) reports on the phases of the resettlement scheme.

It was explained that Resettlement 'A' was carried out early due to the locations of those households during the construction of the dam. Bui Resettlement 'B' was to be relocated to the current location which was deemed suitable due to the potential floods and other diseases at their original location. Such observations validate the analyses done by Kalitsi (2000) and Fobil and Attaquayefio (2003) on the environmental impacts of the Akosombo dam on the affected population. They explained that households that were located far away had fewer health problems compared to those that lived close to the reservoir.

With respect to the construction of infrastructure stage (Table 9), out of the 218 multiple responses in the resettled households, activities involving housing units constituted 0.9% and other infrastructure, 1.8%. These low responses may be due to the lack of skilled labour needed for the construction works at the resettlement sites. Similarly, out of the 381 multiple responses in the host household, activities involving housing units constituted 11.2% while other infrastructure had 5.8% compared to the 75 multiple responses with activities involving housing unit having 10.6% and other infrastructure, 8.0% in the adjoining households.

These responses allude to the fact that most of the host and adjoining households have skilled and unskilled labour which was engaged in the construction project. As argued by Mahapatra (1996) and MacQueen (2014) on the delusions of infrastructure development in Cahora Bassa in Mozambique and India's resettlement schemes, most of the people who are affected by resettlement schemes cannot exploit employment opportunities, except the host and adjoining households. This is due to the potential and psychological risks they encounter.

The movement to the new site is the last resettlement stage which occurs in the resettled households. Out of the 218 multiple responses in the resettled households, allocation of housing units to beneficiary households and chosen day for movement to the new sites had 28.4% each. That both activities/processes had equal responses confirms the assertion by Alemu (2015) and BPA (2011) that there was the need to give equal attention to the allocation and movement so as not to create panic and tension which could lead to conflicts among the resettled households.

Consultation with the Host Community

One of the cardinal principles of planned resettlement schemes is enough consultations with the host communities (IFC, 2002; WB, 2004). Before the resettlement, BPA had consultations with the relevant host communities, Jama and Bongase. The aim was to implement a bottom-up approach with full consent and participation of local stakeholders. A key informant, in discussions held at Jama on the 19th of December, 2016, intimated that: "We were consulted, but the way such messages were communicated to us made us conclude that the resettlement was going to solve our problems. We, as chiefs gave the land to BPA for the resettlement. Affected households that lost economic assets were consulted individually by BPA."

In a further probe during an FGD, a participant had this to say: "We had no power to resist and so we agreed with BPA on the resettlements but we disagree with the location. We were later convinced by the officials." This revelation of host households' disagreement on resettlement locations is in line with Taddesse (2009). According to such information, due to differences in power between the implementers and host communities, officials may persuade or coerce the host to accept the resettlement due to the benefits. This view of coercion between the officials and host communities were also observed by Alemu (2015) in his analysis of planned resettlement schemes in Amhara in the Southern regions of Ethiopia on how officials enticed the host to accept resettled households.

To validate these discussions, a further key informant discussion was held with BPA at the generation station at Bui. The respondent here noted: "I have the feeling that the custodians of the land were expecting more after they were consulted. What I will say now is 'how do we help the host communities address some of the livelihood challenges?'" (key informant discussion held on 25th January 2017). This livelihood deterioration was evidenced during observation because illegal mining and the activities of Fulani herdsmen have rendered the land poor. This decline in the fertility of the soil could affect the livelihoods of the host households who are predominantly farmers. Such observations reinforced the work of Mathur and De Wet (2006) whose analysis of environmental degradation holds that there is a tendency of altering the livelihood of the host and resettled households.

Participation for the Restoration of Livelihoods

According to ERM (2007b), the RPF was to resolve livelihood challenges that the resettled, host and adjoining households were likely to face. However, ten years after the resettlement scheme, most of the planned activities that were designed to address sustainable livelihood issues have not been implemented. To validate this, a key informant stated that: "I can hardly get yam to eat; meanwhile, I used to sell truckloads of yam and cassava. Two years ago, I had to buy yam seedlings/setts to augment what I have. Beetle infestation of yams, which hitherto was not known, has become a common challenge to yam farmers. This means that the land is dead" (In-depth interview with the chief yam farmer at Bongase on the 20th December 2016). That is to say, the land is exhausted and not fertile to support yam cultivation.

To confirm the key informant's submission, an FGD participant at Resettlement "A" had this to say: "They (BPA) should come and see! We are now hungry. Our spirits have left the town. We told them to listen to us but after their work, they left". These revelations confirmed the fear expressed by Cernea (2000a & 2000b) and Price (2008 & 2015) that unplanned livelihood restoration for displaced populations can lead to poverty. Mariotti (2015), in analysing resettlement and its adverse incorporation on the Polavaram dam in India, posited that the greatest challenge to effective resettlement planning is the ability to get natural resources with the same quality to compensate for those the affected households had lost. These show the relevance of participation in the planned restoration of livelihoods of affected households.

In a further probe during the FDGs at Bui resettlement "B", a participant indicated that:

> *We have not seen any business that was planned for us, the support for land preparation was insufficient, and no extension service was provided, neither has micro-credit or crop packaging been executed. We, farmers, were asked to access fertile lands on our own without any support from BPA despite our earlier complaints that the resettlement lands which were given to us were not fertile*. (FGD held on the 28th December 2016).

An analysis of these submissions revealed that the livelihood plight of the farmers was not adequately considered, and if at all it was, then it only existed on paper. These have affected their productivity and livelihoods. Such effects were articulated by Mathur and Cernea (2006, p.33) as leading to "decapitalisation and pauperisation" of the affected households.

Regarding the affected households' restoration of livelihood in fishing, one fisherman stated in a probe during an FGD that: "…we ate and washed our hands in the river but now just look at the distance and restrictions by BPA and BNP. This is what is creating the low catch". Another fisherman lamented:

> *This is really troubling us because we were with our food and you asked that we move so you can do something good for the whole country. Now we have moved and if we want to come back for our food you say no. You told us you have planned for trade, grazing, hunting and easy access to forest products, and when the time*

comes, we would be asked to choose the best livelihood activities. (FGD held on 28th December 2016 at Bui Resettlement "B" and Resettlement "A").

To authenticate the data provided during the in-depth interview, a BPA official explained:

We planned livelihood enhancement programme and it was to make the affected households to decide for themselves which activities fit into his household needs. It was to run for some time to compliment what we had given earlier. It was hope that such LEP could improve and even help them to obtain a profession to earn some income to support them. This was important due to the alterations in the environment. They were to be trained on vocation and involved household heads deciding what suits him or her. (Key informant at the Jama generating station)

However, about ten years after the resettlement, the purported LEP planned to restore and provide a "safety net" for households whose vulnerability and poverty may increase because of economic, social and livelihood risks has not been implemented. In line with the lack of participation by households in implementing the frameworks for resettlement, De Wet (2004; 2009) argues that because of the complex nature of resettlement schemes, programmes that were not planned with the people on livelihood restorations and infrastructure projects were likely to be abandoned. Such observations were also shared by Rahmato (2003) on the tragedy of population displacement in the 1980s in Ethiopia. He argued

that most of the resettlement projects were not completed because risks associated with resettlement diminishes after ten (10) years.

A VRA official, on the participation in planned restoration of livelihoods during the implementation process, stated:

> *I have a feeling they have downgraded the challenges associated with displaced people. Although the people involved are small, I think they are more concerned with challenges of the technical projects. I encouraged a harmonious relationship between BPA and VRA; I believe this did not happen because of political reasons. In big projects many times that is what happens; one just tries to behave like a politician to hear and follow the people and assure them that things will be done. Afterwards, you then have to lobby and convince them, which may take years, so they are given a lot of promises but the fulfilment might come later, which is very common in Ghana.* (Key informant, Accra; 23rd January 2017).

These submissions agree with Tsikata (2008) on how each category of affected people should participate in the planning process of the resettlement scheme. Households that were partly affected are sometimes not integrated into the planning process except individual households which are compensated in lieu of what has been lost (Kalitsi, 2000; 2008).

Summary

The chapter focused on the research findings from the primary data collected from the study area. The first section discusses the demographic characteristics of respondents while the second part dealt with the planning process of the resettlement scheme. It explored the extent of the resettled, host and adjoining communities' participation in the process, information dissemination, consultation strategies and stakeholders' involvement in the resettlement.

CHAPTER SIX

RISKS AND COPING MECHANISMS

Introduction

The central theme in resettlement studies focuses on the risks encountered by Project Affected People's (PAPs). Attempts to manage such vulnerabilities and risks involve reconstructing the livelihoods of the affected households to enable them to derive maximum benefits from such resettlement schemes. These risks include landlessness, joblessness, marginalisation, social disarticulation, food insecurity and loss of access to common pool resources. In line with the IRR model, this chapter discusses the risks that the residents of the study area experience. This is in order to have an understanding of the type, nature and effects of these risks on the livelihood of the affected households and the mechanisms they employ to cope with such risks.

Risks Encountered by Households

The respondents' views were first sought to find whether they experienced risks during the resettlement process. About 97 percent of the respondents admitted they encountered some form of risks while 3 percent stated they did not encounter any form of risks. This indicates that all the surrounding communities were affected by some risks. Similar findings came out from the FGDs as interactions with residents of adjoining communities indicated that many households encountered a reduction in their fish catch during the lean and bumper seasons. Farmers, traders and all those that were engaged in economic activities in

the adjoining and host communities also confirmed experiencing some form of risks as a result of the Bui project.

The FGDs organised for the residents provided further evidence of these risks as one discussant remarked on the 23rd of January 2017 as follows: "Before the resettlement scheme, household members had enough rooms to sleep in but after the resettlement, household heads have rented all the rooms to strangers who are either engaged in fishing or illegal mining, leaving some of the household members limited space too crowded for a decent living."

Homelessness/Inadequate Shelter

According to ERM (2007b) on the RPF, three set of communities were likely to be affected by the Bui dam project; the report indicated that these communities require various forms of assistance. These households were those requiring physical resettlement, those that need compensation as a result of the loss of assets and those whose livelihood may be altered due to the project. Loss of shelter was identified as one of the risks in the resettlement process affecting the resettled and adjoining households.

In Table 10, the findings of the survey suggested that in the first year, 51.6 percent of the resettled indicated to have had difficulties in accessing shelter compared to 33.9 percent in the fifth year and 14.5 percent in the tenth year. The host households did not encounter shelter difficulties. However, the Adjoining households recorded 79.9 percent, 69.2 percent and 56.4 percent of respondents agreeing to have had difficulties in getting shelter in the first, fifth and the tenth year respectively.

Table 10: Risks Encountered by the Affected Households

Risks		Resettled (n=62)		Host (n=182)		Adjoining (n=39)	
	Year	(f)	(%)	(f)	(%)	(f)	(%)
Inadequate shelter	2006	32	51.6	0	0.00	30	79.9
	2011	21	33.9	0	0.00	27	69.2
	2016	9	14.5	0	0.00	22	56.4
Joblessness	2006	42	67.7	13	7.1	34	87.2
	2011	31	50.0	16	8.8	29	74.4
	2016	6	9.7	101	55.5	6	15.4
Landlessness	2006	30	48.4	45	24.7	36	92.3
	2011	33	53.2	82	45.1	33	84.6
	2016	36	58.1	143	78.6	38	97.4
Marginalisation	2006	49	79.0	152	83.5	38	97.4
	2011	31	50.5	98	53.8	29	74.4
	2016	11	17.7	45	24.7	35	89.7

Source: Field Survey (2017)

Table 10: Continued

Risks	Year	Resettled (n=62)		Host (n=182)		Adjoining (n=39)	
		(f)	(%)	(f)	(%)	(f)	(%)
Social disarticulation	2006	60	96.8	43	23.6	39	100.0
	2011	51	82.3	32	17.6	36	92.3
	2016	32	51.6	8	4.4	25	64.1
Food insecurity	2006	56	90.3	164	90.1	33	84.6
	2011	42	67.7	105	57.7	18	46.2
	2016	60	96.8	172	94.5	28	71.8
High morbidity & mortality	2006	0	0.00	0	0.00	0	0.00
	2011	0	0.00	0	0.00	0	0.00
	2016	0	0.00	0	0.00	0	0.00
Lack of Access to Common Resources	2006	61	98.4	109	59.9	39	100.0
	2011	58	93.5	152	83.5	37	94.9
	2016	42	67.7	171	94.0	33	84.6

Source: Field Survey (2017)

Though there were general reductions in access to shelter in the households of the respondents in the resettled and adjoining households, the adjoining households were affected more than the resettled households. The high risk of inadequate shelter was due to various reasons such as the high cost of rents. These arose because immigrants who were engaged in illegal mining were able to pay for an increase in rent costs by landlords. These compelled more families to occupy the limited number of rooms available in their houses. Due to this, majority of the adjoining households have erected structures with grasses covered with black polythene as temporal rooms.

An FGD participant at Nsuano remarked on the 21st of January 2017 that: "we have developed skin rashes and have been contracting malaria compared to our neighbors'". Further discussions with two key informants at the Bui resettlement "A" health Centre and Jama health post on the 26th of January 2017 also confirmed the prevalence of such diseases in the adjoining households. They admitted that such poor materials were easily affected by heavy rains and wind, rendering them susceptible to diseases.

Joblessness/ Lack of Employment

As indicated by Cernea (2000; 2006) in the model of analysing resettlement and displacement in Africa, restoring resettled household's ability to earn an income from different job opportunities is central to the success of any resettlement scheme. As presented in Table 10, during the first year, all households in the resettled and adjoining households had a high percentage of respondents who faced the risk of joblessness compared to the host households.

These high percentages of 67.7 percent and 50.0 percent were juxtaposed by 9.7 percent in the resettled households.

Similarly, the adjoining households recorded 87.2 percent in the first year which reduced marginally to 74.4 percent in the fifth year. However, there was a decline to 15.4 percent in the tenth year compared to the national average of 12 percent unemployment in Ghana (GSS, 2014). The scenarios were different in the host households, where the first year recorded 7.1 percent but 8.8 percent in the fifth year and 55.5 percent in the tenth year.

A further probe through focus group discussions with participants revealed that the high rate of joblessness, especially for fishermen/fishmongers, in the first year was due to the activities of the engineers at the construction sites and the turbidity and increase in the volume of water in the reservoir. The blasting and concrete works were believed to have driven the fishes away to remote and inaccessible places. Yet, it was revealed that the affected households were not given any financial assistance to purchase bigger/larger fishing gears. In a discussion with a key informant at a resettled household on the 15th of January 2017, he indicated that "Fishermen were also restricted from most of the fishing areas that were deemed to have recorded good catches".

According to another FGD participant in a host household, the situation became worst when gold deposits were identified in substantial quantities in some of the communities along the bank of the river. This caused illegal miners to compete for farmlands in hopes of mining gold. This resulted in a scarcity of land

and caused environmental problems which account for the increase in joblessness in the host communities.

Landlessness/Inadequate Productive Land

The findings from other studies (Cernea, 2000b; 2006) on the loss of land as a result of resettlement programmes were not different from what was observed at the resettled, host and adjoining households. Loss of land was very visible in the study area; this affected farming activities as opined by (Cernea, 2000a, b).

The results in Table 10 indicate that inadequate productive land in the resettled households increased marginally over the periods from the lowest of 48.4 percent, to 53.2 percent and 58.1 percent in the first, fifth and tenth years respectively. Similarly, the host households also recorded an increase over the years from 24.7 percent to 45.1 percent and, finally, to 78.6 percent in the first, fifth and tenth year respectively. For the adjoining households, landlessness reduced marginally from 92.3 percent to 84.6 percent in the fifth year and, suddenly, increased to 97.4 percent in the tenth year.

The results after the tenth year in all the households show increases in the incidents of inadequate productive land. According to qualitative data encoded from focus group discussions on the 16th of January, participants indicated that the inundation of the reservoir occupied a large area of landmass with overlapping land ownership rights in the Bole and Banda traditional area. This reduced productive lands for household heads.

Furthermore, a key informant interviewed at the Lands Commission on 20th January 2017 revealed that: “A potential landlessness trigger was the acquisition

of large parcels of land on the principle of eminent domain, where the state has supreme rights to acquire land for the benefit of the entire nation". Further analysis of the study revealed that the activities of Fulani herdsmen and illegal miners coupled with an increase in population have complicated the already precarious condition of productive land in the affected area.

Marginalisation

Marginalisation is one of the risks that affected people whose social and psychological conditions have been altered due to resettlement schemes (Mathur, 2000). These marginalisations are often common among host and resettled households. However, the study observed these marginalisations in the adjoining households. From Table 10, marginalisation reduced from 79.0 percent to 50.5 percent in the fifth year and 17.7 percent in the tenth year in the resettled households. The host households saw a marginal increase from 78.6 percent to 83.5 percent in the fifth year and a reduction to 53.8 percent in the tenth year. The adjoining households, also, recorded a reduction from 97.4 percent to 74.4 percent in the fifth year before an increase to 89.7 percent in the tenth year.

Further analysis of the matter with FGD participants revealed that there were disruptions in their socio-cultural influence as a result of their relocation and the restrictions imposed on them by BPA. As indicated by a key informant on the 16th January 2017:

> *We have become like cotton wools, such that the wind can easily blow us towards any direction. At times, farmers don't even know who to complain to when assaulted by the illegal miners and the*

> *Fulani herdsmen. Wherever we went, BPA and BNP prevented us. We only rotated on the same piece of land for farming while Fulani cattle kept trampling on the limited land that was allowed to fallow.*
>
> (Key Informant, 16th January 2017)

This confirmed an assertion that marginalisation reduces confidence levels and heightened feelings of vulnerability among affected households (Cernea, 2000a; Mathur, 2000).

One of the discussants of the FGD on the 28th December 2016 at Bongase intimated this: "Fertility of farmland and its size were not proportional to our previous farm sizes". While some focus group participants asserted that the resettlement has facilitated their children access to quality education, healthcare, markets and communication, other FGD participants posited that their children were not able to learn their mother tongue and were forced to learn the language of "others". Other forms of marginalisation were observed in terms of buying and selling products in the local market where intermediaries (middlemen/women) exploited the peasant farmers and fishermen by offering low prices and selling them at exorbitant prices to other dealers.

Social (Settlement) Disarticulation

In many studies, especially Faas *et al.,* 2015 and Price, 2015, social disarticulation is the disintegration of social structure and networks during a resettlement process. Statistics from Table 10 indicate that in the resettled households, social disarticulation which was 96.8 percent in the first year reduced marginally to 82.3 percent in the fifth year and 51.6 percent in the tenth year. The

host households recorded 23.6 percent in the first year, 17.6 percent in the fifth year and 4.4 percent in the tenth year. Similarly, there was a reduction in the risk of social disarticulation in the adjoining households from 100 percent in the first year to 92.3 percent in the fifth year and 64.1 percent in the tenth year.

The marginal reductions in both the resettled and adjoining households were due to the residents' inability to build networks and social structure albeit under difficult conditions. Some of the resettled population believed that they were dumped on the host communities' land without proper integration. An analysis of data from key informants and focus group discussions held on 16th January 2017 revealed that the resettled (Bui resettlement A) had four communities. The people from the host households at Jama saw the residents of resettlement A as a potential threat in terms of competing for their resources. Comparatively, the data indicated that the proximity of the three different communities at Bole District improved social bonds compared to those in the Banda District.

To sum up, although there are improvements in social networking in these households, fisher folks have to travel long distances in order to fish. Sometimes, they spend weeks, leaving behind children and women. This could affect the psychological, educational and moral character of the children.

Food Insecurity

Food insecurity is one of the critical risks identified by the IRR model (Cernea, 2000a; 2006). Analysis from many studies (Mathur, 2000; Price, 2015) on displacement and resettlement concluded that increased food insecurity is caused by reductions in crop production and yields. As can be seen from Table 9,

food insecurity was high in all the three communities. In the first year of the resettlement process, the resettled households recorded 90.3 percent of food-insecure households which reduced to 67.7 percent in the fifth year. It increased to 96.8 percent of food insecure households in the tenth year compared to 90.1 percent, 57.7 percent and 94.5 percent respectively in the same period in the host households. Conversely, food insecure households of the adjoining communities reduced from 84.6 percent in the first year to 46.2 percent in the fifth year and 71.8 percent in the tenth year.

Focus group participants indicated that the diminishing availability of land coupled with the increased level of poor soil fertility has led to the reduction in their annual food production. This led to food insufficiency and food insecurity at the household level. According to a key informant, on the 28th of January, at Bui resettlement B, "BPA gave each household head a grant of Gh¢50.00 for the preparations of the newly acquired farmland. Each household was to receive an additional GH₵ 100.00 per month for a year to alleviate any reduction in their household income and food supply".

A further probe revealed that food insecurity was a result of the poor productivity of land and very limited diversification of crops produced by the households. The traditional crops such as cassava, maize, groundnuts, yams, sorghum etc. required a certain amount of rainfall and a fertile soil for good yield. Unfortunately, the intensification of both human and animal activities affected the fertility of the soil, thus, reducing their yields.

Lack of Access to Common Resources

Cernea (2000a) stresses the fact that the displacement and resettlement of people reduce their access to common property and assets, leaving them poor and vulnerable. According to Mathur and Cernea (2006), these assets include water bodies, forests and forest products, grazing land, markets, shrines and groves, religious structures and burial grounds. An analysis of the quantitative data generated from the household schedules found limited access to common resources in the study area.

As can be observed in Table 10, resettled households' access to common resources reduced marginally from 98.4 percent in the first year to 93.5 percent in the fifth year and 67.7 percent in the tenth year compared to 59.9 percent, 83.5 percent and 94.0 percent in the host households. In the adjoining households, lack of access to common resources was 100.0 percent in the first year but reduced to 94.5 percent in the fifth year and 84.6 percent in the tenth year.

There were marginal reductions in access to these resources in the resettled and adjoining households but an increase in that of the host households as indicated in Table 10. This confirms ERM (2007a, b) and Mettle (2011) that most of the affected households in the resettled and adjoining households lack access to common resources. This had affected the food security situations in the households.

In a focus group discussion and the key informant interviews, it was revealed that fishermen were severely affected in the first years of their resettlement due to the restrictions on access for fishing rights by BPA. Similarly,

access to forests and forest products such as herbs, honey, and dawadawa among others were also restricted due to the intensification of BNP security patrol teams. This had implications for sustainable livelihoods and vulnerability (Cernea, 2000a & b; Cernea, 2006; Scudder, 2009).

High Morbidity and Mortality

High mortality and morbidity are one of the various risks that were identified by Cernea (2000a). The quantitative data from the field (Table 10) indicated that within the ten year period, the incidence of higher morbidity and mortality during the resettlement scheme was negligible in the three sets of households. Data collated from the health centres at the Bui resettlement, Bongase and Jama indicate that there has not been any maternal and child related death.

However, respondents here intimated that the low lying nature of the adjoining households and their proximity to the water bodies makes them fertile grounds for the breeding of mosquitoes that caused malaria. From a focus group discussion, it came out that the adjoining households were expected to be temporal riverside communities for the landing of canoes; but, they have been transformed into settlements. In response, residents argue that such settlements were necessary because landing of boats happens during any period of the day, and such people arriving need to be taken care of.

The high rate of illegal mining in the Volta basin could, also, pose health challenges to the communities because an estimated 53,000 people live illegally within the BNP and use the contaminated water containing mercury and other chemicals for cooking and bathing. This confirmed the fear Cernea (2003) and

Diaw and Schmidt-Keller (1990) expressed that health-related risks are less readily recognised by resettlement authorities than other risks. These health problems could reduce productive activities of the affected households.

Support and Coping Mechanisms

Findings from discussions on Table 11 indicate that coping mechanisms adopted before and after the resettlement scheme were mixed. Each household devised mechanisms that were seen to be favourable. Out of the respondents from the households, 91 percent of the resettled, 64 percent of the host and 10 percent of the adjoining communities indicated that BPA was their main source of assistance during the resettlement programme.

With the District Assemblies (DAs), 98 percent and 93 percent of the respondents responded "No" in the resettled and adjoining households. The trend was not different for assistance from NGOs, where 93 percent, 98 percent and 95 percent of respondents from the resettled, host and adjoining households respectively indicated that they received no form of assistance from NGOs. With "self-help", however, the situations were different. As much as 98 percent, 96 percent and 95 percent of the respondents from the resettled, host and adjoining households respectively responded that they relied on "self-efforts". With respect to communal role as a coping mechanism, 75 percent, 80 percent and 72 percent of the respondents in the resettled, host and adjoining households had assistance from their respective communities. These findings are presented in figure 5.

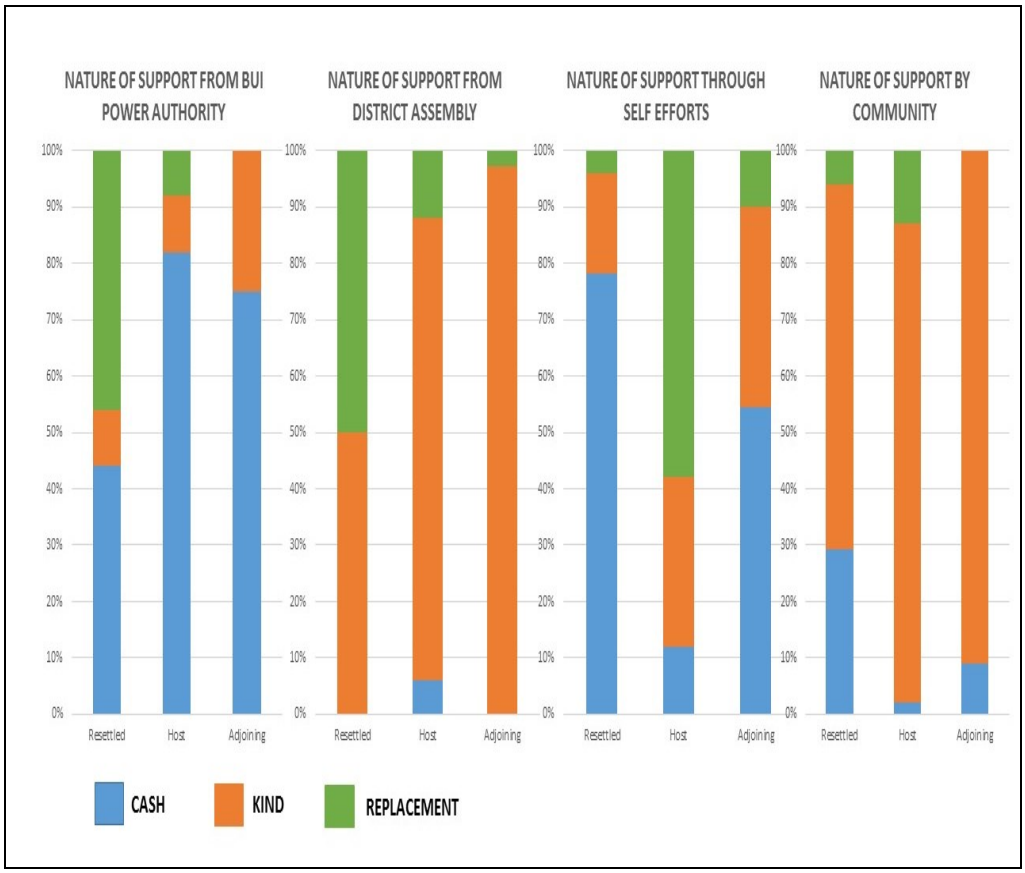

Figure 5: A Combined Graph of the Sources of Support
Source: Field Survey (2017)

From FGD participants on the 18th January 2017, it was revealed that the cost of risk aversion mechanisms was borne by the household heads in the host, resettled and adjoining households. They explained that a one-time resettlement grant of GH₵100.00 was paid to each member of a household to offset relocation expenses with a cut-off date of 2010 but it was not adequate for households. The resettled, host and adjoining households, thus, adopted different coping mechanisms to manage the risks as indicated in Table 11. Some of these coping strategies were requesting crop from neighbours (48.0%), ruminant sale (24.1%), petty trading (46.0%) and sending children to live with relatives (15.0%). Others

include doing daily labour (34.0%), illegal mining (9.0%), selling assets (16.0%), and taking credit (15.0%).

In a focus group discussion, participants indicated that due to the closeness of their previous location to the resettlement site, they did not incur extra cost when they conveyed their belongings.

Table 11: Coping Strategies by Respondents

Strategies from 'self'	Responses	(f)	(%)
Requesting crops from neighbours	Yes	133	48.0
	No	148	52.0
Ruminants' sale	Yes	69	24.1
	No	214	76.0
Petty trade	Yes	130	46.0
	No	153	54.0
Sent children to live with relatives	Yes	46	15.1
	No	237	85.0
Doing daily labour	Yes	98	34.0
	No	185	66.1
Illegal mining	Yes	29	9.0
	No	254	91.0
Saleof assets such as (canoe/nets,	Yes	47	16.2
clothes, etc)	No	236	84.1
Take credit from money lender	Yes	45	15.0
	No	237	85.0

Source: Field Survey (2017)

CHAPTER SEVEN

HOUSEHOLDS'LIVELIHOOD STRATEGIES

Introduction

This chapter analysed the livelihood strategies adopted by the resettled, host and adjoining households before and after the resettlement. It focused on factors that influenced the choice of a particular livelihood strategy by the resettled, host and adjoining households. The commonest livelihood strategies discussed in this chapter include farming as well as non-farm and off-farm activities. Farming activities covered were crop and vegetable production and ruminants/birds rearing. Off-farming activities analysed include gathering of fruits/firewood and illegal mining. Finally, it concludes with discussing petty trading, transportation and daily labour and fishing as non-farm activities.

Main Sources of Livelihood

Results from the interview schedule revealed that the main sources of livelihood before and after the resettlement for the resettled, host and adjoining households were varied. Five livelihood sources were measured to examine their improvement or otherwise after the resettlement scheme as indicated in Table 12. The total levels of improvement of all the sources of livelihoods were at moderate to low levels. Of the five livelihood sources rated by levels of agreements in the resettled, host and adjoining households, the change was significant at ($p<0.001$)

except for ruminants/birds and non-farm activities in the resettled households. Fishing was significant at ($p<0.01$). Overall, improvements in livelihood sources were moderate in the resettled, host and adjoining households.

In-depth interviews with key informants and FGDs in all the study households further validated marginal reductions in the livelihood of the households after the resettlement. For instance, an FGD participant, on 16thJanuary 2017 remarked: "The intensification of human activities and livestock grazing have reduced the fertility of the soil. Prior to the resettlement, the yields of our crops were better compared to our current locations. Everywhere you go to farm, the yields are poor" The implication of the above expression is that the livelihood strategies of the resettled, host and adjoining households that depended on traditional agriculture were affected due to environmental changes (ERM, 2007b). However, the analysis in Table 12 showed agriculture (farming, fishing animal rearing) dominated in the livelihood strategies of households. Hence, in order to have more insight about reductions in agriculture as a source of livelihood, different aspects of livelihood sources such as food crops, vegetable and livestock/birds production were analysed.

Table 6: Paired-Sampled t-text Statistics for Monthly Income from Livelihoods before and after the Resettlement

Livelihoods	Period	Resettled (n=62)			Host (n=182)			Adjoining (n=39)		
		Mean	SD	t	Mean	SD	t	Mean	SD	t
Crop cultivation	Before	0.30	1.27	4.79ns	-0.68	0.80	-3.28***	-0.76	1.13	-8.97***
	After	0.41	1.26		-0.19	1.23		0.35	1.10	
Ruminants/Birds	Before	1.0	0.91	-1.88*	-0.15	1.22	-6.0***	0.45	0.20	-1.24***
	After	-0.94	0.62		-0.74	0.90		0.44	0.02	
Fishing	Before	0.94	0.62	2.85ns	-0.96	1.07	-1.79*	-0.73	1.20	3.67ns
	After	1.20	1.04		0.84	0.79		-0.02	1.21	
Petty-trading	Before	−1.05	0.96	-	1.01	0.66	-0.65**	-0.94	1.02	-1.04***
	After	−0.38	1.22	5.64***	1.04	0.58		-1.20	0.28	
Illegal mining	Before	−0.98	0.89	-1.71*	-80	1.20	-4.12***	1.01	063	-0.60**
	After	−1.02	0.84		0.79	0.88		1.04	0.21	

Source: Field Survey (2017): Mean score interpretations: 1.41-2.0=strongly agree, 0.25-1.4= agree, -0.24-0.24=neutral, -0.25- (-.1.4) = disagree, and -1.41-(-2) = strongly disagree: ns=not significant; *significant at 0.05; **significant at 0.01; ***significant at 0.001

Farming/Food crop production

Crop cultivation is one of the farming activities that are common in the resettled, host and adjoining households. Analysis from the survey showed that resettled, host and adjoining households cultivated roots and tuber crops. Maize and sorghum were also cultivated in large quantities. Similarly, leguminous crops such as Bambara and groundnuts were cultivated by household heads. Despite the cultivation of these crops, there was a decline in the farm sizes (hectares) of the resettled, host and adjoining households.

Table 13shows the extent of deviation for the reduction in farm sizes before and after the resettlement scheme in all the households. In the resettled households, farm sizes of commonly cultivated crops like maize, cassava, yam and groundnuts have reduced from an average of 3.5 hectares, 3.0 hectares, and 5.0 hectares to 1.2 hectares, 1.4 hectares and 1.8 hectares respectively with a strong deviation > 2. Similarly, sorghum, cocoyam, groundnuts and plantain farmers have also had the sizes of their farmlands reduce from 2.0 hectares, 2.6 hectares, 1.3 hectares and 1.8 hectares to 0.6 and 0.9 hectares for sorghum and cocoyam and 1.1 as well as 0.2 hectares for groundnuts and plantain respectively with a deviation of < 1.

Table 7: Main Crops Cultivated

Main Crops	Resettled				Host				Adjoining			
	Before		After		Before		After		Before		After	
	Mean Size (ha)	SD	Mean Size (ha)	SD	Mean Size (ha)	SD	Mean Size (ha)	SD	Mean Size (ha)	SD	Mean Size (ha)	SD
Maize	3.5	2.7	1.2	1.3	3.6	2.1	2.4	1.6	2.0	1	0.1	0.5
Cassava	3.0	2	1.4	1.1	4.5	4.2	2.7	1.7	1.9	1.8	0.3	0.5
Plantain	1.9	1.0	0.2	0.4	3.1	2.6	2.2	2.0	2.2	0.9	0.0	0.0
Yam	3.6	3.7	1.8	1.0	5.0	2.4	2.4	1.4	1.8	1.0	0.2	0.4
Sorghum	2.0	1.4	0.6	0.9	4.3	2.6	2.2	0.8	2.2	2.0	0.2	0.0
cocoyam	2.0	1.6	0.09	0.2	1.0	0.0	0.3	0.5	4.5	0.5	0.0	2.6
Groundnuts	2.6	1.6	1.1	1.1	2.8	2.6	1.7	1.3	1.5	0.0	2.0	2.9
Bambara	1.3	0.6	0.2	0.4	3.4	0.8	1.3	0.5	1.0	0.5	0.0	2.3

Source: Field Survey (2017)
Interpretation of the standard deviation, <1 =less deviation; 0= no deviation; 1>x≥2= strongly deviates

The household survey analysed further showed a remarkable decline in farm sizes of crops in the host households. Sorghum and cassava had the highest farm size of 4.6 hectares and 4.5 hectares respectively. The sizes were reduced to 2.2 hectares for sorghum and 2.7 hectares for cassava with a strong deviation > 2. Similarly, maize and yam reduced from 3.6 to 2.4 hectares; Bambara, 3.4 to 1.0 hectares; plantain,3.1 to 2.1; groundnuts, 2.8 to 1.7 and cocoyam, 1.0 to 0.3 hectares with a deviation of1.0 ≥ 2.

The adjoining households further exhibited similar tangent. There was, generally, a decline in landholding for all the major crops. This general decline was lower at the household level compared to the district average (ERM, 2007b; Bole District Assembly, 2014). This was due to the small sizes of fertile land, poor fertility, and activities of illegal miners and trampling of the soil by cattle compared to before the resettlement scheme where human and livestock activities were low.

Furthermore, analysis of the national average land holding size of crop production revealed the savanna belt of Ghana to be 4.0 hectare; forest zone, 3.1 hectares and the coastal belt, 2.3 hectares. This implies that households that were engaged in agriculture were basically peasant farmers since their farm sizes were below the national average. Conversely, the nature of mixed-cropping in these households reflected the national average of 3.7, consisting of cassava, sorghum, maize and yam/cocoyam within the savanna belts (GSS, 2014). This shows that crops mixed at the households were in tandem with the national crop mix portfolio.

Such peasant farmers could benefit from a national policy that is geared towards modernisation of agriculture in the savanna ecological enclaves by MOFA of the government of Ghana (GSS, 2014). This study supports the index of crop importance in the savanna ecological belts, where the national average index for cassava is 0.18 compared to 0.1 at the households and maize, 0.21 compared to 0.11 at the households. Yam, on the other hand, is 0.06 compared to 0.02 at the household level. The share portfolio of maize, cassava, yam and sorghum in the savanna zones were 61 percent, 21 percent, 12 percent and 8 percent respectively compared to 32 percent, 41 percent, 38 percent and 7 percent respectively in the households. This implies that with the exception of cassava and yam whose share portfolios were above the national average, the share portfolio of the rest was below the national average (GSS, 2014).

The qualitative data validated the above analysis. For instance, in-depth interviews and FGD participants stated that to boost crop production in the households of the resettled, host and adjoining households, there was the need to introduce irrigation schemes to augment the reduction in productivity.

Vegetable production

The study found resettled households to have a general reduction in all the land holdings of vegetable cultivation (Table 14). Okra and agushie previously had 3.3 hectares of farm sizes but reduced to 0.7 and 1.3 respectively after the resettlement, with a standard deviation of >2.Pepper, tomatoes and cabbage cultivation also declined from farm sizes of 2.0 hectares, 3.5 hectares and 1.2 hectares respectively to insignificant sizes (Table 14).

Consistently, the host and adjoining households have demonstrated similar trends in the reduction of cultivated land for all vegetables. Okra, agushie and pepper which were cultivated on land sizes ranging from 1.6 hectares, 2.9 hectares and 2.8 hectares also declined after the resettlement (Table 14).

A focus group discussion at the three communities on the 16th and 18thof January 2017 revealed that the gradual reduction in the size of vegetable farmlands was due to similar challenges encountered by the food crop growers. Given the poor fertility of the land, it was suggested that the only option available to them was irrigation.

Livestock/bird production

The main systems of farming were mixed farming in the affected households (Table 15). Livestock (such as goats, sheep, pigs) and birds (for example, fowls) were kept in smaller quantities in addition to fishing and farming. Before the resettlement scheme in the resettled households, the average mean of cattle, goats, sheep, pigs and birds were 0.4 cattle, 3.3 goats,2.0 sheep,3.5 pigs and 8.9 birds compared to 0.7 cattle, 1.3 goats,0.4 sheep, 0.7 pigs and 5.8 birds afterwards.

Also, there were reductions in the average households that reared or keep livestock or birds as indicated in Table 15.Ruminants were an important component of the smallholder mixed farming system where it provided food as well as spiritual and economic security (ERM, 2007b; BDA, 2014). This mixed farming was good in the wake of diseases. It, also, helps in reducing risks.

Table 8: Vegetables Grown by the Households

Vegetables	Resettled				Host				Adjoining			
	Before		After		Before		After		Before		After	
	M (ha)	SD	M (ha)	SD	M (ha)	SD	M (ha)	SD	M (ha)	SD	M (ha)	SD
Okra	3.3	2.6	0.7	0.7	1.6	1.4	1.1	0.4	1.7	1.0	0	0.0
Agushi	3.3	2.9	1.3	1.3	2.9	1.8	2.2	1.2	3.0	2.0	1.0	1.4
Pepper	2.0	2.3	0.4	0.4	2.8	2.1	1.4	0.8	1.5	1.1	0.0	0.0
Tomatoes	3.5	2.8	0.6	0.7	0.6	0.3	0.9	0.2	1.8	0.9	0.0	0.2
Cabbage	1.2	0.9	0.0	0.0	0.0	0.0	0.0	0.0	2.5	1.2	0.0	0.0

Source: Field Survey (2017) Interpretation of the standard deviation, <1 =less deviation; 0= no deviation; 1>x≥2= strongly deviates
M= mean; SD= standard deviation

Table 9: Types of Livestock/Birds Reared in Households

L/B	Resettled				Host				Adjoining			
	Before		After		Before		After		Before		After	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
cattle	0.4	2.6	0.7	0.7	0.6	0.2	1.1	0.4	0.1	0.01	0	0.0
Goats	3.3	2.9	1.3	1.3	2.9	1.8	2.2	1.2	3.0	2.0	1.0	1.4
sheep	2.0	2.3	0.4	0.4	2.8	2.1	2.3	0.8	1.5	1.1	0	0.0
pigs	3.5	2.8	0.6	0.7	0.6	0.3	0.9	0.2	1.8	0.9	0	0.2
Birds	8.9	0.9	5.8	1.2	12.4	1.4	7.1	1.2	1.3	1.2	1.0	0.2
Mean	3.62		1.7		3.86		2.76			1.54		0.36

Source: Field Survey (2017) *L/B=Livestock/Birds

Similarly, there was a decline in the average ownership of livestock and birds in the host households. There were marginal increases of cattle from 0.6 to 1.1 and 0.6 pigs to 0.9 pigs. The rest, such as goats, declined marginally from 2.9 to 2.2, sheep from 2.8 to 2.3 and birds from 12.4 to 7.1. In the adjoining households, livestock and birds declined significantly. Cattle and sheep were not recorded in the households that were surveyed. The average household rearing of goats reduced from 3.0 to 1.0 while birds reduced from 1.3 to 1.0 after the resettlement. However, due to complementary and competitive uses of livestock and birds in the traditional setting, attempts to improve such production would require both cultural and economic orientations (ERM, 2007b; MOFA, 2010).

From the FGDs, it came out that these livestock/birds supplement the food requirements of households. Additionally, they help generate income and serve as a store of wealth during the dry seasons. However, household heads encountered a

lot of challenges in their management. As shown in Figure 6, the common problems for the management and production of livestock/birds in the households were stealing (41.3%), straying onto farms (6.5%), health problems (3.3%), poor housing (9.1%) and lack of capital 39.8%).

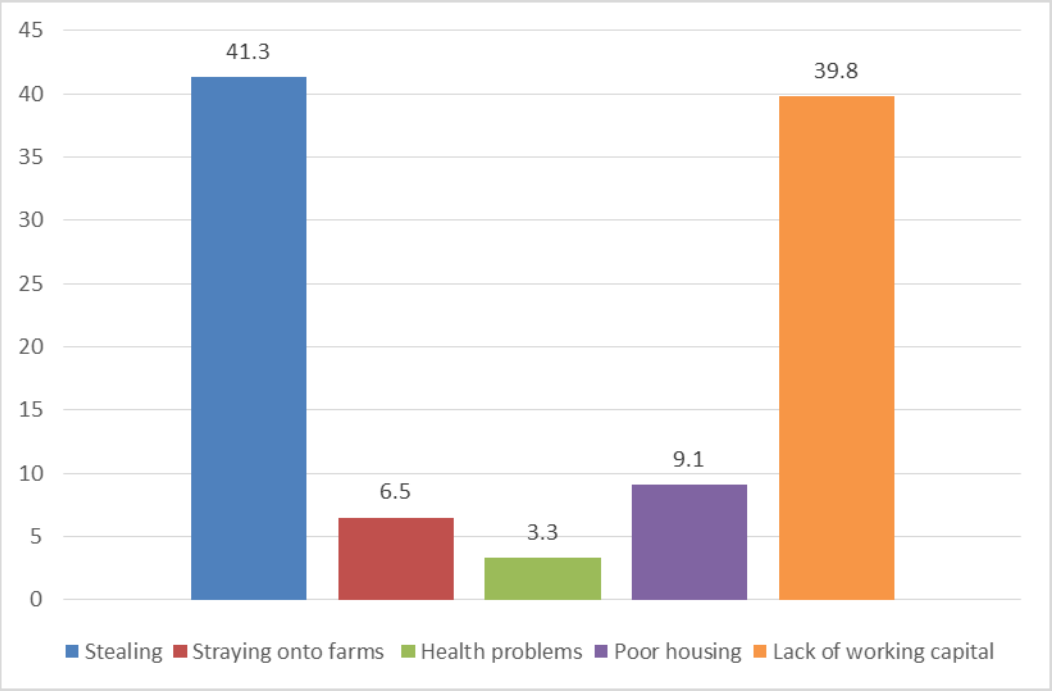

Figure 6: Challenges in Livestock/Birds Management at the Household
Source: Field Survey (2017)

This revelation confirms studies (ERM, 2007b; GSS, 2014) that posit that Bole and Banda districts respectively have 49.0 percent and 32.4 percent of households that faced these problems in the management of livestock/birds. A further probe during an FGD on 26th January 2017 validates these challenges. A respondent remarked: "lack of capital, and stealing were challenges livestock/birds households encountered".

Off-Farming Activities

The off-farming activities in the households revealed a general reduction after the resettlement in the resettled, host and adjoining households compared to before the resettlement as seen in Table 16. Yet, the sale of firewood/charcoal increased in all the households from 19.1 percent to 24.0 percent in the resettled, 33.4 percent to 50.1 percent in the host and 11.6 percent to 13.9 percent in adjoining households after the resettlements. Rent of land and catering services also saw an increase in the resettled, host and adjoining households. Catering services increased from (1.3%) to (33.5%) after the resettlement as seen in Table 15. Similarly, agriculture wage, transportation services, petty trading and dressmaking/tailoring all saw increases after the resettlement in all the study households.

Further analysis of the matter during FGDs in the host and adjoining households on the 28th and 18th of January 2017 revealed that charcoal/ firewood businesses became profitable after the resettlement due to an increase in economic activities such as smoking of fishes, catering services etc. The increase in population and economic activities in all the resettled, host and adjoining households made such an enterprise profitable. This assertion confirms the finding of previous studies (Cernea, 2006; ERM, 2007b; Obour *et al.,* 2016) that dam construction projects always lead to an increase in off-farm activities in the affected households.

Table 16: Off-Farm Activities

Off-farm activities	Resettled		Host		Adjoining	
	Before (%)	After (%)	Before (%)	After (%)	Before (%)	After (%)
Sales of firewood/ charcoal	19.1	24.0	33.4	50.1	11.6	13.9
Rent of land	14.7	72.6	23.5	89.6	8.9	2.6
Catering services	11.0	45.9	11.9	52.8	1.3	33.5
Migrants wage labour	5.6	66.8	19.0	54.1	1.9	11.3
Transportation services	4.5	43.7	14.9	66.2	3.1	42.1
Petty trading	27.1	54.9	31.0	55.9	22.1	62.7
Dressmaking/tailoring	3.1	31.0	11.0	54.3	0.0	33.6

Source: Field Survey (2017)

FGD participants on 26th January admitted that there were truckloads of both firewood and charcoal to urban towns every day in the study areas. The construction of temporal structures/shelters for housing by migrants engaged in illegal mining, expanding of farmlands and grazing of animals influenced felling of trees. Data collected from Bole revenue office from the planning officer on 15th January 2017 confirmed these assertions by the FGD participants. It was revealed that about twenty-eight trucks of charcoal/firewood were exported from the district every day. These confirm studies (Agnihotri, 1996; Biswas, 2012) that maintain that increased human activities alter the patterns of rainfall and the microclimate during resettlement activities.

Non-Farm Activities

Non-farm activities in the resettled, host and adjoining households include illegal mining, hunting, wild fruits picking, logging and wage-work as depicted in Table 17.

Table 17: Types of Non-farm Activities Engaged by Respondents

Non-farm activities	Resettled		Host		Adjoining	
	Before (%)	After (%)	Before (%)	After (%)	Before (%)	After (%)
Illegal mining	0.0	11.6	6.2	68.3	2.8	33.1
Fishing	89.7	67.2	0.0	0.0	78.1	86.9
Hunting	36.3	24.9	33.7	27.0	2.4	0.0
Wild fruits picking	2.8	0.0	38.9	23.5	0.0	0.0
Logging	0.9	2.8	10.7	66.2	0.0	0.0
Wage work	15.7	24.8	11.4	32.1	8.9	13.1

Source: Field Survey (2017)

As shown in Table 17, illegal mining activities which were hitherto unknown in resettled households recorded 11.6 percent. Similarly, for the host households, these activities increased from 6.2 percent before the resettlement to 68.3 percent after the resettlement. Likewise, it increased from 2.8 percent in the adjoining households to 33.1 percent after the resettlement.

Nonetheless, fishing declined from 89.7 percent to 67.2 percent after the resettlement in host households while the adjoining households recorded an increase from 78.1 percent to 86.9 percent after the resettlement. Hunting and wild fruits/leaves picking and harvesting, also, declined in all the households. Yet,

logging saw an increase in the resettled and host households from 0.9 percent to 2.8 and 10.7 percent to 66.2 percent respectively after the resettlement.

Wage work, also, saw an increase in the resettled households from 15.7 percent to 24.8 percent after the resettlement. Likewise, there was an increase from 11.4 percent to 32.1 percent in the host households and 8.9 percent to 13.1 percent in the adjoining. These variations reflected the emerging changes in household livelihood diversification in the households. These revelations validate Cernea (2000a) and Mathur's (2006) studies on livelihood diversification among resettled households in Africa.

Fishing and Related Activities

One of the largest non-farm livelihood activities in the resettled and adjoining households is fishing/fish mongering as shown in Table 18. Comparing household responses, the resettled households fishing activities declined from 33.9 percent to 25.4 percent after the resettlement. In the host households, they declined from 1.7 percent to 1.1 percent. Similarly, the adjoining households had their fishing/fish mongering activities decline from 21.5 percent to 16.4 percent after the resettlement. This confirms reports (BaDA, 2014; Bole District Assembly, 2014; ERM, 2007a & b) that majority of the resettled and adjoining households' economic activities were predominantly fishing related. It was found that fishing and its related activities were influenced by gender in the study households. Males go fishing while the females processed and sell the catch (GSS, 2014).

However, during FGDs on 20th January 2017, a participant revealed that: "The quantities and sizes of fishes we catch have generally increased but the high cost of inputs, electricity bills, school fees and transportation costs have eroded the gains".

Table 18: Respondents Fishing Activities in the Households

Communities	Periods	(Freq.)	(%)
Resettled (n=62)	Before	60	33.9
	After	45	25.4
Host (n=182)	Before	3	1.7
	After	2	1.1
Adjoining (n=39)	Before	38	21.5
	After	29	16.4
Total		177*	100.0

Source: Field Survey (2017)
* < the sample size due to low responses in the households

Such assertions validate earlier findings (Mettle, 2011; Owusu-Mensah, 1996; Raschid-Sally, 2008) that in a dam-induced resettlement, households engaged in fishing and its related activities see an increase in their catches within the short-term. The sustainability of the increase in catches is, nonetheless, influenced by the method employed due to unhealthy competitions among the fishermen.

Fishing Gear Employed

The commonest fishing gears were hook/line and the trap nets as indicated in Table 19 which shows the types of fishing gears used by fishermen in these households. Out of the respondents interviewed in the resettled households, 30.7 percent used line nets. In the adjoining households, 42.1 percent used the same nets. Also, 14.8 percent and 11.6 percent used traps in the resettled and adjoining households respectively. Hooks and cast nets were used by 27.5 and 20.0 percent in the resettled households while the adjoining households recorded 28.9 percent and 17.4 percent respectively. The host households did not record any usage of fishing gears.

Table 19: Types of Fishing Gears by Households

Types of fishing gears	Resettled (%)	Host (%)	Adjoining (%)
Line nets	30.7	0.0	42.1
Traps	14.8	0.0	11.6
Hooks	27.5	0.0	28.9
Cast nets	27.0	0.0	17.4
Total	100.0	0.0	100.0

Source: Field Survey (2017)

A probe during FGDs on 20th January 2017 showed the traditional fishing methods used in fishing activities. The commonest nets were the mesh nets with sizes ranging from 2 inches (5 cm) to 1 (2.5 cm) and 1 7/8 inches (4.8 cm). During a key informant interview with the chief fisherman at the resettled household on 21st January 2017, he remarked: “Before, the Bui projects, we were

not using engine boats in our fishing activities. There were, usually, two people per boat for paddling and the removal of fish from the nets. However, the construction of the Bui dam has brought the need for fishermen to use larger engine boats that required between 3 to 6 people for effective fishing". Such an admission confirms the need for an increase in the quality and quantity of fishing gears to increase and sustain livelihoods as observed by Ampratwum-Mensah, 2011.

Forest Products (Wild fruits picking and logging)

Forest products that were utilised by households are presented in Table 20. About 32.6 percent of respondents in the resettled households use medicinal herbs compared to the 23.6 percent in the host and 22.0 percent in the adjoining households. On the other hand, 10.1 percent use dawadawa in the resettled households compared to 20.4 percent in host and 9.8 percent in the adjoining households. The high usage of medicinal herbs in the resettled households and dawadawa in the host households confirmed assertions (Ainooson, 2005; ERM, 2007a, b) that due to an induced micro-climate, households close to dam-induced resettlements are prone to water-related diseases.

Other forest products that were harvested and used in the resettled households include shea-fruits which constituted 7.2 percent compared to 2.9 percent in the host and 8.9 percent in the adjoining households. The percentage of baobab leaves/fruits constitute 8.0 percent for the resettled households, 4.8 percent in the host and 6.5 percent in the adjoining households. Furthermore,

wood products harvesting and usage were higher in all the studied households compared to honey.

Table 20: Types of Forest Products in the Households

Forest products	Resettled		Host		Adjoining	
	(f)	(%)	(f)	(%)	(f)	(%)
Medicinal herbs	45	32.6	162	23.6	27	22.0
Dawadawa	14	10.1	140	20.4	12	9.8
Shea-fruits	10	7.2	20	2.9	11	8.9
Baobab leaves/fruits	11	8.0	33	4.8	8	6.5
Honey	17	12.3	158	23.0	29	23.6
Wood products	39	28.3	173	25..2	36	29.3
Total	138*	100.0	686*	100.0	123*	100.0

Source: Field Survey (2017)
*More than the sample size due to multiple responses

While wood product harvesting and usage constituted 28.3 percent for the resettled households, honey constituted 12.3 percent. Similarly, in the host households, while wood products constituted 25.3 percent, honey represented 23.0 percent. In addition, wood products garnered 29.3 percent while honey had 23.6 percent in the adjoining households.

The above findings corroborate findings made by Diaw and Schmidt-Keller (1990) and Alhassan (2008) in their studies on the Akosombo and Kpong resettlement schemes in Ghana. They argued that forest products were very vital as sources of rural livelihood for affected households during resettlement. According to Obour *et al.* (2015) and GSS (2014), rural households along the

BNP depend on forest products during the dry or lean seasons for their livelihoods.

Game and Wildlife Hunting

Respondents from the study households stated that they were engaged in hunting as a form of off/non-farm activity (Figure 7). About 70.0 percent of respondents in the study households were not engaged in hunting activities but the remaining 30.0 percent were. Out of this 30.0 percent that engaged in hunting, 40 percent out of them said they hunted for both subsistence and sale while 60 percent stated they hunted for both reasons.

The decision to hunt by park adjacent households was complimentary as indicated by Acquah *et al.* (2014). The excess time during the lean season was used to hunt for game and wildlife along the fringes of BNP.

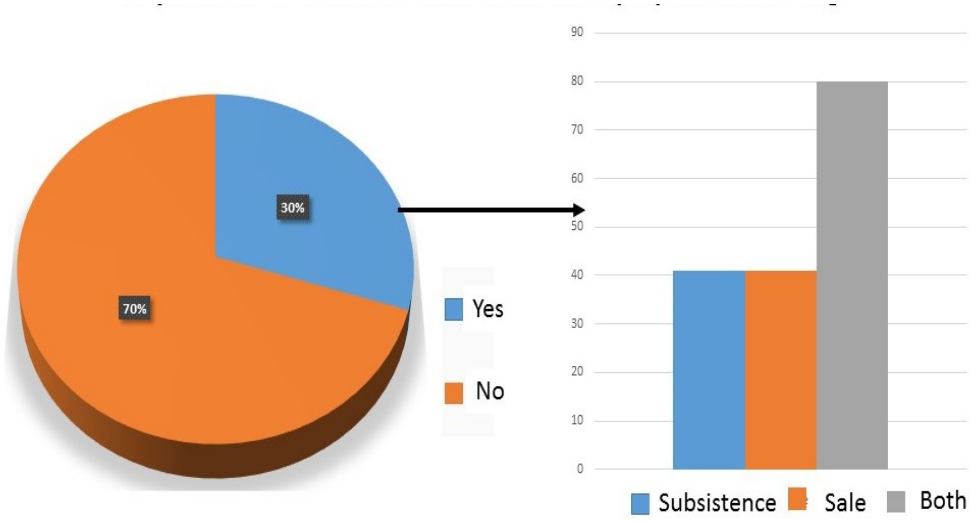

Figure 7: Reasons for Hunting
Source: Field Survey (2017)

Further revelations by key informants indicated that the decision to hunt was influenced by warders from BNP since the hunters were supported by warders at BNP. They connived with some of the warders to track their operations and duty post at night. This enabled them to kill medium size game like the dear, antelopes, chimpanzees etc. (Key informant from Jama 12th January 2017).

Summary

The chapter analysed the livelihood strategies adopted by the resettled, host and adjoining households before and after the resettlement. Livelihood activities such as farming, off farming and non-farming activities were critically examined. Farming activities covered were crop and vegetable production and ruminants/birds rearing. Off-farming activities analysed included gathering of fruits/firewood and illegal mining. Petty trading, transportation, daily labour and fishing as non-farm activities were also analysed. It concluded by looking at challenges affecting them have also been discussed.

CHAPTER EIGHT

LIVELIHOOD RESOURCES

Introduction

This chapter analysed household assets that influenced sustainable livelihood outcomes. These resources include physical, social, financial, human and natural resources. With respect to the physical resources, elements such as farming, shelter, sources of energy, domestic water supply and infrastructure development have been discussed. Elements of social resources that have been analysed include social networks, power relations and sources of conflicts. Similarly, sources of income, expenditure and household savings and credits constituted financial resources. Under human resources, common ailments, disability, household sizes and educational level were examined. Natural resources such as ownership of land, tenure arrangements, sources of construction materials and afforestation were also discussed. The chapter concludes with sustainable livelihood outcomes.

Physical Resources

One of the most important livelihood assets that supported infrastructure was the physical resources. As indicated in Figure 1, the assets pentagon in the livelihood framework consists of resources that were vital in the resettled, host and adjoining households (Ellis, 2000; Scoones, 20015). The ensuing section discusses physical resources such as farming tools, hunting inputs, shelter and social services.

Farming Tools

Common tools that were used for the cultivation of crops and vegetables in the resettled, host and adjoining households were hoe, cutlass and tractor services. As indicated in Table 21, 46.8 percent used hoe/cutlass while 4.8 percent used tractor services in the resettled households compared to the 87.4 percent and 12.6 percent who used hoe/cutlass and tractor services respectively in the host households. There was, however, a low usage of both hoe/cutlass (7.7%) and tractor services (2.6%) in the adjoining households.

The low usage of these tools and services was a confirmation of the belief that the adjoining and resettled households were less engaged in farming compared to the host households. The low utilization of tractor services in all households confirmed the peasant nature of their agricultural activities. These observations were made by WRM (2001), Raschild-Sally *et al*. (2008) and Obour *et al.* (2016) that due to the low-lying topography of the Volta Basin, traditional tools were mostly used in the cultivation of crops.

Additionally, farm inputs that were used are presented in Table 22. It was observed in the resettled households that out of 117 multiple responses, weedicides had the equivalent of 19.7%; pesticides had 10.3%; fertilizer, 38.5% and improved seeds, 31.6%. Similarly, out of 393 multiple responses in the host households, weedicides constituted 17.2%; pesticides, 12.5%; fertilizer, 42.7% and improved seeds, 27.7%. The application of agricultural inputs in the adjoining households was more evenly distributed: weedicides, 24.2%; pesticides, 18.1%; fertilizer, 27.2% and improved seeds, 24.0%.

Table 21: Tool(s) used for Crop Cultivation by Households

Community		Tractor	Hoe/Cutlass	Total
Resettled n=62)	(f)	3	29	62
	(%)	4.8	46.8	100.0
Host (n=182)	(f)	23	160	182
	(%)	12.6	87.4	100.0
Adjoining	(f)	1	3	39
(n=39)	(%)	2.6	7.7	100.0

Source: Field Survey (2017)

The high percentage for application of weedicides in the adjoining households was because weedicides are used to kill the grasses that easily grow at the banks of the river. Secondly, it was used to spray grasses behind their shelter/houses. Their closeness to the river also makes them vulnerable to creeping insects and dangerous reptiles; hence, the frequent usage of weedicides to kill the grasses behind their houses.

A recent study by Mariotti (2012) and Alemu (2015) on resettlements in Vietnam and Kenya's Cambera enclaves affirmed the low inputs-use among resettled households. They observed that due to the low income among affected households, there was the need for state institutions to subsidise the prices for them.

Table 22: Uses of Agricultural Inputs by Households

Inputs	Resettled		Host		Adjoining	
	(f)	(%)	(f)	(f)	(f)	(%)
Weedicides	23	19.7	67	17.1	8	24.2
Pesticides	12	10.3	49	12.5	6	18.1
Fertiliser	45	38.5	168	42.7	9	27.2
Improved seeds	37	31.6	109	27.7	10	24.0
Total	117*	100.0	393*	100.0	33**	100.0

Source: Field Survey (2017)
* More than sample size due to multiple responses
** Less than sample size due to non-participation

Shelter/Housing

The provision of shelter is one of the fundamental infrastructures that provided the people with security to live and work (WB, 2012; IFC, 2012). The kinds of materials used for constructing dwelling places in the resettled, host and adjoining households are presented in Table 23.

Table 23: Types of Construction Materials for Dwelling by Respondents

Households		*MWG R (%)	*GWG R (%)	*MWZ R (%)	*CBZ R (%)	*WWZ R (%)	Total (%)
Resettled	Before	34.4	21.3	29.5	11.5	3.2	100.0
	After	0.0	0.0	0.0	100.0	0.0	100.0
Host	Before	12.6	9.3	33.5	43.4	1.2	100.0
	After	2.7	6.0	30.3	59.9	1.1	100.0
Adjoinin	Before	5.1	0.0	10.3	84.6	0.0	100.0
g	After	15.4	76.9	7.7	0.0	0.0	100.0

Source: Field Survey (2017)
*MWGR-Mud wall with grass roof; *GWGR- Grass wall with grass roof;
* MWZR- Mud wall with zinc roof; *CBZR- Cement block with zinc roof and
*WWZR- Wooden wall with zinc roof

The dominant types of buildings (per the building materials used) before the resettlement scheme were mud walls with grass, constituting 34.4%; grass walls with grass roof, 21.3%; mud wall with zinc roof, 29.5%; cement block with zinc roof, 11.5% and wooden wall with zinc roof, 3.3%. Nonetheless, CBWZ (100.0%) became the dominant building type in the resettled households after implementing the resettlement scheme. This shows the remarkable improvements in the quality of dwelling places they have been provided due to the resettlement scheme as envisaged in the (ERM. 2007b).

However, when the analysis is extended to the host household, the results were MWGR, 12.6%; GWGR, 9.6%; MWZR, 33.5%); CBZR, 43.3% and WWZR, 1.2% before the resettlement and MWGR, 2.7%; GWGR, 6.0%; MWZR, 30.2%; CBZR, 59.9% and WWZR, 1.1% after the resettlement. In the adjoining households, the types of dwelling places based on the building materials used before the resettlement scheme were MWGR, 5.1%; MWZR, 10.3% and CBZR, 84.6%. After the resettlement, MWGR became 15.4%; GWGR, 76.9% and MWZR, 7.7%.

It is worth noting that in rural Ghana, 35 percent of households live in mud wall houses roofed with grasses while 6.0 percent of rural households live in houses built with cement block in northern Ghana (GSS, 2014).The contrasting picture depicted in the analysis in the host and the adjoining households may be due to the influx of migrants to the adjoining households after the resettlement to exploit the economic opportunities that stemmed from illegal mining and fishing. The sudden reduction of households using block and zinc in the adjoining

households may, also, be due to the perceived illegal status of these households within the catchment area of the Bui dam.

It, also, emerged from FGDs that there have been improvements in the conditions and the quality of their dwelling places/shelter compared to the situation before the resettlement scheme was implemented. A case in point was when a key informant from the Bui resettlement, on 28th January 2017, took me to his house which was provided by the BPA to observe the facilities that were added to the housing unit. Each newly constructed housing unit had a kitchen, washroom, bathroom and electricity supply. In addition, it had a wide corridor with adequate windows for ventilation. Plate 1 compares dwelling places/shelter before and after the resettlement scheme.

Plate 1: Shelter/Dwellings before and after the Resettlement Scheme
Sources: Adapted from BPA (2011)

Generally, a further observation by the researcher revealed that the housing conditions of the resettled households have improved compared to the host and adjoining households although the host households have expanded and developed new structures. A further probe with a key informant (18th January 2017) revealed that illegal mining and high prices of foodstuffs have increased the income of the people, and this has helped them to extend and construct new dwelling places.

It, further, emerged from an observation on 18th December, 2016 that the adjoining households' dwelling places were predominantly "makeshift" structures (Plate 2) because migrant fishermen and illegal miners used the banks of the rivers as transit points for the economic activities when boats and canoes from fishing expeditions and illegal mining dock.

Plate 2: Dwelling Structure of Adjoining Households
Photo Credit: Author (2017)

Basic Sources of Energy in the Households

About 100.0 percent of the resettled households use electricity as the main source of energy for lightening compared to 92.0 percent of the host households. In the adjoining households, however, 90.0 percent of the houses use kerosene operated lanterns while 6.0 percent use battery-operated/solar rechargeable lanterns. Another 2.0 percent of these households sleep in darkness. Alternative sources of energy such as torchlight and candles constituted 2.0 percent and were used by the adjoining households.

In Ghana, 70.0 percent of rural households have electricity compared to the 68.0 percent in these two districts. This means that access to electricity in the resettled (100.0%) and host households (92.0%) have exceeded the national and district average (GSS, 2010). It, also, implies that more efforts are needed to improve the accessibility of electricity in the adjoining households.

Sources of Domestic Water

The study analysed the available sources of water, types of sanitation facilities and methods of disposing of waste. With respect to drinking water, 100.0 percent of resettled households used borehole water compared to the 83.2 percent in the host households while the adjoining households have no access to potable drinking water. The main source of drinking water for the adjoining households was the river. Studies by Arp and Baumgartel (2004) and ERM (2007b) have shown that access to potable water minimises the prevalence of water-borne diseases among household members, especially young children in displaced populations. Similarly, studies (Cernea, 2000; Chowdhury & Kigpen, 2013) in North-East India and Egypt confirmed that a good source of drinking water is important because potentially fatal diseases such as diarrheal diseases, bilharzia, typhoid, cholera, schistosomiasis, trachoma and dysentery can easily be managed.

According to GSS (2014), the proportion of households in Ghana that have access to potable drinking water is about 77.0 percent compared to the 100 percent and 83 percent accessibility in the resettled and host households respectively. This means their access to potable water is better than the national

average. Yet, 100.0 percent of the adjoining households used the polluted water from the river for their household activities

In terms of toilet facilities, 100.0 percent in the resettled and 45.2 percent in the host households indicated that they have adequate toilet facilities compared to the 100.0 percent in the adjoining households without adequate toilet facilities. However, it is important to note that the national average for access to proper sewage disposal is 11 percent for rural areas and 12 percent for urban centres while the district average is 14 percent (GSS, 2010; BDA, 2014). This implies that both the resettled and host households have access to proper sewage disposal, unlike the adjoining households.

A further probe with key informants on the 26th December 2016 revealed that open defecation in the bush is more common in the adjoining households than the resettled and host households. Such open defecation could increase the contamination of water bodies and some leafy vegetable crops. This potential contamination could be the carrier of intestinal bacteria, parasites and viruses that may be responsible for causing diarrheal diseases when consumed.

Infrastructure Provisions

According to McDonald (2006), the nature of roads and communication networks influenced affected households' access to markets. There were examinations of social services infrastructure before and after the resettlement scheme (Table 24). The results indicate that a health centre, basic schools, fishing gears, electricity, mobile services, roads, potable water, veterinary services and canoes were some of the social services/infrastructures that were accessible in the

study area. Others include credit facilities, markets, microfinance, religious centres, toilet facilities, extension services, grinding mills, cemeteries, shrines/grooves and forest reserves. These were some of the services accessible before and after the resettlement scheme.

Out of the 253 multiple responses in the resettled households on social services infrastructures that were most accessible before the resettlement, basic schools constituted 5.5%; fishing gears, 8.7%; canoes, 9.5%; religious centres, 6.3%; cemetery, 10.3%; shrines/grooves, 16.6% and forest, 20.6%. These results suggest that the resettled households prefer religious places of worship that were linked to the environment. They also suggest that social services or infrastructure that were linked to their livelihoods, such as canoes, fishing gears, cemeteries, shrines/grooves and the forest, were of paramount importance to the resettled households.

These productive resources were likely to be used in generating income for the households (Alemu, 2015; Scoones, 2015). However, access to social services infrastructure after the resettlement changed completely from productive resources to service infrastructure in the resettled households. Out of the 756 multiple responses, health centre, markets and toilet facilities (7.8%) were the highest followed by basic school (6.9%). These alterations from productive assets to services infrastructure affected the livelihoods of the resettled households.

Furthermore, out of 1,615 multiple responses in the host households, eight out of the nineteen social services saw an increase to appreciable levels. These were basic school (6.7%), religious centre (6.8%), toilet facilities (6.4%),

extension services (7.2%), grinding mills (8.7%), cemetery (9.9%), shrines/grooves (10.6%) and forest (9.8%). The access to these productive social services was in tandem with the resettled household before the resettlement scheme. This implies that the host households' productive resources such as extension services, grinding mills, cemetery, shrines/grooves and forest products were vital to the livelihood of the people as observed by Obour *et al.* (2016).

Similarly, after the resettlement, the host households record out of the 2,286 multiple responses that access to social services infrastructure improved in nine entities out of the nineteen; these include electricity (6.4%), mobile services and roads (7.9%), markets (6.8%), micro finance (7.6%), religious centres (7.0%), toilet facilities (6.6%), grinding mills (7.7%) and cemetery (7.2%). These results, as well, suggest that there have been an improvement in roads and electricity but a decline in the shrines/grooves and forest products after the resettlement. These affected their livelihoods during periods of lean harvest where most of the rural population depends on forest products to supplement their income and reduce vulnerability (Scoone, 2015).

Furthermore, out of 196 multiple responses, access to social services was high in seven of the nineteen social services infrastructure in the adjoining households as indicated in Table 25. These were basic school (6.2%), fishing gears (9.7%), canoes (8.7%), markets (6.2%), microfinance (7.1%), shines/grooves (13.3%) and forest (13.8%). This pattern of responses confirmed both the resettled and host households' admission that productive resources are of more interest to the affected households. Forest and forest products and

shrines/grooves recorded the highest responses. This suggests that any alterations to their religious sites would affect their livelihood (ERM, 2007a, b; Cernea, 20009). Comparatively, after the resettlement, out the 403 multiple responses, access to social services improved in only roads (8.9%) and grinding mills (9.2%) with marginal increases in basic schools and markets as well (see Table 24).

Aside from the results in Table 24, some of the improved access to social services were visible during the study and are, thus, indicated in Figure 10 and Plate 3.

Table 24: Access to Social Services Infrastructure

Social services	Resettled				Host				Adjoining			
	Before		After		Before		After		Before		After	
	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)
Health centre	6	2.4	60	7.8	66	4.1	107	4.7	7	3.6	16	4.0
School(Basic)	14	5.5	53	6.9	108	6.7	121	5.3	12	6.2	34	8.4
Fish equipment	22	8.7	16	1.0	0	0.0	0	0.0	19	9.7	32	7.9
Electricity	9	3.6	62	3.8	45	2.8	147	6.4	0	0.0	11	2.7
Mobile service	11	4.3	61	3.7	70	4.3	180	7.9	9	4.6	30	7.4
Roads	9	3.6	60	3.7	43	2.7	181	7.9	7	3.6	36	8.9
Potable water	4	1.6	61	3.7	50	3.1	123	5.4	0	0	7	1.7
veterinary ser.	0	0.0	23	1.4	67	4.2	102	4.5	11	5.6	12	3.0
Canoes	24	9.5	48	2.6	0	0.0	0	0.0	17	8.7	35	8.7
Credit facilities	0	0.0	10	0.6	69	4.3	76	3.3	2	1.0	12	3.0
Market	8	3.2	60	7.8	89	5.5	156	6.8	12	6.2	38	9.4
Micro finance	0	0.0	34	4.4	50	3.1	174	7.6	14	7.1	33	8.2

Source: Field Survey (2017)

*More than the sample size due to multiple responses

Table 24: Continued

Social services	Resettled				Host				Adjoining			
	Before		After		Before		After		Before		After	
	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)
Religious st're	16	6.3	43	5.6	109	6.8	160	7.0	9	4.6	30	7.4
Toilet facilities	10	4.0	60	7.8	104	6.4	150	6.6	5	2.6	15	3.7
Extension serv.	0	0.0	14	0.9	115	7.2	137	6.0	8	4.1	12	3.0
Grinding mills	0	0.0	58	3.6	140	8.7	176	7.7	0	0	37	9.2
Cemetery	26	10.3	34	2.1	160	9.9	166	7.3	11	5.6	17	4.2
Shrines/gr'ves	42	16.6	0	0.0	171	10.6	132	5.8	26	13.3	21	5.2
Forest	52	20.6	8	0.5	159	9.8	105	4.6	27	13.8	13	3.2
Total	*253	100.0	*765	100.0	*1615	100.00	*2286	100.0	*196	100.0	*403	100.0

Source: Field Survey (2017)

*More than the sample size due to multiple responses

Plate 3: Road Infrastructure Linking the Study Communities
Photo Credit: Author (2017)

A further probe during a key informant interview on 17th December 2017 at Jama Nsuano revealed that BPA constructed a landing site for larger fishing boats for all the resettled and adjoining households. In line with an objective to improve the sites, market stall sites were casted to allow market women to easily erect structures; but, they have all been abandoned. This, the informant explained, was due to the low level of water in the reservoir (Plate 4).

Plate 4: Abandoned Casted Concrete for Market Stalls at Jama Nsuano
Photo Credit: Author (2017)

Social Resources

Formal and informal networks and connectedness are vital for individuals and institutions for healthy survival and strengthening of social bonds (Scudder & Cernea, 2006; McDonald, 2006). In every social life, these interconnectedness functions in our daily activities such as in funerals, marriages, outdoorings and religious rites (Faas *et al*., 2015).

Social Networks

The people we interact with on regular basis and even sporadically affect our beliefs, decisions, opinions, behaviours, economic decisions, micro-finance and politics (Faas *et al.*, 2015). As depicted in Table 25, after the resettlement scheme in all the affected households and out of the 128 multiple responses in the resettled households, beliefs (25.0%), economics/markets (20.3%), and politics (18.0%) were recorded. The results indicate that among the various forms of social networks, beliefs were highly influential followed

by economics/markets as observed by ERM (2007b) and Cernea (2009). Similarly, out of the 864 multiple responses in the host households, economics/markets (19.9%), behaviours (19.2%), beliefs (16.8%), decisions (16.0%), politics (15.5%) and micro-finance (12.6%) were cited as the forms of social networks in households.

Table 25: Forms of Social Network

Social networks	Resettled		Host		Adjoining	
	(f)	(%)	(f)	(%)	(f)	(%)
Beliefs	32	25.0	145	16.8	27	17.7
Decisions	15	11.7	138	16.0	19	12.5
Behaviours	17	13.3	166	19.2	33	21.7
Economics/markets	26	20.3	172	19.9	29	19.1
Micro-finance	15	11.7	109	12.6	14	9.2
Politics	23	18.0	134	15.5	30	19.7
Total	∗128	100.0	∗864	100.0	∗152	100.0

Source: Field Survey (2017)
∗More than sample size due to multiple responses

The pattern of responses indicates that economics/markets and behaviours were important in the affected households. These observations confirm various studies (Tsikata, 2008; Mettle, 2011; Faas *et al*, 2015; Obour *et al*, 2016) that intimate that host households are always threatened by resettlements when there are alterations in the economic or cultural lives of the people.

The respondents in the adjoining households also exhibited a similar trajectory in the various forms of social networks in the households. Out of 128 multiple responses, behaviours (21.7%), politics (19.7%),

economics/markets (19.1%) and beliefs (17.7%) were recorded. This was due to the increase in economic activities through illegal mining and fishing. It, however, promoted social vices such as teenage pregnancy, school dropout, prostitution and arm robbery along the major roads within the area (BDA, 2014, GSS, 2014; Bole District Assembly, 2014).

Further discussions with FGDs participants on 21st December 2016 at the resettled household revealed that their ability to maintain regular contacts with relatives within and outside households has increased their participation in social activities. This had improved their connectedness which was, hitherto, very low. In addition, the increase in economic/market opportunities has reduced the spirit of "sharing tools".

Alluding to the submissions at the FGDs, a key informant on 21st December2017 had this to say: "Our bond of communal spirit for the construction of dwelling places, toilets, exchange of labour and fish has reduced because neighbours no more take custody of young children when a family goes for weekly fishing expedition or harvesting his farm produce" These views were observed by Faas *et al.* (2015) who opines that refugees and migrant populations at the Bududuram refugee camps in Ghana have a weak sense of social network and interconnectedness. These attest to the fact that the spirit of social/communal networks has declined in the affected households.

Relationships with Neighbouring Households

The quality and quantity of relationships between and among households affected livelihood (Courtland, 2003; Collins, 2009). As shown in Figure 8, the resettled households indicated the quality of their relationships

with neighbours as follows: very good (22.6%), good (53.2%), no change (9.7%) and bad (14.5%). The responses showed positive relationships of the resettled households and their neighbours. Such cordiality promoted peace and stability which is vital for sustainable development. The results further confirm the findings of Faas *et al*. (2015) in their study at Bududuram in the central region on the good relationships that existed among the Liberia refugees in the resettled households and their neighbours. Similarly, responses from the host households showed the pattern: very good (54.4%), good (43.4%) and no change (2.2%). The same pattern of responses was seen in the adjoining households as well. They are very good (2.6%), good (76.9%), no change (5.1%) and bad (15.4%).

The highest response to bad relationships with neighbours came from the adjoining households. According to FGD participants in the adjoining households, their proximity to the reservoir had caused regular warnings from BPA about the potential effects of their location (A leader of FGD participant held on the 19th, January 2017 at Nusano).

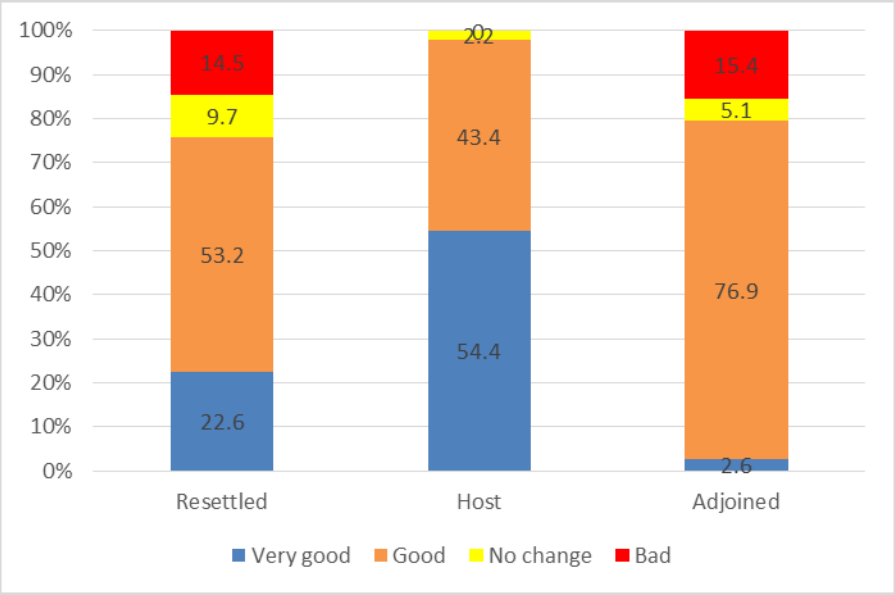

Figure 8: Nature of Relationship with Neighboring Households
Source: Field Survey (2017)

In a further probe, a key informant at the adjoining households on 25th January 2017 contended: "We have been told by the Ghana Police that most of the illegal miners and cattle rustlers were identified as people who were engaged in the arm robberies on the roads leading to the communities". This made the host and resettled households suspicious of people who, hitherto, were not resident in the resettled, host and adjoining households. This justifies (ERM, 2007b) baseline studies that hold that maintaining the socio-cultural identity of the affected households is one of the resettlement committees' objectives.

Power Relationship with Traditional Authorities

Chieftaincy is one of the important institutions guaranteed by the 1992 constitution of Ghana (Acts, 277) because of land ownership (stool, skins, clan and families). In a key informant interview held on 18th December, 2016 with the paramount chief at Banda-Ahenkro, he remarked that: "Community chiefs and headsmen at the affected households should continue to reign over their subjects but must pay allegiance to the various paramount and divisional chiefs which they hitherto belong to because we are the custodian of the land". This submission confirms reports by Coyne and Bellier (1995) and Desalegn (2003) from their feasibility studies on the Bui dam project in Ghana and Ethiopia's Canberra regions respectively. They propose that traditional land tenure arrangements be respected so as not to endanger the social fabric of the affected households in resettlement projects. In a further discussion, a key informant stated:

> *"Chieftaincy issues were too thorny to be engaged in as managers of a national project. Hence, we avoided being trapped*

by the dynamics of tradition in the area. Households were resettled based on their former allegiance to the paramountcies. Land can be acquired, but tradition cannot be bought, so state acquisition of lands does not circumvent tradition and the symbiotic relationship among the affected households" (Key informant at Lands commission held on the 16th, January 2017).

These submissions implied that the affected households should not perceive the acquisition of the land by the state as an act of acquiring freedom and independence from their indigenous benefactors (hosts). This confirms earlier studies (Fink, 2005; Tsikata, 2006; Kalitsi, 2007) and the WCD's recommendation on dam-induced resettlement projects. It can be seen from the aftermath of the Akosombo and Kpong resettlement schemes that households being alienated from their traditional jurisdictions and affected the ownership rights of land.

To validate these assertions, another key informant at Bole, on 28th January 2017, explained: "The position of a chief goes with ownership rights over resources. We were involved in decisions that affected them".

This assertion by the chiefs, according to Cernea and Mathur (2006), robs the affected households of self-determination, power and right to resources. Such admission rendered the resettled and adjoining households "landless", which means they would hang on them for a long time, no matter how the affected households were integrated.

Potential Conflict Triggers

Evidence collected by studies (Downing, 1996; Fobil & Attaquayefio, 2003) from Tucuru dam projects and Akosombo resettlement on conflicts

suggested variables that could trigger conflict after resettlement. As depicted in Table 26, out of the 208 multiple responses in the resettled households, causes of conflicts were access to fishing sites (28.9%), competition for fertile land (26.4%) and destruction of crops by cattle (25.0%). These findings agree with those made by Downing and Garcia-Downing (2009) and Alemu (2015) in their studies on planned relocations in China and Vietnam and the Southern Canberra region of Ethiopia. They opined that majority of such conflicts were environmentally induced.

Table 26: Sources of Conflict in the Households

Sources of conflict	Resettled		Host		Adjoining	
	(f)	(%)	(f)	(%)	(f)	(%)
Religious activities	18	6.4	34	6.0	8	10.4
Illegal mining	23	11.1	178	31.3	6	7.8
Competition for fertile land	55	26.4	180	31.6	10	13.0
Cattle destructions of crops	52	25.0	177	31.1	15	19.5
Access to fishing sites	60	28.9	0	0.0	38	49.4
Total	*208	100.0	*569	100.0	*77	100.0

Source: Field Survey (2017)
*Responses greater than sample size due to multiple responses.

Furthermore, out of the 569 multiple responses in the host households, illegal mining (31.3%), competition for fertile land (31.6%) and cattle destruction of crops (31.1%) constitute the main potential sources of conflict. Similarly, the adjoining households recorded the pattern: access to fishing sites (49.6%), cattle destruction of crops (19.5%), competition for fertile land (13.0%) and religious activities (10.4%). The results from both the host and adjoining households showed that the struggle over resources was the main

cause of conflict in the area. This, also, validates the work of Gray (1996) and Gyau-Boakye (2001) on indigenous resistance to resettlement and livelihoods in Brazil and Ghana respectively.

Furthermore, FGDs participants expressed fear about the growing level of fertile land scarcity due to increasing illegal mining activities. Similar sentiments were expressed by key informants. One lamented: "We have been caged from the north by the reservoir and BNP, south by Banda-Ahenkro town, east and west by our farmlands. Where would our children get land to farm in the future?" (Key informant discussions with Assemblyman at Jama on 19th December 2016). These submissions were pointers to the fears expressed by Cernea (2000a, p. 333) and De Wet (2006) about the "decapitalisation and pauperisation" of resettled and host households in resettlement schemes.

Financial Resources

Financial resources include income sources, expenditures, access to credit and savings. These were analysed in the ensuing sections.

Income Sources and Levels

Incomes of the resettled, host and adjoining households came from non-farm, off-farm and farming activities (Table 27). There were differences in sources of income before and after the resettlement in the resettled, host and adjoining households. The mean income of Gh¢ 480.8 (US$ 120.2) before the resettlement was higher than the Gh¢ 254.2 (US$ 63.6) after the resettlement in the resettled households. Such a drastic decline in the mean levels of their income reduced their purchasing power and increased poverty.

The picture is not so different at the host households where their mean income of Gh¢ 348.7 (US$ 87.2) before resettlement was higher than the Gh¢ 210.4 (US$ 52.6) after the resettlement. The most extreme and dramatic manifestation of such changes were observed in the adjoining households. The estimated mean income of Gh¢ 383.9 (US$ 96.0) before the resettlement reduced to Gh¢ 118.7 (US$ 29.7) after the resettlement.

Table 27: Sources of Monthly Mean Income

Income activities	Resettled		Host		Adjoining	
	Before	After	Before	After	Before	After
	Gh¢	Gh¢	Gh¢	Gh¢	Gh¢	Gh¢
Income from non-farm activities	261	457	470	115	121	28
Income from off-farm activities	213	126	162	182	441	489
Income from cash crops	805	158	795	469	73	0
Income from fish	567	110	260	122	1282	251
Income from food crops	663	235	486	392	264	7
Income from vegetables	485	538	186	135	82	5
Income from animals/birds	372	156	83	58	424	51
Mean	480.8	254.2	348.7	210.4	383.9	118.7

Source: Field Survey (2017)

These results indicate that the reduction in these households' income levels affected their purchasing power. This was consistent with findings made by Cernea and Mathur (2006) that Alemu's dam project in Mexico reduced the mean income of the displaced population that were relocated. Mahapatra (1996) further provided better impacts of the Three-Gorges Dam in China and how affected populations had their mean income reduced as they relied on state and federal governments' support.

Expenditure

The main areas of expenditure for affected households are indicated in Table 28. The mean expenditure in the resettled households increased from Gh¢ 165.9 (US$ 41.5) per month to Gh¢ 288.9 (US$ 72.2). Similarly, the mean expenditure of Gh¢ 164.3 (US$ 41.1) in the host households before the resettlement increased to Gh¢ 238.0 (US$ 59.5). Also, the mean expenditure of the adjoining households of Gh¢ 136.3 (US$ 30.08) before the resettlement increased to Gh¢ 191.7 (US$ 47.93).

Table 28: Estimated Expenditure by Respondents

Expended items	Resettled		Host		Adjoining	
	Before (GH₵)	After (GH₵)	Before (GH₵)	After (GH₵)	Before (GH₵)	After (GH)
Foodstuffs	205	367	182	198	130	289
Non-foodstuffs	126	112	85	134	44	80
Health	187	215	205	287	63	112
Education	131	571	346	665	516	502
Transports	135	191	139	224	104	203
Clothing	276	408	139	77	66	100
Miscellaneous	99	158	54	81	31	56
Mean	165.6	288.9	164.3	238	136.3	191.7

Source: Field Survey (2017)

Generally, there was an increase in all the households' expenditure. The results revealed the need to increase either productivity or reduce expenditure. If none of these conditions are met, the fear expressed by Fernandes and Bhurali (2011), that after displacement and relocation, the disintegration of social networks increased the expenses of households, would materialise.

Similar observations were made by Price (2015) and Picciotto *et al*. (2001) on increased expenditures of displaced populations in WB funded dam-induced resettlements in Asia.

Household sources of credit and savings

One of the greatest determinants of wealth is the ability of households to save generated income (Killick, 2010; Todaro & Smith, 2012). As depicted in Table 29, out of 283 respondents in all the households, MASLOC (15.9%), Commercial Banks (17.7%), Rural Banks (25.4%), Microfinance institutions (25.8%) and money lenders (8.8%) were common sources of credits and savings in the households. The percentages for rural banks and microfinance institutions were higher than the 22 percent of rural households in Ghana engaged in the provision of loans and credit facilities (GSS, 2012).

Table 29: Sources of Credits

Sources of credit & saving	Freq.(f)	Percentages (%)
MASLOC	45	15.9
Commercial banks	50	17.7
Rural banks	72	25.4
Friends and relatives	16	5.7
Microfinance institutions	73	25.8
Local money lenders	25	8.8
NGOs	2	0.7
Total	283	100.0

Source: Field Survey (2017)

These results validate findings by Akabza and Darimani (2001) that the main sources of credits for most of the resettlements in the mining sector in Ghana were commercial and rural banks with an increased preference for micro financial institutions.

Human Resource

According to Scoone (2015) and Ellis (2000), human resource is vital in determining livelihood outcomes. Factors that affect the human resource for livelihood constructions include common ailments, disabilities, household size, dependency ratio, educational levels and child labour.

Common Ailments

As mentioned in the ERM (2007b), the commonest ailments suffered by affected households are shown in Table 30. Out of the 276 multiple responses in the resettled households, malaria (20.3%), waist pain (16.0%), eye diseases (21.7%), gastritis (14.1%) and malnutrition (12.0%) were the common diseases. The high percentages for eye diseases and malaria were due to their closeness to the river banks and fishing, which exposed them to the black flies and mosquitoes. This report confirms studies by Diaw and Schmdt-kaller (1990) and Fobil and Attaquayefio (2003) on the effects of the Akosombo and Kpong resettlement programme on the health of the people. They cited eye diseases, malaria and waist pains as the commonly occurring sicknesses.

The ailments cited in the 870 multiple responses in the host households include malaria (19.9%), diarrhoea (17.8%), eye diseases (18.2%) and malnutrition (16.4%). Similarly, out of the 196 multiple responses in the

adjoining households; malaria (19.9%), diarrhoea (15.3%), waist pains (19.4%) and eye diseases (16.3%) were recorded.

Table 30: Common Ailments in the Households

Types of ailments	Resettled		Host		Adjoining	
	(f)	(%)	(f)	(%)	(f)	(%)
Malaria	56	20.3	173	19.9	39	19.9
Pneumonia	17	6.2	57	6.6	23	11.7
Diarrheoa	27	9.8	155	17.8	30	15.3
Waist pain	44	16.0	79	9.1	38	19.4
Eye diseases	60	21.7	158	18.2	32	16.3
Gastritis	39	14.1	105	12.1	21	10.7
malnutrition	33	12.0	143	16.4	13	6.6
Total	*276	100.0	*870	100.0	*196	100.0

Source: Field Survey (2017)
*>sample size due to multiple responses

The distribution of the common ailments in the host and adjoining households validates the observations made in the BDA (2014) and BoDA (2014) reports on the types of ailments that affected households could suffer. It argued that due to improper sewage disposals in the affected households, there were potential infestations that could cause such diseases.

Household Size

Household sizes influence the quality and quantity of labour supply in a nation (GSS, 2014). Such assertions hold true for households with large sizes in rural Ghana. Results from Table 31 depict the average size of the resettled households before the resettlement scheme to be 5.9 compared to the

6.5 per household after the resettlement. The increase in the average household size of the resettled households was due to the in-migration of family members and high birthrates.

Such a trend supports studies by Price (2015) at the Budumbura refugee camp in Ghana. According to Maitra's (2009) studies on development induced displacements of the Narmada valley resettlement project, household sizes in resettled households increased after the resettlement project. In the host households, the household sizes reduced marginally from 5.7 to 5.4 persons while the adjoining household size increased from 2.6 to 8.2 after the resettlement.

Table 31: Household Size before and after Resettlement

Households	periods	Estimated population	HH size
Resettled (n=62)	Before	364	5.9
	After	403	6.5
Host (n=182)	Before	1046	5.7
	After	982	5.4
Adjoining (n=39)	Before	102	2.6
	After	237	8.2

Source: Field Survey (2017)

The marginal decline in the household size of the host households was due to out-migration to the urban centres while the sudden increase in the adjoining household sizes was due to in-migration of relatives from different parts of the country to engage in fishing and illegal mining activities. In all these instances, household sizes in the affected areas were above the national average of 4.0 before and after the resettlement (GSS, 2014). The large

household sizes showed the potential to meet labour requirements in farming and fishing but were challenges to food security and vulnerabilities.

Dependency Ratio

The age group (≤15 and ≥65+) that depends on the workforce for their survival was analysed in the households. As depicted in Table 32, the age dependency ratio (ADR) was 0.65 in the resettled households before the resettlement and 0.59 after the resettlement. This means 10 working adults needed to cater for 6 people who are not working in the household. This is consistent with the household sizes in Table 31.

There were marginal declines in the host households from 0.85 to 0.69 while the adjoining households maintained 0.85 as the working group taking care of the same number of dependents in the households before and after the resettlement. The study revealed a high dependency ratio in all the affected households. The reasons were high in-migration, low level of education, improved healthcare and economic activities (see Table 8).

This observation validated the work of Diaw and Schmidt-keller (1990) on the Volta Lake resettlement schemes. They found high dependency ratios in the resettled households after the implementation of the resettlement scheme. Their study was, however, constrained by a lack of adequate baseline data before the scheme to allow for easy comparison. Nonetheless, they concluded that such dependency ratios affected the quality of households' income, investment and skills training programmes implemented through VRA Trust Fund.

Table 32: Households Dependency Ratio

Age groups	Resettled		Host		Adjoining	
	Before	After	Before	After	Before	After
≤15	109	114	418	307	36	67
16-64	221	229	567	526	55	103
65+	34	21	61	55	11	21
ADR*	0.65	0.59	0.85	0.69	0.85	0.85

Source: Field Survey (2017)
ADR*=Age Dependency Ratio

Educational Level

The level of education of any segment of a population is very critical in determining the adoption of an innovation (GSS, 2010; Magembe-Mushi & Lupala, 2015). As indicated in Table 33, the educational level in the resettled, host and adjoining households was analysed. At the resettled households, respondents who had no education constituted 43.6%; those with basic education, 32.3%; sec/voc education, 17.7% and tertiary education, 6.5%.

Similarly, in the host households, respondents with no education were 59.9%; those with basic education, 23.6%; sec/voc education, 12.6% and tertiary education, 3.3% while in the adjoining households, they were no education, 46.2%; basic education, 38.5%; sec/voc education, 10.3% and tertiary education, 5.1%. The ERM (2007b) revealed that affected households had either no or basic education during the baseline survey. Such low levels of education in all the households affected participation during the resettlement process (Mettle, 2011). The low level of education in the affected households confirmed the poor literacy rate in rural Ghana (GSS, 2014).

Table 33: Educational Level of Household Respondent

Ed'tn'l level	Resettled		Host		Adjoining	
	(f)	(%)	(f)	(%)	(f)	(%)
No Education	27	43.6	109	59.9	18	46.2
Basic	20	32.3	43	23.6	15	38.5
Sec/Votec	11	17.7	23	12.6	4	10.3
Tertiary	4	6.5	6	3.3	2	5.1
Other	0	0.0	1	0.6	0	0.0
Total	62	100.0	182	100.0	39	100.0

Source: Field Survey (2017)

In a probe during key informants' discussions at the adjoining households on the 17th of December, 2016, a respondent lamented: "We don't have adequate educational structures at our place. Our children attend schools at either the host or resettled households". This was also observed by the researcher (Plate 5). As a form of help, an NGO provided desks for the adjoining community. But, such efforts were halted because the location and topography of the area made it prone to flooding. Even in the host and resettled households where educational infrastructure was provided by BPA, children attrition rates were high due to teenage pregnancy and child labour (Plates 5 to 6 constitute School structure at adjoining, resettled and host communities).

Plate 5: School Structure at Adjoining
Photo Credit: Author (2017)

Plate 6: School Structure at Resettled
Photo Credit: Author (2017)

Plate 7: School Structure at Host
Photo Credit: Author (2017)

A cursory observation showed poor or inadequate infrastructure at the affected households. As depicted in figure 15, pupils were busy learning in a

serene classroom compared to the structures in figure 13 where the almost-abandoned classrooms have been turned into shelters for maintaining and repairing fishing gears.

Child Labour

The study sought to find out if children under the age of 14 years were engaged in economic activities in the affected households. As illustrated in Table 34, some of the reasons that respondents gave for children dropping out of school were illness (1.6%), lack of uniforms/fees (2.1%) and working to support the family (6.3%) in the resettled households. Similarly, it was illness (19.9%), lack of uniforms/fees (12.1%) and working to support the families (9.4%) that were cited in the host households. The same trend was observed in the adjoining households where respondents attributed dropping out of school to illness (2.9%), lack of uniforms/fees (16.0%), lack of schools (14.3%) and working to support the family (12.1%).

These results showed that economic activities played a major role in children's inability to go to school in the host households. Illness, lack of uniforms/fees and working to support parents were the major reasons in the resettled and adjoining households. This confirms the report by ERM (2007a) that children's education would be affected due to the households' proximity to the reservoir and the increase in economic activities. This observation was reported by Cernea (2000a, b) as well that one of the risks associated with dam-induced resettlements was health-related issues among children. In other related analysis, Tsikata (2006) concluded that the long-term effects and consequences of displacements on the host and adjoining households were

basically livelihood constructions and health-related ailments that affect the education of the children.

Table 34: Reasons for Children not Attending School

Main Reasons	Resettled (%)	Host (%)	Adjoining (%)	Total (%)
Illness	1.6	19.9	2.9	24.4
lack of uniforms/fees	2.1	12.1	16.0	30.2
Lack of school	0.0	0.0	14.3	14.3
Working to support family	6.3	9.7	12.1	28.1
Not interested	0.9	0.4	0.2	1.5
Others	0.0	0.1	0.4	0.5
Total	10.6	42.2	33.8	100.0

Source: Field Survey (2017)

In both the Brong-Ahafo and Northern Regions, about 9 percent of children under the age of 14 years were engaged in economic activities, with the national average being 14.5 percent (GSS, 2014). It is worth noting that Ghanaian laws set the minimum age for employment. The law stipulates that children >15 years or who have completed basic education can work as apprentices if the craftsman provides food, training and a safe and healthy work environment (GSS, 2012). In the affected households, children less than those ages were engaged in fishing (Plate 8).

Plate 8: Children of School going Age Returning from Fishing in the Morning
Photo Credit: Author (2017)

Those under 18 years may not engage in night work and are prohibited to be engaged in hazardous labour such as mining and fishing. Others include manufacturing that involves chemicals, operating machinery and jobs that involve carrying heavy loads. Employers are subject to a fine and/or 2 years of imprisonment (Ghana, 1992).

Natural Resources

Natural resources were critical determinants in livelihood construction (Ellis, 1999; Scoones, 2015). Some of the natural resources were land, tenure arrangement, construction materials and afforestation/conservation.

Land Tenure and Ownership

Households responded to series of questions that were related to land ownership in the study area. As can be seen in Table 35, land tenure arrangements in the resettled households include ownership (13.9%), paying of annual donations to chiefs (3.9%) and community ownership (1.8%).

Similar arrangements exist in the host households as well. They include owned (51.9%), sharecropped (5.0%) and an annual donation to chiefs (1.1%). In the adjoining households, they were either owned (11.0%) or community owned (2.8%).

Table 35: Forms of Land Ownership

Forms of land ownership	Resettled (f)	Resettled (%)	Host (f)	Host (%)	Adjoining (f)	Adjoining (%)	Total (%)
Own	39	13.8	147	51.9	31	11.0	76.7
Rented	3	1.1	2	0.7	0	0.0	1.8
share cropped	0	0.0	14	5.0	0	0.0	5.0
Pay annual don'tn to chiefs	11	3.9	3	1.1	0	0.0	5.0
Com'ty owned	5	1.8	15	5.3	8	2.8	9.9

Source: Field Survey (2017)

The results depict similar forms of tenure arrangements in all the study households. Such arrangements validated studies by Asiama (2003) and Annor (1985) on dual tenure arrangements in Ghana. It, also, confirms the baseline report of ERM (2007b) on tenure ownership in the study area which explains that tenure arrangements were influenced by allodial titles.

Observations revealed (Plate 9) that a government acquired land adjacent the affected communities have effects on the space of land available for farming.

Another critical area was the variation in land ownership between different traditional areas (Banda District in Brong-Ahafo Region and Bole District in the Northern region). The inundation of the reservoir occupied large area of land where different ethnic groups and their paramountcies spread with

heterogeneous land ownership rights. In an interview with the paramount chief of Banda (Bandahene) at Banda-Ahenkro, he claimed to have ownership rights of all the lands in the Brong-Ahafo portion of the dam but the views expressed in Table 36 were different. In a focus group discussion in all the communities in Banda District, the disagreed and indicated that families had ownership rights of land.

The Paramount of Bole (Bolewura) in Bole also claimed customary ownership of all the lands in the Northern Region portion of the dam but the two paramount chiefs have competing claims of the Bui National Park creating a large multiple layers of land ownership exactly in the same area of the reservoir. Though both chiefs receives modest yearly compensation from the forestry commission as a lease for the area of the Bui national park, the dam has created competing fishing rights which is seen as permanent usage and annexation from the paramount chiefs.

In a key informant interview with the Bolewura on the 18th January, 2017 at Bole, he intimated that:

"Another land ownership challenges was the enskinment of a paramount chief at the North Mo (Deg) traditional area in 1992. The position of the newly enskined chief goes with land rights over an area previously own by the Gonja traditional Council. This condition created protest from the Degs (Mo) about the compensation rights that may be perceived as 'big' from the government which can lead to conflict if not well managed'.

With such competing scenario, prolong dispute is likely since both chiefs perceived the compensation as 'substantially big'. They argued that the project implementers were dealing directly with individual settlers who do not

own land without the consent of the chiefs. In an interview with the chief of Deg (Mo) traditional council, he expressed the view that:

"We were excluded from the membership of Bui Development Board. Such exclusion is an attempt to cede the authority and control of our rights of our land to others which at the right time we shall reject" (Key informant, 12th January, 2017 at Jama)

Another area of complication is the issue of compensation for acquired lands. Under the traditional Ghanaian land tenure system (though there are variations between the north and South of the two traditional areas), the chiefs are supposed to use part of all monies received from land leased for development activities to benefit all their subjects because he is usually a custodian of the lands on behalf of the people. However, in the case of similar compensated land in the past, these royalties have generated more disagreements resulting in chiefs and their communities going in tango over the use of such revenues (Amanor, 1993; Fink, 2005). An interview with a Regional peace council's representatives, he alluded to the fact that provided a serious mismatch on how issues of potential land ownership rights could result into conflict. He concluded:

"Well, we have two dams already and nothing of that nature has ever happened, so I don't expect this minor incidence to go that far. When it comes, we shall manage it or the police can contain it"(key informant,14th January, 2017 at Sunyani)

Plate 9: A Post showing Acquired Land by BPA
Photo Credit: Author (2017)

Construction Materials

Trees and grasses were the major materials for the construction of houses and other structures in the affected area. As indicated in Table 36, respondents in the resettled households' sources of construction materials are grasses/trees from BNP (40.3%), grasses from bush (33.9%), tress from bush (22.6%) and others (3.2%) compared to the same materials with different percentages: 46.2%, 44.0%, 6.6% and 3.3% respectively in the host households.

Table 36: Sources of Construction Materials

Main sources	Resettled		Host		Adjoining	
	(f)	(%)	(f)	(%)	(f)	(%)
Grasses/Tress from BNP	25	40.3	84	46.2	31	79.5
Grasses from bush	21	33.9	80	44.0	6	15.4
Trees from bush	14	22.6	12	6.6	2	5.1
others	2	3.2	6	3.3	0	0.0

Source: Field Survey (2017)

Of the 39 respondents from the adjoining households, 79.5% harvested grasses/trees from BNP, 15.4% harvested grasses from the bush and 5.1, trees from the bush as well. These they used as their building materials. It can be deduced from this that most of the respondents collected trees/grasses from lands that were already under severe stress due to the intensification of farming activities, illegal mining and cattle grazing which aggravate the process of deforestation (ERM, 2007a, b; Obour *et al*., 2016). This view was echoed by Hart (1980) and Gyau-Boakye (2001) that the intensification of livelihood activities by displaced populations affects the physical, biological and socio-economic activities of the environment

A BNP officer, on the 20th of January 2017, explained: "The cutting down of trees during land preparations, house construction, energy/ fuelwood consumption, illegal chainsaw operations have compounded and accelerated the environmental degradation of the affected area". Such open admission threatened the availability and sustainability of forest and non-timber forest products. Due to the importance of afforestation, the study investigated efforts by BPA or NGO(s) to train the households on afforestation projects.

Discussions with key informants and observations confirmed that BPA had initiated an afforestation project at the adjoining households to serve as a windbreak and boundary between dwellings and the reservoir. These, at long-run, would protect and reduce erosion and siltation along the banks of the reservoir as indicated in Plate 8.

Plate 10: Afforestation Project at the Adjoining Settlement
Photo Credit: Author (2017)

Sustainable Livelihood Outcomes

Sustainability of livelihood outcomes was measured in increased income, food security, livelihood adaptation, resilience and vulnerability as discussed in the ensuing pages.

Increased Income

An increase in the income of households has been one of the critical outcomes of constructing sustainable livelihoods (Scoone, 2015; Obour *et al*., 2016). Results from the study confirmed that the average household income decreased in the resettled, host and adjoining households after the resettlement

(Table 27). At the resettled households, the mean income of Gh¢ 480.8 (US$ 120.2) before the resettlement reduced to Gh¢ 254.2 (US$ 63.6) after the resettlement.

Since rural households are vulnerable, such a reduction can increase their poverty levels because their purchasing power has been reduced. This reduction induced low standards of living and increased poverty as observed by Ortolano and Cushing (2000). They explained that the Grand Coulee dam and the Columbia basin resettlement project had reduced the income of affected households.

Similarly, the host households had their mean income of Gh¢ 348.7 (US$ 87.2) before the resettlement reduced to Gh¢ 210.4 (US$ 52.6) after the resettlement. The most dramatic reduction, however, was recorded in the adjoining households, where the mean income of Gh¢ 383.9 (US$ 96.0) before the resettlement reduced to Gh¢ 118.7 (US$ 29.7) after the resettlement. The highest income recorded by the adjoining households in the study was Gh¢ 1,282 (US$ 320.5) per month.

As explained earlier, most of the migrant fishermen had better fishing gears than their counterparts at the resettled households. These good fishing gears and the illegal mining activities suddenly increased households' income. According to GSS (2014), the average annual income of rural households was Gh¢ 792.05 ($198.01) and Gh¢1, 314 ($328.5) for the extreme poor in rural savanna and guinea savanna respectively.

Per the above mentioned average income of the affected households, the livelihood outcome, "more income", was not achieved in all the

households after resettlement, except for the major season where the adjoining households recorded Gh¢ 1,282 (US$ 320.5) per month.

Enhanced Household Food Security

The average expenditure on food items increased after the resettlement (Table 37). The share of income expended on food items increased from Gh¢165.6 to Gh¢288.9 in the resettled households. In the host households, expenditure on the food items (Table 37) increase from Gh¢164.3 to Gh¢238.0 after the resettlement. Similarly, the adjoining households' expenses reduced from Gh¢136.3 to Gh¢191.7 after the resettlement. An analysis of the pattern of expenditure revealed that household food security was not enhanced due to the increases in expenditure.

According to GSS (2010), households whose expenditure exceeded 70.0 percent of their income were food-insecure while the vice versa showed foods secure households. Furthermore, in the analysis of the households' food security, the average meals households ate was a predictor variable on an improved food security. About 79 percent of households ate three (3) times a day compared to 54.2 percent before the resettlement in the resettled households. It was 87.0 percent in host households after the resettlement compared to 48.9 percent before the resettlement and in the adjoining households, 55.3 percent increased to 67.2 percent after the resettlement. Almost all the affected households ate two meals a day.

Table 37: Monthly Income and Expenditure

Mean income	Resettled		Host		Adjoining	
	Before GH₵	After GH₵	Before GH₵	After GH₵	Before GH₵	After GH₵
	480.8	254.2	348.7	210.4	383.9	118.7
(Deficit)	226.6		138.3		265.2	
Mean expenditure	Monthly expenditure on food					
	165.6	288.9	164.3	238.0	136.3	191.7
(Deficit)	123.3		73.7		55.4	

Field Survey, (2017)

Nevertheless, the proportion of meals per day after resettlement was greater than before resettlement, indicating an improved household food security.

Livelihood Adaptation

According to ERM (2007b), resettled households were to be integrated into their new environment so that they can adapt to their new sources of livelihood. Ten years after the resettlement, their sources of livelihood such as fishing, keeping of livestock/birds and farming were not sustainable. However, the increasing role of non and off-farm activities to the household portfolio had helped in improving their adaptive capacity (Table 16, 17, 19). With an increased household income diversification, households were able to adapt to their new environment.

FGD participants explained on the 18th and 19th of January 2017 at resettled and host households that the increase in volume and depth of the reservoir had slowed the resettled and adjoining households' adaptation process compared to that of the host households.

Resilience and Vulnerability

The increased resilience of affected households in their capacity to recover from shocks and stresses due to the resettlement scheme determined their vulnerabilities. The inability of affected households to cope with the disruptions in their livelihood sources such as the reduction in soil fertility stemming from overgrazing, illegal mining activities and inundation of the reservoir on large tracks of croplands etc. suggests vulnerability (Table 38).

Table 38: Potential Vulnerable Areas

Vulnerabilities	Resettled		Host		Adjoining	
	(f)	(%)	(f)	(%)	(f)	(%)
Religious activities	18	6.4	34	6.0	8	10.4
Illegal mining	23	11.1	178	31.3	6	7.8
Competition for fertile land	55	26.4	180	31.6	10	13.0
Cattle destructions of crops	52	25.0	177	31.1	15	19.5
Access to fishing sites	60	28.9	0	0.0	38	49.4
Total	*208	100.0	*569	100.0	*77	100.0

Source: Field Survey (2017)

The potential sources of vulnerability in the resettled households include religious activities (6.4%), illegal mining (11.1%), competition for fertile land (26.4%), cattle destruction of crops (25.0%) and access to fishing sites (28.9%). In the host households as well, they are religious activities (6.0%), illegal mining (31.3%), competition for fertile land (31.6%) and cattle destruction of crops (31.1%). Similarly, these sources are religious activities (10.4%), illegal mining (7.8%), competition for fertile land (13.0%), cattle

destruction of crops (19.5%) and access to fishing sites (49.4%) in the adjoining households.

Resettled and host households were more vulnerable to competitions over fertile land and cattle destructions than religious activities and access to fishing rights. Illegal mining, as well, made the host households more vulnerable than the resettled and adjoining households. However, the adjoining households were, also, more vulnerable to cattle destructions and access to fishing sites than the resettled and host households.

Another area of vulnerability was conflict with the traditional authorities. This was mainly because the Fulani herdsmen caused destructions to crops of peasant farmers. Illegal mining, also, induced vulnerability to conflicts between the BNP and traditional authorities. Due to the direct benefits accruing to the traditional authorities from such activities within the BNP, they demanded compensation from the government, without which the illegal mining must continue.

Additionally, there were conflicts between the host and resettled households because of the shortages in farmlands that resulted from restrictions imposed on them by BNP and BPA. Another source of vulnerability to the affected households was their dependence on rainfall for the cultivation of crops, fishing and livestock/birds. This induces vulnerabilities when crops fail or diseases breakout. These may affect household income, food security and poverty.

To reduce such levels of vulnerability, there was the need to introduce irrigation, veterinary services and aquaculture to increase productivity. Deforestation due to the unregulated cutting of trees, clearing of land and

overgrazing led to environmental degradation. Moreover, the transmission of the power through the pylons to the substations at Kintampo and Sunyani required the cutting down of trees. In effect, the people within these affected households became vulnerable.

Improved sustainable natural resources Management

The over-exploitation of forest products such as honey, dawadawa, baobab fruits/leaves, shea-fruits, medicinal plants among others, renders this venture unsustainable. Further, the use of unsustainable fishing methods, overgrazing by cattle and uncontrolled bush burning has accelerated the disappearance of both flora and fauna which are vital for the sustainability of the ecosystem.

FGDs participants admitted using slash and burn methods to clear farmlands for crop cultivation. The Fulani, also, burn bushes to enhance the early growth of vegetation for their livestock and cattle to feed. Trees that bear large leaves are also cut down for the animals to feed on. During the dry season, the cattle drink from the water collected in ponds and wells as well as streams while the illegal miners use same for processing gold" (FGDs with the people on the 14th, 17th and 20th January 2017 at the resettled, host and adjoining households).

Summary

This chapter analysed household asset that influenced sustainable livelihood outcomes. These resources include physical, social, financial, human and natural resources. With respect to the physical resources, elements such as farming, shelter, sources of energy, domestic water supply and

infrastructure development have been discussed. On the other hand, elements of social resources that have been analysed include social networks, power relations and sources of conflicts. Similarly, sources of monthly income, monthly expenditure and household monthly savings and credits constituted financial resources. Under human resources, common ailments, disability, household sizes and educational level were examined. Natural resources such as ownership of land, tenure arrangements, sources of construction materials and afforestation were also discussed. Land ownership rights of households in the study communities were discussed. The chapter concluded with forms of sustainable livelihood outcomes.

CHAPTER NINE

SUMMARY, CONCLUSIONS AND RECCOMENDATIONS

Introduction

This concluding chapter presents a summary of the whole study as well as the major findings and the conclusions derived from the study. Furthermore, it provides recommendations based on the findings and conclusions of the study to improve sustainable livelihoods of the affected households. Other topics captured under this chapter are the study's contribution to knowledge, limitations of the study and areas for further research.

Summary

The study examined the planning process of the Bui resettlement scheme and its effects on the sustainable livelihood of the affected households. Specifically, the objectives of the study were to examine the planning process of the resettlement scheme, evaluate the risks that affected households encountered after the resettlement, assess the livelihood strategies of the affected households and examine assets that support livelihood activities in the affected households.

The study was guided by the following research questions:

i. How was the nature of the planning process of the resettlement scheme?
ii. What risks did the affected households encounter after the resettlement?

iii. What were the livelihood strategies of the affected households before and after the resettlement?

iv. Which assets influenced livelihood activities of the affected households?

v. What is the assessment of the livelihood outcomes of the affected households?

In order to address these questions, both theoretical and empirical literature were reviewed to explore the relationship that exists between them such a synergy had informed other studies (Blalock, 1991; Bryman, 2001). Such reviewed literature consolidated the philosophical basis of the methodology that was adopted for the study (Cresswell, 2014; Cresswell & Plano Clark, 2007).

The mixed method research approach was adopted to capture the multi-dimensional nature of the study. To enhance the reliability and validity of the study, both qualitative and quantitative data were used. The concurrent mixed method, as well, was employed in the collection of the data for the study. A structured household interview schedule was used across the six communities selected for the study to collect the necessary primary data. Other research instruments used in the study were the interview guides, focus group discussion guides and observation checklists.

Data analyses were done with the use of SPSS for the quantitative analysis and thematic analysis for the qualitative analysis. A total of 283 household heads were interviewed and 31 qualitative interviews.

Main Findings of the Study

The key findings from the analyses, discussions and results based on the objectives of the study are discussed below. The first objective was to examine the planning process of the resettlement scheme. The main issues that emerged were as follows:

i. The planning process did not implement some of the requirements of the RPF and International Financial Institutions' operational policies of the resettlement scheme.

ii. Participation of the affected households focused on consultation instead of decision making. As such, the locations where the resettled households identified as the preferred site were rejected by the BPA. The sources of information were FM/TV, meetings and brochures/flyers distributed to the affected households. The planning process of the resettlement scheme focused on the resettled and host households without considering the adjoining households which were equally affected by the resettlement.

iii. Resettlement 'B' was properly planned in terms of site selection compared to Resettlement 'A'. It was established that the planned livelihood restoration programmes were not implemented.

iv. The planned irrigation scheme has not been implemented, ten years after the resettlement scheme.

v. BPA was interested in the physical relocation of the people rather than facilitating the enabling environment for the acquisition of sustainable livelihoods;

vi. The affected households did not have institutions to resolve emerging challenges. As it stands, households had to rely on the district assemblies for their subsequent infrastructure needs.

The second objective of the study was to evaluate the nature of the risks affected households faced after the resettlement.

The main findings of this objective could be summarised as follows:

i. Risks were higher in the adjoining and the resettled households than the host households. However, the rate of reductions in the level of risks in the resettled and host households in the fifth and tenth years was higher than that of the adjoining households.

ii. Risk of homelessness reduced from 51.6 percent to 14.5 percent in resettled households while the adjoining saw a reduction from 79.9 percent to 46.4 percent within the same period of 2006 to 2016.

iii. Joblessness had reduced in the period, 2006 to 2016 from 67.7percent to 9.7 percent and 87.2 percent to 15.4 percent in the resettled and adjoining households but increased from 7.1 percent to 55.5 percent in the host households.

iv. Inadequate shelter had increased in the host households from 24.7 percent to 78.6 percent from 2006 to 2016 compared to 48.4 percent to 58.1percentin the resettled while a marginal increase was recorded from 92.3 percent to 97.4 percent in the adjoining households within the ten-year period.

v. With respect to marginalisaion, the resettled and host households recorded reductions from 79.0 percent to 17.7 percent and 83.5 percent

to 24.7 percent respectively compared to the marginal reduction from 97.4 percent to 74.4 percent in the adjoining households.

vi. Social disarticulation also reduced from 96.8 percent to 51.6 percent in the resettled, 78.6 percent to 8.5 percent in the host and 100.0 percent to 64.4 percent in the adjoining households in the same period

vii. With the exception of adjoining households, food insecurity increased from 90.3 percent to 96.8 percent and 90.1 percent to 94.5 percent in the resettled and host households respectively.

viii. Finally, lack of access to common pool resources reduced marginally from 98.4 percent to 67.7 percent and 100.0 percent to 94.0 percent in the resettled and adjoining households while it increased from 59.5 percent to 94.0 percent in the host households.

ix. In terms of nature of support, the host received their highest support in "cash"; the adjoining, in "kind "and there settled, "replacement".

The third objective was to assess the livelihood strategies of the affected households. The under listed were the key findings:

i. In the host households, food crops change was significant at $p<0.001$ while change in fishing at the resettled and adjoining households was significant at $p<0.01$.

ii. The changes were moderate in the affected households.

iii. Non-farm and ruminants/bird rearing activities were not significant at the resettled households, being at -1.71 and -1.88 respectively but were significant at -4.12 and -6.00 at the host households

iv. The average farm size of the resettled households before the resettlement was 2.47 hectares compared to 0.92 hectares after the

resettlement. The average farm size of food crop production in the host households also declined from3.46 hectares to 2.12 hectares while that of the adjoining households declined from 1.62 hectares to 0.35 hectares.

v. Similarly, average farm size of vegetables declined in the affected households. It reduced from 2.66 hectares to 2.3 hectares in the resettled, 1.58 hectares to 1.1 hectares in the host and 2.10 hectares to 1.2 hectares in the adjoining households.

vi. With respect to livestock/birds, there was a decline from 3.62 hectares to 1.70 hectares in the resettled households, 3.86 hectares to 2.76hectaresin the resettled and 1.54 hectares to 0. 36 hectaresin the adjoining households.

vii. The main problems of livestock/birds in the resettled households were stealing, recorded by 41.3 percent; straying into farms, 6.5 percent; health problems, 4.5 percent; poor housing, 9.1 percent and lack of working capital, 39.8 percent.

viii. Non-farm activities such as sale of firewood increased from 19.1 percent to 24.1 percent; rent of land, from 14.7 percent to 72.6 percent; catering services, from 11.0 percent to 45.9 percent; migrant wage labour, 5.6 percent to 66.8 percent; transportation services, 4.5 percent to 43.7 percent; petty trading, from 27.1 percent to 43.2 percent and dressmaking, from 3.1 percent to 31.0 percent in the resettled households.

Similarly, the host households saw an increase in their non-farm activities from 33.4 percent to 50.1 percent; rent of land, from

23.5 percent to 89.6 percent; catering services, from 11.9 percent to 52.8 percent; migrant labour, 19.0 percent to 54.1 percent; transportation services, 14.9 percent to 66.2 percent; petty trading, 31.0 percent to 55.9 percent and dressmaking, from 11.0 percent to 54.3 percent.

Respondents in the adjoining households, also, attest to an increase in non- farm activities from 11.6 percent to 13.9 percent; catering services, 1.3 percent to 33.5 percent; transportation services, 3.1 percent to 42.1 percent; petty trading, 22.1 percent to 62.7 percent and dressmaking, to 33.6 percent.

ix. In the resettled households, fishing and its related activities declined from the 33.9 percent before the resettlement to 25.4 percent after the resettlement. The host, as well, saw a decline in such activities from 1.7 percent to 1.1 percent after the resettlement and the adjoining, from 21.5 percent to 16.4 percent.

x. Access to forest-related products in the host households was highest with medicinal herbs being 32.6 percent; wood products, 28.3 percent; honey, 12.3 percent and dawadawa, 10.1 percent. Similarly, in the host households, the highest forest product was wood products at 25.2 percent followed by medicinal herbs at 23.6 percent; honey, 23.0 percent and dawadawa, 20.9 percent. In the adjoining households, wood products were the highest at 29.3 percent followed by honey, 23.6 percent and medicinal herbs, 22.0 percent.

The fourth objective was to ascertain assets that support livelihood activities in the affected households. The main findings were as follows:

i. About 4.8 percent of respondents employed tractor services while 46.8 percent use hoes/cutlasses in the resettled household. In the host households, tractor use was 12.6 percent while hoe/ cutlass constituted 87.4 percent. These were represented by 2.6 percent and 7.7 percent respectively in the adjoining households.

ii. With respect to agricultural inputs, fertilizer (38.5 percent) was highest, followed by improved seeds (31.6 percent) and weedicides (19.7 percent) in the resettled households compared to fertilizer at 42.8 percent; improved seeds, 27.7 percent and weedicides, 17.1 percent in the host. The adjoining households, also, showed a similar trend with fertilizer being 27.1 percent; weedicides, 24.2 percent and improved seeds, 24.0 percent.

iii. With respect to building materials, MWGR was 34.4 percent; GWGR, 21.3 percent; MWZR, 29.5 percent and CBZR, 11.5 percent in the resettled household before the resettlement, compared to CBZR at 100.0 percent after the resettlement.

iv. There was an increase of CBZR from 43.4 percent to 59.9 percent in the host household after the resettlement compared to the reduction in MWZR from 33.5 percent to 30.3 percent after the resettlement. In the adjoining households, MWGR increased from 5.1 percent to 15.4 percent while GWGR was at 79.9 percent after the resettlement.

v. Considering social services, out of the identified eighteen, eleven had improved in the resettled households compared to eight in the host households and seven in the adjoining households.

vi. In terms of social networks in the resettled households, beliefs were the highest with 25.0 percent followed by markets/economics at 20.3 percent; politics, 18.0 percent; decisions and microfinance, 11.7 percent and behaviours, 13.3 percent. In the host households, both behaviours and economics/markets were at 19.9 percent; beliefs and decisions were about 16.8 percent each and politics, 15.5 percent. The adjoining, however, had the highest being politics at 19.7 percent; economics/markets, 19.1 percent; behaviours, 21.7 percent and beliefs, 17.7 percent.

vii. With respect to relationship with neighbours, 53.2 percent of the respondents from the resettled households, 43.4 percent from the host and 76.9 percent from the adjoining households said it was good while 54.4 percent and 22.6 percent from the host and resettled households respectively said it was very good.

viii. About twenty-five percent indicated rural banks and micro-finance as the main sources of credit for the households in the study area.

ix. Commonest diseases in the resettled households were malaria (20.3 percent) and eye diseases (21.7 percent). They were highest at the host households as well with 18.2 percent and 19.9 percent respectively and 19.4 percent and 19.9 percent respectively in the adjoining households.

x. Respondents in the host households indicated their relationship with neighbours was very good (54.4 percent), good (43.4 percent) and no change (2.2 percent). The same pattern of responses was recorded in the adjoining households where very good was recorded by 2.6

percent; good, 76.9 percent; no change, 5.1 percent and bad, 15.4 percent.

i. In terms of potential causes of conflict, out of the 208 multiple responses in the resettled households, access to fishing sites 28.9 percent, competition for fertile land 26.4 percent and cattle destruction of crops 25.0 percent constituted the highest potential sources of conflict.

ii. Furthermore, out of the 569 multiple responses in the host households, illegal mining 31.3 percent, competition for fertile land 31.6 percent and destruction of crops by cattle 31.1 percent constitute the main potential sources of conflict.

iii. Similarly, the adjoining households recorded access to fishing sites 49.6 percent. Cattle destruction of crops 19.5 percent, competition for fertile land 13.0 percent and religious activities 10.4 percent as the main potential causes of conflict.

The main results for financial resources were as follows:

i. At the resettled households, the mean income of Gh¢ 480.8 (US$ 120.2) before the resettlement reduced to Gh¢ 254.2 (US$ 63.6) after the resettlement.

ii. Respondents at host households had their mean income of Gh¢ 348.7 (US$ 87.2) before the resettlement to be higher than the Gh¢ 210.4 (US$ 52.6) after the resettlement.

iii. The estimated mean income of Gh¢ 383.9 (US$ 96.0) before the resettlement was reduced to Gh¢ 118.7 (US$ 29.7) after the

resettlement. This sudden reduction in household's income dislocated household budgets and rendered them vulnerable.

iv. The mean expenditure in the resettled households had increased from Gh¢ 165.9 (US$ 41.5) per month to Gh¢ 288.9 (US$ 72.2). Similarly, the mean expenditure of Gh¢ 164.3 (US$ 41.1) in the host before resettlement had increased to Gh¢ 238.0 (US$ 59.5). The mean expenditure of the adjoining households which was Gh¢ 136.3 (US$ 30.08) before the resettlement had, also, increased to Gh¢ 191.7 (US$ 47.93).

v. Out of 283 respondents in the affected households, MASLOC 15.9 percent, Commercial Banks 17.7 percent, Rural Banks (25.4 percent), Microfinance institutions 25.8 percentand money lenders 8.8 percent were the common sources of credits and savings in the households.

Finally, the main findings on human resources were the following:

i. Out of the 276 multiple responses in the resettled households on diseases, malaria had 20.3 percent; waist pain, 16.0 percent; eye diseases, 21.7 percent; gastritis, 14.1 percent and malnutrition, 12.0 percent were the commonest occurring diseases.

ii. Other ailments cited in the 870 multiple responses for the host households were malaria 19.9 percent, darrheoa 17.8 percent, eye diseases 18.2 percent and malnutrition 16.4 percent. Similarly, out of the 196 multiple responses in the adjoining households, malaria 19.9 percent, diarrheoa 15.3 percent, waist pains 19.4 percent and eye diseases 16.3 percent were recorded.

iii. The average size of resettled households before the resettlement was 5.9 compared to 6.5 persons per household after the resettlement. The increase in the average household size in the resettled households was due to in-migration of family members

iv. In the host households, family sizes reduced marginally from 5.7 to 5.4 persons in a household. Meanwhile, in the adjoining households, there was an increase in family sizes from 2.6 to 8.2 persons per household after the resettlement.

v. In the resettled households, the average dependency ratio was 0.65 before the resettlement and 0.59 after the resettlement. The host household declined marginally from 0.85 to 0.69 while the adjoining households maintained 0.85 before and after the resettlement scheme.

vi. At the resettled households, respondents with no education represented 9.5 percent followed by those with basic education 7.1 percent and secondary/vocational education 3.9 percent. This trend was similar in the host households where respondents with no education constituted 38.5 percent those with basic education, 15.2 percent and sec/voc, 8.1 percent. In the adjoining households, respondents with no education were 6.4 percent, those with basic education, 5.3 percent and sec/voc, 1.4 percent.

vii. Some of the reasons for dropping out of school in the resettled households were illnesses 1.6 percent, lack of uniforms/fees 2.1 percent and working to support the family 6.3 percent. In the host households, illness accounted for 19.9 percent; lack of uniforms/fees, 12.1 percent and working to support the family, 9.4 percent. The same

trend was observed in the adjoining households where illnesses had 2.9 percent; lack of uniforms/fees, 16.0 percent; lack of schools, 14.3 percent and working to support the family, 12.1 percent.

Finally, objective five dealt with livelihood outcomes in the affected households. The main findings were the following:

i. At the resettled households, the mean income of Gh¢ 480.80 (US$ 120.2) before the resettlement reduced to Gh¢ 254.20 (US$ 63.6) after the resettlement.

ii. The estimated mean income of Gh¢ 383.90 (US$ 96.0) before the resettlement was reduced to Gh¢ 118.70 (US$ 29.7) after the resettlement. The highest income recorded by the adjoining households was Gh¢ 1,282.00 (US$ 320.5) per month.

iii. Respondents in the adjoining household's expenses also increased from Gh¢136.30 to Gh¢191.70 after the resettlement.

Conclusions

Based on the results and discussions, the following conclusions were drawn.

i. With respect to objective one, there was a mismatch between the planning and implementation of the resettlement scheme. It focused on the physical relocation rather than sustainable livelihood reconstructions.

ii. The second objective analysed the risks. The resettled and adjoining households were equally affected by the resettlement scheme.

iii. With respect to the 3rd, 4th and 5th objectives, the conclusions were based on these: the main sources of livelihoods of the affected households were fishing in the resettled and adjoining households and crops cultivation at the host households.

iv. Generally, fish production was higher after the resettlement though with higher costs of inputs. All other sources of livelihood declined in productivities after the resettlement compared to before the resettlement.

v. The contribution of off/non-farm activities to the households' portfolio was higher after the resettlement than it was before the resettlement.

vi. The affected households faced challenges such as diseases, animal destructions of crops, decreasing soil fertility, stealing, inadequate capital and illegal mining.

Recommendations

The major findings and conclusions drawn from this study formed the basis for the following recommendations. The Ministry of Energy in consultation with the Energy Commission should carry out the following recommendations:

i. Bui Power Authority (BPA) should incorporate the views of the stakeholders during the site identification and selection in the planning process of the resettlement schemes.

ii. BPA in consultation with the District Assemblies should coordinate the implementation of the livelihood enhancement programme.

iii. BPA should collaborate with Ghana Irrigation Development Authority to implement the irrigation component of the Resettlement Planning Framework (RPF).

iv. Since there were disparities between Ghanaian laws and the international financial institutions, there must be enforceable guidelines for constructing sustainable livelihoods after the implementation of the resettlement scheme. Resettlement activities should be conceived and planned as sustainable development projects with the involvement of all the affected communities.

v. Affected persons should not only be recipients of information from the project implementers but also participate in the planning and implementation of the resettlement scheme.

vi. In addition, non-farm and off-farm livelihood activities in the affected households must be supported by BPA.

vii. The benefits of the resettlement scheme were unequally distributed among the affected households. Thus, improved mechanisms like benefit sharing should include periodic monetary transfer to the affected households by BPA.

viii. Government should facilitate a dialogue between the BPA, BNP, District Assemblies and affected communities.

ix. BPA should ensure a proper transfer of Land titles and streamline the land acquisition process for all the affected communities.

x. The District Assemblies should encourage the establishment of Town Development Committees to communicate any grievances to BPA.

Contribution to Knowledge

The relevance of every academic research lies in its capacity to contribute to knowledge (Fay, 1987; Field & Hole, 2003). Based on this, this study filled a number of identified niches or gaps in the area (Millar, 2004). It can, conveniently, be submitted that this study has contributed to the debate in the subject literature covered, which includes the application of IRR model, diffusion and De Wet's theory in the affected households. Specifically, some modest contributions to knowledge in the area were as presented below.

First, most studies have largely focused on the application of the IRR model on resettled/displaced populations without considering the host and adjoining households who are equally affected. This is an aspect covered in this study. Since the affected households shared similar communal livelihood assets and encountered similar risks, an alteration of their livelihoods can affect such households.

In addition, this study contributes to knowledge as it challenges the argument of diffusion theory on resettlement. Due to the closeness of the affected households, innovations can easily be transferred from the resettled to the host and adjoining households and vice versa. The prices of fish, vegetables andfoodstuffs were similar in all the communities. Similarly, illegal mining, which was common in one of the adjoining communities, is gradually creeping into most of the households in other communities.

Also, this study contributes to knowledge as it focuses on the equator principle between the IFIs and state laws. The guidelines covered by the equator principle would help address both the physical and the livelihood needs of the people equitably.

Limitations

In my view, the study has fairly responded to the main objectives and key questions it sought to answer. Notwithstandingthe subtle contributions made to knowledge, there are grey areas that need to be acknowledged. Among these limitations that need attention are the following:

i. Most members of the adjoining households who goes away on fishing expeditions for weeks without returning. This made it difficult to access them to respond to interviews. Similarly, representatives from some of the households in the adjoining households came during the resettlement but could not respond appropriately to all the items during the interviews.

ii. A corollary to the first limitation was the data generated from the interview schedules, where some of the items in the interview schedules were not completed or were left blank. Also, due to differences in land tenure arrangements between the Northern and Brong-Ahafo Regions of Ghana, some items on the in-depth interview guide were not appropriate for all the traditional authorities.

iii. Another limitation of the study was the analysis of the data. Most of the analysis had to be done with cross-tabulations of resettled, host and adjoining households, in which each household has “before” and “after” as against the variables under discussions. This made it difficult to apply advanced statistical techniques in the analysis.

Suggestions for Further Research

In the context of this study's findings and conclusions, there is the need for further research such as:

i. A longitudinal study of the environmental and livelihood changes in the affected populations.

ii. An ethnographic approach to studying the impact of resettlement schemes on landowners who are indigenes and settler farmers who were also uprooted by the same projects in order to devise policy directions.

iii. The differential impact of resettlement between first settlers and subsequent migrant settlers under the same project.

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APPENDICES

APPENDIX A

HOUSEHOLD INTERVIEW SCHEDULE/ QUESTIONNAIRE

RESETTLEMENT PLANNING AND SUSTAINABLE LIVELIHOOD A STUDY OF BUI RESETTLEMENT SCHEME IN GHANA

a) Serial No. of questionnaire
b) Date of interview

Good Morning/ Afternoon/ Evening, Sir/Madam?

I am grateful for this opportunity to interact with you on the subject under investigation. The objective of this scheduled interview is for academic purpose. It has no bearing on you personally or affect any administrative decision taking for/against your inputs.

Please, be assured that all the information provided during the interaction is meant for academic purpose and would be treated with optimum confidentiality. It is not compulsory for you to respond to all the questions, but it would be much appreciated if you are able to honor all the questions. Please, seek clarification on any issue at point in process of our engagement.

Thank you for your kind consideration.

1. SECTION A: DEMOGRAPHIC INFORMATION

1.1 Type of community [**Tick**]: 1=Resettled; 2=Host; 3=Adjoining

1.2 Sex of HH head **[tick]**: 1=Male [ ]; 2=Female [ ]

1.3 Literacy level of HH Head [Tick]: 1=No education [ ]; 2= Basic [ ]; 3=Sec/Votec [ ]; 4=Tertiary [ ]

1.4 Age of HH head [Tick]: 1=20-29 [ ]; 2=30-39 [ ]; 3=40-49[ ]; 4=50-59[ ]; 5=60-69 [ ]; 6=70+ [ ].

1.5 Ethnicity [**Tick**]: 1=Guan [ ]; 2=Ewe [ ]; 3=Akan [ ]; 4=Grunse [ ]; 5=Mole-Dagbani [ ]; 6=Banda [ ]; 7= others [ ].

1.6 Marital status [**Tick**]: 1=Married [ ]; 2=Divorced [ ]; 3= widowed [ ]; 4= Single (Never married) [ ]

1.7 Religion [**Tick**]: 1=Catholic [ ]; 2=Protestant [ ]; 3=Islam [ ]; 4=Traditional [ ]; 5= Pentecostal/Charismatic [ ]; 6=Other Christians [ ]; 7= No religion [ ]; 8= others [ ]

1.12 Primary occupation of respondent [**Tick]**: 1=farmer [ ]; 2=fisherman/fishmonger [ ]; 3=hunter [ ]; 4=Trader/marketer [ ]; 5=Illegal miner [ ]; 6=charcoal burner [ ]; 7=government worker [ ]; 8=transport owner/driver [ ]; 9=others specify [ ]

1.17 If any of the children are/is not attending school, what is the reason(s)? **[Tick, multiple answer possible]:** 1= Sickness [ ]; 2= cannot afford (school fees, uniforms, textbooks) [ ]; 3= No school nearby or no place in nearby school [ ]; 4= working to support household [ ]; 5= Not interested in school [ ]; 6= others ……..

1.18 Number of household members over 60 years. [**Tick**]; 1=1 [ ]; 2=2 [ ]; 3=3 [ ]; 4=4[ ]; 5=>4 [ ]; 6= none [ ]

1.19 Forms of disabilities in your HH [**Tick, multiple response allowed**], 1=hearing disability [ ]; 2=physical disability [ ]; 3=visual disability [ ]; 4=leaning disability [ ]; 5=Autism [ ]; 6=others, specify…….

2. SECTION B: PLANNING PROCESS OF THE RESETTLEMENT SCHEME

2.1 How were you inform about the resettlement [**Tick**, multiple responses allowed]: 1= Announcement [ ]; 2=Brochures [ ]; 3=Meetings [ ]; 4=Reference group [ ]; 5=Written [ ]; 6=others [ ]

2.2 Did you/representatives took part in the planning process of the resettlement? [**Tick**]: 1= Yes [ ]; 2=No [ ]

2.3 If yes to Q2.2, how were you/they involved? [Tick, multiple responses allowed]: 1=site identification [ ]; 2= Site selection [ ]; 3= Site development [ ], 4=construction of housing units [ ]; 5= monitoring during construction [ ]; 6=Evaluation of the projects [ ].;7=non-consulted [ ]

2.4 Which of these areas were you/your representative involved the restoration of livelihood in the planning stage? 1=Fishing [ ]; 2=farming [ ]; 3=Trading [ ];4= Grazing land [ ];5=others [ ]

2.7 Who should make decision on the resettlement scheme on your behalf? [Tick]: 1= Community Chiefs [ ], 2=Assemblyman [ ], 3=District Assembly [ ], 4=Paramount chiefs [ ], 5=Members of Parliament [ ], 6=Religious leaders, 7=ethnic leader/chief [ ]; 8=others [ ]

2.8 How would you rate the involvement of the local people regarding the resettlement scheme? [**Tick**]: 1= very poor, 2= poor, 3=neutral, 4=good, 5=very good

2.9 Did you hear and or attended the public for a organised by the stakeholders during the resettlement scheme? [Tick]: 1= I heard and attended [ ], 2= I heard, but did not attend [ ], 3=I neither heard or attended [ ]; 4=others, specify

2.10 If 1 or 2 to Q 2.10, how did you hear the information? [Tick, multiple responses allowed]: 1=Advertisement posted in public places [ ], 2=invitation letter from the BPA [ ], 3= personal networks [ ], 4= Radio announcement [ ], 5=Public van [ ], 6=others [ ].

2.11 Which of these did you require/expected during the engagement at the fora? [**Tick, multiple responds allowed]:** 1=financial support [ ], 2= infrastructure development [ ], 3=Rehabilitation measures [ ],

4=compensation in relation to assets [ ], 5=Assistant programmes [ ], 6=legal enforcements [ ], 7=others [ ]

2.12 Please rate the extent to which Bui Power Authority has been participatory during the period of the resettlement with the statement below; using a 5-point scale, where SA= Strongly Agree (5); A=Agree (4); U=unsure (3); D=Disagree (2); SD= Strongly Disagree (1)

Agreement

No	Statement	SA 1	A 2	U 3	D 4	SD 5
a)	Many invitation to BPA were received					
b)	All relevant stakeholders were often invited					
c)	All relevant stakeholders were highly involved on the resettlement scheme					
d)	All relevant stakeholders made inputs in construction stage					
e)	Decisions-making concerning the resettlement were discussed frequently					
f)	Project teams were constituted at each of the stages					
g)	Affected stakeholders were allow to decide the nature and type of assistance					
h)	Affected stakeholders jury were constituted					
i)	Communities trusted BPA during the participation process					
j)	You/representatives invited to negotiate when the initial plan was detrimental to the community					
k)	Adequacy of the balance of power during negotiation					

3. SECTION C: RISKS ENCOUNTERED BY THE AFFECTED COMMUNITIES

3.1 Have you faced any risks after the resettlement? [Tick]:1=Yes [ ]; 2=No [ ].

3.2 If yes for Q 3.1, impoverishment risks faced by households after resettlement: [Rate the risks you encountered during the periods indicated in the table below. [**Use codes**] 1= highly severe; 2= severe; 3=Neutral; 4=Not severe; 5=Not very severe

If yes to Q3.2,risk faced by HHs	2006	2011	2016	
Homelessness				
Joblessness				
Landlessness				
Marginalization				

Social disarticulation				
Food insecurity				
Lack of access to common pool resources				
Increased morbidity &mortality				
3.3 Which mechanisms help to minimize these risks [**tick, multiple responses allowed**]	1= BPA[ ]; 2= DA [ ]; 3=Self effort [ ]; 4 NGO [ ]; 5=Community [ ]			
3.4 Nature of support you had in Q3.4	[use codes]: 1=cash; 2=kind; 3 replacement			
BPA				
DA				
NGO				
Self				
Community				

3.5 If the mechanism was "self-effort", what were these efforts? [**Tick, multiple response allowed**]: 1=Requesting crops from neighbors [ ]; 2=ruminants sale [ ]; 3=Petty trade (firewood/charcoal, fish, etc) [ ]; 4=Sent children to live with relatives [ ]; 5=Doing daily labour [ ]; 6=Illegal mining [ ]; 7=sold properties such as (canoe/nets, clothes, etc) [ ]; 8=Take credit from money lender [ ]

3.6 As compare to the first year, how do you compare the risk now? 5=very good [ ], 4=good [ ]; 3=no change [ ]; 2=bad [ ]; 1=very bad [ ]

4. SECTION D; HEALTH FACILITIES

4.1 Did/do you have health facilities?	Before the resettlement	After the resettlement
	1=Yes [ ]; 2=No [ ]	1=Yes [ ]; 2=No [ ]
4.2 If yes for Q4.1, what time did you travel to get the health services?	1=≤30mins [ ]; 2=31-60mins [ ]; 3=>1hr [ ]	1=≤20mins [ ].; 2=40mins [ ]; 3=1hr[ ]

4.3 What were the major diseases/illness that affected your HH in the last year? 1=malaria [ ]; 2= pneumonia [ ] 3= diarrhea [ ]; 4= waist pain [ ]; 6= eye diseases [ ]; 7=gastritis [ ]; 8=malnutrition [ ]; 9= others [ ],

4.4 Which category of your HH members were mostly affected by these sicknesses? ***[Tick-multiple answer possible]***: 1= children [ ]; 2= elderly [ ]; 3= husband/wife [ ]; 4=others…….

4.5 How did you help the sick person? ***[Tick- multiple answer possible]*** 1= treated by herbalist [ ]; 2= sent to health facility [ ]; 3=Bought drugs from the shop [ ]; 4=others, specify…….

4.6 Perception of household on health services before and after the resettlement[use codes:5=strongly agree, 4= Agree, 3=neutral, 2=disagree, 1=strongly disagree]	Before	After
I was satisfied with the length of time I had to wait for health services		
The facility was at a convenient distance from my home		
The medical staff were readily available		
The facility had all the necessary medicines and supplies		
NHIS could address the service fees/cost of the ailment		
I received any health information that I want without any difficulties		
The buildings are in good condition and well maintained		
I received good medical attention by qualified staff		
Ambulance services were/are readily available		

4.7 General health service situation before the resettlement? [**Tick**] 5= better; 4= good; 3= not changed; 2=bad; 1= very bad

4.8 General health services situation after the resettlement? [**Tick**] 5= better [ ]; 4= good [ ]; 3= not changed [ ]; 2=bad [ ]; 1= very bad [ ]

5. SECTION E: EDUCATION

5.1 Did/Do you have education facilities? [**Tick**]	Before	After
	1= Yes[ ]; 2=No [ ]	1= Yes[ ]; 2=No [ ]

5.2 If yes to Q 5.1 before the resettlement, how far did your children travelled to get the education services? 1=≤ 30 mins [ ]; 2=31-1hr [ ]; 3>1 hr [ ].

5.3 If yes to Q5.1 after the resettlement, how far did your children travelled to get the education services? 1=≤ 30mins [ ]; 2=31-1hr [ ]; 3>1hr [ ].

5.4 Perception of HH on education services before and after the resettlement[use codes:5=strongly agree, 4= Agree, 3=neutral, 2=disagree, 1=strongly disagree]	Before	After
I was satisfied with the length of time my children had to travel for education services		
The facility was at a convenient distance from my home		
The teachers were readily available		
The facility had all the necessary T/L materials		
School fees were reasonable		
I attended all PTA/SMC meetings		
The buildings are in good condition and well maintained		
5.5 General education condition in the community 5= very		

good; 4= good ;3= not changed;2=bad; 1= very bad		
5.6 Does the teachers live in the communities? 1=Yes; 2=No		
5.7 Were you given any training? 1=Yes; 2=No		
5.8 If yes Q5.7, what form of training did you get?		
Agriculture extension training		
Health Education		
NVTI/NBSSI		
Environment		
Livelihood Empowerment Programme (LEP)		
5.9 If yes for Q5.7, were you satisfied with the knowledge gained from the training? 1= Very satisfied, 2=satisfied, 3=Neutral; 4= Dissatisfied; 5 Very dissatisfied		
5.10 Your capacity to solve socio-economic problems due to the training? 5= Very good; 4= good ;3= Neutral ;2=bad; 1= very bad		

6. SECTION F: HOUSING/SHELTER

	Before	After
6.1 What type of house do the household lived in? [tick] 1 = Mud walls with grass roof; 2 = Grass walls with grass roof;3 = Mud walls and zinc roof;4 = Cement block with zinc roof;5 = others, specify		
6.2 Where do HH members go for toilet? (***Tick***): 1= Open pit/bush, 2= Communal latrine, 3=private modern latrine, 4=private traditional latrine 5=Others , specify		
6.3 Do you have access to clean and protected drinking water? **(Tick)** 1=Yes; 2=No		
6.4 If Yes for Q 6.3, duration for access to water sources? (Going and return, walking)? In minutes (write "00" if within the house or dwelling) 1=00; 2=≤30 mins; 3=31-1 hr; 4=>1hour		
6.5 If No for Q 6.3, what is the main source of your drinking water? ***[***use codes***]***: 1= Springs, 2=Traditional well; 3=Ponds/river; 4=Borehole;5= others, specify:		
6.6 Do you treat your drinking water? ***[use codes];*** 1=Yes ;2= No		
6.7 How did you evaluate the water service? Use codes: 5= Very good; 4= good ;3= not changed;2=bad; 1= very bad		
6.8 What was your main source of fuel for cooking and lighting? [**use codes**]: 1=Fire Wood/ charcoal; 2=Electricity;3=Gas/Kerosene; 4=crop/animal residuals, 5= Others		
6.9 If firewood/Charcoal, where was the source?[**Use codes**]: 1=own plantation, 2=natural forest , 3=purchasing from market, 4=crop residues, 5=others		

6.10 With reference to Q 6.1, was the house you were living before the resettlement yours? [**Tick**]; 1=Yes [ ]; 2=No [ ]

6.11 If No for Q6.10, which of the following owned the living place? [**Tick**]; 1= rented [ ]; 2=relatives [ ]; 3= government [ ]; 4= own [ ]; 5= others, specify…….

6.12 How would you rate the level of adequacy of your present accommodations? [Tick] 1=Not adequate [ ]; 2=fairly adequate [ ]; 3=neutral [ ]; 4= adequate [ ]; 5=very adequate [ ]

6.13 If not adequate for Q6.17, what are you doing about it? 1=Nothing [ ]; 2= making an extension [ ]; 3= building new living room [ ]; 4= looking for a bigger room to rent [ ]; 5= others, specify……

7. SECTION G: SOURCES OF LIVELIHOOD

7.1 What were the main sources of livelihood before and after resettlement? [use codes-multiple answers possible): 1 = **farming**; 2=**Animal/Birds Production;** 3 = **off- farm activities**, 4 = **non-farm activities**; 5= **Fishing**

	Resettled communities		**Host communities**		**Adjoining communities**	
	Before	After	Before	After	Before	After
Farming						
Animal/birds						
Off-farming						
Non-farming						
fishing						

7.2 Rank the livelihood strategies in Q7.1 according to their importance? [**Use codes**]; 1=very important; 2=important; 3=neutral; 4=fairly important; 5=not important

	Resettled communities		**Host communities**		**Adjoining communities**	
	Before	After	Before	After	Before	After
a) Farming						
b) Animal/birds						
c) Off-farming						
d) Non-farming						
e) fishing						

7.3 The main crops harvested by the household before and after resettlement

Main Crops harvested	**Resettled communities**		**Host communities**		**Adjoining communities**	
	Before	After	Before	After	Before	After
	Size (ha)	**Size(ha)**	**Size (ha)**	**Size(ha)**	**Size (ha)**	**Size(ha)**

a) Maize						
b) Cassava						
c) Plantain						
d) Yam						
e) Sorghum						
f) cocoyam						
g) groundnuts						
h) Bambara						

7.4 The main vegetables grown by the HH before and after the resettlement

Main vegetables cultivated	**Resettled communities**		**Host communities**		**Adjoining communities**	
	Before	After	Before	After	Before	After
	Size (ha)	**Size (ha)**	**Size (ha)**	**Size (ha)**	**Size (ha)**	**Size (ha)**
okra						
Agushie						
Pepper						
Tomatoes						
Cabbage						
Others						

7.5 What tool(s) do you use to cultivate your crops? [**Tick**] Use codes: 1= tractor [ ]; 2= hoe and cutlass [ ]; 3=others

7.6 Were your produce sufficient to feed your family until the next season? [**Tick**]

	Resettled communities		**Host communities**		**Adjoining communities**	
	Before	After	Before	After	Before	After
	1=Yes[ ]; 2=No[ ]	1=Yes[ ]; 2=No [ ]	1=Yes[ ]; 2=No [ ]	1=Yes[ ]; 2=No[ ]	1=Yes[ ]; 2=No[	1=Yes[ ]; 2=No[

7.7 During which months is food shortage severe?

	Resettled communities		**Host communities**		**Adjoining communities**	
	Before	After	Before	After	Before	After

7.8 What do you think are the main causes of food deficit? ***[Use code; multiple answer possible]*** 1= Absence of adequate rainfall [ ]; 2= Insect or pest infestation [ ]; 3=Shortage of cultivated land [ ]; 4=Poor quality of land [ ];5=Animal disease [ ]; 6=Poor health situation of the farmers'[ ]; 7=Flood [

]; 8=Shortage of input supply [ ]; 9=Transport and marketing challenges [ ]; 11=others, specify:

7.9 How does the household cover the food shortage? ***[Use codes-multiple answer possible]*** 1= Purchase of grain from market [ ]; 2= Food / cash for work [ ]; 3= support from relatives and friends [ ]; 4= Cash credit to be replaced in kind during harvest [ ]; 5=Grain credit to be replaced in kind during harvest [ ]; 6 = others, specify:

7.9 How would you compare the productivity of crops, fruits and vegetables before and after the resettlement? Use the code- 1=very low; 2=low 3= unchanged; 4= high; 5= very high

	Resettled communities		**Host communities**		**Adjoining communities**	
	Before	After	Before	After	Before	After

7.10 Did you use agricultural inputs for your farming? [**Tick**] 1=Yes [ ]; 2=No [ ]

7.11 If yes for Q 7.10, what agricultural inputs do you use? 1=improved seed [ ]; 2= modern agricultural farm tools [ ]; 3=fertilizer [ ]; 4=pesticides [ ]; 5=Fishing gears [ ];6= specify[ ]

7.12 If No for Q 7.10, what was the reason? [**Tick**] 1= not available [ ]; 2= too expensive [ ]; 3=inadequate supply [ ]; 4= others [ ]

7.13 Have you undergone training on agricultural extension? [**Tick**]: 1=Yes [ ]; 1=No [ ]

7.14 If yes for Q 7.13, about what? [Use codes- multiple answers possible]:1= crop production [ ]; 2= animal production [ ]; 3=soil conservation [ ]; 4=forestry [ ]; 5=use of fertilizer [ ]; 6=use of pesticides [ ]; 7=use of improved seeds [ ], 8=aquaculture [ ]; 9= others, specify……

7.15 Do you use forest and forest products as your source of livelihood? [**Tick**]; 1=Yes [ ], 2=No [ ]

7.16 If yes for Q 7.15, what were they use for? [**Use codes- multiple answers possible**]: 1=timber [ ], 2=charcoal [ ], 3=construction [ ], 4= firewood [ ], 5=medicinal [ ], 6=spices/food [ ], 7=wood work [ ]; 8 =others [ ]

7.17 How did you compare the following variables before and after the resettlement? Use codes: 5=very good; 4= good; 3= not changed; 2=bad; 1= very bad

Variables	**Resettled**		**Host**		**Adjoining**	
	Before	After	Before	After	Before	After
Soil fertility						

Availability of adequate rainfall for farming						
Availability of better variety of seeds						
The plate size of the farm land						
Access to agricultural equipment's						
Availability of fertilizers						
Access to agricultural extension service						
Destruction of crops by animals						
The level of productivity of crops						
Availability of irrigation system						
Wildfire destruction of crops						
Stealing of crops						

7.18 Use of livestock/birds: [**Tick, multiple answers possible**]-: 1=Food [ ]; 2= ploughing [ ]; 3= sale [ ]; 4=transportation [ ], 5=others, specify……..

7.19 What were the major problems in livestock/birds production after the resettlement? (**Tick, multiple answers possible**) 1= Feed problem [ ]; 2=straying onto farms [ ]; 3= Health problem [ ]; 4=lack of improved breeds [ ]; 5= lack of working capital [ ]; 6= others [ ]:

7.20 Are you involve in off- farm? 1=Yes [ ]; 2=No [ ]

7.21 If yes to Q7.20, which of the following activities are you involved in? [**Use codes**]; 1=Yes; 2=No

	Resettled		**Host**		**Adjoining**	
	Before	After	Before	After	Before	After
Sales of firewood/ charcoal						
Rent of land						
Rent of production tools						
Agricultural wage						
Transportation services						
Petty trading						
Catering services						
Dressmaking/tailoring						
Others						

7.22 Are you involve in non-farm activities to supplement farming? [**Tick**] 1=Yes [ ]; 2=No [ ]

7.23 If yes to Q7.22, which of the following activities are you involved in? [Use codes]; 1=Yes; 2=No

	Resettled		**Host**		**Adjoining**	
	Before	After	Before	After	Before	After
Illegal mining						
fishing						
hunting						
Wild fruits picking						
logging						
Wage work						

8. SECTION H: FISHING

8.1 Do you or anyone in your family fish? [Tick]: 1= Yes [ ]; 2= No [ ]

8.2 What do you use to fish [Tick, multiple response allowed]: 1= Cast nets [ ]; 2 =Traps [ ];3= Line nets [ ];4= Hooks [ ].

8.3 Which season do you often fish? [**Tick**]; 1= peak season [ ]; 2= lean season [ ]; 3=both seasons

8.4 Do your household process any of your fish? [Tick]: 1=Yes [ ]; 2= No [ ]

8.5 If yes for Q8.7, how do you processed them? [**Tick, multiple response allowed**]; 1=fry [ ]; 2=dry [ ]; 3=smoke [ ]; 4=salted [ ].

8.6 Where is the fish sold? [Tick, multiple answers allowed]: 1=in village to agent [ ]; 2= in local market [ ]; 3= in town to trader [ ]; 4= at the river bank [ ]; 5=others (specify)……..

11. SECTION I: HOUSEHOLD ASSETS FOR SUSTANABLE LIVELIHOOD

11.1 Did you own land before and after the resettlement? **(Tick)**

	Resettled communities		**Host communities**		**Adjoining communities**	
	Before	After	Before	After	Before	After
	1=Yes[ ]; 2=No [ ]	1=Yes[ ] 2=No [ ]	1=Yes[ ]; 2=No[ ]	1=Yes[ ]; 2=No[ ]	1=Yes[ ]; 2=No[ ]	1=Yes[ ]; 2=No[ ]

11.2 Tenure arrangement [**Tick, multiple responses allowed**); 1=own [ ]; 2=rented [ ]; 3=sharecropped [ ]; 4=pay annual donations to chiefs [ ], 5= community owned [ ]; 6=others, specify……..

11.3 How do you utilized the land? [Tick] 1=own use, cultivated [ ]; 2=own use, not cultivated [ ]; 3=fallow [ ]; 4=on loan to another [ ]; 5=others (specify)……..
11.4 How do you see the size of your new farm land compared to your original land? **(Tick)** 1=very small [ ]; 2= small [ ]; 3= unchanged [ ]; 4= big [ ]; 5=very big [ ]

12. SECTION J: SOURCES OF INCOME

12.1 Source of income and estimated amount	**Resettled**		**Host**		**Adjoining**	
	Before (GH₵)	After (GH₵)	Before (GH₵)	After (GH₵)	Before (GH₵)	After (GH₵)
Income from on-farm activities						
Income from off-come activities						
Income from cash crops						
Income from fish catch						
Income from food crop						
Income from vegetables						
Income from Animals/birds						

12.2 Estimated expenditure	**Resettled**		**Host**		**Adjoining**	
	Before (GH₵)	After (GH₵)	Before (GH₵)	After (GH₵)	Before (GH₵)	After (GH)
Foodstuffs						
Non-foodstuffs						
Health						
Education						
Transports						
Clothing						
Miscellaneous						

14. SECTION K: MEMBERSHIP OF ASSOCIATIONS

14.1 Did you and family members participated in any formal associations before the resettlement? [Tick]; 1=yes; 2=no

14.2 If yes for Q14.1, the name of the associations? [**Use codes-multiple answers possible**]-: 1=Religious [ ]; 2=Susu/saving [ ]; 3=fishing [ ]; 4= farming [ ]; 5=cash crops [ ]; 6=political [ ]; 7=Ethnic [ ]; 8= others [ ]

	Resettled communities		Host communities		Adjoining communities	
	Before	After	Before	After	Before	After
religious						
'Susu'/saving						
fishing						
farming						
Cash crops						
political						
Ethnic						
others						

14.3 If yes for Q14.1, what benefits did you gain as a member of such associations? [Use Codes]: 1= Income increased; 2= labour and social support; 3= credit used; 4=recognition in the community 5= others, specify:

	Resettled communities		Host communities		Adjoining communities	
	Before	After	Before	After	Before	After
Income increased						
Labour and social support						
Credit used						
Community recognition						

14.4 If No for Q14.1, what is the probable reason? [Tick]: 1=No information [ ]; 2=No interest [ ]; 3=No associations [ ] 4=others, specify [ ]
14.5 If yes for Q 14.1, membership experience? [**Use codes**]: 1=<1 year; 2= 1-2 years; 3= 3-5 years; 4=>5 years

14.6 Socio-political voice and influence after the resettlement? 1=Very good; 2=good; 3= no change; 4=bad; 5=very bad

15. SECTION L: RELATIONSHIPS WITH NEIGHBOURING COMMUNITIES

15.1 Have you establish socio-economic relationship after the resettlement? [Tick]: 1=Yes [ ]; 2= No [ ]

15.2 If yes to Q 15.1, what kind of relationships? [Tick, multiple response allowed]: 1=share-cropping [ ]; 2= 'Ndobua' [ ]; 3=tools/equipment hiring; 4=marriage [ ]; 5= religion [ ]; 6=marketing transaction; 7= funeral/naming ceremony [ ];

15.3 In general, how is your relationship with your neighboring communities? 1=very good [ ]; 2=good [ ]; 3= no change [ ]; 4=bad [ ]; 5=very bad [ ]

15.4 Have you ever had any conflict with the neighboring communities? [Tick]; 1=Yes; 2=No

15.5 If Yes for Q 15.4, what are the major reasons for the conflict after the resettlement scheme? [**Tick, multiple responses allowed**]: 1= religion [ ]; 2= competition for land [ ]; 3=forest destruction [ ]; 4=illegal mining sites [ ]; 4= fishing rights [ ]; 5=ethnicity [ ]; 6=share-cropping [ ]; 7=others [ ]

15.6 If yes to Q 15.4, how was it solved? [**Tick, multiple responses allowed**]: 1=by community elders [ ]; 2=by BPA committee [ ]; 3=by legal means [ ]; 4=by religion head [ ]; 5=Assemblyman [ ]; 6=others [ ]

16. SECTION M: SAVINGS AND ACCESS TO CREDITS

16.1 Do you save at the bank) [Tick]: 1=Yes; 2=No

16.2 If yes for Q16.1, complete the following [**Codes for the sources of credit, multiple responses allowed**]: 1= Masloc [ ]; 2= Commercial banks [ ]; 3=Rural banks[ ] ; 4= Friends and relatives[ ] ;5= Micro finance institutions [ ]; 6= Local moneylenders [ ]; 7=others [ ]

16.3 Have you ever receive any type of credit? [Tick]: 1=Yes; 2=No

16.3 What was the purpose for the credit? [Tick, **multiple responses allowed**] 1= Education [ ]; 2= for health [ ]; 3= Purchase of implements/fishing nets [ ]; 4= food/clothings [ ]; 5=for social obligation [ ]; 6=shelter [ ]; 7=miscellenous

17. SECTION N: MARKET ASSETS

17.1 Was there a nearby market before the resettlement scheme? [**Use codes**]: 1= Yes; 2=No

17.2 If Yes for Q 17.1, the distance of the market from your house in mins/hrs.? [**Tick**]:1= <30mins [ ]; 2=31-60minutes; 3=>1 hr
17.3 How do you see the selling price for your produce after the resettlement? 1=very low; 2= low; 3= not changed; 4=high; 5=very high

17.4 If your answer for Q 17.3 is **very low/low**, why? [Use codes multiple answers possible]: 1= No (demand) for the produce [ ]; 2=More supply of the produce [ ]; 3=Lack of access to potential market [ ]; 4=others, specify:

17.5 Where do you sell your farm products? [**Use codes-Multiple answer possible**] 1=on farm/riverside [ ]; 2=Taking to the local market [ ]; 3=process them for future sale [ ]; 4= others, specify:

17.6 What means of transport do you use to transport your produce to the nearest market? [Use codes]: 1=Trucks [ ]; 2=canoe [ ]; 3=Human power [ ]; 4= tricycle/motorbikes [ ]; 5=others, specify:

17.7 What were the problems in selling your products? [**Use codes**]: 1=Transportation problem [ ]; 2=Too far from market place [ ]; 3=Low barging power [ ]; 4=Low price of Agricultural produce [ ]; 5=others, specify:

18. SECTION O: ENVIRONMENTAL MANAGEMENT AND REHABILITATION

18.1 Where did you get the construction materials for your dwelling places and animals / birds place? [Use codes]: 1=BNP [ ]; 2=farm [ ]; 3=Use trees planted around [ ]; 5=others,

18.2 Have you been trained about environmental management by BPA or an NGO staff? 1= Yes [ ]; 2=No [ ]

18.3 Have you ever planted indigenous trees on your farm land? 1= Yes [ ]; 2=No [ ]

18.4 If yes for Q18.3, list (2) of some of the trees you planted in your farmland? 1=Teak [ ]; 2=mahogany [ ];3=cashew [ ]; 4=mangoes [ ]; 5=others

18.5 Do you practice any forest conservation after the resettlement? 1 = Yes [ ]; 2= No [ ]

18.6 How would you rate the effect of the natural environment on you after the resettlement? [**Tick**] 1=highly affected [ ]; 2=affected [ ]; 3=unchanged [ ]; 4= little affected [ ]; 5=not affected

19. SECTION P: LIVELIHOOD OUTCOMES (SECURITY AND SUSTAINABILITY)

19.1 1mprovement in infrastructure and social service facilities before and after resettlement (use codes):1=strongly disagree; 2=disagree; 3= Not change; 4= agree; 5 =strongly agree

Facilities/services	**Resettled**		**Host**		**Adjoining**	
	Before	After	Before	After	Before	After
Health institutions expanded						
Access to schools increased (Basic)						
Fishing gears provided						
Electricity access expanded						
Mobile services enhanced						
Access roads provided						
Safe drink water supplied						
Access to veterinary service expanded						

Durable canoes provided						
Access to credit facilities expanded						
Market access improved						
Access to micro finance institutions expanded						
Religious structures provided						
Toilet facilities established						
Access to extension services expanded						
Access to grinding mills expanded						
Sites for cemetery provided						
Shrines and grooves relocated						
Access to forestry product improved						
Participation in the management of BNP enhanced						
Others						

19.2 How do you consider the adequacy of social services in your area after the resettlement scheme? [Tick, multiple responses allowed]: 1=very adequate; 2= adequate; 3=unchanged; 4=not adequate; 5=worst

	Resettled		**Host**		**Adjoining**	
	Before	After	Before	After	Before	After
Education						
Health						
Waste disposal						
transport						
Telecommunication						
sanitation						
water						
Law and order (security)						
Community centre/play ground						
Other,						

19.3 How would you rate your overall success and benefits gained in resettlement programme in your area? [Tick]; 1=Very Low; 2=Low 3= No Change; 4=High; 5= Very High

20. SECTION Q: SUSTAINABILITY OF LIVELIHOOD

21.1 Have you notice any livelihood changes after the resettlement? [Tick]
1=Yes [ ]; 2=No [ ]

20.2 If yes to Q20.1, to what extent do you agree on the livelihood changes after the resettlement? [Use codes]: 5=strongly agree, 4=agree, 3=neutral, 2=disagree, 1=strongly disagree

	Resettled		**Host**		**Adjoining**	
	After		After		After	
More income						
Increased wellbeing						
Better heath						
Better education						
Reduced vulnerability						
Asset accumulation						
High status in the community						
Livelihood adaptation						
Resilience enhanced						
Natural resource sustainability ensured						

20.3 How would you rate your overall success and benefits gained in the resettlement in your area? 1=Very Low [ ]; 2=Low [ ]; 3= No Change [ ]; 4=High [ ]; 5= Very High [ ]

21. SECTION R: CHALLENGES AND SUGGESTED SOLUTIONS

21.1 Mention the major problems associated with resettlement scheme that need special attention?
1……
2……
3……
4……

21.2 What possible solutions do you recommend?
1……
2……
3……
4……

Thank you for your time and patience!!!!!

APPENDIX B

FOCUS GROUP DISCUSSION GUIDE

RESETTLEMENT PLANNING AND SUSTAINABLE LIVELIHOOD A STUDY OF BUI RESETTLEMENT SCHEME IN GHANA

Sir/Madam

I am grateful for this opportunity to interact with you on the subject under investigation. The objective of this scheduled interview is for academic purpose. It has no bearing on you personally or affect any administrative decision taking for/against your inputs.

Please, be assured that all the information provided during the interaction is meant for academic purpose and would be treated with optimum confidentiality. It is not compulsory for you to respond to all the questions, but it would be much appreciated if you are able to honor all the questions. Please, seek clarification on any issue at point in process of our engagement.

Thank you for your kind consideration.

1 **SECTION A: PARTICIPATORY NATURE OF THE RESETTLEMENT SCHEME.**

1.1 Probe into the various opinions of the participatory process of the resettlement scheme by each focus group.

1.2 Solicit group's criticisms and appraisals of the planning process of the scheme.

1.3 What are the institutions involve in the planning process of the scheme

1.4 Explore focus group's view about the need and modalities of improving the planning process for the host, resettled and adjoining communities.

1.5 Identify the stakeholders involve with the resettlement scheme.

1.6 What were your expecting during the planning process of the resettlement? What should they have done differently?

1.7 How was the participation of planned livelihood restoration?

1.8 Assess group's opinion about the collaboration that has existed between the community and the institution(s) and whether there is the need for this collaboration to continue.

1.9 What was the perception of resettled people about the resettlement scheme, both in the resettlement area and origin?

2. SECTION B: RISK ENCOUNTERED BY THE PEOPLE

2.1 What risk (s) did you encountered/are still encountering during and after the resettlement

2.2 Which mechanism help to minimise the risks? How did they do it?

2.3 How was the assistances provided by the BPA during the implementation of the scheme? Shelter, land, farm inputs and tools, infrastructure and social services (education, health centre, etc.)

3. SECTION C: LIVELIHOODS ASSETS, STRATEGIES AND OUTCOMES

3.1 What assets developed? What livelihood strategies adopted? How did you/ communities improve their livelihoods?

3.2 Which livelihood source (s) is/ are more sustainable?

3.3 How would you compare the productivity/distance from your community to your farms/fishing/markets?

3.4 Do you see any threat pose by the resettlement scheme on the Bui Game Reserve? How?

3.5 How was the nature of compensation in your community?

3.6 How is employment situation within the affected communities? How can it be managed?

3.7 What was the effect of the resettlement scheme the on environment and natural resource usage?

3.8 Have you notice any livelihood changes after the resettlement? How?

4. SECTION C: SOCIAL RELATIONSHIPS

4.1 How is the relationship between resettled, host and adjoining community?

4.2 Have you identify new associations after the resettlement? Why have they emerged after the resettlement?

4.3 How do you assess the resettlement scheme? Has it been a success or failure in changing the livelihood of resettled, host and adjoining communities?

4.4 What challenges have you observed associated with resettlement scheme in the area?

4.5 What solutions do you recommend for the challenges?

5. SECTION E: RECOMMENDATIONS

5.1 How do you think the planning process should have involved the affected communities?

5.2 What improvement should be made?

5.3 In which way would you propose to have consulted the affected communities?

5.4 How should conflicts/disputes occurring during such process be resolve?

5.5 Which set of communities would you recommend for them to benefit from the resettlement scheme?

THANK YOU FOR YOUR TIME AND ATTENTION

APPENDIX C:

KEY INFORMANT INTERVIEW GUIDE

RESETTLEMENT PLANNING AND SUSTAINABLE LIVELIHOOD A STUDY OF BUI RESETTLEMENT SCHEME IN GHANA

Sir/Madam

I am grateful for this opportunity to interact with you on the subject under investigation. The objective of this scheduled interview is for academic purpose. It has no bearing on you personally or affect any administrative decision taking for/against your inputs.

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Thank you for your kind consideration.

A. **General Information**

a) Date……

b) Time of interview: Start ……End……..……

c) Village/Town……

d) Name of organization…….

e) Type of organization……

f) Project Area……

g) Number of Technical Staff……

A. **PERSONAL DETAILS OF KEY INFORMANT**

1. Sex: 1=Male [ ]; 2=Female [ ]
2. Age : 1= 20-29 [ ]; 2= 30-39 [ ]; 3= 40-49 [ ] ; 4= 50-59 [ ];5=60+
3. Sex **[tick]**: 1=Male [ ]; 2=Female [ ]
4. Educational level [Tick]: 1=No education [ ]; 2= Basic [ ]; 3=Sec/Votec [ ]; 4=Tertiary [ ]; 5= others (specify)……
5. Qualification [Tick] 1=WAEC [ ]; 2=Diploma [ ]; 3= Degree [ ]; 4= Masters [ ]; 5=PhD [ ]; 6= others(specify)……
6. Age [Tick]: 1=20-29 [ ]; 2=30-39 [ ]; 3=40-49[ ]; 4=50-59[ ]; 5=60-69 [ ]
7. Ethnicity [**Tick**]: 1=Guan [ ]; 2=Ewe [ ]; 3=Akan [ ]; 4=Grunse [ ]; 5=Mole-Dagbani [ ]; 6=Banda [ ]; 7= others [ ].
8. Marital status [**Tick**]: 1=Married [ ]; 2=Divorced [ ]; 3= widowed [ ]; 4= Single [ ]
9. Religion [**Tick**]: 1=Catholic [ ]; 2=Protestant [ ]; 3=Islam [ ]; 4=Traditional [ ]; 5= Pentecostal/Charismatic [ ]; 6=Other Christians [ ]; 7= No religion [ ]; 8= others [ ]
10. Residential status [**Tick**]: 1= year-round resident [ ]; 2= resident, but absent more than 3 months [ ]; 3= resident, but more than 6 months [ ]; 4=non- resident, visiting [ ]; 5=others specify
11. Office Portfolio:……
12. Rank:……

B. **PARTICIPATORY NATURE OF DURING PLANNING PROCESS OF THE RESETTLEMENT SCHEME.**

13. Can you explain the procedure for resettlement planning in Ghana? (Stages, laws and institutions involved)
14. What is the role of your institution in this process?
15. Which other institutions could play such role?
16. How does your institution understand the role of participation in the process?
17. At what stages was your institutions involve?
18. Who participated and in which way?
19. Which categories of people were involve during the participatory process?
20. How did you involve the host, resettled and adjoining communities?
21. Did your institutions also considered the view of all affected communities? How?
22. Did the process contribute to building public awareness and ownership of the option finally selected?
23. Were the stakeholders fully able to express their concerns?

- ❖ Who are the actors involved in the resettlement?
- ❖ What kind of preparations/feasibility study was done before the scheme started?
- ❖ How well have the host, resettled and adjoining communities been consulted about the scheme?
- ❖ How has the programme been implemented practically and administratively?

C. **POTENTIAL RISK**

24. Do you anticipate any potential risk of the resettlement scheme on the host, resettled and adjoining communities?
25. Who is affected negatively?
26. Did your institution involve these set of communities equitably?
27. Was your institution involved on issues of compensation?
28. What are the losses that your institution considered for compensation?
29. How would you rate the set of communities that are affected by the resettlement in terms of their livelihood?

D. **LIVELIHOODS ASSETS, OUTCOMES AND STRATEGIES**

30. How do people perceive the resettlement scheme, both before and after the resettlement?
    - ❖ Do people perceive the resettlement scheme as voluntary?
    - ❖ What do the adjoining communities know about the scheme, how do they obtain information, and how does the level of knowledge affect their livelihood strategies?
31. How do you see the assistance provided by BPA during the implementation of the scheme?
    - ❖ Shelter construction
    - ❖ Social and infrastructure facilities establishment
    - ❖ Household packages
    - ❖ Land distribution
    - ❖ Agricultural inputs provision
    - ❖ Dispute resolutions
    - ❖ Environmental management

- ❖ Livelihood enhancement
- ❖ Communal assets restoration

32. What do the resettled communities do to make a living? What are their livelihood strategies? What kind of assets do they have access to? How do they improve their livelihoods?
33. Did your resettlement scheme considered the host and adjoining communities?
34. Is there difference among the resettled households regarding their livelihood strategies and degree of access to assets, and if so, between whom and why?
35. How do you see the socio-economic and cultural relationship between resettled, adjoining and host communities in terms of;
    - ❖ Share-cropping
    - ❖ Employment
    - ❖ Transaction
    - ❖ Religion, Language, Clothing, Marriage
    - ❖ Funeral ceremony, etc.
36. Do the socio-cultural backgrounds of the resettled match to the host and the adjoining communities?
37. Is there conflict between host, resettled and adjoining communities or among resettled themselves? How has such disputes been resolved by your institution?
38. What were the major reasons?
39. What minimum infrastructure and social facilities have been established and functioning now?

40. How was the scheme designed to manage the resettlement impact on environment?

Resettled, host and adjoining communities to conserve the environment; regulating forest clearing and trees cut for different purposes?

41. Making other alternative sources available to reduce dependence on forest.
42. What other interventions are designed and being undertaken to sustain the attempt of resettled, host and adjoining communities to attain their livelihoods in the area?
43. How is the success and failure of the resettlement scheme on improving the livelihood of the people being monitored and evaluated?
44. How do you evaluate the overall conditions of resettlement scheme in contributing to the livelihoods of resettled as compared to the host and adjoining communities?
45. What challenges have you observed associated with Bui resettlement scheme?
46. What solutions do you recommend for the challenges?

E. **RECOMMENDATIONS**

47. How do you think the planning process should have involved the affected communities if your institution has noticed any?
48. What improvement should be made?
49. In which way would you propose to have consulted the affected communities?
50. How should conflicts/disputes occurring during such scheme be resolve?

51. Are there cases in such resettlement schemes where community's participation of affected people been effectively used? How were they organised?

THANK YOU FOR YOURTIME AND ATTENTION