Negotiated Entitlements: A Study of Land and Water Access in the Tono Irrigation Project in Navrongo, Ghana

John B. Akanvariyuei Agandin

Thesis for the Master of Philosophy in Development Geography

Spring, 2015

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ABSTRACT

The economy of Northern Ghana is largely agrarian with over 70% of the population engaged in agriculture and agricultural based livelihood activities (GSS, 2012). Agriculture is however characterised by poor yields as a result of erratic rains and poor soils. Irrigation offers greater opportunities for livelihoods security and poverty reduction through all-year-round cultivation and higher yields. Creating irrigation facilities and allocating land and water rights however raises many land tenure issues involving many social actors. In the Tono Irrigation Scheme in the Upper East region, management has to work through and against several actors to institutionalize authority and resource control. These actors include; farmers, chiefs, family landholders, earthpriests (*tigatiina/tengnyam*), local politicians, and village committee executives. Using an extended entitlement framework, this study investigates how power play and competition between the various actors affect the distribution of land and water resources. The framework links both macro and micro levels of analysis, matching external and higher level forces to internal, local level dynamics that affect access to resources. Further insight is drawn from the dynamics of land rights and the exercise of compulsory acquisition by government to acquire land for development projects in Ghana as well as the role of agricultural policies and interventions and market forces in shaping resource access behaviour.

The study found that there is a gap between statutory/formal institutions and local practices - pre-existing customary land tenure and informal land transactions. This opens the door for manipulation by powerful actors. 'Big men', politicians, local chiefs and other customary landholders try to circumvent one set of rules with the other in order to support claims and counter claims for control or access rights to land and water resources. In the process, resource allocation is skewed in favour of these powerful actors who have privileged access to scheme lands whilst local small-scale farmers, women and young people are generally disadvantaged and lose out. Competition also borders on the legitimate authority to mediate conflicts on project lands as local chiefs compete with Village Committee executives as well as the authority of management not only over scheme lands but also for the allegiance of local farmers. The study suggests that as many irrigation users tend to obtain access to land through diverse combinations of statutory and customary entitlements, local land tenure issues must be properly taken into account in establishing irrigation facilities and regulations should aim to build on local tenure systems rather than attempting to replace them. Existing inequalities in

customary tenure systems must also be recognised and attempts made to cater for the interest of weaker social groups.

Fieldwork was done over a three month period from June to August, 2014. Qualitative data was collected through Individual and Key Informant interviews, Group Interviews, field observations, photo elicitation and informal discussions. Forty five (45) individual informants drawn from all the actor groups were interviewed using a semi structured interview guide. Each interview lasted a minimum of one (1) hour. Officials and Key informants were interviewed on more than one occasion. Two group interviews were also conducted in two communities.

Key Words: Irrigation, land rights, water rights, social actors, resource negotiations, entitlements, Tono, Ghana.

DEDICATION

To the inspiring memory of my Dad, late Agandin Adaayomah (aka King George) who went to great lengths to enrol and keep me in the village school. Also to my Mum, Awombanoipo Agandin who laboured much to keep me in the Senior High School. The generosity of my uncle Adak Adeka, is also highly appreciated. To you all I say…

Tusen takk!

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ABBREVIATIONS

AAGDS	-	Accelerated Agricultural Growth and Development Strategy
CARD	-	Coalition for African Rice Development
FAO	-	Food and Agricultural Organisation
FASDEP	-	Food and Agricultural Sector Development Policy
FBO	-	Farmer Based Organisation
GHC/GHS	-	Ghana Cedis
GIDA	-	Ghana Irrigation Development Authority
GPRS	-	Ghana Poverty Reduction Strategy
GSS	-	Ghana Statistical Service
JICA	-	Japan International Cooperation Agency
ICOUR	-	Irrigation Company of Upper Region
IDA	-	Irrigation Development Authority
IFAD	-	International Fund for Agricultural Development
LAC	-	Land Allocation Committee
MDA	-	Millennium Development Authority
MOFA	-	Ministry of Food and Agriculture (Ghana)
MLF	-	Ministry of Lands and Forestry (Ghana)
MTADP	-	Medium Term Agricultural Development Programme
NAFCO	-	National Food Buffer Stock Company
NRDS	-	National Rice Development Strategy
NGOs	-	Non-Governmental Organisations
NPP	-	New Patriotic Party
NDC	-	National Democratic Congress
OFY	-	Operation Feed Yourself
OFYI	-	Operation Feed Your Industries
SRID	-	Statistics, Research and Information Directorate
USAID	-	United States Agency for International Development
VC	-	Village Committee
PM	-	Project Manager

CHAPTER ONE

Background to the Study

1.1 Introduction

Irrigation in Sub-Saharan Africa currently stands at a little over 7 million hectares and is believed to be about twice that if northern Africa is included (FAO, 2005). The combined irrigated area of both sub-regions however represents only about 6 percent of the total cultivated area of the continent and is far lower than other regions of the world such as Asia (38), Caribbean (27) and Latin America (12) (ibid.). The irrigation potential of the whole continent is estimated at more than 42.5 million ha (ibid.). However, the share of cultivated area equipped for irrigation in individual countries varies considerably; ranging from almost none in Lesotho to nearly 3 million hectares, in Egypt where farming would be impossible without irrigation (FAO, 2005). The potential irrigable land of Ghana was estimated by Agodzo and Bobobee (1994) at over 500,000 ha and was later revised downward to about 360,000 ha by FAO (1997) (in Kyei-Baffour & Ofori, 2006). The figure is currently pegged at about 1.9 million hectares (FAO, 2005). These estimates were based on whether the scheme was purely gravity, pumps and gravity, or pumps and sprinklers[1] (see Namara et al., 2010 for a description of the typology of irrigation systems in Ghana). The varied irrigation technologies available on the market coupled with the almost adequate rainfall amounts in most parts of the country makes the concept of irrigation potential difficult to estimate. The irrigation potential of Ghana could therefore be far higher than any of the projected figures (Kyei-Baffour & Ofori, 2006).

In terms of effects on the general agricultural sector, irrigated agriculture currently contributes about 38 percent of the value of total agricultural production in Africa from just about 6 percent of cultivated land (Svendsen, Ewing, & Msangi, 2009). In addition, unit productivity values in all countries show an output advantage for irrigated agriculture over rain-fed agriculture at ratios ranging from 1.5 to 3.0. Much of this output is from formal irrigation schemes thus confirming the potential of irrigation to improve livelihoods and suggesting that more investment in irrigation could yield more benefits to the continent. Improving the

[1] Gravity systems divert water from rivers or reservoirs to fields by gravitational force. Pump systems draw water through water pumps to fields and sprinklers do the actual sprinkling of water on the fields. There are varied combinations of these systems.

quality of both formal and informal[2] irrigation is expected to raise both the percentage share of the value of agricultural production and improve the ratio of irrigation output to rain-fed agricultural output. Indeed, the World Bank (2010) asserts that much of the future growth in crop production in developing countries is likely to come from intensification, mostly through irrigation. With agriculture being a dominant sector of the economy of Ghana, the importance of agricultural intensification through the practice of irrigation as a strategy for poverty reduction especially in the semi-arid regions of the north of the country cannot be overemphasised.

The economy of northern Ghana is largely agrarian with over 70% of the population engaged in agriculture and agricultural based livelihood activities (GSS, 2012). However, the increasing population of the area, urban growth, the spread of neoliberal capitalism and the pressures of the market economy have increased the demand for land and raised land values throughout the region (Yaro, 2010; 2012). Moreover, an increasingly variable and erratic rainfall regime is further threatening the livelihoods of many subsistence farmers in the area. The single rainy season is limited to only 4-5 months in the year. Even within these months, the rainfall pattern is erratic and unrealiable. Irrigated agriculture therefore offers greater opportunities for livelihoods security and poverty reduction through all-year-round cultivation. More importantly, evidence in Ghana has shown that crop yields are consistently higher in irrigated farming than rain-fed agriculture (Kyei-Baffour & Ofori, 2006; MOFA, 2013). Irrigation offers improvements in the levels and security of productivity, improve farm income, and promote local agro-enterprises with important linkages to other sectors of the rural economy (Smith, 2004). Irrigation is therefore recognised as a key intervention for increasing agricultural productivity, improving food security and reducing rural poverty especially in the north of Ghana (Inkoom, 2011). However, despite a long history of irrigation practice, only about 2 percent of Ghana's irrigation potential is being utilised today (and only 0.2 percent in Northern Ghana) (FAO, 2005; Kyei-Baffour & Ofori, 2006). This proportion, out of the estimated 1.9million hectares has not only been described as insignificant, the performance and productivity of existing schemes, especially public schemes have been found to be below expectations (Namara et al., 2011).

[2] Formal schemes are public or private irrigation projects with universally accepted standards and, are often captured in national statistics. Informal schemes are developed by farmers themselves and often not reported in national statistics.

Formal irrigation development in Ghana started in the 1960s although informal small-scale irrigated agricultural practices across the country dates back to as early as about 1880 (Kyei-Baffour & Ofori, 2006; Owusu et al., 2013). The first irrigation scheme was set up by the colonial government in 1920 as part of a water supply project in Winneba (Owusu et al., 2013). The first large scale national irrigation project, in Dawhenya, began in 1959 and an Irrigation Development Authority (IDA) was set up in 1977 under the Supreme Military Council Decree 85 (Kyei-Baffour & Ofori, 2006; Namara et al., 2011; Owusu et al., 2013). The IDA is responsible for identifying possible irrigation sites and in some instances, managing and maintaining irrigation schemes (MOFA, 2015). Most of the schemes are managed through what the IDA calls the "Civil Service Approach" which is a bureaucratic establishment in the form of a company wholly owned by Government of Ghana (ibid.). These bureaucracies are tasked with ensuring sustainable and efficient use of the resources of the various schemes. Increasingly however, the bureaucrats are thrown into a myriad of difficulties among which control over land and water, primary resources of the schemes, are threatened (Laube, 2009). Their control over land is contested. They therefore have to negotiate the control of resources and outwit other actors in order to maintain authority and control (ibid.). Land and to some extent, water thus continue to be at the centre of a controversy between irrigation management and local actors.

Land ownership in Ghana has been described as "*an embodiment of the rights of primordial groups: villages, stools, families and kinship groups*" (Boamah, 2014:409). Such primordial groups hold about 80% of the country's land and only about 20% is held by private individuals or controlled by the state (Kasanga & Kotey, 2001). Majority of lands under the control of the state were accessed through compulsory acquisition either with or without compensation (Larbi et al., 2004). The process of acquisition was a top-down approach that excluded most expropriated owners. Decisions were taken by government functionaries and community leaders without consultation with individual landowners thus leading to many disputes overtime (ibid.). Factors such as the non-payment of compensation or the appropriation of such compensation by traditional leaders and politicians, the lack of written records of transactions, the dearth of permanent boundary indicators (Kasanga and Kortey, 2001) and the absence of title deeds coupled with current pressures such as the increasing value of land, population growth and unemployment allow actors with varying degrees of

power to contest State land ownership and control. In other cases, there is an interplay of the tripartite distinction between territorial jurisdiction, functional jurisdiction and jurisdiction over persons (see Lund & Boone, 2013:4). Territorial jurisdiction refers to authority over a defined area. Functional jurisdiction involves the different authorities in a defined area and jurisdiction over persons can be split among competing authorities. This gives opportunity for land claimants to appeal to competing authorities for control and use of land or for the settlement of disputes pertaining to its use.

1.2 Problem Statement

Creating irrigation facilities and allocating land and water rights to users raises many land tenure issues. These issues border on the extent to which local land rights are recognised by legislation, and compensation of the original right holders for loss of their rights (Cotula et al., 2006). The allocation of user rights to irrigated plots may be made on the basis of criteria determined by legislation or other development objective. Pre-existing land rights; labour or cash contributions to project; household size; capacity to cultivate the land; and local residence; are among the criteria often used (ibid.). The application of these criteria may create tensions between competing claimants - neighbouring villages; owners and tenants, indigenes and migrants, herders and farmers; and along gender lines (ibid.). These dynamics have fostered resource conflicts in some irrigation projects in the Sahel region. In Burkina Faso and Senegal, Cotula et al., (2006) identified three causes of these conflicts: firstly national legislation not recognising customary land rights (this was identified in Burkina Faso), secondly, officials not fully understanding the long history and complexity of local land relations and thus being exposed to manipulation by well-informed locals and thirdly, when administrative boundaries and customary land tenure boundaries do not coincide. In addition, irrigation tends to boost land values, and may therefore exacerbate land competition and foster conflict between land users. For instance in a conflict among three villages in Burkina Faso, it was found that the irrigation scheme was initially created without much conflict in 1970. The present conflict then was inspired by the increasing value and importance of land and irrigation production. Generally, it was revealed that customary landholders use their position in communities (as chiefs, elected councillors, etc) to circumvent formal rules and perpetuate a privileged access to land which tends to skew the distribution of land and water rights in their favour.

Land rights in northern Ghana were governed by traditional or customary laws that guaranteed security of tenure to individuals, families and communities (Kasanga, 1997, in Yaro, 2012). The land itself was described as plentiful and the law governing its access and use as egalitarian (ibid.). Yaro (2012) however argues that the spread of neoliberal capitalism, population growth and urbanisation, natural resource scarcities, market-driven demand and state interventions are increasingly resulting in the commoditisation of land. This mutation of customary land tenure rights and control is creating a situation where weak social groups lose out to powerful actors in land negotiations (Yaro, 2012). Customary land tenure rules notwithstanding, irrigation facilities as stated above, raise land tenure issues relating to the suppressing of existing land rights and the reallocation of these to new users, the nature and duration of these rights, and the land transactions fostered by the increased land values that irrigation brings about (Cotula et al., 2006). Water rights are closely related to land rights in irrigation schemes. These rights include the schedule to ensure timely and effective water delivery and possible fees.

The Tono irrigation scheme is considered the largest in Ghana and irrigates about 2490 hectares of land area. Its main objective is to expand the production of much-needed staple foods and to integrate local producers into the national economy by transforming the subsistence farming system in the area to commercial farming system through the introduction of modern farming techniques (ibid.). The scheme also seeks to reduce rural-urban migration by providing employment opportunities for the youth (Ofosu, 2011). Since 1983, the scheme has been under the management of the Irrigation Company of the Upper Region (ICOUR). It however seems that, the company has been plunged into profound difficulties which threaten to derail the scheme from achieving its objectives. Indeed, Asare (2002) claims that Ghana has a history of failed rural development projects and that the scheme seems well on its way to becoming part of that story. This assertion is based on his assessment of local participation in the scheme as well as its productivity and sustainability prospects. According to him, the scheme is based on a model of rural transformation that is severely limited because it ignores local knowledge and places economic considerations above other aspects of reality. This is leading to clashes with other social actors. Laube, (2009) also pointed out that several actors are continuously involved in competition and negotiation with each other and with management over scheme resources especially land. This he observed, is leading to multiple and changing natural resource regimes.

Land for the project was compulsorily confiscated from eight (8) villages; Bonia, Wuru, Yigbwania, Yogbania, Korania, Gaane, Biu, and Chuchuliga (now part of the Builsa North District)[3] (Asare, 2002; Laube, 2009; Ofosu, 2011). The process left many people distressed and angry and though compensation was offered, it was said to be meagre and ultimately appropriated by local chiefs and politicians (Konings, 1986, Laube, 2009). There was little or no opposition to the expropriation process at the time but this is attributed to the fact that it was done by a military government and people did not have the liberty to express anti-government sentiments (Laube, 2009). However, in the wake of the country's over twenty years of peace and democracy, individuals, families and communities have begun to rise and compete with the irrigation management company, ICOUR, for control over land and water resources in the scheme.

According to Laube (2009), at the commencement of operations of the Tono scheme in 1979, there was an intention to prioritise farmers who had lost land to the project in the allocation of plots. Attempts were made to put people back on their original lands close to their ancestral homes although the sizes of the plots were to be limited to 0.5 acres for dislocated and small-scale farmers. Commercial or contract farmers on the other hand could get up to about 30 acres of land (Konings 1986; Laube, 2009). Konings, (1986) however argues that, despite official claims to regulate access to land in favour of the displaced and indigenous farmers, illegal and extra-legal practices had plagued the scheme in its early years. Laube claims that at present, although ICOUR is officially in charge of the scheme, the company has lost much of its authority over local farmers. Other actors, including traditional leaders, Village Committee executives, commercial and small-scale farmers, politicians, earthpriests and family landholders have gained prominence. Each group of actors actively pursue their own strategies in pursuit of access to land and water within the project area (Laube, 2009). The distribution and control of land and water thus still remain a central preoccupation within the project. The actors do not have equal economic, social, or political power. The unequal power relations between actors and the varying strategies and mechanisms by which irrigation resources are accessed means that the claims of some actors are likely to prevail over those of others.

[3] The Builsa North district is an administrative area adjacent to the Kasena Nankana East district where the scheme is located.

1.3 Research Question(s)

The main aim of this study is to investigate how power play and competition between various stakeholders/actors affect the distribution of entitlements (land and water resources) especially for local small-scale farmers within the scheme. The study addresses the following research questions in pursuit of achieving the main objective stated above.

1. What local actors influence or affect resource access in the Tono irrigation scheme?
2. What factors, strategies and arguments influence the distribution of land and water rights in the scheme?
3. How and why do customary land tenure and local practices affect land allocations in irrigation schemes?
4. How does structural and price incentives influence resource access in irrigation schemes?

1.4 Justification for Irrigation Development in (Northern) Ghana

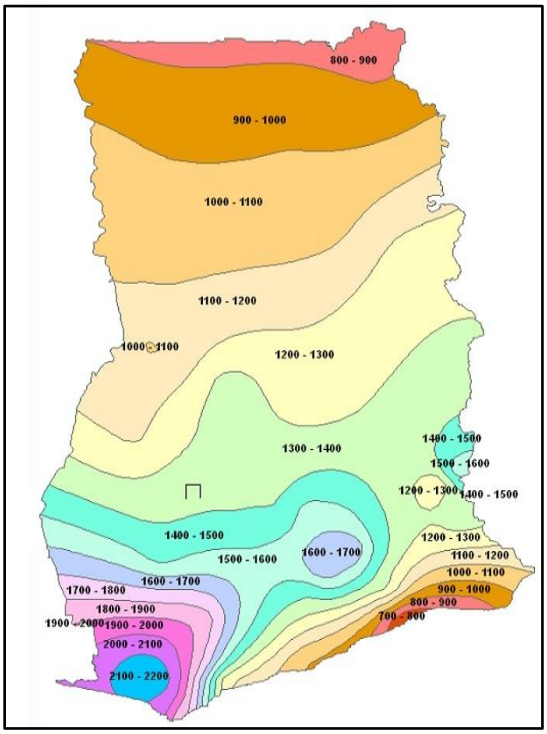
Water is a key input in agricultural production. In Ghana, much of the agricultural production depends on natural rainfall. As a result, poor rainfall results in poor crop yields. The rains often either come too early or too late. This is even more frequent in the face of global climate change and variability. In order to keep up or increase agricultural production for both local consumption and commercial purposes therefore, there is the need to exercise control over water (Kyei-Baffour & Ofori, 2006) through irrigation. Irrigation is also needed because of the 'odd dry year' such as occurred in 1983 (ibid.) where nearly the whole sub-region experienced a drought. This meant that, agricultural production by natural rainfall was not possible and the development of irrigation sites would be of even greater significance then.

Moreover, rainfall in Ghana is distributed very unevenly geographically and seasonally (see Map 1.1). Northern Ghana has a unimodal rainfall pattern of rather short duration but with excessive evapotranspiration rates (Namara et al., 2011). The dry season is nearly of 7-8 months duration (September to April/May). Under rain-fed agriculture, farming is only possible for a short period of 4-5 months (May/June – August/September). The middle and southern parts of the country experience double maxima rainfall, however, the minor season tends to be rather short and unreliable (ibid.). Although there is abundant rainfall in these parts of Ghana (see Map 1.1), the case for irrigation development can still be made based on

the proximity of these sectors to major demand centres and necessary infrastructures. Generally, however, rain-fed agriculture may not be able to support the future population of the nation unless coupled with investments in the irrigation sector (ibid.).

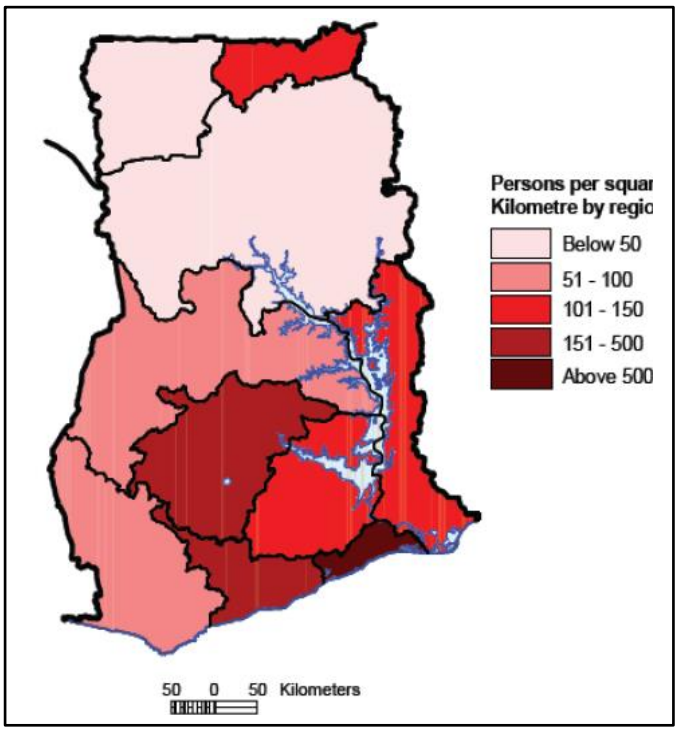
Apart from the unreliability of rainfall in Northern Ghana, many areas such as the Upper East region have limited arable land due to high population density (118.4 persons per sq. km) (GSS, 2012; 2013, see Map 1.2) and topography. Indeed some researchers and organisations have linked the poverty of Northern Ghana and the Upper East region in particular to the area's environmental problems including desertification, deforestation, erosion and poor soils (see Blench, 1999; Aniah et al., 2013; Dinye & Ayitio, 2013; WFP, 2013). An increasingly large part of the Upper East region is being invaded by the Sudan Savannah which has even lesser rainfall amounts. This coupled with limited alternative income generating activities (CARE, 2009) means that irrigation could be the sine qua non for maximum utilisation of the available land for food security and development.

Map 1.1: Rainfall Isohyets of Ghana



Source: Namara et al., (2011)

Map 1.2: Regional Population Density of Ghana (2010)



Source: GSS, (2013)

In general, the country is endowed with sufficient land and water resources for irrigation (MOFA, 2011a). Total actual renewable water resources are estimated to be about 53.2 km^3/yr of which surface water is estimated to be about 29km^3/yr and groundwater amounting

to about 26.3km^3/yr. About 30.3 km^3/yr of the country's water is internally produced whilst about 22.9 km^3 enters the country from Burkina Faso (8.7km^3), Cote d'Ivoire (6.2km^3), and Togo (8km^3) (FAO, 2015). It can therefore be argued that Ghana has significant justification and the primary resources (land and water) for irrigation development as a way to achieving food security, poverty reduction, and rural employment especially in Northern Ghana.

1.5 Structure of the Thesis

This work is divided into eight chapters. The first chapter contains essentially the project description; its background, statement of the research problem, the research questions and a justification for irrigation development in Ghana. The second chapter focuses on the study area laying out its geography and climate as well as the historical development of the irrigation scheme. The third chapter examines the framework of entitlements approach and the dynamics of land tenure and land ownership in the country especially in Northern Ghana. It also expatiates on how compulsory acquisition has affected land ownership and management.

Chapter four examines the research design and methodology. It outlines the various strategies and techniques employed in the data production process as well as in its management, analysis and presentation. The chapter endeavours to explain the reasoning behind the use of each strategy as well as the practicalities involved in using the strategy on the field. The role, status and positionalities of the researcher (and my interpreter) during the fieldwork are also discussed in this chapter. Chapter five explores the agricultural policies of Ghana since independence and how in the implementation of these policies, differentiated actors gain access and control over resources (endowments) and subsequently, the conversion of endowments into entitlements.

Chapter six begins the presentation of the findings of the study with a description of the land and water rights of local small-scale and contract farmers as well as the claims, strategies and justifications of all actors involved in the project. Chapter seven examines endowment and entitlement mapping in the project and the institutions operating at different levels in the mapping process. Chapter eight concludes the study with a discussion of institutions and entitlements as well as power play among actors in the project and conclusions drawn from the study.

CHAPTER TWO

Study Area

2.1 Introduction

Ghana is made up of six agro-ecological zones defined on the basis of climate (MOFA, 2011b, 2013). These zones are distinguished by the natural vegetation and influenced by the soils. The zones include the evergreen rain forest, deciduous rain forest, transition and coastal savannah zones making up the southern half of the country, and the Guinea and Sudan Savannah making up the northern half (ibid.). Annual rainfall ranges from about 800 mm along the Guinea, Sudan and Coastal savannahs to 2200 mm in the Rain forest (see Map 1.1). This precipitation mostly follows the movement of the Inter Tropical Convergence Zone (ITCZ). The agro-ecological zones in southern Ghana have a double equatorial rainfall pattern, giving rise to two annual growing seasons: a major and minor growing season. The remaining two agro-ecological zones in northern Ghana have a single rainfall pattern allowing for only one growing season (ibid.). The area is prone to droughts and floods. Serious crop failures as a result of late rains and or flooding are regularly reported in the media in most parts of the north. Access to land for all year-round farming (such as provided by the irrigation facility) is therefore seen as a strategic intervention to address crop failures resulting from the vagaries of the weather.

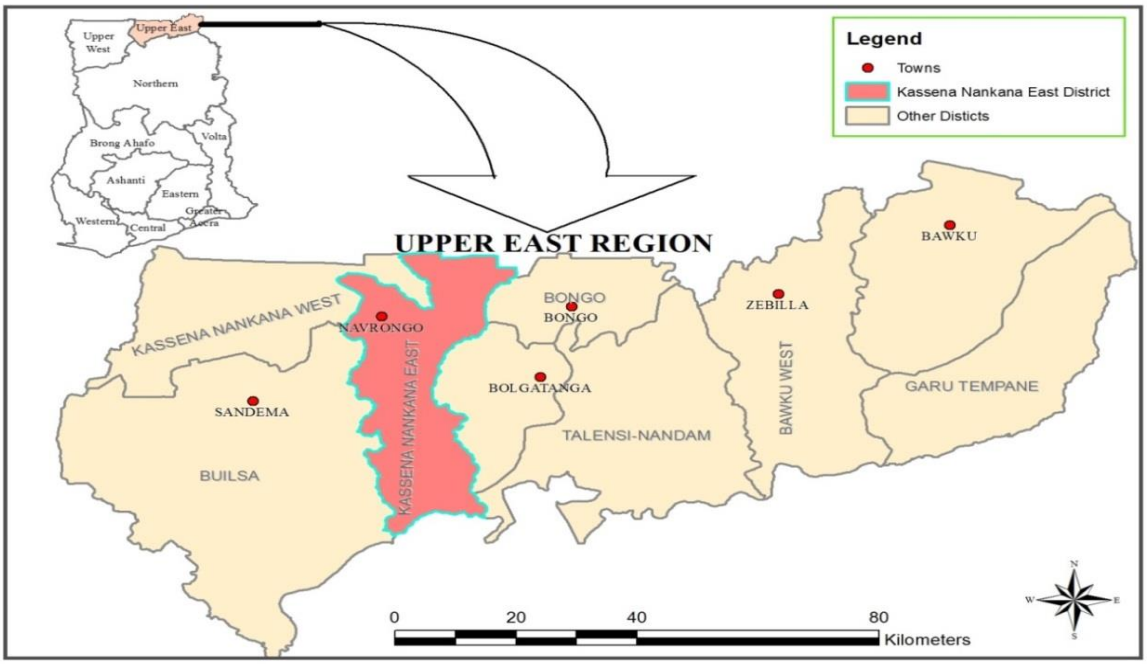
2.2 The Upper East Region

Upper East is located in the north-eastern corner of the country (see Map 2.1). The region is within the Guinea Savannah agro-ecological region. However, a distinct Sudan Savannah agro-ecological zone is creeping in from the extreme north eastern corner of the region due to land degradation and desertification. The region is geopolitically bordered to the north by Burkina Faso, to the east by the Republic of Togo, to the west by the Upper West region and to the south by West Mamprusi district in the Northern Region. The land is relatively flat with a few hills to the East and southeast. The region occupies a land area of about 8,842 sq. km, which translates into 2.7 per cent of the total land area of the country. The total population of the region as at 2010 was 1,046,545 constituting 4.2% of national population. The region has a population density of 118.4 persons per sq.km which is high compared to the national density of 103.4 (GSS, 2012, see Map 1.2). This high population density of the region has serious consequences for access to land and is frequently cited along with other factors as a cause of low agricultural productivity in the area (see Blench, 1999; Dinye, & Ayitio, 2013;

WFP, 2013). The economy of the region is largely agrarian and allegedly has the highest proportion of its economically active population (72.1%) in the area of agriculture, forestry and fishing (GSS, 2012). These agrarian livelihoods are however hindered by the single rainfall regime and the scarcity of arable land.

The Upper East region much like the rest of northern Ghana, is subject to spells of floods and droughts that can occur in the same season. Here also, the majority of people are dependent on rain-fed farming for their livelihoods, and alternative income generating strategies are limited. Food and livelihood security are challenged by decreasing soil fertility, desertification, deforestation and inequitable access to and control over resources such as land (CARE, 2009). The Tono Irrigation Scheme, located in the Kassena-Nankana East District is an attempt to promote an all-year round agricultural production. It is one of two main public irrigation schemes in the region, the other being the Vea irrigation scheme. Both are under the management of the Irrigation Company of the Upper Region (ICOUR). In addition however, there are numerous dug outs and ponds in different parts of the region that are used for private irrigation.

Map 2.1: District Map of the Upper East Region



Source: GIS Lab, University of Ghana

2.3 The Kasena-Nankana East District

Navrongo is the capital of the Kasena-Nankana East Municipal Assembly (see Map 2.1). The town is believed to have been founded around the middle of the eighteenth century and has been one of the most important historical and commercial cities of the Upper East Region (see Abadamloora et al., 2004). During the 19th century, the town became an important staging post on the Sahel caravan route and at the beginning of the 20th century, the British established a base there (Arhin, 1974). It was the first place of settlement of the Christian Missionaries in northern Ghana and the start of both the Christian religion and formal education. The municipality lies within the Guinea Savannah Woodlands. It falls approximately between latitude 11^{o} 10' and 10^{o} 3' North and Longitude 10^{o} 1' West. It is one of the thirteen districts in the Upper East Region with a population of 109,944 as at 2010 (GSS, 2012).

Much like the rest of northern Ghana, the history of the area is one of marginalisation and subjugation (Hesselberg and Yaro, 2006). The slave trade in pre-colonial times devastated the area whilst colonial policies such as forced labour migration to the south, restricted educational opportunities, and the neglect of the development of infrastructure and agricultural resources resulted in further stagnation and disruption of life in the area (Bening, 1975). Post-colonial interventions have also not been very successful due to poor diagnosis and misconceptions of the problems of the area and of the concept of development (Hesselberg and Yaro, 2006). The post-colonial interventions have been through a range of socialist and neoliberal policies and projects. The initial socialist interventions were in the form of the establishment of state farms and co-operative organisations aimed at enhancing the agricultural potential of the area. These were later abolished by neoliberal policies that focused on private sector-led growth through improved varieties, irrigation dams and rural development projects (ibid.). The Tono Irrigation project is the brainchild of the neoliberal policies (ibid.).

2.3.1 Geographical and Climatic Conditions

The climatic conditions of the District is characterized by the dry and wet seasons, which are influenced mainly by two (2) air masses – the North-East Trade winds (Harmattan) and the South-West Monsoon (Tropical Maritime). The Harmattan air mass is usually dry and dusty as it originates from the Sahara Desert. During such periods, rainfall is virtually absent due to

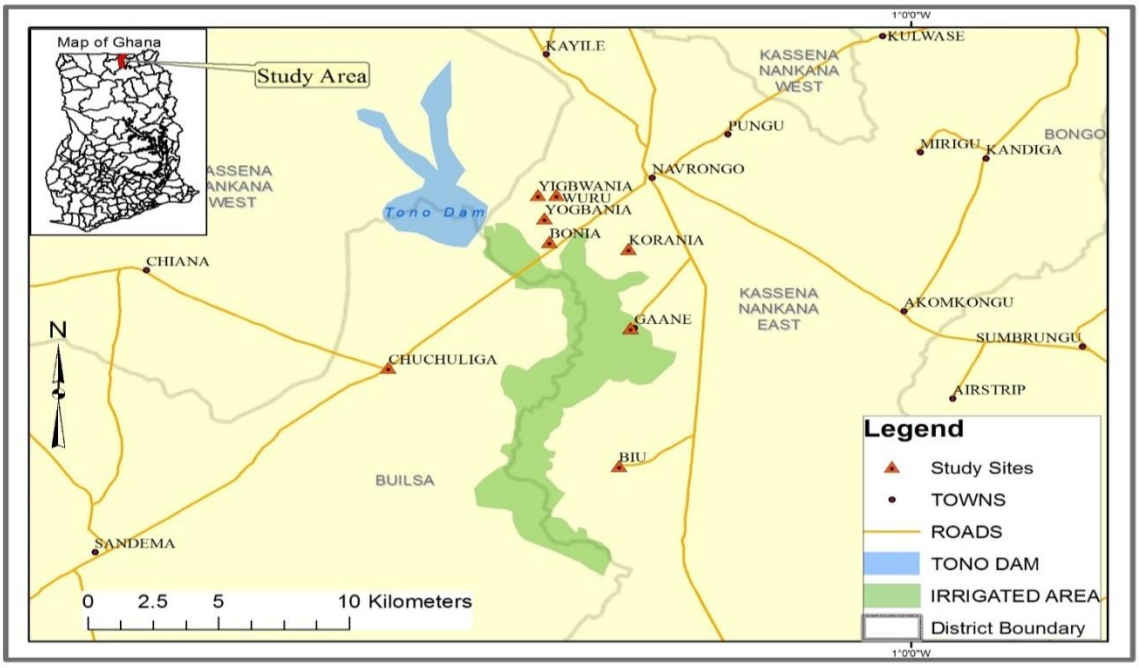
low relative humidity, which rarely exceeds 20 per cent and low vapour pressure less than 10mb. It is felt between the months of November and April. Temperatures during this period range between about 42^0C in the day and 18^0C at night. The South-West monsoon air mass is experienced between May and October. This brings to the area, precipitation averaging 950 mm per annum (see Map 1.1), good enough for the production of both cereals and root crops. The drainage system of the district is constituted mainly around the tributaries of the Sissili River – Asibelika, Afumbeli, Bukpegi and Beeyi. The Tono irrigation dam is constructed over a tributary of the Asibelika River (known as Tono River) which is of great economic importance to the entire district. There are also private dugouts and ponds, which are used for livestock, crop farming and domestic purposes.

Savannah ochrosols and groundwater laterite are the main soil types in the district. The Savannah ochrosols are concentrated in the northern and eastern parts of the district while the rest has groundwater laterite. The Savannah ochrosols are suitable for the cultivation of cereals, grains, legumes and vegetables as they are porous, well drained, loamy, and mildly acidic. This soil type covers much of the arable land sites including most parts of the Tono irrigation area where both irrigation and dry land farming activities are concentrated (Dinye & Ayitio, 2013).

2.3.2 Study Communities

The Tono Project Area sits astride two political/administrative districts namely; the Kasena-Nankana East Municipal Assembly and the Builsa North District Assembly. Eight (8) villages; Bonia, Wuru, Yigbwania, Yogbania, Korania, Gaane, Biu (in Kasena-Nankana East), and Chuchuliga (in the Builsa North District) constitute the catchment area of the project with varying amounts of land within the scheme. Map 2.2 shows the location of these villages within the project. Each of these communities has a village committee (VC) that oversees the allocation of plots and collection of water fees on behalf of ICOUR. The VCs also organise farmers for the clearing of silted canals and settles disputes pertaining to the use of land and water resources. There are nine (9) of such Village Committees (VC) in the project (Chuchuliga has two VCs).

Map 2.2: Communities within the Tono irrigation project



Source: GIS Lab, University of Ghana

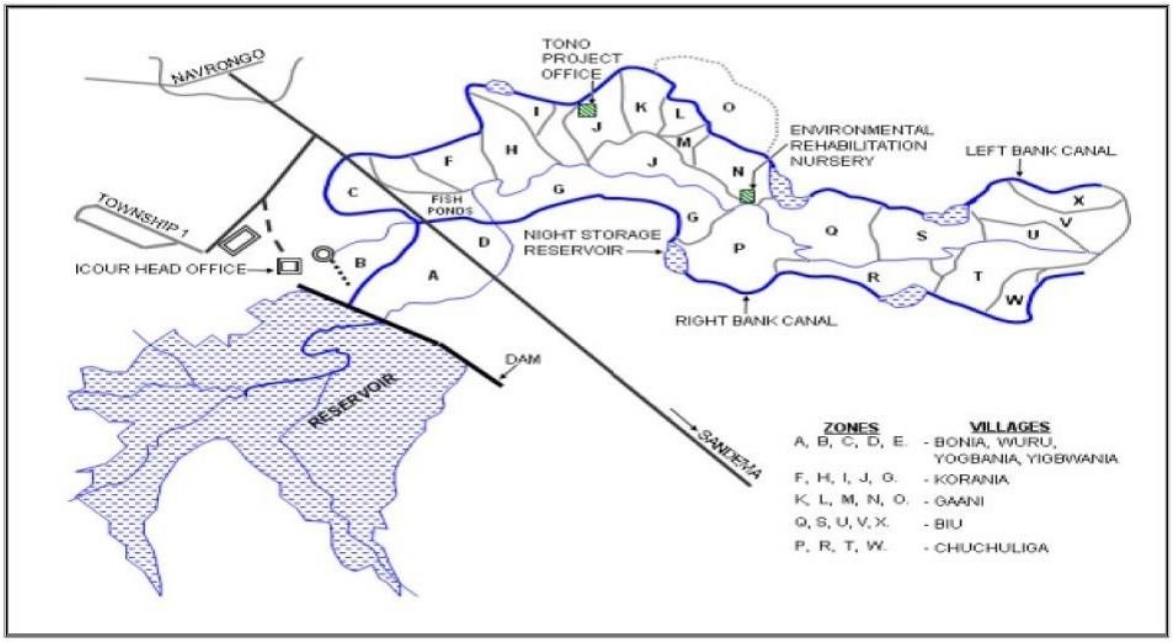
2.4 The Tono Irrigation Project

The Tono Irrigation project lies in the Guinea Savannah ecological zone of Ghana. It has a potential area of about 3840ha with a developed area of about 2490ha (the developed area is the same as the irrigable area). The source of water is from the river Tono. The construction of the Tono dam began in 1975 and was not completed until 1985 at the cost of about US$40 million (Laube, 2009). The project was funded by the government of Ghana with loans from the Canadian and British governments. Started at a time rife with much political instability in the country's history, the construction process is said to have been slow and marred with regional and personal favouritism (Bening, 1999; Konings 1986).

As at the time of completion of the scheme in 1985, it was Ghana's largest irrigation scheme. It comprised a 5 km long dam, creating an artificial lake with a surface area of 1860 ha and a water storage capacity of 93 million m^3, 37 million m^3 of which could be used for irrigation. The original layout targeted the development of about 3840ha of irrigable land. Two main canals (left bank and right bank) with an overall length of 42km and a network of laterals and sub-laterals of a further 210 km serve water to the irrigation fields (see Map 2.3). A further 120 km of roads were created to provide access (Asare, 2002; Laube, 2009; Dinye & Ayitio, 2013). The scheme is a reservoir based gravity-fed irrigation system. Water from the dam is

diverted to the fields by gravity through intake structures and canal systems (Namara et al., 2010). The area has the location advantages of a fairly flat and gentle sloping topography and the soils are typical of the savannah ochrosols described above and are quite conducive for the cultivation of cereals, grains and some vegetables (Asare, 2002; Laube, 2009; Dinye & Ayitio, 2013).

Map 2.3: Layout of the Tono Irrigation project



The scheme was designed by Dioxiades Associates of Athens and built by Taylor Woodrow of Great Britain and its management was initially the responsibility of Tate & Lyle Engineering Services, a British multinational which operated on behalf of the Irrigation Development Agency of Ghana until 1981. After the 1981 revolution, the scheme was abandoned and came under the control of a People's Defence Committee (PDC) until 1983 when the PDC transferred its powers to a newly established parastatal, the Irrigation Company of the Upper Region (ICOUR) (ibid.). Under the terms of the project, the scheme management company was charged with offering some assistance to farmers in the form of input supplies such as fertilizers, seeds and pesticides. Farmers pay back after harvest with part of the produce. Also, farm machinery such as tractors, combine harvesters and other farm implements were to be leased to farmers for a fee (Dinye & Ayitio, 2013). However, in recent times, most of the company's machinery is either obsolete or completely broken down as is much of its infrastructure. Farmers depend on private individuals for these and occasional help from NGOs and other organisations for machinery and other farm inputs.

CHAPTER THREE

Theoretical Framework - Institutions, Entitlements and the Dynamics of Land Rights in Ghana

3.1 Introduction

Ghana has a peculiar land tenure system; a complex of network relations reflecting the unique traditional and political organization, socio-cultural differences and attributes of the various ethnic groups, clans and families who through conquests and assimilation and early settlement came to acquire ownership of land (MLF, 2003). The system has also been substantially influenced by the political and economic activities of the country's history including colonialism, the introduction of tree crop farming, and the exploitation of timber and mineral resources as well as neoliberal and market forces operating today. The country is said to have over 100 statutes on land ownership, tenure, planning and use, in addition to the different customary laws that pertain to specific localities (Larbi, 2006). The interactions of these numerous statutes with local customary rules have created situations where "*resources have been negotiated into a texture of composite property relations that defies public – private distinctions*" (Lund, 2009: 133). Customary and statutory land tenure may thus coexist over the same territory and result in overlapping rights, contradictory rules and competing authorities.

3.2 Institutions and Institutionalisation

Institutions are the sets of formal and informal rules and norms that describe and shape interactions between humans (Agrawal & Gibson 1999). They may also be conceived as "*regularized patterns of behaviour between individuals and groups in society*" (Leach, et al., 1999; 225). According to Hodgson (2006), language, money, law, systems of weights and measures, table manners, and firms (as well as other organizations) can all be called institutions. Institutions are the most important structures in the social realm because they are the substance of social life (Ibid: 2). Institutionalisation refers to the process by which formal and informal rules, values, and mode of behaviour become embedded within an organization, social system, or society as a whole. Institutions may facilitate or constrain human action, and promote "stability of expectations *ex ante* and consistency of actions *ex post*" (Agrawal & Gibson 1999: 637). Though the existence of rules (institutions) implies constraints, such constraints also open up possibilities; enabling choices and actions. For example, the rules of

language allow communication and traffic rules permit traffic flow (Hodgson, 2006). Institutions may be formal or informal.

Formal institutions are the formal laws of a state, or the written rules of an organization or a company whilst informal institutions refers to all the unwritten norms and rules in a specific society. These informal rules are normally institutionalised through societal practices over time. Informal institutions often pre-exist and may not always conform to the formal institutions/laws of a state. Because of the facilitating and constraining nature of institutions, strategic actors may attempt to bypass both formal and informal institutions or create new ones that match their interests. For example, community members may break state regulations or try to outwit local custom if they think they make no sense, are not being enforced or are a hindrance to their livelihood (Agrawal & Gibson 1999). Institutions however, remain "*the primary mechanisms available to mediate, soften, attenuate, structure, mold, accentuate, and facilitate particular outcomes and actions*" (ibid: 637). Once formed, the effects of institutions are independent of the forces that constituted them and they are constantly made and remade through the actions of the very individuals whose behaviour they are supposed to describe and prescribe.

Land is a basic resource for agricultural production and questions of who has the rights to and control over land and water are central to the livelihoods of individuals and communities. Individuals and groups in the study communities have varying rights over land (and water) in the scheme. These rights to access and control are often the result of a complex of negotiations and manoeuvrings as well as of network relations between people of different economic, political, social, cultural and symbolic capital. Often, it is a case of competing claims and changing resource regimes. This is because a customary land tenure system prevailed before the expropriation of those rights by eminent domain. The formal property rights have been invested in the Irrigation Company of the Upper Region (ICOUR) but as Hodgson argues, "*Legal systems are invariably incomplete and give scope for custom and culture to do their work*" (2006: 12). Thus, the control of ICOUR is said to be incomplete and is therefore being constantly challenged by different actors with informal institutions (customary rules, personal agreements etc). As indicated, the actors involved are not of equal

economic, political, social, cultural, or symbolic capital but are as diverse as their motivations, strategies and legitimizing arguments are varied.

3.3 The Entitlements Framework

The entitlements approach was initially developed by Amartya Sen (1981) for analysing famine but has been found by analogy to be useful for explaining how social actors gain access to and control over natural resources (Leach et al., 1999). Sen (1999) argues that poverty is more than just a lack of adequate income; it is also a lack of a range of capabilities and freedoms, which vary in individual and collective circumstances. The sole focus on income therefore diverts attention from how different people and groups gain access to and control over resources to the detriment of others. The entitlements framework therefore shifts analytical emphasis away from "*a fixation on food supplies — the Malthusian logic of "too many people, too little food"— and on to the inability of groups of people to acquire food*" (Devereux, 2001: 246). Hence, people may starve even with adequate food supplies and well-functioning markets if they cannot access adequate food because of poverty or lack of access to crucial resources necessary for food production or exchange. There is no technical reason for markets to meet subsistence needs and no moral or legal reason why they should (ibid.).

According to Sen, "*scarcity is the characteristic of people not having enough..., it is not the characteristic of there not being enough. While the latter can be the cause of the former, it is* (only) *one of many causes*" (Sen, 1981, in Leach et al., 1999: 232). He therefore suggests that poverty must be seen as the deprivation of basic capabilities and subsequently inadequate functionings (Sen 1999). Capabilities are what people can do or be with their entitlements whilst functionings reflects the various things a person may have reason to value doing or being (Leach et al., 1999). Using their capabilities, individuals draw on entitlements and endowments to secure functionings. A poor set of endowments and entitlements thus affect people's capabilities and ultimately their well-being. These entitlements are resources that can be accessed by those with sufficient capability. A person with insufficient capability to access crucial resources may be affected by food insecurity even if overall food supply is adequate.

The approach has three conceptual categories, made up of an *endowment set*, an *entitlement set*, and *entitlement mapping* (Leach et al., 1999).The endowment set is the combination of all those resources legally owned by a person conforming to established norms and practices. These include both tangible assets, such as land, equipment, and intangibles assets such as

knowledge and skill, or membership of a particular community (ibid.). The entitlement set is "*the set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces*" (Sen, 1984 in Devereux, 2001: 246). In other words, it is all the possible combinations of goods and services that a person can legally acquire by converting his or her endowment set through production, exchange or transfer. Thus, entitlements here do not refer to people's rights in a normative sense (what people should have) but in the descriptive sense (the range of possibilities that people can have) (Leach et al. 1999). The entitlements set comprise the direct use of resources in the endowment set such as for food, and water and the market value of such resources such as income from sale of farm produce. The entitlement mapping, called E-mapping, is the relationship between the endowment and entitlement sets. It is the rate at which the resources of the endowment set can be converted into goods and services (Nayak, 2000). Thus, a person's entitlement depends on his initial endowment and the E-mapping specifying the set of alternative commodity bundles that can be obtained given the initial endowments. The approach is therefore useful for examining how different people gain entitlements from their endowments and so improve their well-being or capabilities whilst others lose out (Leach et al., 1999).

4.3.1 Criticisms of Sen's Entitlements Approach

Sen's initial entitlements approach as has come in for criticism from different quarters. Here I shall not dwell on the empirical criticisms arising from its application to famines but its weaknesses or otherwise as a conceptual framework and analytical tool. First, Sen himself identified four limitations, two of which are relevant to its application here: firstly that "*there can be ambiguities in the specification of entitlements*". Secondly, that "*while entitlement relations concentrate on rights within the given legal structure in that society, some transfers involve violations of these rights, such as looting or brigandage*" (Devereux, 2001: 248). Sen's concept of entitlements does not consider ethics, morality or human rights. Thus, his approach sought to describe only legal sources of food, which he put into four categories: "production-based entitlement", "trade-based entitlement", "own-labour entitlement" and "inheritance and transfer entitlement" (ibid.). This ignored the possibility of "*weaker claims over resources such as access and usufruct rights*" and common property regimes. He later acknowledged that in pre-capitalist society, there can be a good deal of vagueness on property rights and related matters (ibid.). This is of great importance in this study since the competing institutions include notions of land rights and ownership (such as customary land tenure

arrangements) that predate the introduction of private ownership and other capitalist ideas into the communities involved. These arrangements are steeped in traditional values, norms, ethics, and reciprocity. Combined with utilitarian logic, conditions are created that enable some actors to manipulate and circumvent rules in order to gain an advantage in resource negotiations.

Also, Sen seamlessly shifts between the individual, the household, or an "economic class" of people as his unit of analysis as if they are interchangeable. However, in the context where the same resource is contested by different individuals, groups or institutions, conflicts and ambiguities occur because group ownership or control of a resource such as land "*does not necessarily imply equal or equitable access to that resource by each individual member*" (Devereux, 2001: 253). This point is also very central in this study as the different actors do not have equal access to land and water resources within the project area. With different individuals and groups having socially legitimated rights over the same resource endowment, entitlements accruing from that resource cannot be treated as if flowing to a single person. Even, a focus on the household level as the principal unit of analysis must engage with social relations and power inequalities at the intra-household level (ibid.). In this study, household members do not have equal access to resources within the project as women do not inherit land and therefore begin with a low set of endowments.

In relation to the second limitation, Sen acknowledges that: *"While entitlement relations concentrate on rights within the given legal structure in that society, some transfers involve violations of these rights, such as looting or brigandage. When such extra-entitlement transfers are important, the entitlement approach…will be defective"* (Sen, 1981 in Devereux, 2001:256). Some researchers argue that this point is more significant than what Sen chooses to acknowledge (Devereux, 2001). Intentionality or deliberate action/inaction as a possible causal trigger is also ignored by Sen's original formulation. In the project area, some land owners or community members did not show any interest in the scheme in its initial years and this affected their endowments because when they became interested in later years, their share in it was limited by the sheer number of farmers. Other actors with influence in the project such as politicians, contract farmers, VC executives and traditional leaders have privileged access and their entitlements can be disproportionate to their initial endowment set.

Sen's formulation has also been criticised as being apolitical, ahistorical and even amoral due to a perceived neglect of the political economy of entitlement generation. It accepts endowments at any point in time as given and therefore legitimate without questioning the political context (Devereux, 1996). Some political and historical processes have involved the neglect or violation of human rights including the right to crucial resources. For example, farmers' rights were truncated in the process of expropriation and the volatile political situation (during a military regime) within which it occurred meant that they could not seek proper redress. Without the political analysis, the entitlement approach will fail to illuminate the entire complexity of the mapping process in the Tono irrigation scheme.

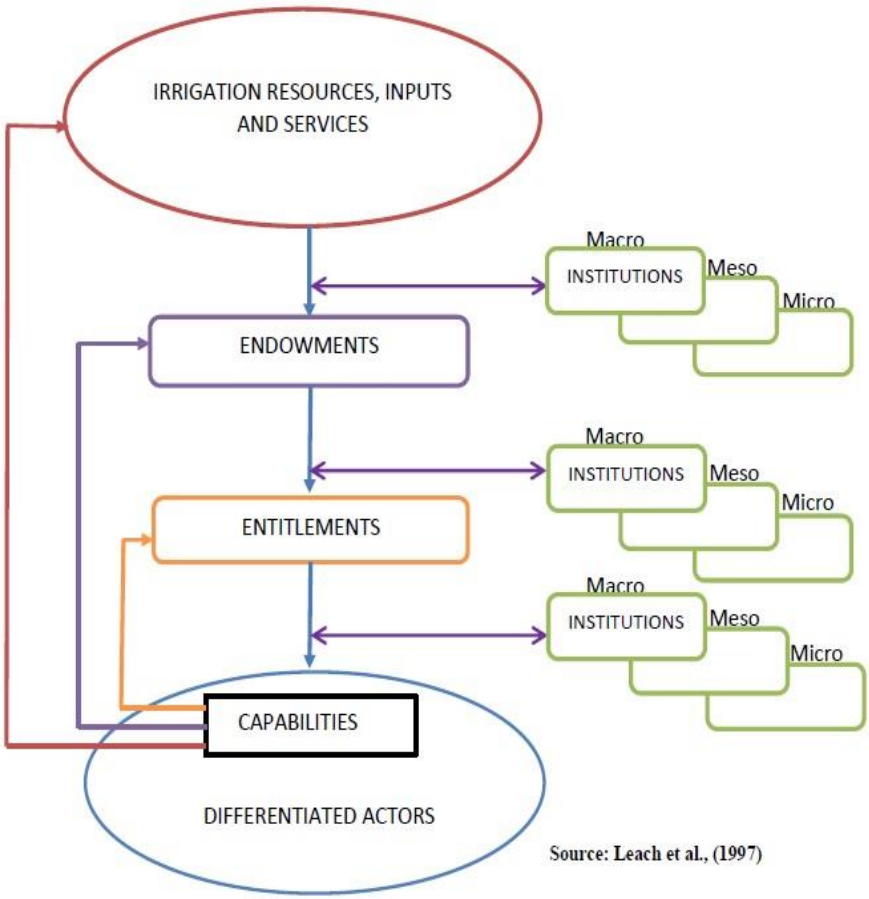
Leach et al., (1999) further pointed out that some elements of Sen's framework are too restrictive. They argue for instance that he places undue emphasis on entitlement mapping to the detriment of explanation of endowment mapping. For them however, how endowments are transformed into entitlements is just as important as how people come to have their initial endowments. Therefore, instead of assuming that endowments are simply given, they propose a framework that focuses on how both endowments and entitlements arise. In addition, endowments and entitlements are not fixed but depend on time such that an entitlement may in another time be an endowment from which new entitlements are acquired (ibid.). They also point out that resource claims are often contested and within the unequal power relations in communities, the claims of certain actors are likely to prevail over others – a point very central in this study. With both formal and informal institutions being sources of legitimacy, there is often conflict and different actors espouse different narratives to legitimise their claims. Women, especially the unmarried and young people are strongly disadvantaged in their ability to gain access and control over land and water resources in the irrigation scheme for instance.

3.4 The Extended Entitlements Approach

In light of the criticisms and concerns identified in the original formulation of the entitlements approach outlined above, Leach et al., (1997) propose an "extended entitlements approach" (Fig 3.1). This approach sees entitlements as "*the outcome of negotiations among social actors, involving power relationships and debates over meaning, rather than as simply the*

result of fixed, moral rules encoded in law" (Leach *et al.*, 1997: 23). To them, entitlements refer to "*legitimate effective command over alternative commodity bundles*" (Gasper, 1993 in Leach et al., 1999: 233). With regards to this study therefore, entitlements refer to the alternative sets of utilities derived from irrigation project resources and services over which actors have legitimate effective command and which are essential for enhancing their wellbeing socially, culturally, economically and politically. An entitlement being "legitimate" here refers not only to 'control' approved by official regulations but also to that authorised by customary rights of access, use or control, and other social and traditional norms (Leach et al., 1999). These sources of legitimacy may often conflict and different actors may espouse different views of the legitimacy or otherwise of their rights and those of others (ibid.). Also, the "effectiveness" of command over resources reveals that unequal power relations and competing sources of legitimacy allow multiple claims and contestations and thus the claims of some actors are likely to prevail over those of others (ibid.). In addition, effectiveness also imply that some actors may not be able to mobilise some endowments (e.g. capital, labour) in order to make effective use of others (such as land).

Figure 3.1: Extended Framework for Endowments and Entitlements



According to Leach et al., (1999: 234), analysis using the extended entitlements approach focuses not just on the particular endowments, entitlements and capabilities of an actor at a given time but also on the "*dynamic mapping processes that underlie each of these static sets*". The mapping processes are mediated by different institutions (to the right of Figure 3.1) that operate at various scales and levels from the macro to the micro. The relationship between and among these institutions at the various scale levels are key to determining which actors have access to and control over resources.

The framework links both the macro and micro levels of concern, matching external and higher level forces to internal, local level dynamics that affect access to resources. In essence, "*it situates' a disaggregated (or 'micro') analysis of the distinctive positions and vulnerabilities of particular [social actors] in relation to the 'macro' structural conditions of the prevalent political economy*" (Jenkins, 1997, in Leach et al, ibid.). The extended entitlements approach is therefore suitable for this study. This analytical framework for entitlements and endowments helps to examine how the different actors derive entitlements (land and water) from their endowments (rights to land) to enhance their capabilities (farming activities) within the irrigation scheme.

The informal institutions or local customary practices related to land which play against the formal rules laid down by the irrigation company are varied and shifting. They are imbedded in the customary land tenure practices that prevail over the country and specifically northern Ghana. Many of these local practices and rules predate even colonialism. However, neoliberal forces, market economy and other policies and interventions of the modern state have affected customary land tenure and other local practices related to land. A discussion of land tenure practices in Ghana and some of the interventions of the state would help to put these institutions in perspective especially with regards to lands in the irrigation project.

3.5 The Dynamics of Land Rights in Ghana

There are five recognised types of land interests in Ghana. These are (MLF, 2003):

- ✓ The Allodial Interest
- ✓ Customary Freehold
- ✓ Common Law Freehold
- ✓ Leasehold including subleases
- ✓ Customary Tenancies

(a) The Allodial Interest

This is the highest proprietary interest known to customary law, beyond which there is no superior title (Rocha & Lodoh, 1995 in Lund, 2006). It may also be referred to as the paramount or absolute title and has been likened to the freehold interest, as the concept is understood in English common law. Stools, skins, earthpriests (*tendamba*[4]), clans or families held the allodial interest in land originally. The title is vested in the head of the land owning group who manages it on behalf of the family, clan or community with the consent and concurrence of other principal members of the group (MLF, 2003). Thus, the chief/*tendana* or clan/family head is the custodian of such land. Historically, it is believed that the allodial title was created or assumed through discovery, conquest, settlement and use thereof of the land by the stool/skin, clan or family (ibid.).

(b) Customary freehold

This is the interest in land to which members or indigenes of a landowning community that holds the allodial interest are entitled as of right, according to the customary law of that community (Aryeetey et al., 2007 in Boamah, 2014). It is also called the usufruct (the right to use, enjoy or derive profit from a thing possessed without altering or damaging it). This interest has an indefinite duration and prevails even against the allodial titleholder so long as it is held and exercised by an indigene (MLF, 2003). It includes the right to occupy and derive economic use from any portion of the communally owned land that has not been occupied previously by any member of the community (ibid.). Thus, the usufruct can cultivate, build or enjoy the use of the land in any manner he chooses.

[4] *Tendamba* is the plural of *tindana (earthpriest).* The *tendana* possesses the allodial title to land in the acephalous societies of Northern Ghana.

(c) Common law freehold

This interest arises out of a grant in the nature of a freehold made by the holder of the allodial title by way of sale or gift. It is derived from the rules of common law, and can be held for an indefinite period. It is created only by express grant. Previously, all Ghanaians, members of the stool or family or skin which holds the allodial title and foreigners alike, could acquire common law freehold. The rights of non-Ghanaians/foreigners to hold such interests were curtailed by the 1969 constitution to a maximum 50-year lease term to be granted at any one time (Larbi et al., 2004). The 1979 Constitution also abolished the grant of freehold rights in stool and skin lands to Ghanaians whether they are outsiders or members of the land owning group. Hence, from 1979 such rights emanating from stool or skin lands can no longer be granted in the country, they can however, emanate from family lands (MLF, 2003).

(d) Leaseholds

Leaseholds are granted to a person to occupy and use land for a specified term subject to certain agreements, which may include the payment of a rent. The holder of an allodial title, customary freehold, or common law freehold may grant such right to another person in respect of land over which he has not already granted such a lease. Leaseholders may further grant sub- leases (MLF, 2003).

(e) Lesser Interests

Holders of any of the above rights may also create various lesser interests under customary law. These are usually sharecropping contractual arrangements by which a tenant farmer gives a specified portion of the produce of the farm to the landlord at each harvest time. The best known of such tenancies in Ghana are the '*abunu*' – where the produce is shared 50:50 and '*abusa*' – where one-third of the produce goes to the landowner and two-thirds to the farmer (ibid.). Nevertheless, the state through its power of eminent domain can (and often does) acquire any land in the country over which any of the interests described above is held.

3.6 Land tenure and land access in (Northern) Ghana

Throughout the country, in the traditional context, the conception of land transcends the material realm. Land is considered a spiritual entity. Religious attachment to land thus forms the basis of land tenure and ownership in almost all ethnic groups in Ghana (see Kyerematen, 1971). In this context, land is held in trust by the head of a community for all the members of the community, clan or family in the belief that land is owned by the dead, living and those

yet unborn. This is the central tenet of customary land ownership, which accounts for about 80% of land holdings in the country (Kasanga & Kotey, 2001). The chieftaincy institution – the *stool* in the South and the *skin*[5] as well as the *tendana* in the North occupies the customary offices. In the north, the chief constitute the political authority whilst the *tendana* fulfils religious or spiritual functions. Ownership of customary lands belongs to stools, skins, families, clans and other kinship groups. It is also inter-generational and the allodial title to the land usually resides in the community, clan or family and is non-transferable.

In the centralised states of the north, including Dagbon, Gonja, Mamprugu and Nanumba in the Northern Region, land is vested in the various paramount skins and the chiefs and sub-chiefs exercise management rights over it (Yaro, 2012). In the so-called acephalous societies including the Lobbi-Dagarba, and Sissala in the Upper West Region, and the Grune, Kusasi, Tallensi, Builsa and Kasena (among whom this study was done) in the Upper East Region, the situation is different. Here, land is held, controlled and managed by the *tendamba* (called *tengnyam* among the Builsa and *tigatiina* among the Kasena) or a lineage leader for a group of people living on the land (ibid.). The *tendana*[6] is usually believed to be a descendant of the first person that settled on the land and belongs to the senior segment of the first comer's lineage, although a soothsayer may also choose him (Lund, 2006; Yaro, 2012). The *tendana* is the custodian of the earth and must propitiate the land and sacrifice to the gods prior to each season of cultivation (Lund, 2006). When a person (especially a stranger) consults the chief for a piece of land, the chief usually directs him/her to a *tendana* who will in turn direct him/her for consideration to a person or group with the right to use a particular piece of land to transfer part of the said land to the newcomer (Yaro, 2012). This is because the giving of land to a stranger implies admitting an outsider to the ancestral heritage of the society, clan, lineage or family and extending birth right of that citizenship (MLF, 2003). Lineage and or family members may only need to consult their family head for a piece of land to do whatever they wish. Responsibility for land is thus shared between family heads and lineage leaders in the Upper Regions. Family heads have control over their family's land and may only inform the lineage head of any decisions pertaining to its use (Yaro, 2012).

[5] Chiefs in northern Ghana sit on animal skins as the symbol of their power and office while those in the south sit on stools.
[6] Singular of *tendamba*

Before the advent of colonialism and indirect rule, land was the sole preserve of the *tendana* in the acephalous societies (egalitarian or non-stratified societies without political leaders or hierarchies). Under the indirect rule policy of the British colonial administration, these headless societies were reorganized along the lines of the centralized kingdoms, and chiefs were created for administrative purposes (Yaro, 2012). Chiefs in this context then typically had little influence over land, except their respective family lands. However, with the authority and backing of government, chiefs began to play a role in land transactions by signing lease documents for a fee (ibid.). This brought them greater power and authority in land matters and a clash with the *tendana* in the post-independence era with each attempting to claim, reframe, and reinvent "traditional" rights to transact land (see Hobsbawn & Ranger, 1983 for discussion on invented tradition) (ibid.). The *tendamba* have resisted any attempt to marginalize them or to diminish their role with regard to land control since colonial times (see Lund, 2006).

Following independence in 1957 and the attainment of republican status in 1960, the State Property and Contract Act of 1960, vested all lands in the previous Northern Territories (now Northern Ghana) in the President in trust for and on behalf of the people of Ghana for public services (Lund, 2006; Larbi et al., 2004). The executive instruments provided that in the event of any acquisition of land by the state, the state did not have to pay compensation for the land itself but only for "*unexhausted improvements and economic trees and other works on the land"* (Lund, 2006:81-82). However, campaigns by northern elite, chiefs and people in the 1970s, resulted in lands in the Northern and Upper Regions being divested from the state in the 1979 constitution and vested "*in any person who was the owner of any such land before any such vesting ...*" (Lund, 2006: 82). And subsequently, the 1992 constitution (Republic of Ghana 1992, Article 36(8)), vests all customary lands in the appropriate stool, skin, or land owning family on behalf of and in trust for their people. Neither constitution however specified who were the appropriate stools, skins, and families.

In line with governments' neoliberal policies of the structural adjustment and economic recovery programmes of the 1980s (Songsore, 2001, in Yaro, 2010), a procedure was put in place for land owners to register their interest by the land title law of 1986 (PNDCL 152). This registration process was intended to put land resources in the hands of individuals in a

deliberate attempt to test the hypothesis that private secure tenure is inherently linked to higher productivity (Yaro, 2012). The constitutional recognition of chiefs as allodial landholders also paved the way for chiefs to reinvent customs enabling them to own and sell land, often to the detriment of poorer families (ibid.). The two documents (the 1979 constitution and the land title law of 1986), it is therefore argued, introduced individualised norms into a communal system of land ownership in Ghana (ibid.) and hence, created opportunities for various actors to renegotiate their status and entitlements (Lund, 2006). Land became commoditized due to the influence of the land title law and private ownership and this is compounded by rapid urbanisation and population growth. The customary norms were contravened by 'self-styled' chiefs and other local political office holders (Yaro, 2010) and land negotiations generated conflicts between chiefs, clans, kinsmen and family members (for example see Lund, 2006; 2009). This led to the displacement of poor and marginalised families from their lands, which was described as a 'national disease' (Kasanga and Kotey 2001; Yaro, 2012).

3.6.1 Gender and Customary Land Ownership

Land policy and legislation in Ghana appear to be gender neutral. They however, affect women adversely in their implementation because of women's peculiar socio-economic position and the cultural context in which they are applied. Traditional norms subtly preclude women from ownership and control over land resources. It is usually men who preside over the allocation of land resources owned by the family, or clan (Aryeetey, 2002, in MLF, 2003). By convention, women's role in agriculture is normally confined to assisting their husbands and male relatives in planting, harvesting and marketing of farm produce. To obtain land for their personal agricultural purposes therefore, women generally have to look to their husbands or to their own families to allocate plots to them. Plots thus allocated to them are usually the farthest from home and the least productive (IFAD, 1998). Unmarried women seldom have access to land. Financial empowerment is usually the best way for women to break away from the traditional stronghold and to gain ownership and control of land resources but as women especially in rural areas are handicapped in this regard, their ownership and control of land is very limited (ibid.).

3.7 Compulsory Land Acquisition in Ghana

All land in Ghana is owned or at least claimed by one indigenous community or another such that land for public use must necessarily be acquired through negotiation or compulsory acquisition. Eminent domain is the power to take private property for public use, by a state or a national government. It is also known as compulsory acquisition/purchase, resumption or expropriation. This practice has been exercised extensively in Ghana since colonial times by the state to acquire land for development. The power of compulsory acquisition granted to government an overriding interest over access, control and management of land irrespective of the tenure regime under which the land was previously held or owned (Larbi et al., 2004). Compulsory acquisition of land in Ghana is governed by the State Lands Act, 1962 (Act 125), which gives the state extensive power to acquire land, whether it be stool or skin, communal, family or private land if it considers the acquisition to be in the public interest. The Act empowers the President of Ghana to expropriate any land by publishing an Executive Instrument specifying the site, dimension and time associated with the compulsory acquisition (Thurman, 2010). The 1992 constitution (which is currently in effect) Article 20(1) also grants compulsory acquisition powers to the State in the event that it is necessary in the interest of defence, public safety, order, morality, health, town and country planning or other development for the public benefit. The purpose of the acquisition should be "*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*" (Republic of Ghana, 1992). Both the 1962 and 1992 constitutions also made provision that the acquisition be subject to the payment of fair and adequate compensation.

As noted, all past governments of Ghana including the colonial regime have exercised the powers of compulsory acquisition, albeit in different ways. The colonial government (1850 – 1957) generally adopted two different kinds of approaches to it. Expropriation (compulsory acquisition with compensation) was exercised in the colony and Ashanti, whilst appropriation (compulsory acquisition without compensation) was generally used in the Protectorate (Northern, Upper East and Upper West regions) (Larbi et al., 2004). Under the appropriation policy, all the lands of the Protectorate, whether occupied or not were declared to be under the control of the Governor without compensation (ibid.). The Public Lands Ordinance of 1876 (Cap 134) made expropriation possible, whilst the appropriation policy was formalised under a Northern Territories Ordinance of 1902 (Cap 111) which vested all lands in northern Ghana

in the state under the control and subject to the disposition of the Governor (Bening 1975; Larbi, 1995; Larbi et al., 2004). Larbi et al., (2004) noted that, often, a notice with the inscription: 'taken for government' was sufficient to vest land in the crown and to extinguish all existing rights to the land without any compensation. However, this declaration never did affect indigenous rights in the use of land except in urban areas and in other specific cases (ibid.).

After independence, rather than restructuring land relations various successive governments continued to utilise compulsory acquisition powers albeit with few moderations depending on local circumstances, politics, patronage and objectives (ibid.). The main instrument of compulsory acquisition in Ghana, the State Lands Act was passed in 1962. The instrument was passed to simplify the process of compulsory acquisition so a top-down approach was adopted which excluded land owners from the process (Larbi et al., 2004). Issues of compensation were to be dealt with after the land had been vested in the president. Non-payment did not invalidate the acquisition. This effectively separated the issue of compensation from the acquisition process and unfortunately became the standard practice for successive governments in the country. Several lands were acquired by the Convention Peoples' Party (CPP) government under the Act including a 709.7ha plot in Accra for a state farm and a 276.1ha plot in the Ashanti Region for a leprosarium (Ibid.).

The National Liberation Council (NLC), a military regime, overthrew the CPP government in 1966 and undertook the largest ever land acquisition in the country; 31,760.9 ha for a rubber plantation in the Western Region. Other equally large acquisitions were done in other parts of the country before power was handed over to the civilian elected government of the Progress Party (PP) in 1969. It was the PP government that introduced the legislation that curtailed freeholds in landed property owned by non-Ghanaians under the 1969 constitution to 50-years, with the reversion vested in the State. The National Redemption Council (NRC) overthrew the PP government in 1972 and also proceeded to acquire large tracts of land. A 1161.5 ha was acquired for an Olympic sports complex in Accra but never materialised. A further 2736.4 ha for irrigation, 2882.1 ha for a settlement farm, 810.4ha for an atomic reactor all in Accra, 12,950.4 ha in the Brong Ahafo Region for livestock production, and 1611 ha for the University of Cape Coast were acquired (Larbi et al., 2004). The land for the Tono

irrigation project was acquired within this period. It was a very tempestuous time in which between 1972 and 1979, four internal coup d'état were carried out (NRC- SMC1- SMC2- AFRC). Few people would have had the courage to resist or hold government for compensation during the period.

A democratically elected government of the Peoples National Party (PNP) came into power in September 1979. They also followed the practice of compulsory acquisition acquiring a 689.5ha land in Accra for a police depot and college, which was never started (Ibid.). The Provisional National Defence Council (PNDC) soon overthrew this regime in 1981. The PNDC ruled until 1992 and metamorphosed into a civilian elected National Democratic Congress (NDC) government following the new 1992 constitution and national elections which the party won and continued to rule from 1993 to 2001 (as well as from 2008 to today). Compulsory acquisitions were executed by both the military and civilian regimes of this government too.

In all, according to Larbi et al., (2004), a whopping 1336 compulsory acquisitions were executed between the start of the colonial period and 2004 though the most acquisitions occurred in the colonial period (62.5%). Government has compulsorily acquired land in every region in Ghana mostly without regard for the indigenous peoples from whom it is taken. Little or no compensation was paid in most instances and many of the land parcels expropriated by the state remain unused, underutilised or utilised for purposes either than those stated in the compulsory acquisition instruments (Agbosu, et al., 2007).

The 1962 Constitution of Ghana vested land in northern Ghana "*in the President in trust for and on behalf of the people of Ghana for the public services of the Republic of Ghana*" (Bening 1976 in Yaro, 2012). Thus, the British crown and the State previously owned all land in northern Ghana in the colonial and post-colonial periods respectively. The 1992 constitution attempted to correct this by vesting all customary lands in the appropriate stool, skin, or land-owning family, on behalf of and in trust for their people, to be managed based on customary law (Republic of Ghana 1992, Article 36(8)). However, in instances where compensation is paid or said to have been paid during compulsory acquisition (such as in the

case of the Tono project), holders of usufruct interests still lost out. This is because, the allodial title holder, usually the chief, *tendana* or family head, is paid compensation in the form of a lump sum as the trustee of a family, stool or skin land (Agbosu, et al., 2007). Usufruct or customary freehold interest holders are only entitled to compensation for the value of their crops. Compulsory land acquisition by governments over the years has therefore contributed greatly to land shortages for all uses, increased population pressure on limited lands, increased out-migration towards urban areas especially the southern parts of the country and changes in occupation and means of livelihood (ibid.). The 'reckless' manner in which compulsory acquisitions were done resulted in the State being challenged and even defied in later years leading to multiple resource regimes and this as reported by Lund, (2006) makes it difficult to categorise some properties as public or private.

CHAPTER FOUR

Research Design and Methodology

4.1 Introduction

The basic understanding of a method is a way of doing something but it is obviously more than that. It is also a philosophy or an approach for inquiry. Contemporary human geography adopts a range of research methods; however, the goal is the same. According to Fotheringham and others (2000), the *"major goal of geographical research, whether it be quantitative or qualitative, empirical or theoretical, humanistic or positivist, is to generate knowledge about the processes influencing the spatial patterns, both human and physical, that we observe on the earth's surface."* (Aitken and Valentine, 2012: 238). Thus, both quantitative and qualitative approaches to research have the same objective; to generate information about spatial phenomena. This study is basically qualitative.

Qualitative research has been described as being "*concerned with elucidating human environments and human experiences within a variety of conceptual frameworks*" (Winchester and Rofe, 2010). At the risk of over simplification, one can say that the philosophical base of qualitative research is the idea that "*human behaviour is, in fact, subjective, complex, messy, irrational and contradictory*" (Clifford, French & Valentine, 2010: 5). Hence, humanistic geographers draw on methods that would allow for the exploration of meanings, emotions, intentions and values (ibid.). These methods can be grouped into three namely: oral techniques (primarily interview-based), textual analysis (creative, documentary, and landscape), and observationally based ethnographies (Winchester & Rofe, 2010: 8). I depended mostly on techniques in the first and third groups. Specific techniques used in this study included key informant interviews, individual, and group interviews, interviews with officials, observation, informal discussions and photo elicitation. These strategies combined, helped me to unearth individual experiences, meanings, attitudes and behaviours associated with land and water access within the irrigation scheme.

4.2 Reconnaissance Visit to the Study Area

I first visited the Tono Irrigation dam in 2004 – ten years ago. Since then, the dam had passed out of all my affairs. It was therefore very revealing to visit the area and to make a conscious effort to study what was going on there and to document it. A draft version of my interview guide was pretested during this reconnaissance visit in some of the villages in order to tests its reliability and the reaction of respondents to my questions and approach. Before embarking

on the reconnaissance visit, I contacted some former schoolmates of mine in Chuchuliga and arranged for one of them who is very familiar with the irrigation scheme and speaks Kasem, the language of the other study communities, to be my interpreter cum gate keeper.

We first visited zones P and T, which belong to Chuchuliga. These zones are located quite far from the community and with a motor bike; it took us more than half an hour to reach each zone from the community. This was also because it was the middle of the rainy season and the path was very bad. He took me round each zone pointing out the fields, the main canals that bring water into the zone and the lateral canals that take water to the fields. He described how each farmer lets water into his fields and showed me his own field in zone P. The next day – a market day, he took me round the market and introduced me to farmers. I met and was introduced to over 40 farmers. I explained my research interest to each of them and on a few occasions to a loose group of farmers standing around in conversation. I requested to interview most of them on a later date and many agreed. I took down the mobile numbers of those who consented to an interview.

Over the next few days, we visited other communities including; Korania, Bonia, Wuru, Yogbania, Yigbwania, Gaani and Biu. In each community, we visited the VC chairman, the chief and many farmers at their homes or on their fields. We also went over to at least one zone in each community to observe what was going on. During these tours, I pre-tested my interview guide with a few farmers and requested to interview many of them at a later date. We also had many informal conversations with farmers during these visits.

4.3 Status and Role during fieldwork

Status has been defined as "*a position in a particular pattern*" (Linton, 1936:113). And as the individual participates in several patterns, he/she tends to have many statuses. These statuses define the person's position in relation to the rest of the society. Statuses are also rights and responsibilities and an individual in exercising the rights and duties associated with a status, performs a role (ibid.). Just as there are many patterns and hence many statuses, there are also many roles to go with all the statuses one can occupy. In the course of the fieldwork, I occupied many statuses and performed many roles as was my interpreter. Our assigned statuses included; students of the University for Development Studies (UDS), agricultural extension officers from the irrigation project, NGO workers, or spies from the project office.

Others thought of me as a privileged person living abroad, and my interpreter as my Ghanaian friend. For some, my letter of introduction from my supervisor often seems to increase their anxiety. Especially if they were involved in a land conflict, for according to one farmer "*a son of the land does not need an introduction letter to come and talk to his own people*". For each status, people who assigned it to us received us differently. All in all however, with a little explanation, a show of my student ID and letter of introduction and a word of encouragement from my interpreter cum gatekeeper or the mention of the name of another farmer who has referred us opened the door and we were received as brothers, sons or students.

4.4 Power and position in qualitative research

Interactions between two or more individuals always occur in a social context and the nature of the interaction is influenced by societal norms, expectations and structures of power (Dowling, 2010). Qualitative research is social in character, and thus interwoven with relations of power (ibid.). Power and positionality play critical roles in shaping the findings of the fieldwork, as there is a danger that the filtering process that knowledge goes through may lead to misinterpretation (Schoenberger, 1991 in Mullings 1999). The raging debate of insider/outsider positions in research is therefore an effort to identify ways by which a researcher can gain access to balanced viewpoints (Mullings, 1999). Some have argued that 'insiders' – researchers who belong to a group that they study – have the advantage of using their knowledge of the group to gain more insights (Abu-Lughod (1988) and Hill-Collins (1990) in: Mullings, 1999). Others point out that 'outsiders' not being members of the group they study, have a greater degree of objectivity and being perceived as neutral, may be given information that would not be given to an outsider (Fonow and Cook, 1991 in: Mullings, 1999). Such arguments are however untenable as they tend to "*freeze positionalities in place and assumes that being an insider or outsider is a fixed attribute*" (Mullings, 1999: 340). The insider/outsider binary is an unstable boundary that "*ignores the dynamism of positionalities in time and through space. No individual can consistently remain an insider and few ever remain complete outsiders*" (ibid.). Mullings (1999) therefore posits that the researcher must find positional spaces of trust in order to ensure that information in qualitative research is reliable.

In this study, I was both an insider and an outsider at different times to different informants based on their background. In interviewing informants at Chuchuliga and Biu, I was an insider because these two are Builsa communities and I interviewed all my respondents in the native language, Buli. My insider status was always reaffirmed by most of my respondents who respond to my greetings with "*Ah, fi ka Bulua? Tia."* (Are you a Builsa? Welcome then). My interpreter was an insider in these two communities too, more so in Chuchuliga because he was himself a local farmer within that community. Here, after the initial introduction to farmers in the market place, I visited and interviewed each farmer alone.

There were however occasions when my position could better be described as 'inside-outsider or outside-insider'. In Biu and Chuchuliga, despite the common grounds of ethnicity, I was sometimes seen as an 'inside-outsider' because I did not come from the community itself and also when they realise that I was schooling abroad. In the other communities including Yogbania, Yigbwania, Wuru, Bonia, Gaani and Korania, I was either an outsider or an 'outside-insider' depending on whether my informant could speak Buli or not. My interpreter was an outsider here too. Some informants asked critically about who I was, what I was doing in the irrigation scheme and why I was interested in land issues and sometimes who referred me to them. Informants with whom I could speak my native language often tried to establish more insider relations with me by describing how they relate to Sandema my hometown. In these settings, I was seen as an outside-insider with whom it was safe to talk about the manoeuvrings for land access in the community and in the scheme without any anxieties.

When I met the managing director (MD) and deputy managing director (DMD) of ICOUR and the project manager (PM) at the Tono project office, their first anxiety was to be sure I was not a journalist and when I showed my introduction letter and student ID, they each took time to read through it. The DMD said he hoped that I would let him see my write-up before it is published. I said I could send him a copy but it was not going to be published in a newspaper or magazine. From then, an atmosphere of trust was developed between us and he even allowed me to record my interviews with him on tape. Though at my first interview, he was a bit hesitant about talking with me, we eventually spoke for over an hour and on the second occasion, even more. About the time I completed my fieldwork, a new project

manager was appointed. While interviewing the DMD, he called the new project manager into his office to be interviewed and it lasted for nearly an hour and half.

My status and position as well as that of my interpreter during the fieldwork were therefore dynamic ones. We had foreseen that my interpreter's status as a farmer within the scheme could either aid or hinder our interactions and we agreed not to reveal this status unless it was necessary. His insight into land issues within the scheme as an insider was always very useful during interviews. In areas where we could not hide his identity (such as in his own community), I usually visited and interviewed farmers alone because I could speak the local language and did not need his services then. In other communities, we simply introduced ourselves as two students (He was in fact, a student of the University of Education, Winneba, Ghana). We generally adopted a curious outsider position and it proved very successful in reducing suspicion and fostering an atmosphere of trust and confidentiality with informants. I observed that informants who thought of me as an outsider were often more cooperative whilst those who thought of me as an insider were a bit hesitant for when it comes to land matters, insider status poses a threat.

4.5 Sampling

Sampling has been defined as acquiring information about a relatively small part of a larger population, usually with the aim of making inferential generalisations (Rice, 2010). It is generally agreed that qualitative studies should not be judged by their representativeness or lack thereof but by the quality of the theoretical reasoning that they generate (Richards, 1996 in Rice, 2010). Since my aim is not to establish any statistical relationships, I used purposive, snowball and convenience sampling techniques whilst bearing in mind the need to diversify my sample (in terms of gender, age, and type of farmer (local or contract). This enabled me to directly approach people with the relevant experiences related to the issue under investigation. A total of 45 informants were selected through these sampling techniques as well as two groups (see Table 4.1). The first group was made up of 9 farmers, all male whilst the second was made up of 13 farmers, all female.

A voice recorder was used to record some of the interviews with the consent of the respondents whilst I also took notes in my notebook. Observation, informal conversations and photo elicitation were done at all sites at all times and incorporated into interview questions during interviews.

Table 4.1: Study sites, data collection techniques, and number of informants

Community/Site	Data Collection Technique	Number of informants	Gender	
			Female/	*Male*
Chuchuliga T&P	*Individual Interviews*	9	3	6
	Group interview	(9)		
	Key informant	(1)		
Bonia	*Individual interviews*	4	1	3
Wuru	*Individual interviews*	4	1	3
Yigbwania	*Individual interviews*	4	2	2
Yogbania	*Individual interviews*	4	0	4
Korania	*Individual interviews*	9	1	8
	Key informant	(1)		
Gaane	*Individual interviews*	4	2	2
Biu	*Individual interviews*	4	2	2
	Group interview	(13)		
ICOUR and Tono Project Office	*Individual interviews*	3	0	3
TOTAL	*Individual interviews (All)*	45 (69)	12	33

4.6 Data Collection Techniques and Strategies

4.6.1 Individual Interviews

Interviews have been described as verbal interchanges where one person attempts to elicit information, opinion or belief from another person or persons (Dunn, 2010). It involves listening, paying attention, being open to hear what people have to say and being non-judgmental (Longhurst, 2010). An interview is a dialogue rather than an interrogation and take a conversational, fluid form, varying according to the interests, experiences and views of the interviewee (Valentine, 2005). A great advantage of the interview as a data production strategy is that it is sensitive and people oriented, allowing the interviewees to construct their own accounts and explain the complexities and contradictions of their experiences and even raise issues that the researcher may not have anticipated (ibid: 111,). The material thus produced is "*rich, detailed and multi-layered*" (ibid.).

There are three types of interviews: structured, unstructured and semi-structured which can be placed along a continuum (Dunn, 2010). The structured interview is at one end and follows a predetermined and standardised list of questions whilst the unstructured interview is at the other end and does not involve any predetermined or standardised questions. Instead, the interview is directed by the informant rather than by a set of questions (ibid.). The semi-structured interview falls mid-way along the continuum. It contains some pre-ordered questions but is flexible enough in the way issues are addressed by the informant, allowing for an open response in the informant's own words rather than a yes or no answer (Longhurst, 2010).

A semi-structured interview guide (see Appendix) was prepared for farmers, key informants, and the project manager (PM) to assist the researcher to keep track of issues discussed and questions that needed to be asked. This was used in most cases except in informal conversations. Interviews with other project officials, chiefs and Village Committee (VC) executives were unstructured but often started with a few questions from the interview guide for the farmers before proceeding to their own experiences and opinions. This helped me to cross check on information received from farmers based on the interview guide and also to see how ordinary farmers' experiences differed from those of their leaders.

Forty-two (42) farmers, composed of twelve (12) women and thirty (30) men were interviewed in all (See Table 4.1 and Plate 4.1). About four (4) farmers were interviewed in each of the VC controlled areas. There are nine (9) VC controlled areas because Chuchuliga is divided into two; Chuchuliga P and Chuchuliga T. Majority of farmers interviewed were local, small scale farmers with field sizes ranging from 0.2ha to about 1.0ha. Others were contract/commercial farmers (see Table 4.2) with field sizes ranging from 3.0 to about 8.0 hectares (these farmers operated based on agreements with the project manager). The ages of farmers ranged from 20 to over 60 years (see Table 4.3). Informants' length of stay in the scheme ranged from a year to thirty years (Table 4.4). The diversity in age, experience, and field size were chosen in order to access how different generations experience the scheme as well as the changing modes of access to land.

Plate 4.1: Interview with some farmers

Source: Fieldwork, 2014

Two key informants were also interviewed in two communities, one in each. This was to get an in-depth knowledge of the different experiences of different communities. One of the key informants is from a village where a large number of families were resettled to make way for the project (Korania) whilst the other is from a village where hardly anyone was resettled (Chuchuliga). Different dynamics were found to operate within each of these communities with regards to strategies for accessing land and water within the scheme. A feeling of communal resource dominated in the latter whilst a strong feeling of individual/family ownership prevailed in the former because people were allocated either their ancestral lands or as close as possible to it. This was confirmed in interviews with individual farmers in the communities. Each of the key informants was interviewed more than once.

Three officials of ICOUR were interviewed including the Deputy Managing Director (DMD), the Acting Project Manager, and an extension officer. The DMD had just been promoted to the position after having worked as a project manager (PM) since 1989; hence, I interviewed him on two occasions using the interview guide for the PM. Each interview with him lasted for more than an hour. He later arranged for me to meet the new PM for a chat. The acting PM (at the time of my fieldwork) was a senior finance officer and had not even overseen a full growing season yet but his years of service as finance controller had made him very familiar with the issues discussed. Informal conversations were held with two other officials of the scheme, a man and a woman each of whom had worked with the scheme for several years and provided much useful information.

Table 4.2: Type of Farmers interviewed

Farmer Type	Number Interviewed
Local farmers	37
Contract farmers	5

Table 4.3: Ages of Farmers interviewed

Age Range	Number Interviewed
20 – 29	5
30 – 39	8
40 – 49	9
49+	20

4.6.2 Group interviews

Group interviews were conducted in two communities. One with a group of 9 men, all local farmers, and the other with a group of 13 women local farmers. This enabled me to examine the different experiences of men and women in the scheme and the issues that were gender specific. This method also allowed me to observe power play among farmers themselves through their silences, and their answers to questions. For example in the interview with men, when I asked how a farmer may lose his/her rights to land within the scheme, the farmers responded that it was only through non-payment of water levy. When I asked if any of them had lost land before, they all said no. After the interview, one of them sought me out and described how he had lost land to the chief. Asked why he did not speak up earlier, he said the other farmers could later tell on him to either the VC executives or the chief.

4.6.3 Informal Conversations

Informal conversation was also regularly used among farmers. This occurred often whilst I was trying to locate a targeted informant and lasted anywhere from 5 to 30 minutes. It was widely used in Chuchuliga where I was introduced to many farmers at the market place and also in Korania. Other farmers also personally sought me out to hear their stories especially when they thought I was an NGO worker or other person able to influence things in their favour. A lot of information was acquired through informal conversations that went to improve the interview guide or help to explain observed phenomena.

Table 4.4: Length of time farming within the scheme

Length of time (years)	Number interviewed
1 – 10	14
11 – 20	13
21 – 30	15

4.6.4 Observation and Photo Elicitation

It is often said that 'seeing is believing'. Visual observation is a key aspect of many types of research and involves touching, smelling and hearing the environment and making implicit or explicit comparisons with previous experience (Rodaway, 1994, in Kearns, 2010). Geography as a discipline it has been argued, is preoccupied with the visual (Crang, 1997, in Kearns, 2010). However, observation as a research strategy has not been given as much attention as granted to others in the gamut of methods in human geography (Kearns, 2010). Observation, some have argued, can be "*transformed into a self-conscious, effective, and ethically sound practice* (Ibid: 241). Its unconstrained quality should not be mistaken as random or haphazard for we never observe everything there is to see. Hence, observation is an active choice rather than mere exposure (Kearns, 2010: 242).

There are three main purposes for observation, which include: counting, complementing, and contextualizing (ibid.). Counting refers to the enumerative function of observation which can be used to produce numerical data to show trends. The second function is for providing complementary evidence. This may be additional descriptive information gathered before, during, or after other methods of data collection have been applied. The third purpose, contextualizing, means "*to construct an in-depth interpretation of a particular time and place through direct experience*" (ibid.). Observation could be classified as controlled and uncontrolled. Controlled observation sets out explicitly what, how and when to observe whilst uncontrolled observation is not restricted to noting prescribed phenomena (Ibid: 243).

Plate 4.2: Plots of some local farmers

Source: Fieldwork, 2014

For this study, I employed uncontrolled observation for the purpose of providing either complementary evidence or to generate questions for interviews. Both observation and photo elicitation were used hand in hand. I observed the dam, the fields, boundaries, main and lateral channels, lateral valves, and crops grown (Plates 4.2; 4.3; 4.4; and 4.6). I took photos of these cases to discuss with informants. Informants including project officials later revealed that many of the main and lateral canals as well as other equipment of the company are in a state of disrepair. Some rehabilitation works which entailed replacement of concrete lining of the main canal and some lateral canals, construction of culverts and clearing of drains were being carried out. The Minister of Agriculture later in the year announced that the government intends to rehabilitate the scheme's infrastructure with support from the World Bank and USAID (GNA 2014).

Plate 4.3: Water level has dropped so much upland zones cannot get water

Source: Fieldwork, 2014

Most informants also explained that a lot of subdivision of land is taking place among local farmers in the scheme and this was confirmed when I later observed that many fields were divided into small portions (sometimes less than half an acre) which were being worked by different farmers (see Plate 4.2). In one zone, an observation of several fields demarcated with

red pieces of cloth tied to poles led to the revelation by farmers that there was a conflict over those fields.

Plate 4.4: Channels overgrown with weeds

Source: Fieldwork, 2014

I also observed my respondents closely during interviews. For example in an interview in one community, the VC chairman often spoke about the village chief with a sneer. This made me to probe into dealings between the two leaders and it was revealed that, not only were they in disagreement over ownership of a plot of land within the project area, but have had similar disagreements in the past. The chief of the village had even made an attempt to have the VC chairman replaced. Both leaders are also competing on who has the legitimate authority to address disputes between farmers on project lands. The feud between the two leaders had trickled down to the farmers and created two factions among them. Informants were more hesitant in this community about speaking with me until they had verified who I was and what I wanted and especially who had referred me to them. Observation therefore offered me an early hint into the power relations between these two individuals and institutions (the Village Committee and the chief (traditional leader).

Plate 4.5: Newly ploughed fields of some contract farmers

Source: Fieldwork, 2014

Plate 4.6: A young farmer showing me the lateral valve that lets water into his field

Source: Fieldwork, 2014 (Published with the permission of the farmer)

4.7 Ethical Considerations

Ethical behaviour in geographical research requires acting "in accordance with notions of right and wrong" (Mitchell & Draper, 1982, in Hay, 2010:35). This includes being thoughtful, informed and reflexive (ibid.). With the ultimate aim to obtain unbiased responses, protect the rights of my informants, maintain trust for continued research in future, and ensure personal safety, I continuously reflected on my actions and inactions during fieldwork. In order to protect the rights of informants, as a first step, my interview guide did not require the names or other identity of my informants. I always explained that their names were not a necessary part of the data I needed and they could choose not to tell me. I endeavoured not to mention any names or release other descriptive information about my informants that may lead others to recognise them. This is applied to all informants regardless of whether they felt secure or insecure or gave out 'sensitive' information or not. Although I often discussed issues with my interpreter, unless he had been personally present at an interview, I usually do not mention the names of respondents with him. We also agreed between ourselves not to mention any names or discuss my research with other friends or colleagues in or from the study areas. Community names are also withheld in the presentation of findings so as not to give any clues of the identity of informants or to embarrass members of those communities.

Because of the number of NGOs offering farm inputs to farmers in some communities, many local farmers thought I was working for an NGO and usually wanted to be enlisted in case of future support. I always tried to counter this by introducing myself and showing my introduction letter and student ID in all cases and informed respondents that their participation was voluntary and only for my personal use as part of my studies. I explained that I may not

be able to help them with farm inputs but would appreciate their time and response. This usually was enough to gain their consent but in a few instances, some farmers still insisted that I could do something for them by telling the PM that the water levy was too high for them or that they did not get the fertilizer in the previous season. I informed such farmers that I could tell the PM those things (and I did although I didn't mention their names) but could not guarantee a positive response for them. In a few instances too, I had to accept farmers' perception of me as a student of UDS in order to facilitate the interview because some were demanding that I buy them a drink before or after the interview since I must have brought a lot of money from Norway. I did buy drinks for one or two farmers. Also, I am relatively well acquainted with customary practices in the study area because of its proximity to my hometown Sandema, hence, appropriate behaviour and courtesy was extended at all times to all informants.

4.8 Data Analysis Procedure

The process of bringing order, structure, and interpretation to the mass of data produced was messy, tiring, time-consuming, creative, and fascinating. It did not in any way proceed in a linear fashion neither was it neat. It involved several reading and re-reading of transcripts and going back to listen to audio recordings and looking up field notes to read descriptions of settings and informants, starting and cancelling, and sitting for several hours.

Much of the data that was produced is qualitative in nature. These include observations, audio recordings and transcriptions of interviews, notes taken during and after interviews and photographs. The qualitative data was organised by an analytical structure using codes. This helped me to identify categories and patterns emerging from the text materials. Silverman, (2003), has pointed out that one needs to think about how respondents use "*culturally available resources*" to tell their own stories. That is, how respondents explain their own actions (e.g. how they acquired their plots and transactions with the scheme officials) to "*those who otherwise may not understand*" (Miller & Glassner, 1997 in Silverman, 2003). My codes therefore, followed respondents' stories and explanations. These codes were then built into themes that connect to the broader literature. According to Cope, (2010), the commonest way to construct the first set of codes is to read through your first text, "marking important sections, phrases or individual words and assigning a code" (pp. 445-6). Following this

approach, the data were coded under different categories of types of rights, duration, and conditions of tenure, institutions, actors involved, and unique experiences of farmers. New codes were created, changed, combined, split, renamed and refined. I kept a memo of what has been included in each particular category over time.

This was then followed by the construction of a thematic network where core categories or themes were identified or grouped in line with my research questions (Strauss, 1987 in Cope, 2010). Thus, the initial codes and categories were grouped under four types of themes in the data namely: "*conditions of tenure, interaction among actors, strategies and tactics* and *consequences or Outcomes*". Under 'conditions', were grouped user rights, duration and conditions, schedule for payment of water levy and delivery of water etc. For 'interaction among actors', I looked for institutions mediating access to land and water and actors involved. How respondents engaged with other actors: farmers, scheme officials, VC leaders, politicians, and land owners and how these others treated them in return. 'Strategies and tactics' was used as a general theme to refer to how farmers behaved in particular situations/events. For example, how they got access to more land or how they ended up with the size of plot they have, their response to conflicts/disputes, water access, access to inputs and services. 'Consequences' refer to the outcomes of 'conditions' 'interactions' and 'strategies' adopted by a farmer or actor. Thus, whether an actor succeeded in securing or losing land, new rights, and so on. During this grouping or network stage, basic codes and categories were re-evaluated in order to confirm that the description reflected the raw data.

4.9 Validity and Reliability of Field Data (Trustworthiness)

A key task of every research design is to eliminate or minimize ambiguity in conclusions from the results. Thus, validity is concerned with the integrity of conclusions drawn from a study or research (Bryman, 2012). Though it is almost impossible to eliminate all ambiguities in any social research, a good research design can certainly help to reduce them (de Vaus, 2001). The extent to which the structure of a research design can enable the elimination of alternative explanations for the results is termed internal validity (ibid.) whilst external validity is concerned with whether or not the results can be generalized beyond the specific research context (Bryman, 2012).

It is argued that "*the experiences of individuals and the meanings of events and places cannot necessarily be generalised, but they do constitute part of a multifaceted and fluid reality*"

(Winchester & Rofe, 2010: 7). Gobo (2004) asserts that issues of generalisation and transferability have been a source of disagreement for decades. Recently however, *"a conciliatory offer has been made by qualitative researchers…stating that there are two kinds of generalisations: a generalisation about a specific group or population (which aims at estimating the distribution in a population) and a generalisation about the nature of a process"* (ibid: 435). According to him, the first kind of generalisation is based on statistical logic which sometimes does not have social significance. The second kind, based on the notion of 'theoretical sampling' and referred to as 'transferability' is mostly associated with qualitative research. This theoretical sampling is the idea that the researcher collects data from an individual or a group of people who can provide the appropriate and relevant data for the theoretical framework.

Gobo again advices that issues of generalisation need to be faced "… *in dialogue with field incidents, contingencies and discoveries*" (2004:436). By this, Bradshaw and Stradford (2010) call on qualitative researchers to ensure rigour in their work. To do this, they suggest two steps: firstly, to include appropriate checking procedures from the early stages of the research design to be applied at various stages in the research process and secondly, to document each stage of our research carefully so that we produce "*analyses that are as open to scrutiny as possible*" (ibid: 77; see also Kapborg and Berterö, 2002). Hence, although I take ultimate responsibility for the outcomes of this study, I was not alone in the process. Criticisms and suggestions from my supervisor, lecturers, and colleague students during presentations and informal discussions at different stages of the study were very crucial and carefully considered.

Reliability is the extent to which a method of data production would consistently come up with the same result or measurement when used repeatedly in similar circumstances or at different times (Bryman, 2012). According to Bryman, reliability is of particular concern to quantitative research. Because of the great deal of subjective judgment involved in qualitative studies, consistency of decisions in recording of observations and translation of data into categories is critical to ensuring reliability. No method is ever perfectly reliable and the goal therefore is to maximize reliability as much as possible. Some qualitative researchers propose that the term trustworthiness be used instead of validity and reliability as the criterion for assessing the quality of a study (ibid.). Invalidity and unreliability can come from many sources including; poor wording of questions, different interviewers, influences of status and

position between an interviewer and interviewee, mood and context of interviews or "*asking questions about which people have no opinion, have insufficient information or require too precise an answer*" (de Vaus, 2001:31). This means that researchers must be reflexive and constantly reflect on the social nature of the research process as well as the research methods.

To maximize reliability and reduce ambiguity in my data, I had endeavored to test my interview guide among a couple of farmers in villages during my reconnaissance visit to the project area. This enabled me to follow the reasoning of farmers in responding to my questions and questions from farmers were also noted in order to reword or rephrase questions for final interviews. Apart from this, the questions, themes and issues to be queried had been subjected to review with my interpreter who was himself a farmer in the scheme and later with my supervisor who added invaluable comments and suggestions. Thus, I was pretty much familiar with the flow of the questions and some possible interpretations of them before administering them to informants. In addition, the same interview guide was used for different individual farmers in all eight villages. This allowed for comparison of answers and for probing and follow up questions based on responses from previous informants.

In addition, the use of multiple strategies; individual and group interviews and informal conversations, observation and photo elicitation enabled complementarity of strategies as each approach helped to strengthen the other and data from all the sources were checked against each other for consistency and accuracy. Also, I ensured that respondents were always comfortable and secure before interviews by adopting the curious outsider position in order to foster confidentiality with informants. Though I often explained to respondents that they could stop the interview anytime if they were uncomfortable or didn't want to continue, not one respondent discontinued an interview and most respondents gave me more time and attention than they agreed to before the interviews started.

A threat to validity and trustworthiness may also arise due to my use of an interpreter because of the back and forth interpretation of questions and answers but also because of issues of positionality and cultural bias. In this situation the advice of Kapborg & Berterö (2001) to use an interpreter with full understanding of the research project was taken seriously. I worked

with my interpreter(s) as a team and we discussed our own biases and life experiences together in an attempt to minimise their intrusion into our interaction with respondents (see Temple and Edwards, 2002). Also, though I used an interpreter, I conducted all the interviews by myself. Not one interview or observation or conversation happened in my absence. I can therefore say with confidence that my data are valid and reliability was maximized in the range of strategies and approaches used for the particular context and circumstance within which my field work was carried out.

The practice of reflexivity, that is, making clear my position vis-à-vis the research, and through the explicit disclosure of circumstances surrounding the data collection and analyses (Rose, 1997 in Mullings 1999: 348), as outlined above aims to help establish the plausibility of my study to readers and researchers. The elaboration of the historical, political and cultural context (see chapters two and three) will satisfy intellectual and ethical reasons and also demonstrate that I was adequately informed by relevant literature. All these go to establish the reliability and trustworthiness of this study.

Finally, despite all the above, Bradshaw and Stratford (2010) warn that there are still limits to transferability because of the particularities of the research topic, the research methods used and the researcher (me). However, the meticulous documentation of all the stages of the research process and my own position (as well as that of my interpreter) coupled with the practice of reflexivity will hopefully allow my interpretive and participant community to be able to check all of these stages and confirm that my study can be considered dependable.

CHAPTER FIVE

Review of Ghana's Agricultural Sector Policies and Reforms

5.1 Introduction

Agriculture in Ghana is dominated by food crop production, accounting for almost two-thirds of the agricultural GDP. Cocoa is still the leading export crop, but its contribution has reduced and now accounts for only 10–15% of agricultural GDP, (Kolavalli et al., 2012). In essence, food crop production is not only a source of livelihood for many people, but it is increasingly becoming an important source of foreign exchange for the country. Major food crop exports include root tubers, oil palm, fresh vegetables and fruits (MOFA, 2011b; 2013). In addition, the largest potential domestic market for output from other sectors of the economy is agriculturally-dependent rural households (72% of the population) (IFAD, 2006). Several policy strategies over the years such as the Medium Term Agricultural Development Programme (MTADP), Accelerated Agricultural Growth and Development Strategy (AAGDS), the Food and Agricultural Sector Development Policy (FASDEP) 1&2, Ghana Poverty Reduction Strategy (GPRS)1&2, and others have sought to promote food especially rice production to address food insecurity and poverty in Ghana (MOFA, 2009).

The country's drive towards self-sufficiency in food production had led to the creation of the Ghana Irrigation Development Authority (GIDA) in 1977. Since its creation, GIDA has placed much emphasis on the development of large-scale irrigation projects for the production of rice and other food crops (MOFA, 2011a). Rice is cultivated both as a food crop and a cash crop; however, export is currently on a limited scale. The Authority has developed about 10,000ha for irrigated rice production (Owusu, et al., 2013) and the crop has progressively become a convenient national staple in most Ghanaian homes becoming the second most important food staple after maize. However, the country depends immensely on imported rice and this has been of concern for policy makers over the years especially in the light of price hikes on the world market since 2008 which has since not returned or abated.

5.2 Policy Review

Since independence in 1957, Ghana has tried a number of strategies, policies and programmes aimed at achieving economic growth and development. It began with a push for import-

substituting industrialisation and mechanised agriculture in the 1960s through direct public intervention in production (Khor, 2006). This policy however raised government's expenditures and resulted in severe economic problems including huge budget deficits and high and increasing inflation (ibid.). A wave of political instability followed, all citing the worsening economic fortunes of the country and an increasing scarcity of consumer goods including foodstuffs.

Over the next two decades following independence, successive civilian and military governments tried different policies and programmes alternating between open market systems and direct state intervention in both the production and marketing of agricultural products with varying levels of success. Restrictions were imposed on imports in the 1970s to encourage domestic production and official prices were set for domestic rice from 1974 to the early 1980s (Abdulai & Huffman, 2000). The programmes Operation Feed Yourself (OFY) and Operation Feed Your Industries (OFYI) were put into action in 1972. Various government agencies were involved in production, import and distribution of farm inputs including seeds, fertilizers, insecticides, fungicides, small hand tools, motorized equipment and premix fuels (Khor, 2006). Prices of these inputs were directly subsidised and tariffs on imported agricultural inputs were reduced or lifted altogether. All these, in addition to an overvaluation of the nation's currency contributed significantly to an increased protection of the rice sector between 1974 and 1983 (Abdulai & Huffman, 2000). This encouraged a lot of individuals to take up farming (especially rice production) in order to benefit from government incentives (see Konings, 1984). Following this, the country became self-sufficient in rice between 1974 and 1976 (Asare, 2000; Khor, 2006). There were however a lot of unpleasant repercussions. The increased production of food crops corresponded with a decline in cocoa production and inflation worsened, rising to about 117% by 1977 and 123% in 1983 (Khor, 2006).

To stem the tide, the military Provisional National Defence Council (PNDC) that took over power in 1981 introduced economic reforms negotiated with the World Bank and the IMF. The Economic Reform Programme (ERP) was launched in 1983, followed by several Structural Adjustment Programmes (SAPs) in 1986 (Songsore, 2011). The reforms put emphasis on the free market system, with prices given a central role in the allocation of

resources, and the government's control and participation in the economy, including in agriculture, was curbed. The ERPs included trade policy and exchange rate reforms. Emphasis was placed on increasing and diversifying exports with the promotion of non-traditional exports. The SAPs included deregulation of commodity and service markets, reduced domestic price interventions and liberalisation of imports (Khor, 2006; Songsore, 2011). In addition, the period also saw considerable cut backs in public sector employment as an attempt to reduce government expenditure and improve public sector performance. Between 1983 and 1992, over 200,000 public sector employees were retrenched (Kimberly, 2005). According to officials of the Irrigation Company of Upper Region (ICOUR), the company lost over 50% of its employees in the period. As part of the ERP and the SAP, subsidies on agricultural inputs were removed and tariffs reinstated.

The combined effects of the ERPs and the SAPs were an increased growth rate, reduced budget deficit, devaluation of the currency and a lower inflation rate in the late 1980s and early 1990s. Whilst these were touted by the government and its partners, on the local level, they negatively affected food crop production. For instance, following the removal of subsidies and elimination of guaranteed minimum prices for farmers in 1990, the profits of large scale mechanised rice production dropped drastically. Rice producers in the northern region of Ghana who were flourishing with subsidies on fertilizer and other inputs, rapidly disengaged (Bozza, 1994; Asare, 2000; Nyantakyi-Frimpong, 2013) and the rice mills set up in the 1970s in Tamale, capital of the Northern region, closed down (Kranjac-Berisavljevic et al., 2003; Yaro, 2013). Many farmers diverted to the production of non-traditional export crops such as cashew (Nyantakyi-Frimpong, 2013). Similarly, tomato farming in the irrigation schemes in the Upper East Region collapsed due to the importation of tomato paste from the European Union (EU) and the livestock sector suffered a similar fate due to budgetary cuts and importation of meat from the EU (Yaro, 2013). Major Shea butter, tomato, groundnuts and rice processing businesses in the north were rendered unprofitable and eventually closed down (ibid.). In essence, the neoliberal policies adopted through the SAPs and ERPs wiped out crucial rural-urban linkages through the markets and food crop production generally suffered.

5.3 Current Agricultural Sector Interventions

Agricultural modernisation which tends to privilege large-scale farmers had been the principal ideology influencing Ghana's agricultural reform policies in the post-independence era. That ideology is still very much alive in today's agricultural reform policies and programmes although support is purportedly being offered to rural small-scale farmers. Current rice sector development policy guideline (2008 – 2018), targets reducing rice imports by 30% through increasing production levels to ensure food security and import substitution (MOFA, 2009). Indeed, the main objective of the National Rice Development Strategy (NRDS) is to double domestic production by 2018, implying a 10 percent annual production growth rate (ibid.). Several initiatives have been implemented towards achieving this objective.

The first Food and Agricultural Sector Development Policy (FASDEP I), formulated in 2002, provided a policy framework for modernizing agriculture and promoting rural growth. It sought to boost domestic rice production levels to 370,000 tonnes and hence decrease rice imports by 30 percent by 2004. However, the target was never achieved (Angelucci et al., 2013). A second Food and Agricultural Sector Development Policy (FASDEP II) was developed in 2007 and implemented in 2009 (ibid.). Pertaining to rice, this policy applied standards to control agricultural imports instead of quotas and import tariffs (CARD, 2010). In addition, the productivity and intensification of irrigation schemes was to be increased by 25 percent and 50 percent respectively by the end of 2012 (MOFA, 2007).

A range of poverty reduction and income increasing interventions were introduced and rice farmers are benefiting from the distribution of high-yielding varieties and other complementary technologies (Angelucci et al., 2013). In all, four initiatives were advanced under FASDEP II which include: (i) subsidizing agricultural mechanization services; (ii) subsidizing fertilizers; (iii) establishing and managing "Block Farms" through subsidies for mechanization services and inputs (fertilizers, improved seed, and pesticides) as well as extension services; and (iv) stabilizing output prices via the establishment and operation of a National Food Buffer Stock Company (NAFCO) (Angelucci et al., 2013; CARD, 2010). Government invested millions of Ghana Cedis into subsidizing fertilizer (see Table 5.1). The subsidy covered from 34 percent to about 50 percent of the cost of different fertilizer types to

farmers (MOFA, 2013). There was an overall perception that the subsidy prices typically benefitted farmers in the northern and middle belt of the country (Banful, 2009).

Table 5.1: Quantity and Cost of fertilizer Subsidy

Year	Total subsidy paid by Government (GH₵ million)	Total Fertilizer subsidized (MT)
2008	**20.7**	**43,176**
2009	34.4	72,795
2010	30.2	91,244
2011	78.7	176,278
2012	120.3	176,000
Total	**284.3**	**559.493**

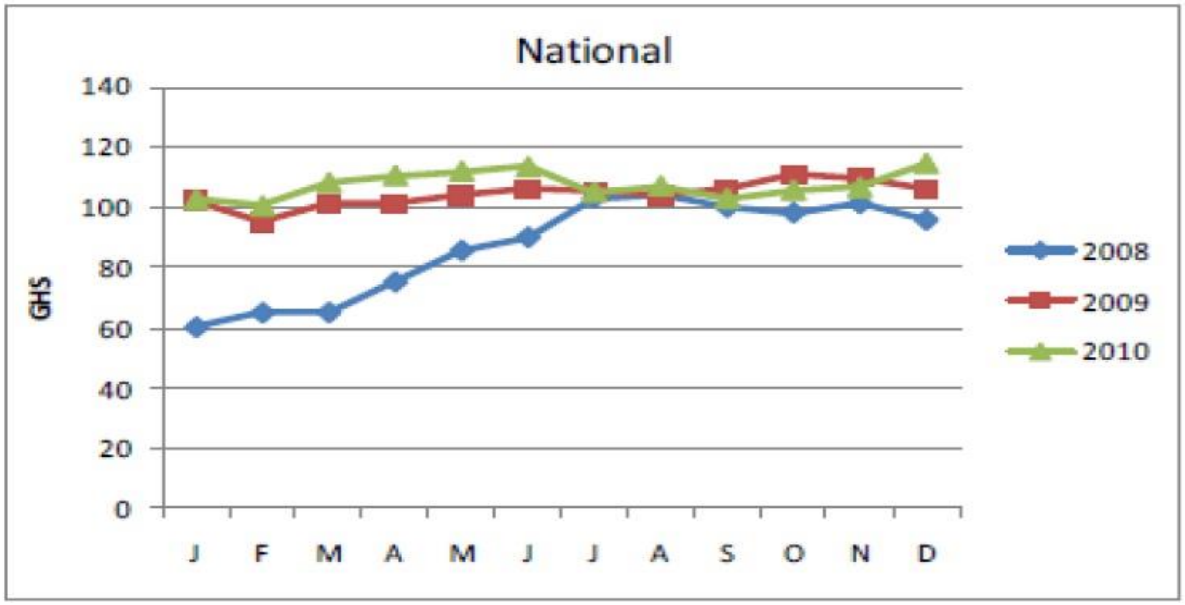
Source: MOFA, (2013)

The National Buffer Stock Company was established in 2009. The company was authorized among other things to (IFPRI, 2011: 51):

- ✓ "guarantee farmers an assured income by offering a minimum guaranteed price and market access;
- ✓ absorb excess produce to reduce post-harvest losses and hence protect farm incomes;
- ✓ purchase, sell, preserve and distribute food stuffs;
- ✓ ensure stability in demand and supply via the use of a buffer stock mechanism", etc.

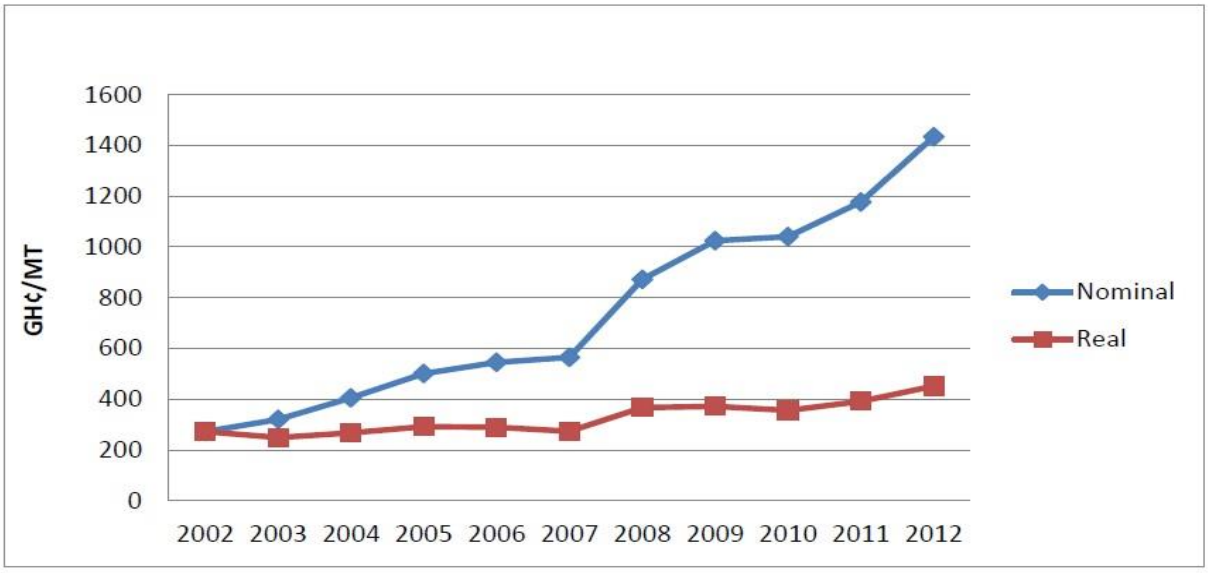
As one of the main aims of NAFCO was to buy and sell grains (mainly rice and maize), it resulted in the stabilization of grain prices especially that of rice (See Figure 5.1). At the local especially rural level however, the price of rice has been on the increase (although inflation may be greatly affecting real returns for farmers) (Figure 5.2 presents rural price trends of rice). This has gone hand in hand with an increase in a mean annual production growth rate of rice from about 18.92 percent for 2008 - 2010 to 31.78 percent for 2010 - 2012 (MOFA, 2011b, 2013).

Figure 5.1: Wholesale price trends of paddy rice in Ghana: 2008 – 2010



Source: Angelucci et al., 2013

Figure 5.2: Average Rural Price Trends for Rice



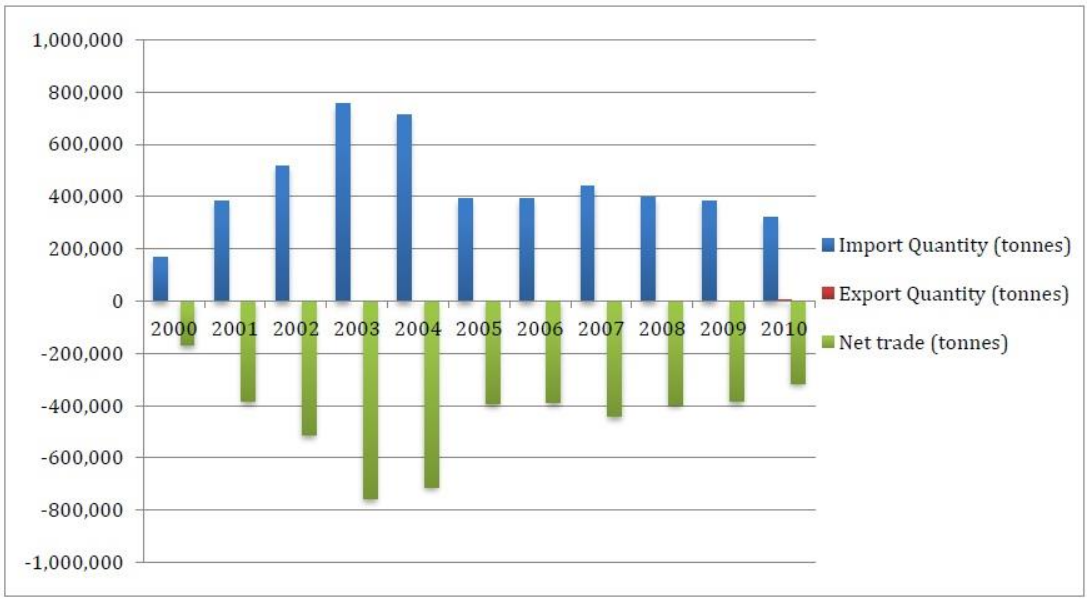
Source: MOFA, 2013

5.4 Rice Demand and Output

Ghana's rice consumption has been increasing over the years as a result of population growth, urbanization and change in consumer habits (MOFA, 2009). The demand is further raised by the rising number of fast food vendors and restaurants in the major cities of the country. Owusu et al, (2013) reports that Ghana now consumes over 600, 000 metric tons of rice annually out of which local farmers are responsible for only 30 percent of the supply (Owusu,

et al., 2013) (see Figure 5.3 for rice import and export flows). Rice accounted for about 11 percent average share of total agricultural imports between 2005 and 2009 (Angelucci et al., 2013) and it is estimated that the country's rice requirement will be in the range of 1.4 – 1.6 million tons per annum by 2018 (MOFA, 2009). The country's current rice import bill is over 500 million US dollars a year and is estimated to increase unless domestic production can increase fast enough to satisfy the growing demand (MOFA, 2011b; 2013; Owusu et al, 2013).

Figure 5.3: Rice import and export flows for the period 2000-2010



Source: UNCOMTRADE 2012 / FAOSTAT 2012 in Angelucci et al., 2013

Likely reasons offered for the import surge in 2003 and 2004 include; first, a drop in world market reference prices between 2000 and 2002 (Angelucci et al., 2013), and political instability in neighbouring Côte d'Ivoire although statistics could not be ascertained (MOFA, 2011b; 2013). The increased imports then may have been subsequently transferred to meet demand in Côte d'Ivoire. There was also a slight fall in imports in 2010. This has been attributed to the restoration of a 20 percent import duty in 2009, which had been removed in 2008 to minimize the impact of the global food crisis. However, there was also a significant increase in local production levels in 2010 which must have gone a long way to supplement imports.

Rising food prices locally and globally has given lands (and labour) in the north of Ghana a competitive edge (Yaro, 2013). The increasing demand for rice in the country and the

governments' policy responses providing a strong motivation for individuals to engage in farming and for existing farmers to try and increase their fields or production in an attempt to take advantage of incentives (see Konings, 1984). In the past, agricultural incentives had resulted in what Konings (1984) calls 'abuses' of customary land laws by chiefs and farmers; conflicts between communities and attempts to effect changes in the customary law in order to regulate land allocation and access.

The main rice types produced in Ghana are *Oryza Sativa* and *Oryza Glaberima* (ODI, 2003 in Angelucci et al., 2013). Rice production in the country is undertaken in three different ecologies: lowland rain-fed ecology, (78 percent of production); upland rain-fed ecology (6 percent), and irrigated ecology (16 percent) (CARD, 2010). The Northern, Volta and Upper East regions are the main rice producing areas. Northern region alone produced about 63 000 tonnes in 2009 (Angelucci et al., 2013; Owusu, et al., 2013). Though irrigated production accounts for just about 16 percent of production, it produces the highest average paddy yields of 4.5 metric tonnes (4500kg) per hectare (Angelucci et al., 2013). Most of the 22 public irrigation schemes in Ghana are into rice production. The Millennium Development Authority (MDA) also targets developing a further 5, 300ha of irrigated land for rice production (ibid.). Rice production has since 2007 been on the increase, with output levels in 2010 being more than double those of 2007 (from 185, 300 tonnes in 2007 to 491, 600 tonnes in 2010) (MOFA, 2011b).

The Tono irrigation scheme being one of the largest in the country is an important rice production source in the Upper East region and the nation as a whole. Majority of farmers within the scheme are into rice production. Other staples such as maize and millet are said to be unprofitable. The increasing emphasis and incentives for rice production coupled with the scarcity of land and erratic rainfall in the region means that lands within the irrigation schemes are under more pressure than ever and therefore a drive for resource conflict among irrigation farmers. There are both formal and customary rules in operation within the scheme for accessing land and farmers have become adept at manoeuvring between these rules to achieve their ends. It is to these varied mechanisms and strategies of access that I now turn.

CHAPTER SIX

Land and Water Access Rights in the Tono Irrigation Scheme

6.1 Introduction

This chapter outlines the results of the study. It involves a description of the rights of local and contract farmers, the design for the allocation of water, and the changing mechanisms in the access of land and water resources by both types of farmers. The actors involved and the various strategies and arguments that they employ in their resource negotiations are also described. There are basically two types of land rights for two types of farmers within the scheme. These are the local small-scale farmers and contract/commercial farmers. The rights varied considerably especially in their initial form but have undergone changes over the years mostly as a result of the inability of ICOUR to effectively control all actors within the scheme. The rights of local farmers are engrained in the historical antecedents of the project. A brief review of the history of the project will allow for a better comprehension of the nature of their rights

6.2 The Evolution of Land Access Rights of Local Farmers

Local farmers number anywhere between 3000 and 4000 and hold their rights within specific zones designated for each village in the project (See Map. 2.3). At the conception of the Tono irrigation project, the Navro pio (paramount chief of Navrongo) was approached by government to facilitate the acquisition of the land (Konings, 1986, in Laube, 2007). As noted earlier, all land in Northern Ghana then, was state property and could be acquired by government without compensation. The military SMC regime had decided to take advantage of this situation but with a little moderation; compensation was to be paid for houses, crops and fruit trees. This however did not create much tension or opposition because people were wary of the military regime (Laube, 2007). Local elders in some of the villages also say there was abundant land and land owners did not actually feel the loss of farmland since they were not even working on much of it anyway. Communities that were resettled however disagree with this opinion pointing out that they felt the loss acutely. Elders from both the resettled and the other villages however agree that farmers were hardly compensated and the then paramount chief of Navrongo failed to redistribute the funds given to him for the compensation of farmers and land owners. Elders in Chuchuliga allege that, a lot of their land was mistaken as belonging to Navrongo town and up to date, that land is still being cultivated by farmers from Navrongo. They say this was because the land was fallow and there were no clear boundaries between communities. It also became clear in interviews that most land

owners did not fully appreciate the implications of their land being taken for the project as illiteracy was widespread.

After construction works in the scheme had been completed, expropriated lands were partially redistributed amongst the local farmers and land owners although they were to be favoured in land allocation. Elders say, because local people did not have any experience with irrigation agriculture, many land owners actually refused to accept plots in the scheme saying that either the plots were far from their compounds or that they had enough land to cultivate near their homes. Other farmers and land owners say they had no capital to engage in agricultural production in the scheme since it involves the payment of fees. In some villages, the scheme had to recruit young and adventurous people to serve as volunteers in an attempt to get local farmers interested in the project. A few of such volunteers spoken to in Chuchuliga say, they had worked on cocoa farms in the middle belt of Ghana and wanted to have their own farms. In other villages where families were resettled, elders say when it came to the distribution of land, the whole community was called to the site and land was distributed to families according to their labour power. In this way, large families whose sons had migrated to the south of the country had equal shares as smaller families. When the migrants returned in later years, it became a problem as they sought to claim back their family lands.

Since 1987, local farmers have been under the supervision of Village Committees (VCs) on behalf of ICOUR. The village committees consist of all local irrigation farmers of each village and are headed by a 5-member executive. The executives are elected by popular vote by all the local farmers for a four year renewable term. According to Laube (2007), the idea of involving Village Committees in the management of the irrigation project is the result of the retrenchment that followed the Structural Adjustment Programmes (SAPs) of the 1980s, during which the project management lost more than half of its staff. Within the zones allocated to each village, the VC executives are responsible for allocating plots to farmers and receiving payment of water levies from farmers for onward transmission to ICOUR and also informing the local communities about current irrigation policies and schedules. Project management say the VCs control over 80% of land within the scheme. Land allocated to local farmers cannot be withdrawn, unless the farmer fails to pay his water or development levies.

Even under these conditions, many local farmers still argue that, the land is theirs and cannot be withdrawn for any reason whatsoever.

Initially, all land allocations (to contract farmers as well as VCs) were to be revised every five years by a Land Allocation Committee (LAC) comprising representatives of project management, traditional leaders, VC executives of all villages, representatives of Ministry of Food and Agriculture (MOFA) and the two district assemblies (Kasena Nankana-East Municipal and Builsa North District Assembly). According to project officials and VC executives however, land allocations are virtually permanent and the allocation committee is now mostly concerned with securing funding for maintenance activities, determination of water levy and assessment of payment, cultivation efficiency, and on rare occasions the allocation of more land to VC's. However, farmers and project officials say the Land Allocation Committee has not met within the last decade (no one seem to remember the last meeting) (see Ofosu, 2011).

6.3 Rights of Contract Farmers

There are about 500 contract farmers within the scheme. The access rights of these farmers are agreements between each farmer and the project manager based on terms agreed between the two before the farmer moves in to cultivate the land. Contract farmers do not need to be indigenes of the villages within the project area but must be Ghanaians. Many prosperous members of the project communities often recognised as 'big men and women' such as opinion leaders, economic elites, traditional leaders and local politicians are however within this group. Each contract farmer has a five year renewable access right to a plot of land allocated to him/her directly by the project manager. Unless due to non-payment of water levy, the farmer can expect not to be arbitrarily deprived of access to that plot of land for five years at the end of which he/she may decide to quit or renew the contract.

According to the project manager, contract farmers were originally allocated their plots in zones G(upland), J(upland), L, N(upland), M and V(upland) (see Map. 2.3). Zones O and B are also being developed for contract farming. Reports indicate that contract farmers were to receive up to 30acres (about 12.14ha) of land (Konings, 1986; Laube, 2009). However, in interviews with some contract farmers, the number of farmers with that much land is actually smaller. The contract farmers are not necessarily restricted to the zones listed above but may

be given plots in other zones based on their availability (i.e. if local farmers cannot utilise all the land in a particular zone). With the latter option however, as and when local farmers demand for the land, the contract farmers are to be notified to vacate it. Local farmers however say this rarely happens and they coexist on the same zones with contract farmers. Contract farmer rights according to ICOUR are neither intergenerational nor transferable except by special arrangements with the project manager. However, as most contract farmers (especially the economic elites or 'big men' of the villages) have held on to the same plots for over a decade, many of them feel that they have permanent rights. Indeed many of them say they have the right to rent out or bequeath the land to their sons.

6.4 Evolved Strategies and Mechanisms of Access

Much is in practice that is different from the allocation procedures outlined above. In the zones earmarked for contract farmers, land has been allocated to politicians, members of the district administration and MOFA, project personnel and a number of contract farmers who have established business relationships with the project management. The current managing director is alleged to be a member of the ruling National Democratic Congress (NDC) party by some farmers. These therefore accuse him of favouring party members and sympathisers in the allocation of land and other inputs. Within these areas, some small-scale farmers with good relationships to project management are able to gain access to plots. The fact that allocation practices are based on network relations and power dynamics is visible to all and even considered acceptable by some farmers. Some beneficiary farmers say that in the past, the previous party in government also favoured its members and sympathisers the same way.

A contract farmer who said he had more than five (5) hectares of land described how he was favoured by an appointee in the erstwhile New Patriotic Party (NPP) government in the allocation of a tractor for ploughing services but said, he realises now that the practice is bad. Embittered farmers say they are hoping for the party in government to lose power so that they can also get their share. Other farmers who say they do not belong to either faction say, the scheme is being ruined by political interests. As one farmer declared: "*My son* (referring to me), *NDC – NPP is killing us here. Those of us who have no interest in serving the interest of politicians often find ourselves ignored and bypassed in the sharing of inputs. We don't have anybody to stand behind us"*

In the VC controlled zones, the situation is even more complicated. Land access is mediated by many informal institutions with claims and counter claims from farmers. Local farmers have devised many strategies to access land. They may resort to the earthpriest/tigatuu, family landholders, or their social networks (family, friends, relations etc) to gain access or through Farmer Based Organisations (FBOs). These FBOs usually access their land through more formal institutions by contacting the project manager with the help of the VC executives for allocation to the group. Majority of the FBOs are actually made up of women. Other local farmers (especially men) often approach the earthpriest*/tigatuu* or other family landholders for access to project wastelands or areas undeveloped by the scheme for various reasons. When they have succeeded in encroaching, they then work on getting their claims officially acknowledged.

Farmers, who acquired plots from their social network, have plots in different parts of the same zone as they receive 'land grants' from different sources. *"A bit here and a bit there and in total I have nearly 3 acres"* (about 1.2ha) says a farmer in Chuchuliga. Most importantly, these farmers who get their plots from relatives and friends are more loyal to their benefactors than the VC and therefore connive with their benefactors to thwart efforts by VC or ICOUR to identify those who destroy infrastructure or break other rules. A number of these farmers are not formally registered with ICOUR and tend to pay their water levies and get inputs through their benefactors. Farmers who do not have direct ancestral claims to land and are not backed by political patrons or 'big men' are often easily ousted from their land by other powerful actors. If such a farmer encounters difficulty in paying up the water levy on time, a big man may in secret consultation with the VC leaders, take over the plot on the excuse that the water levy has not been paid and the field cannot be allowed to lie fallow.

A young farmer of 35 years lost his land to the chief of his village in such a context. According to him, five seasons ago he travelled and returned about three (3) weeks after the commencement of the growing season only to discover that his field had already been ploughed up. Upon consulting the VC chairman, he was told that since he had not given them notice that he would return to work the field, the chief had asked for it and has already paid the levy and ploughed the field. He was to wait till the next season to get it back but when the next season came, he was told the chief had actually paid the levy for a year (two growing

seasons) in advance. *"From then it was one excuse after the other until I gave up"* he said. This was facilitated by the fact that the plot did not have his name on it. He however currently works on a 2.5 acre field left to him by a friend who has migrated to the south of the country. The field is still in this friend's name though he (the respondent) had been working it for the past 3½ years (7 growing seasons). This meant that, if this friend returned at any time, he would have to give it up. Asked why the migrated friend's land was not taken by the VC leadership for redistribution, he replied that the friend was "*well connected*".

Financial empowerment is usually the best way for most women to gain access to land within traditional society. However, as most women are financially handicapped in the area, they tend to depend either on their grown up sons or husbands to allocate them plots. Women do not have claims to customary land in the scheme area. Respondents say most women work either with their husbands or on a share of the family's plot usually given by their husband. In recent times however, a lot of women are beginning to gain access to scheme lands by themselves. Most of these women say they approached the project manager through the VCs to gain their access. Many women have also gained access to scheme lands through the Farmer Based Organisations (FBOs). Many such FBOs exist in Biu and other villages within the scheme. These FBOs are usually given a plot of land and members then proceed to share it among themselves according to what each member can handle. Excess land is then worked by the group and the produce sold and/ or shared.

Women may also keep access rights to a field that they worked on with their husbands (if he is late) but this is often subject to other household arrangements with co-wives, husband's brothers or their own grown-up sons. Women who gained access to fields through their husbands say, they may lose all or much of their plots upon their spouse's death if they do not have the support of other male family members. This they say is because they are overloaded with household and other chores and are not able to compete with their male counterparts in the maneuvering for water and other inputs. All in all, women are less active in the maneuvering for land because of their customary disadvantage. 'Women' is however not a homogenous group but as one woman put it: "*we're not equal and there are women who are more powerful and have far larger plots than many men here. Some of the challenges we face are not necessarily because we're women. It applies to all farmers, women and men, but*

generally as women, we tend to rely on men to gain access to resources here especially in the initial stages". A few women with the financial strength have indeed established themselves strongly in the scheme either as contract farmers or local farmers but say, they do not receive any special support from the scheme as women. A female local farmer who says she has about 1.4ha of rice field observed that: *"The challenge of access to more land, fertilizer, implements and markets is most severe on us women local farmers because we do not know much about land politics and also because we have a lot of other chores that keep us away from the negotiations here".*

Contract farmers, opinion leaders and local chiefs control a lot of land in VC areas mostly through monetary inducements and network relations as they are seen as 'big men' by the local farmers and VC executives. The VC executives lack much control over big men and other opinion leaders because though VC executives should be democratically elected, the process is usually overshadowed by negotiation processes between local chiefs, opinion leaders, and the big men. As such, VC leaders are chosen based on social origins or standing rather than merit. Big men and local chiefs therefore exercise great control over executive actions and decisions and if those decisions are not in their favour, leadership may change quickly. In one village for instance, when the VC chairman went against the wishes of the local chief, the chief immediately called a meeting and asked for the VC to be removed though he had not served his term. Many farmers also argue that the VCs do not represent their interests but those of particular groups and individuals as well as themselves.

6.5 The Design and Allocation of Water Rights

The allocation of water within the scheme characterized by what Laube (2007:431) calls a "*lack of institutional legitimacy and enforceability*". There are two seasons, the dry season irrigation which has full-scale irrigation and the rainy season which has supplementary irrigation. Water use is levied according to plot sizes and the crops cultivated. Farmers pay a development levy (rainy season) and a water levy (dry season). At the time of this study the development levy according to official sources, was GHC100 (about US$32). The dry season water levy was dependent on crops and was GHC120 (about US$37) per hectare for rice, and GHC90 (about US$28) per hectare for vegetables. Local farmers however reported different amounts per acre for rice (ranging from US$12 to US$18); perhaps a reflection of the

different authorities they pay to. Ownership of water is not contested. However, accusations of bribery and corruption plague the distribution of water. Water bailiffs are responsible for the irrigation schedules of the project and should serve all zones and laterals with water at fixed intervals according to these schedules. The schedule is however not on paper and depends on the memory of the engineers and bailiffs. This presents some problems as some farmers say, the engineer is sometimes induced to 'forget' to open or close some valves to the benefit of his friends and associates.

When the valves are opened too, there are still conflicts between farmers on how the fields should be irrigated. The agreed procedure is for fields at the tail end of the lateral canals to be irrigated first, and the other fields to be successively irrigated until the plots at the mouth have received water (see Laube, 2007). However, appointed supervisors lack the power to effectively supervise water allocation within the lateral canals. Farmers tend to irrigate their farms as and when the lateral valves are opened by the engineer. They accuse each other of hiring people to close the inlets of their neighbours' fields in the night in order to divert water into their own. Many farmers say they resort to staying up in their farms till midnight and beyond in order to water their fields but always stop short of consenting to blocking the inlets of their neighbours' fields in the process. Disputes over water allocation and distribution thus frequently arise among farmers of each zone.

Project officials also accuse farmers of frequently breaking the locks of their lateral valves in order to illegally water their plots when it is not the turn of their area. Farmers have also been accused of destroying canals and lateral valves to direct water to their own farms or those of their friends. Local farmers frequently accuse commercial farmers and project personnel of bribing the water engineers to "forget" to lock some lateral valves for many days in order to channel additional water to their plots. Whilst the accusations and counter accusations are flying in all directions, neither group ever plead guilty to any. Sanctions are hardly applied as both project officials and farmers say they cannot identify the culprits. These issues are worsened by dwindling water levels that negatively affect irrigation schedules. The allocation of water is thus governed by a lot of indiscipline, self-interests and disrespect for rules and guidelines. Some farmers and project officials say the lack of sanctions is as a result of

political patronage. As one farmer concluded: "*Money and political connections speak louder than human voices here*".

The above description of the rights and manoeuvring of both local small-scale and contract farmers for access to land and water and how these rights have evolved over the course of the historical development of the Tono irrigation scheme is a general view of operations in the scheme. In the following section, I present a case that is a snapshot of the pattern of interaction between different actors over access to land and how the irrigation bureaucracy tries to manoeuvre among the actors in order to protect its interests and maintain its own legitimacy. It will also show how this process empowers other actors such as chiefs and earthpriests to press their own claims of legitimacy.

6.6 A telling example – A Community At War With Itself?

Community A[7] is one of eight villages within the Tono irrigation project. It is also one of the communities that were largely affected by resettlement to make way for the scheme. The community has land in five (5) zones in the scheme. The scheme started operations in this community in 1984. As with many of the other communities, farmer operations in the scheme lands were preceded by the allocation of lands/fields to farmers by officials of the irrigation scheme, ICOUR. By then, all lands within the scheme were managed and allocated by ICOUR. Land allocation was done as a communal project. Officials and community leaders chose a date and this was announced to the community. All members then gathered at each zone for the allocation. At the point, the owners of fields were identified and given plots. Some fields were large enough to be divided among several local farmers so that they could effectively work it. This way, some farmers appeared like guests to other farmers who were on their own or ancestral fields. Areas that were much overgrown with wild weeds and big trees were often not allocated or if allocated, farmers refused to work them because of the huge cost involved in clearing the land. As a result, large sections were left unallocated in each zone. The unallocated sections were often allocated to 'stranger farmers' (those who didn't hail from the communities) who had the resources to clear them. Some of the stranger farmers were initially chosen as volunteers to arouse interest among community members. These others could come from any part of the region and many of them were contract farmers

[7] Name withheld for ethical reasons.

though some operated like local farmers. As there was plenty of land and few farmers interested in working it, there were virtually no oppositions to decisions taken by ICOUR or conflicts between farmers. Most farmers had enough land to work on.

Following the Economic Recovery and Structural Adjustment Programmes of the late 1980s and 1990s, subsidies on agricultural inputs were abolished and many farmers left the project. Their fields were allocated to contract and other stranger farmers. Other farmers within the scheme were also able to increase their holdings. Also, due to massive retrenchment of workers in the public sector in the period, ICOUR lost many of its workers and suddenly found it difficult to effectively supervise operations within the scheme (staff of the Tono project dropped from 152 to 55 by 1991) (Laube, 2009). In 1987 when ICOUR started the community participation programme that left much of the scheme lands in the management and control of Village Committees (VCs), contract farmers (even those operating on VC lands) were still under the control of ICOUR. All went well in the initial years but with each passing year, individual farmers and VCs realising how much the company depended on them, grew more powerful.

From the late 1990s, the price of rice rose steeply and the interest of many farmers was revived. More and more people were drawn towards the scheme lands due to the profitability of rice farming and population growth (especially after 2000). Many small scale and contract farmers started to apply for land within the scheme. Most farmers that left their fields as well as those that did not initially show any interest in their ancestral lands within the scheme began to push for their plots. The allocated fields became too small for local farmers and through various strategies; stranger farmers were expelled by indigenes. In the meantime, a lot of middle and senior level employees of ICOUR, contrary to official regulations had become very actively involved in contract farming (Tonah, 1993 in Laube, 2009) with some owning several hectares of land, including lands on VC controlled areas. In addition, various poverty reduction interventions were introduced and targeted farmers with fertilizers, improved seeds and weedicides, in an attempt to encourage and increase food production. Project officials took advantage of these incentives and other project assets for their own benefits (Laube, 2009).

Thus it was that about 23ha of land in one of the zones belonging to community 'A' were allocated to two middle level employees of ICOUR in 2002. The area was said to have been overgrown with wild weeds and shrubs that were difficult to manage and expensive to eradicate. Much of the said land originally belonged to the Kantah family[8] who are original settlers but had given it to the Kaba family[9] several years before the scheme started (both families are from the community). Neither family were however working on those fields. The Kantahs, because they received their share elsewhere and the Kabas because they never came forward. In the last two years however, the children of the Kaba family came forward and requested for their ancestral land from the VC. The VC realised that they had no land left to allocate and could not apply for more land from ICOUR because the community owed on their water levy.

The VC chairman appealed to the farmers on the land to share with the new comers. This was however turned down by the two farmers who had the support of project management because their contracts had not yet expired. At the beginning of the wet growing season 2014, (mid-June), the Kaba family went in ahead of the two contract farmers and ploughed up the whole plot (The farmers say this strategy was often used to dislodge stranger local farmers by landowners and other 'big men'). In this case however, the two contract farmers also went ahead to cordon off the field with red pieces of cloth and to place guards around to prevent the family from sowing seeds. They then appealed to the PM to rectify the situation. They had the support of the Kantah family who argued that the Kaba family has no ancestral claim to that land. The case took an interesting turn then and became a tussle between the Kantah and Kaba families as to who really owns the land.

To settle the dispute over the land, the matter was brought to the VC executives of the zone who brought it before the project manager (PM). The PM called all the parties involved for a meeting to trash out issues but it ended in an impasse. At this the chief of community 'A' requested the PM to allow him take the case 'home' and to settle it by customary law between the two families. The PM agreed but at the chief's court, the matter could still not be agreed upon. Some local farmers accused the chief of ignoring the VC leaders in the process and

[8] Pseudonym
[9] Also pseudonym, no real names are used

appealed to the VC leaders to step in since the land was no longer customary land. This other faction was rather large, so the chief agreed that the VC executives could sit in at the hearing. They were however not recognized as key players or considered to have an input in the case. The chief and the *tigatuu* presided at the court and ruled in favour of the Kantah family as those with legitimate ancestral claims to the land but the Kaba family and many other farmers disagreed and refused to abide by the chief's judgment. The VC executives especially the chairman felt disrespected and insulted and supported the Kaba family, accusing the chief of usurping his power by trying a case involving the project lands without the input of the VC leadership who according to him, are the legitimate authority over project lands belonging to the village. The chief decided to bring the case before the paramount chief of Navrongo, the *Navro pio* for judgment.

The paramount chief listened to both factions but refused to pass judgment on the case, arguing that the land was not under his control but ICOUR's. He referred the case back to the PM for judgment. By this time however, it was getting late for sowing the fields so the parties and the PM accepted a temporary solution. This was to allow the two farmers to plant on their fields since they had paid the water levy. They were also to refund the cost of ploughing to the Kaba family. The case would then rest during the growing season and final judgment or solution found after the harvests. In the meantime, the whole community had become divided into two factions. These were the VC-Kaba family faction and the Chief-*tigatuu*-Kantah family faction. Most of the local farmers spoke in support of either faction. A power tussle between the VC chairman and the chief also ensued with the later asking for the former to be replaced although he had not completed his full term of four years.

6.7 Actors, Competing Claims and Justifications

In the defence of their interests, the various actors involved in the scheme refer to both formal and informal (customary) institutions and different constructions of the past to support their claims. Their arguments and historical claims (especially, landowners, traditional leaders and small scale farmers) are based on different interpretations of custom and their application of formal rules within the project is conflicting. Interestingly too the actors occupy multiple statuses and play multiple and sometimes conflicting roles. For example, many contract farmers are local politicians, village committee members or officials of ICOUR. Many chiefs

are also farmers and many VC leaders (usually the chairman) are usually selected from the *tigatuu/tengnyono* clan or lineage.

6.7.1 The Irrigation Management

The irrigation management or Tono project office is usually beset on a daily basis with many of the actors within the scheme. A number of middle and high level employees of ICOUR are contract farmers within the scheme. They have privileged access to large tracts of land and are favoured by water engineers and bailiffs in the distribution of water. They also have access to government and NGO's support such as farm machinery, fertilizer, seeds and other inputs. Management does not have the means to effect compliance of farmers with official regulations. The company therefore relies upon the VCs and the chiefs to supervise small scale farmers and to collect levies. As a result, when a dispute or a claim involves the VC leaders or the chiefs, it is always difficult to apply formal rules. In a case involving a chief and a small scale farmer in one of the villages, although the chief was said to be wrongfully evicting the farmer, the PM did not intervene and the local farmer was ousted by the chief who claimed that the said farmer was operating on his (the chief's) ancestral field. The PM said it would be disrespectful to the chief if he should step in and refuse to dislodge the farmer. That was why he let the chief have his way. He had only advised the chief that his actions might trigger other landowners to rise up. He believes this was good for peaceful coexistence in the communities because it was necessary for the chiefs to be seen by their subjects as authoritative. Thus, management often allow customary law to be used to settle cases even though, they say that the land belonged to ICOUR and the company had every right to allocate it as it pleased. It was however also clear that the fact that some contract farmers are employees of ICOUR (including the PM himself) makes management sometimes reluctant to intervene especially if it was not in the interest of their workers.

6.7.2 Contract Farmers

Much of the strategies and arguments of these farmers are usually based on network relations and economic power. Many of them are employees of MOFA, ICOUR and Tono project, local politicians (especially political party executives) and their allies, economic elites of the eight villages and especially Navrongo town and traditional leaders. They tend to channel their arguments either directly to the PM or if unsuccessful, through politicians. Their

arguments are usually based on economic logic, such as economics of scale, maximizing profits and taking advantage of market forces. Their prompt payment of water levies and eagerness to try new farm practices and inputs is a source of joy to the PM who complains of the reluctance of local farmers to adopt new farm practices taught by the scheme's extension officers. The prompt payment of the water and development levies makes them strong allies of ICOUR and the PM.

By using their economic, social and political connections, these farmers often have easy access to farm machinery and other inputs such as seeds, fertilizer and pesticides. They have access to credit packages such as delayed payment of water and service charges from ICOUR and government agencies and loans from local banks. A lot of government incentives and packages aimed at boosting production such as fertilizer and other input subsidies, and guaranteed stable prices from the National Food Buffer Stock Company are mostly available to only this group of farmers. Some contract farmers often in turn become suppliers of these inputs to small-scale farmers at much higher prices. They often get away with many abuses and acts of defiance to rules and communal norms. They are the big men in their communities and zones and have great influence on the decisions of ICOUR and the VCs. Some actors allege that, contract farmers have the support of the political elite because they donate monies to support the campaigns of these politicians. It is however also clear that some contract farmers often have the support of small-scale farmers operating beside them who have received or hope to receive favours from them or with whom they have cordial relationships. Although the contract farmers compete with each other in many areas, there is also a huge amount of collective interest among them.

6.7.3 Politicians

The history of the project is incomplete without the role of politics and politicians in its conception, development and management. The project is still rife with political interference. Political influence often comes from the district and regional administration and even from the Member of Parliament for the area (Navrongo Central). Apart from general directives to ICOUR and the project office from the national level when government priorities have changed, individual politicians interfere directly often at the request of farmers especially contract farmers. They do this to gain their sympathy and support and to attract votes. ICOUR

and the project office are forced to heed their influence because the company also depends on them to gain and keep government resources flowing into the scheme. To this end, local and regional politicians continuously promise or announce government's plans or resource allocations to the scheme in the local and national media.

6.7.4 Local small-scale farmers

Local small-scale farmers are the largest group of actors within the scheme. They are mostly residents of the eight communities whose lands were appropriated for the project and each of them has access to only a limited area. They are governed by the Village Committees. Traditional norms and local institutions largely dominate in the claims and ideological justifications of local small scale farmers and their dealings with each other and with some other actors. These norms and institutions include customary tenure rules and obligations and the role of the *tigatuu/tengnyono*. As mentioned ealier, these norms predate the establishment of the project. Although both local and contract farmers often consult the *tigatuu/tengnyono* for land when they fail to get it from ICOUR or the VCs, local farmers are particularly more apt to do so with customary gifts and sacrifices. In land negotiations with each other, these farmers often render various accounts of history and different interpretations of custom to back their claims or arguments. They sometimes invoke the fear of the ancestors or gods in their chastisement of each other. For example, in the case described above, local farmers in support of the Kaba family argued that when landed property is given to another family to settle or to cultivate, it was not possible to take it back from their predecessors. As such, what the Kantah family were doing was tantamount to sacrilege. According to one farmer, modernity had ruined the power of the gods and ancestors to correct the living when they break customary laws with impunity. "*What is given is given. You cannot take it back and live to cultivate it*", he said. Other local farmers in support of the Kantah family, the chief and the *tigatuu* however argue that the land originally belonged to the Kantah family, and still does. They say the Kaba family were more like guardians rather than owners despite their having lived on the land for several generations.

In dealings with the VC, ICOUR and the chiefs however, local farmers tend to be guided by utilitarian rationality and strategies of evasion, withdrawal and even sabotage. For instance, despite their use of customary arguments in the case cited above, the Kaba family and many

local farmers rejected the judgment of the customary institution (the chief and the *tigatuu*) and instead argued that, lands within the scheme were under the control of the VC (and ICOUR) and not the chief. They had the support of the VC executives in this case who felt the chief was usurping their jurisdiction by offering to hear the case without consulting with them. This raises the question of who has functional jurisdiction over project lands and small scale farmers in the communities (see Lund & Boone, 2013). However, the VC chairman complained bitterly that non-payment of water levies by local farmers was making his work very difficult. The locks of some lateral valves were purportedly broken by local farmers who insist on using the water without paying the required levy.

Though this group of actors have the least bargaining power as they lack the economic, social and political capital to support their claims, they have become adept at forum shopping. Their power is in the competition and rivalry between the other more powerful actors and the inability of ICOUR to enforce compliance with rules without lowering the standards for some privileged actors. Local farmers are at their strongest when there is an impasse between the VC, chiefs and the PM. They would then employ deceit, thievery and sabotage to evade rules whilst playing the VC executives, the chiefs and the PM against each other. Often politicians are roped in as these fear to lose the support of local populations by insisting on strict compliance with project guidelines. In one community, whilst the VC executives were complaining of non-payment of water levy and threatening sanctions, the chief argued that the non-payment of the levy is in response to the state of facilities in the scheme. Farmers tended to agree with the chief on the payment of the water levy, arguing that, they were "paying twice", that is, paying the levy and repairing the canals themselves. Thus, local farmers were switching allegiances between these authorities when it suits them to do so.

6.7.5 Chiefs / Traditional leaders

As indicated elsewhere in this study, chiefs were introduced in many parts of northern Ghana by the British colonial government. Since independence and especially the 1969 and 1992 constitutions of the Republic of Ghana recognised them as custodians of customary land, they have begun to exploit that. Although land matters were in precolonial times, the prerogative of the *tigatiina/tengnyam*, chiefs now frequently exercise this constitutional right by usurping the tigatiina/tengnyam to preside over land disputes and conflicts. As leaders in the

communities and custodians of tradition, the failing of ICOUR to control land brings them into the equation and they are able to use their status to personal advantage. They are seen as allies by ICOUR and are often allowed to get away with many abuses of the formal rules of the scheme. ICOUR regularly relies on them for enforcement of official regulations and the VCs cannot request for more land from the project without the support of the village chief. As a result, chiefs have gained more bargaining power and legitimacy in the affairs of project land from other actors especially VCs and local farmers. Their requests and preferences are therefore highly regarded by ICOUR and VCs. Some chiefs have allegedly had land allocated to their wives and other family members. They are also able to influence decisions so as to 'sanction' their adversaries or those who have fallen out of their favour. They also receive favours in access to inputs and machinery as well as in the distribution of water.

Apart from that, they also use their position to increase their power through alliances with village big men and the economic elite whom they support with various decisions or rulings in their courts. They have been known to use their influence to negotiate for land, especially project 'waste lands' for their supporters and to try to have VC or even ICOUR decisions overturned in support of their relatives and friends. These so called waste lands are plots left undeveloped because of low fertility, topography, drainage or environmental reasons. Fields next to developed areas where the slope of the land allows water to flow in from the adjacent fields are also sometimes conveniently labelled as waste lands and encroached. Though chiefs are usually in tandem with VC executives, sometimes they clash with VC executives who have reason to feel that the chiefs are making them redundant. For instance, in the case narrated above, the local chief argued that he was the legitimate authority to interpret customary law and settle disputes pertaining to project land in the community. He did not regard the position of the VC leaders to be important, saying that the VC leaders did not know anything about the history of the community and have no legitimate right to settle land disputes. The VC chairman and the chief had the whole community divided because the chairman considers the action of the chief as disrespectful to his office and an attempt to usurp his official duties.

6.7.6 VC Executives

Village Committee executives are another group of actors that drive significant benefits from the manoeuvrings and negotiation of land relations in the scheme. Charged with overseeing "*the allocation and management of natural resources within the village's section of the project*" (ICOUR, n.d.), VC executives are to work on a "*voluntary basis and for no personal gain*" (ibid.). However, the manoeuvrings in the scheme has opened up many avenues for personal gain. The VC is now a highly politicised body and executives allegedly connive with different actors at various times to divert resources for personal and sectoral/clan interests. The key player in the VC leadership is the chairman. In some villages, he is usually from the tigatiina/tengnyam lineage although this is really a convention rather than a requirement. There are a few others who have no lineage connections with the earthpriest. The power of the VC executives reside in their responsibilities in allocating land to local farmers and collecting water levies for onward payment to ICOUR. Under the VCs there are lateral leaders appointed to collect the water levies of farmers along lateral canals and to report those who do not pay to the VC executive. Although, there is generally not much land to be allocated at present, the fact that the VC executives can evict farmers for several reasons still makes them potent. There are also wastelands and lands along the banks of waterways where the VCs control and which are sometimes in high demand. Also, when local farmers access land from the earthpriest or land holders and want to get their claims acknowledged, the VC executives are the key authority to grant such recognition. They also organise farmers for meetings and communal labour to clear water canals and paths leading to the farms and are the representatives of the local farmers in the Land Allocation Committee (LAC). All communication between ICOUR or the Tono project office and local farmers goes through the VC executives.

The VC chairmen had already requested that they be given salaries for their duties but have not yet received a favourable response from ICOUR. Local farmers in some villages report of having to 'see' the VC chairman in order to be granted access to wastelands and other unused plots. "*And one does not go to the 'chief's' house empty handed*", one farmer complained. By which he meant that he had to go with a bottle of gin and a guinea fowl. Others complain of unlawful evictions and accuse the VC leadership of conniving with big men and contract farmers to take over their fields at the slightest pretext. Local small-scale farmers often have many accusations against the VC executives. In villages where the VC chairman was not from

the *tigatiina* lineage, he tended to consider the *tigatuu* as an illegitimate authority in the project lands (Conflict of functional jurisdiction?). The project manager says he has to step in sometimes to allow sanity to prevail. Other times the village chief would interfere and when this happens, there is antagonism between the chief and the VC chairman. This kind of antagonism often leads to the two leaders disputing over who should be the legitimate authority in the project lands.

All in all, the VC executives are in a strategic position and sometimes use their privileged positions for their personal gain as well as their friends and supporters. They have privileged access to land, being allocators themselves. Though they have no official role in the allocation of water, they are able to influence the water bailiffs for favours. The VC chairmen are very strong actors within the irrigation scheme especially in VC controlled zones.

6.7.7 Tigatiina/Tengnyam and Family Landholders

In traditional society, earthpriests are believed to have a special relationship with the spirits of the land. This gives them a lot of power as it is believed that they can intervene in times of droughts or floods by bringing rain or stopping it. They are expected to perform rituals and sacrifices to purify the land especially when blood has been spilled and also to gain the goodwill of the spirits for a bumper harvest. This group of actors were ignored and bypassed in the expropriation of the land for the project but have gained legitimacy in recent times especially among local farmers for whom they never lost their legitimacy any way. They continue to act as spiritual owners of the land and intervene in land conflicts and disputes. In Chuchuliga, there is a tree in zone P where local farmers say, if they kept their produce under it, they are safe from thieves and brigands because the tree is a god that receives sacrifices from the *tengnyono*. Some VC chairmen were chosen from the earthpriest lineage so that in a way, they still continue to perform their traditional roles by allocating land and presiding over land disputes. They often demand and receive tributes or gifts from farmers who received land from them or who are working on land on which they claim spiritual custodianship. Their legitimacy is on the increase as the control of ICOUR and the Tono project office over land and farmers wanes.

Family land holders also have control over their family plots and often proceed to allocate these to farmers according to local custom. Local farmers say when project infrastructure is dilapidated and water cannot reach a field, the land reverts to the original land owner or family. Although ICOUR does not agree with this, they lack the power to stop landowners from allocating undeveloped land or areas with dilapidated infrastructure to farmers. Local farmers especially continue to consider earthpriests and family land owners as legitimate authorities in land matters and continue to make use of their services. Even some contract farmers, in defiance of ICOUR regulations not to operate on the banks of the river Tono and other reserved areas, often consult the earthpriests and family landowners for allocation of such areas and proceed to cultivate them much to the frustration of the PM (see Laube, 2009). Thus, although the tigatiina/tengnyam and family land holders have limited bargaining power and are overruled in many cases by ICOUR or other actors, they are still important actors in the scheme because of the general networks of patronage and acts of self-interests among various actors.

6.8 Conflict and Collaboration within the scheme

Conflicts and disagreements over resources sometimes erupt within the scheme as described earlier. There are conflicts between contract and local farmers, among local farmers themselves and between community leaders and project management. Conflicts between contract and local farmers often centre on access to land and water where the latter accuse the former of using money and network relations to gain favours from project officials and other actors. Contract farmers are also accused of diverting and hoarding fertilizers and seeds coming from the Irrigation Company, government agencies or NGOs. Local farmers say they often have to contact contract farmers for supply of these inputs and they are often told the price only after the inputs have been long used. Contract farmers also have the means to hire labourers and guards to protect their interests. They however pay their water levies promptly (according to the PM) whilst local farmers tend to owe or sometimes deliberately refuse to pay the levy. Local farmers say this is in protest of the poor state of facilities and the lack of maintenance. As a result, project management tend to respond more promptly to the concerns of contract farmers than local farmers. They have privileged access to land even in VC areas and when the local farmers request for more land, contract farmers holding land in VC areas apply to the company for protection and the company return a ‘no more land available’ response to the VC.

The authority of ICOUR to land ownership and allocation and in the settlement of disputes among farmers in the scheme is regularly contested. Politicians, chiefs, landowners, *tigatiina/tengnyam* and even contract farmers interfere in the allocation of land within the scheme. Whilst politicians and contract farmers often try to influence the allocation of land in developed areas, *tigatiina/tengnyam* and family landowners still claim ownership of undeveloped areas. So called waste lands, lands along the wastewater canals and lands next to developed areas are under pressure. Such lands are allocated by the landowners or the *tigatiina/tengnyam* to farmers who then find ways to access water from the scheme for cultivation whilst trying to get their claims officially accepted. Project management is unable to dislodge them because they are usually well connected with local politicians and have the necessary capital to acquire and use water pumps. Local farmers often tend to have the support of chiefs, landowners and even contract farmers who support them as their relatives, friends or 'boys' (if they are young).

Though both contract and local farmers like to hurl accusations at each other, they tend to cooperate for personal interests. In an interesting case, a contract farmer who was being assessed for an award actually connived with local farmers and classified a number of plots within a particular zone as hers and the local farmers working on them as her labourers. Local small scale farmers played along with the charade though in private, they accuse the contract farmer of using them for personal gain. Some local farmers also get their plots directly from contract farmers.

The description of the power and position of the key actors and their activities above clearly shows that different actors have different bargaining powers. Whilst others are based on formal institutions, others are legitimated by local/traditional institutions and norms and yet others such as politicians drive their power from the general dependence of the society on patronage and other network relations. The next chapter uses the entitlements framework to examine how actors use their positions to gain effective command over resources in the scheme.

CHAPTER SEVEN

Endowments and Entitlements Mapping in the Tono Project

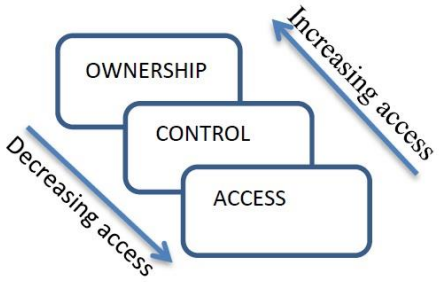
7.1 Introduction

Endowments and entitlements mapping explores the processes by which actors gain access to resources and services of the irrigation scheme. The mapping process is mediated by various institutions from the macro to the micro. These macro, meso and micro level dynamics greatly affect how various actors gain 'legitimate effective command' over resources. As defined elsewhere in this document, 'legitimate' refers to 'control of resources' approved by both official regulations and customary practices and norms. Effective command means that claims are contested and as a result of the unequal power relations, the claims of some actors often prevail over others. The whole mapping process begins with the type of rights an actor has to the scheme lands.

7.2 Types/Levels of Rights in the Project

There are different levels of land rights within the project that are being contested. These are in descending order of influence: ownership, control and access (Figure 7.1). At the initiation of the scheme, the first two levels of rights resided with ICOUR, whilst the access rights resided in members of the various villages within the scheme as well as in contract farmers whose contracts have not expired. The endowments and entitlements mapping shows how actors use their unique positions or statuses and the mediation of both formal and informal institutions to gain or increase their access rights to land. There are formal property rights, such as the rights of village committees to specific allocated zones (See Map 2.3 in chapter two). These were granted by the irrigation company, ICOUR, legitimised by the state, and in principle can be defended in courts of law. But there are also informal or customary property rights, legitimised by local institutions. These are legitimate in the eyes of local residents of the various communities who regard the irrigation zones as their ancestral farmlands. Actors have applied both rights (formal and informal) in their manoeuvrings and some have increased their level/claim of rights to even ownership. Actors with only access rights tend to have the lowest bargaining power and as such, actors at this level strive to increase their right levels.

Figure 7.1: Levels of land rights within the scheme



7.3 Endowment Mapping

Land in the scheme becomes an endowment (people gain access rights to it) through different authorities and institutions. Members of one of the villages in the project area can gain access rights through intra-family arrangements (e.g. sharing father's field), social network, ancestral claims, farmer based organisations, or through allocation by the village committee or the project manager (PM). And yet for others, access comes directly from the *tigatiina*/*tengnyam* or family landholders. For a non-member of one of the VC areas, endowment mapping depends on the PM who allocates plots in specific zones for contract farmers. However, individuals both from the VC areas and outside, with external influences (such as political power or family relations) are able to gain access rights to land in the contract farmer zones as well as in the VC zones. Further, local farmers (in VC areas) use other institutions such as political power, traditional authority or ancestral claims to wrestle land from other farmers. Gaining access to more land puts one in a position to gain even more because increased production comes with economic power and social standing which puts one in a position to negotiate better. Women do not inherit land and cannot lay claim to husbands' or fathers' farmlands but sons and brothers do. How then do widows and daughters gain access to land? To get land within the scheme, many women rely on their grown sons to claim their husbands' fields or resort to the farmer based organisations. Many women and young people access land in the scheme through informal channels like their relatives, friends and the good will of known people in the community.

Endowment mapping (of actors to rights) shows that different actors are gaining or losing different rights and influence in the project. ICOUR's right to ownership and control of land is waning. Instead, some employees have gained privileged access to plots for personal cultivation. Some actors (such as chiefs, family landowners and *tigatiina/tengnyam*) are

increasingly pressing claims of ownership of land. This is because the rights of these actors in control and access to land are increased if their claims of ownership are accepted by other actors. The claims of these actors are mostly recognised by local small-scale farmers but also contract farmers too who hope to increase their own access to land through them. The main interest of other powerful actors (such as politicians, VC executives and contract farmers), is in control and access and not in ownership of land. Although smale-scale farmers will perhaps always be the largest group of actors within the scheme, their right is to access only and in limited sizes of plots at that. Politicians may not be directly involved in the day to day running of the project but their influence in control is huge.

7.4 Entitlement Mapping

The set of entitlements derived from rights and access to land include economic and social returns to land, tributes/gifts, and the right to allocate and arbitrate in land conflicts (see Figure 7.2). Here, chiefs, earthpriests (*tigatiina/tengnyam*) and family landowners can be grouped together because their claims and entitlements are the same although at different levels. Politicians as actors are not included here (although some fall under contract farmers) because their chief motivation is not directly from the scheme lands but in getting the populace to sympathise or support their political goals.

The economic and social returns are a key motivation for claims among most of the other actors. Hence, the manoeuvrings for land is deeply rooted in the rising prices of rice on the market (the most widely grown crop within the scheme). Farmers and project officials say it is not economically wise to grow staples like millet or maize within the scheme. The lucrativeness of rice production means that new farmers are seeking to gain access to plots in the scheme and existing farmers seeking to increase the size of their fields by acquiring other plots. This is further fuelled by increasing unemployment, population growth, and erratic and dwindling rains (for dry land farming). In addition, the shrinking water level in the dam due to poor rainfalls, and broken canals, which wastes water, are denying water to some areas (especially the highlands (see plate 4.3) and driving farmers on such areas towards the lowlands.

Figure 7.2: Claims and Entitlements from Scheme Lands

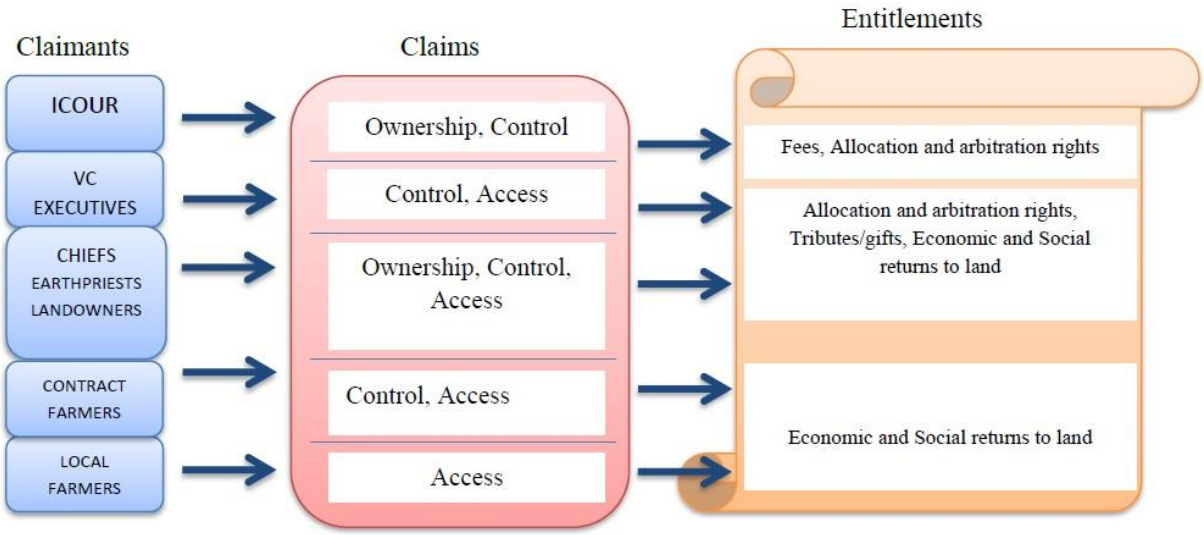
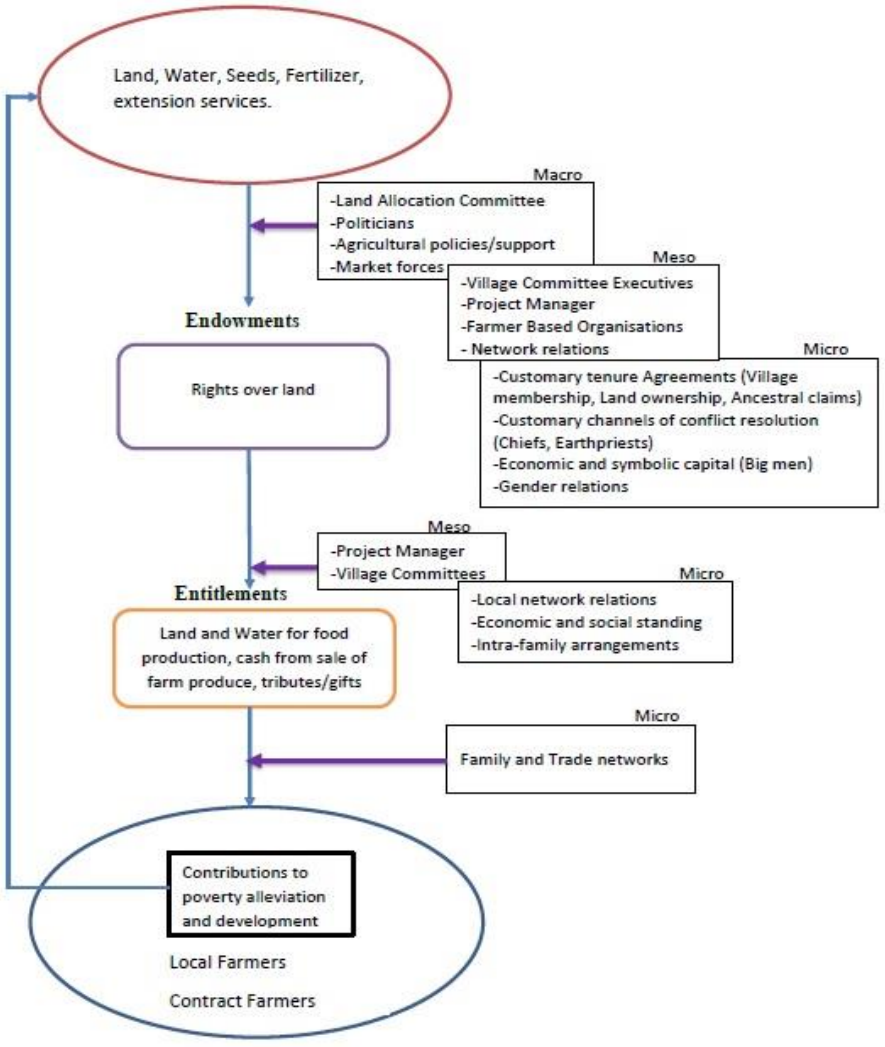


Figure 7.3 shows the endowment and entitlement mapping process and the mediating institutions through which actors gain effective command over land and water resources to improve their capabilities (poverty alleviation and development). The institutions can be recognised as operating at the macro, meso and micro levels. At the macro level, land access is mediated by the Land Allocation Committee. This committee serves as an evaluative and supervisory body over the allocation of land to villages and determines water and other service levies. In addition, national agricultural policies and support often tend to encourage or discourage commercial farming and thus also mediate access. Politicians use project land allocations and the distribution of inputs and other services to gain the support and sympathy of the populace and market forces determines the profitability of irrigation farming and is a huge incentive to farmers.

At the meso level, network relations are significant in securing land access. Village Committee Executives and the Project Manager (PM) oversee the allocation of land to local and contract farmers respectively. Farmer Based Organisations (FBOs) help women and other disadvantaged groups to access land. At the grassroots level are the informal forces that are gaining legitimacy and significance in the eyes of both local and contract farmers. Such forces include; customary tenure agreements (village membership, family landownership and ancestral claims), customary channels of conflict resolution (chiefs, *tigatiina/tengnyam*), economic and symbolic capital (big men syndrome) and gender relations. Institutions are not static or mutually exclusive but complement and contradict each other at different times in the

interests of different actors who invoke them to gain access to land or to settle disputes. Relations with the VC executives and the PM are important to farmers as one can get sanctioned or lose one's access right by the command of either of the two. Local farmers are usually concerned about relations with VC executives whilst contract farmers deal directly with the PM. Farmers however also depend on local networks and big men (and women) as well as family support (especially for women) to keep their fields, access inputs and other services. Farmers actively invest in these networks and often speak of one being 'well connected' as good for operating in the scheme.

Figure 7.3: E-Mapping and Institutions mediating access to land within the scheme



Although, it has been said that much of local farmers' production is for consumption, this is not always true. A significant portion is sold to meet other household needs such as paying school fees and buying other provisions. Marketing effectively depends on establishing a

relationship with village-based or visiting traders who will guarantee a reasonable price. Sometimes local farmers store their produce together in a central location for a buyer who comes to buy in bulk. A teacher's quarters in a part of Chuchuliga had been used to store grain by local farmers to be sold when negotiations with a buyer were complete. Farmers say these local trade networks help them get a better deal than when selling individually (which would be a few bags each). The cost of transport is also minimised and shared. Contract farmers, being more endowed economically often make individual arrangements.

Access to water is also mediated by different institutions both formal and informal such as using the irrigation schedules or monetary and political inducements or even sabotage. As expected, disputes arise and when they do, the VC executives are the first point of call to mediate them. In some cases however, when the disputes are related to the land itself, the case may go from the VC to the PM. The PM also depends sometimes on the chief of each village (who consults with the earthpriest) for support. Other farmers even ignore the VC to consult the earthpriest or the chief directly as the various earthpriests have gained legitimacy in project areas to do more than mediate conflicts. The presence of different authorities regulating access or settling disputes often lead to forum shopping or what I will call 'support shopping'. That is, different claimants seeking the refuge of different authorities to secure their land as could be seen in the case of the Kantah and Kaba families and the two contract farmers described in the previous chapter. In that case, the VC, and the village chief and *tigatuu*, can be seen to be competing with each other and the PM for legitimacy to rule on the case.

Farmers not only compete for land and water, they also compete for farm inputs such as fertilizer, improved seeds and ploughing services. To access these inputs however, a farmer must first have a plot within the scheme. Access to land thus forms the basis for accessing other farm inputs not available to dryland farmers within the same communities.

CHAPTER EIGHT

Synthesis of Main Issues and Conclusion

8.1 Introduction

This chapter concludes the study by discussing the effects or implications of the unequal power and land relations among actors within the scheme. The aim is to show how power and position play out in the distribution of endowments and entitlements in the scheme. Bejaminsen & Lund (2002) have pointed out that the efforts of people to secure land and water rights in Africa are varied and shifting. Likewise, the findings of this study outlined in the previous chapters reveal that varied and shifting institutional arrangements shape the processes of endowment and entitlement distribution within the project. The question of entitlements or who ultimately gets effective command over land and water is influenced by the interplay of formal and informal institutions, including inheritance and succession rights, gender division of labour, farmer based organisations, political and social networks (friends, relatives, colleagues). Land can be seen both as an endowment and as an entitlement for although it is a natural asset, it is acquired by processes of negotiation and struggle and hence actors do not have equal access.

8.2 Institutions and Entitlements Distribution

As noted in the previous chapter, the distribution of entitlements in the scheme is achieved by the interaction of institutions. These institutions operate at various levels ranging from the macro (national and international forces) and the meso (regional and district level) to the micro (local community level forces) (Leach et al., 1999). These forces or institutions condition actor behaviour by the opportunities they create or present to different actors. Macro level forces often prompt different kinds of interactions at the meso and micro levels and local interactions prompt different responses from the upper level institutions. This backward and forward interactive feature of institutions makes them not only hard to classify but also hard to define their boundary lines in order to tell where local institutional influences and external institutional influences begin and end.

At the macro level, the role of economic forces and state interventions in the agricultural sector is a spur if not the main force to actor competition. As Yaro (2012:1) pointed out, changes in the land tenure system in northern Ghana have their roots in the "*wider political and economic processes of state building and the trials of different pathways to modernizing the Ghanaian economy*". Likewise in the irrigation scheme, the policies, strategies and interventions in the agricultural sector and especially the interventions in the rice sub-sector in the past decade (see chapter five) have fuelled more opportunism and competition among even local subsistence farmers than anything else. Government programmes that have seen the subsidizing of fertilizer and other inputs to farmers, and the offer of guaranteed stable prices by the National Food Buffer Stock Company have raised motivation for increased productivity. The role of external market forces in this is also undoubtedly huge. Since 2008, world and domestic food prices and demand (particularly rice) has been on the increase and this as reported by farmers has been a motivation for rice production in the scheme (over local staples). Hence these initiatives brought into the local context the larger political and economic forces that generated the programmes or interventions.

Other forces such as demographic changes, technological innovations, and institutional arrangements also impinge on local forces and influence entitlement distribution as they affect the amount of land available for distribution to farmers. Increasing population in the country is driving many people especially young people into agriculture and irrigation agriculture offers more attraction than dry land farming. Villages have significantly grown in population as compared to their sizes at the time of the initial distribution of plots to farmers. New negotiations and arrangements have to be made to accommodate new farmers. Climate variability which is causing intermittent floods and long spells of absence of rain even in the wet season is of considerable importance in agriculture in northern Ghana. As reported earlier, poor rainfall is causing a huge drop in water level at the irrigation dam and this is causing considerable anxiety to both irrigation management and farmers. The actions of actors such as the project manager and VC executives who are directly involved in land allocations also affect entitlement distribution especially as these actors have to balance the pressures of network relations with official procedures. Often, it is difficult to tell which is behind 'official' decisions as officials try to rationalise decisions taken on the pressure of network relations in order to make them fit into the overall plan or objectives of the project.

Local level institutions and forces such as customary tenure agreements, gender relations and economic, social and symbolic capital tend to exacerbate the impact of external influences as farmers try to adjust to their increasing significance. Thus, customary tenure agreements are activated as actors try to improve their access to land in order to exploit the benefits of economics of scale in the light of price hikes or even to be able to meet growing family demand for food or cash. To do this, farmers must use different forms of capital available to them such as economic, social and symbolic. In the process, conflicts arise and must be mediated. This draws into the picture, other actors with varying and contested powers of control over project lands such as chiefs, the *tigatiina/tengnyam* and family landholders. Women and young people are disadvantaged because of the power of exclusion that is inherent in customary land relations especially with regards to women. Their negotiations are mostly supported by economic power, the absence of which means they must rely on intra-family arrangements or favours from other more powerful actors. Nonetheless, each farmer's access to land in any zone is directly related to the amount of land allocated to that village. The farmer's access is also based on the crop and water budget of ICOUR that estimates crops that can be grown and the area that can be supplied with water. Hence, all local interactions and negotiations take place within the context of larger external forces and institutions.

Thus, with regards to entitlement distribution within the various villages, individual actors negotiate the use of resources among themselves and with the irrigation bureaucracy. They attempt to implement the agreements resulting from their negotiations. And they try to resolve disputes that arise in the processes of implementation of agreements. These three types of local interactions are irreducibly influenced by external economic and demographic forces, government policies and interventions and the structure of incentives within the sub-sector as well as the existing distribution of power among the various actors.

Entitlement distribution within the scheme mirrors observations in the broader society studied by Lund (2006; 2008; 2009) and Yaro (2010; 2012). Lund reports the struggle for control over land between chiefs, earthpriests, clans and family heads in the Bolgatanga[10] area, tracing the causes to the colonial land policy that ignored earthpriests and attempted to make chiefs responsible for both people and land in their areas of jurisdiction. He also reveals how the contest between these actors portrays the tripartite distinction between territorial

[10] Bolgatanga is the capital of the Upper East region within which the Kasena Nankana East district and the Tono irrigation scheme are located.

jurisdiction, functional jurisdiction and jurisdiction over persons (see Lund & Boone, (2013), which in turn allow land claimants to forum shop. This practice in the larger society is played out in the project area between ICOUR, VC executives, chiefs, *tigatiina/tengnyam* and other family land holders as all these actors have contested jurisdictions over persons and land. Also, as Lund (2009) observed in other parts of the Upper East region, actor rights of access to irrigation lands tend to mutate from temporary to permanent as they operate on the same plots for several years. Likewise, powerful contract farmers are claiming permanent user rights over plots that they have been working on for decades.

However, in contrast to Lund (2006) who reported intense rivalry and acrimony between chiefs and earthpriests in the Upper East region, these actors tend to complement and support each other in land negotiations in the scheme. This I attribute to the fact that both actors are not officially recognised as having any jurisdiction over project lands and in the attempt to advance their own claims, they tend to cooperate as their customary roles (based on which they make their claims) are complementary. These customary actors like their counterparts in other irrigation schemes in Burkina Faso and Senegal (see Cotula et al., (2006), generally use their position in the community to circumvent formal rules and perpetuate a privileged access to land that skews the distribution of land and water rights in favour of the powerful.

8.3 Entitlements Distribution and Power Play

It is important to note that though both formal and informal institutions are applied in entitlement mapping, the extended entitlements approach (see Figure 7.3 in previous chapter) shows that entitlements are the outcome of negotiations among different actors and not simply the result of fixed official regulations or customary rules or practices (Leach et al., 1999). The institutions in this case are therefore more or less parameters or guidelines that specify the actors and their roles as well as their powers. The institutions themselves thus empower some actors and disadvantage others. Yaro (2012), has argued that weak social groups are disadvantaged or excluded in the process of negotiation of land relations as unequal power relations and external influences make it difficult to "pin down tradition" (pp. 351-352). In the Tono irrigation scheme, the co-existence of formal and customary ownership rights and rules is creating a situation that allows for powerful actors to negotiate land relations that excludes the weak. Chiefs and other big men in communities are using their traditional role and

position to influence resource allocations that perpetuate their privileged access to land which tends to skew the distribution of land and water rights (Cotula et al., 2006). Whilst some local farmers have been evicted by chiefs and VC executives, the degree of control by some contract farmers has allegedly grown from 'access' to 'transferability' because they have worked the same plots for several years. This right of intergenerational transferability of access that is emerging is not granted by either the formal or the informal institutions but by negotiations backed by network relations. However, Chiefs also try to maintain legitimacy by siding with local farmers against ICOUR when it suits them such as supporting members of their communities not to pay the water or development levy because of poor irrigation facilities and services.

The rivalry between chiefs, *tigatiina/tengnyam* and clan or family heads in land politics in the Upper East region is well documented (see Lund, 2006; Yaro, 2012). However in the Tono irrigation project, chiefs and earthpriests are not necessarily competing against each other but using the same strategies and justification as leverage in the negotiation for resources. Chiefs use their traditional role as leaders and mediators in the communities to personal advantage whilst the *tigatiina/tengnyam* use their role as spiritual custodians of land and their perceived influence over elements of the weather through the gods and ancestors to gain their influence. Chiefs and the *tigatiina/tengnyam* therefore partner and complement each other's powers and roles. Land conflicts brought to the chiefs are hardly judged without consultation with the *tigatiina/tengnyam* and would necessarily also include clan or family heads that hold the allodial title or customary freehold. This resonates with their respective roles prior to colonialism and the introduction of the modern constitutions that ignored the role of the earthpriests. Thus, even without meaning to draw the earthpriests into land allocation in the scheme, ICOUR inadvertently does so by allowing chiefs to settle land disputes.

Furthermore, chiefs have been actors in the scheme from its inception as they were mostly the ones consulted in the expropriation of the land. Their role however did not go beyond the expropriation process. The *tigatiina/tengnyam* and other landholders were ignored altogether. Nevertheless, as the chiefs were not given any official role to play in the scheme beyond the expropriation process, their current inclusion is purely based on their jurisdiction over the people. The chiefs' jurisdiction over their people is based on tradition and tradition is

connected to land (territory), hence for the chiefs to be effective, they must be connected to land as well. The connection of chiefs to land is validated by other actors such as the earthpriests and clan and family heads. Tradition or customary rules thus activates a whole set of actors that are necessary for it to operate or function.

On the other hand, it silences or disadvantages others, for instance, women and young people. Women are not part of the decision-making process in land issues because they do not own land. It is thus highly improbable that a woman could bring a land case before the chief for judgement. This means that a lot of the land negotiations that are left to the determination of chiefs and other customary actors already exclude women to a large extent. The negotiations of women and young people who approach family land holders and the *tigatiina/tengnyam* either to resolve conflicts or to validate claims are usually steeped in sympathy, pity, and self-help. The only way by which women can circumvent this customary restraint is when they have financial might to swing the negotiation from a customary focus towards an economic or utilitarian logic. As financial might is not a strong feature of women in the study areas, they are thus disadvantaged in access negotiations. Many Local small-scale farmers are also disadvantaged because the negotiations are often backed by economic and network relations which tend to carry more influence than simple customary arguments. Customary agreements and claims are themselves contested with various claimants offering different interpretations of customary rules.

Bejaminsen and Lund (2002) argue that the centrality of land, water and other natural resources to livelihoods mean that these resources enjoy not only the attention of individuals, families and local authorities, but also the state. This is because control over these resources does not only confer economic power but political power as well. In the Tono project, this is revealed in the activities of VCs, traditional leaders and politicians all of whom seek control over land and water within the scheme not only for the economic and social benefits but also for political goals. Some chiefs have used their influence in scheme lands to extend or improve their authority in their communities by favouring their supporters and sanctioning those who oppose them. Politicians keep a close eye on happenings in the scheme and often interfere in an attempt to appease and win the sympathies and votes of the local populace especially when elections are due. VC executives are often maligned by local farmers for

allegedly using their strategic positions to enrich themselves economically and politically by aligning with other actors to the detriment of local farmers whose welfare should be their primary focus.

The tussle between ICOUR, VC executives, Chiefs, *tigatiina/tengnyam* and family landholders is a clear case of the tripartite distinction between territorial jurisdiction, functional jurisdiction and jurisdiction over persons as referred to by Lund & Boone, (2013) (see also Lund, 2008). Chiefs, earthpriests and family landholders contest ICOUR for ownership of project lands (territorial jurisdiction?). VC executives, chiefs and earthpriests contest each other over who should be the legitimate authority to settle disputes over land in VC controlled areas (functional jurisdiction and jurisdiction over persons). Each actor refers to different sets of institutions (formal and informal) to legitimise their claims. These allow actors or claimants to appeal to competing authorities (ICOUR, VC executives, Chiefs, *tigatiina/tengnyam* and family landholders) each of whom has an ambiguous and contested functional jurisdiction in the project area. ICOUR sometimes conveniently allows other actors to settle issues by customary law which seem to suggest a kind of power sharing deal with customary actors (e.g. local chiefs) whilst the customary actors (such as chiefs, earthpriests, family landowners) often endeavour to define land disputes as customary and thus conveniently removed from the authority of ICOUR. Chiefs and other land holders who exercise the authority to define and enforce customary rights are promoting the notion or claim that the land ultimately belongs to the community whilst ICOUR and the VC executives (when it suits them) promote the claim that the land ultimately belongs to ICOUR.

It should also be noted that, "*land is charged with historical and contextual signifiers*" and land deals are therefore "*ripe with meaning and values*" (Bejaminsen & Lund 2002:1). Hence, many agendas are affected by land deals resulting in social and political friction and negotiation (ibid.). It can be seen from the historical and political context of the project that much of the present negotiation and competition is prompted by historical antecedents such as the expropriation process and the 'lack' of compensation for land holders and farmers who lost their livelihood in the process. Bejaminsen and Lund (2002:4) have further argued that a common feature of African land tenure systems is the "*accidental and somewhat capricious outcomes*" that ensue whenever the State exercises its power in an "*uneven and haphazard*

way". This seems quite clearly to be the case in Tono. The current state of affairs owes much to the way the state exercised its powers of eminent domain to acquire the land for the project (through compulsory acquisition without payment of compensation). But it also reveals the enduring nature of customs and tradition whose values and meaning still holds sway among local people and has not been repealed by the overriding forces of markets and the state. Instead, these traditional or customary institutions and practices have remained and when the conditions seem ripe, are finding new ways to re-establish themselves. This clearly shows how local level competition, conflict and power reshape social institutions or enable them to survive and endure.

Some researchers (e.g Cleaver, 2002; Odgaard, 2002) have argued that the distinction between formal and informal is a false dichotomy. They suggest that local resource use and management arrangements are a complex blend of formal and informal, traditional and modern rules and practices. Likewise, Lund, (2009) pointed out that in some parts of the Upper East region, "*resources have been negotiated into a texture of composite property relations that defies public – private distinctions*" (ibid.: 133). This particularly seems to be the case within the Tono irrigation scheme. Though ICOUR is the formal or state body charged with managing the irrigation scheme, reality is messier. Chiefs, VCs, earthpriests and family landholders all lay claim to ownership of different portions of lands within the scheme and actually exercise some degree of control over these lands. As people's livelihoods and prosperity are tied to land or active participation in land negotiations (Yaro, 2012), many try to legitimise their access rights to land both formally and customarily (Odgaard, 2002). Thus actors with formal access rights granted by ICOUR often still seek the approval or at least the 'blessing' of the *tigatiina/tengnyam* whilst those who receive land from the customary sources (family landholders or *tigatiina*) try to get their claims formally acknowledged. Both the formal and the informal rules are therefore recognised by actors.

The actor manoeuvrings, negotiation and conflicts also shows competing forms of institutionalisation: State law and bureaucracy versus informal practices grounded in traditional or customary ideas and values. The competition unfolds as both forms offer actors not only ways of legitimizing claims but also manipulating and circumventing the other. It is however not only informal rules seeking to supplant formal rules. The activities of politicians

and local bureaucrats in ICOUR, MOFA, the district administration and others who have vested interests as contract farmers in the scheme also tend to undo formal rules and regulations through network relations. This not only serves to undermine formal rules and regulations in the service of those with privileged access to scheme resources but also result in the exclusion of the weak or those with limited network relations as postulated by Yaro (2012).

8.3 Summary and Conclusion:

This thesis has outlined some of the land tenure challenges, actor rivalry, competition and resource negotiations fostered by the creation of the Tono irrigation scheme and its operation. It is clear that the irrigation project has become a key source of livelihood and tool for economic development in the Upper East region and in its catchment area in particular. However, the scheme is still saddled by the social, economic, political and historical context that shaded its birth. The allocation and continued enjoyment of land and water rights has raised distributive issues between various actors including the irrigation management, local chiefs, VC leaders, politicians, earthpriests, family landholders and farmers. Proper control, monitoring and access to project land and water resources still remain a central preoccupation within the scheme. Control is much reduced from the part of management and is currently being claimed by the aforementioned actors with clearly personal interests. The ensuing power play between the various actors and the pattern of land access and control that has emerged in the scheme reinforces existing inequalities and creates others in the communities that weaken the interests of weak social groups. The various actors: the chiefs, the VC executives, the contract farmers, politicians, *tigatiina/tengnyam*, and local farmers are exploiting the weaknesses in the official hegemony of ICOUR and the complex customary norms and practices of the local communities to increase their own entitlements. This however leaves ICOUR as a company vulnerable and unsustainable.

The historical antecedents of the project and the description of the activities of powerful actors including politicians highlights the way in which history, as well as political and traditional patronage have weakened or eroded official regulations and control by ICOUR and thus opening the scheme's resources up for exploitation, claims and counter claims by various actors including members of the project management itself. Political interference is clearly a

serious hindrance and management is highly encumbered by having to contend with contract farmers wielding political power or other politicians desperate to extend favours to their supporters and sympathisers. Even farmers themselves find politicians counterproductive in the long term as some farmers have confessed. However, both traditional and political patronages have been used by actors at different times to improve or defend their entitlement sets.

The traditional or customary patterns of land allocation and management that is on the ascendancy in the scheme stem from the rise in power and legitimacy of traditional and neo-traditional institutions such as the chiefs, *tigatiina/tengnyam,* family landholders and VCs whose participation and roles have not been properly addressed with the appropriate statutory frameworks. Their current strength emanate from the attempt by ICOUR to maintain a degree of control by forming alliances with various actors. The tussle between chiefs, *tendamba*, clan and family heads and their struggle to secure ownership and control of land in northern Ghana is already well documented (see Lund, 2006; Yaro, 2010; 2012) and their inclusion in the management of the scheme's resources without the appropriate statutory frameworks is certainly sparking up similar outcomes as shown in this study.

The key challenge revealed in this study is the gap between statutory/formal frameworks and local practices - pre-existing customary land tenure and informal land transactions. This is what opens the door for manipulation by powerful actors. An irrigation bureaucracy challenged by politicians and without the appropriate mechanisms of control and having to grapple with other powerful actors cannot control the irrigation resources effectively. Hence resource allocation and use are influenced by a customary land tenure system, market forces and *tigatiina/tengnyam* seeking their former glory. Though strategies of inclusiveness and participation may be necessary for the smooth operation of the scheme – and have been implemented, the institutional and regulatory framework is insufficient resulting in unclear and contested mandates and responsibilities and an inability to deliver comprehensive irrigation support services. The transfer of powers has not been accompanied by appropriate guidelines to safeguard against elite capture. This, if not rectified, the scheme may never be effectively brought under control in the light of the prevailing social and customary structures of the communities and the neoliberal market forces driving resource control.

In relation to the theoretical framework applied in this study, as Leach et al., (1999) posited, entitlements are gained from negotiations among different actors and not simply the result of fixed official regulations or customary rules. This was revealed to be the case in the irrigation project which despite being a direct intervention by government to incorporate local farmers into the national economy (Asare, 2002) has become a site for negotiations among different actors for entitlement distribution that disadvantages many of these local farmers. This also highlights the criticism of Sen's original formulation of the entitlements approach which portrays entitlements as fixed and based on the legal structures in a society (Devereux, 2001). Without a consideration of the historical, cultural, and political economy of entitlement generation (Devereux, 1996), Sen's entitlement approach could not effectively account for entitlement distribution in the scheme.

In conclusion, the project's current state and direction does not seem to put the poor and vulnerable at the centre of development. This fails to achieve equity and bridging of the gap between the rich and the poor or even effectively roping local farmers into the national economy. This calls for taking land tenure issues seriously in the design and implementation of irrigation facilities. Full consultation with local resource users not only the leaders or elite is necessary to ensure that local land tenure issues are properly taken into account. Statutory or other guidelines must be clear on who has right over what - including management and user rights on land, water and other resources and infrastructure. Solutions must be both consistent with legislation and acceptable to local users. As many irrigation users tend to obtain access to land through diverse combinations of statutory and customary entitlements, resulting in multiple and overlapping rights, regulations should aim to build on local tenure systems rather than attempting to replace them. At the same time, regulations and enforcement must recognise the existing inequalities in customary tenure systems and find ways to cater for the interest of weaker social groups.

REFERENCES

Abadamloora, L., Taxil, G., Kwami, M., Moriset, S., Savage, D. (2004) *Navrongo Cathedral: The Merge of Two Cultures*. Editions CRATerre-EAG, Grenoble, France.

Abdulai, A. & Huffman, W. (2000) Structural Adjustment and Economic Efficiency of Rice Farmers in Northern Ghana. *Economic Development and Cultural Change,* 48**,** 503-520.

Agbosu, L., Awumbila, M., Dowuona-Hammond, C., Tsikata, D. (2007). "Customary and statutory land tenure and land policy in Ghana" Institute of Statistical, Social & Economic Research, University of Ghana, Legon. Technical Publication No. 70.

Agrawal, A. & Gibson, C.C. (1999): Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation. *World Development*, 27, 4: 629-649

Aitken, S. & Valentine, G. (eds), (2012): *Approaches to Human Geography*. London: Sage Publications Ltd.

Angelucci F., Asante-Poku A. and Anaadumba P., (2013). Analysis of incentives and disincentives for rice in Ghana. Technical notes series, MAFAP, FAO, Rome.

Aniah, P., Wedam, E., Pukunyiem, M., Yinimi, G. (2013): Erosion and Livelihood Change In North East Ghana: A Look into the Bowl. *International Journal of Sciences: Basic and Applied Research (IJSBAR)* Volume 7, No 1, pp 28-35.

Arhin, K. (1974) (ed). *The Papers of George Ekem Ferguson: A Fanti Official of the Government of the Gold Coast, 1890-1897*. African social research documents. Afrika-Studiecentrum, Cambridge.

Asare, I.K. Paper 2: Characteristics of commercial rice production in Northern Ghana: A comparative analysis of profitability of indigenous and improved rice varieties. In Multi-Agency Partnerships for Technical Change in West African Agriculture: National Workshop on Rice Production in Ghana. Tamale: ODI/UDS, 2000.

Asare, Benjamin. (2002). Local Involvement in Rural Development: The Tono Irrigation Scheme in Ghana. *Development in Practice, 12*(2), 218-223. doi: 10.2307/4029802

Banful, A. B. 2009. Operational details of the 2008 fertilizer subsidy in Ghana—preliminary report. Ghana Strategy Support Program (GSSP). Background Paper 18. IFPRI.

Bening, R.B. (1999) *Ghana Regional Boundaries and National Integration.* Ghana Universities Press, Accra.

Bening, R. B. (1975): 'Colonial development policy in northern Ghana, 1898–1950', *Bulletin of the Ghana Geographical Association* 17: 65–79.

Benjaminsen, T. A. & Lund, C. (2002) Formalisation and Informalisation of Land and Water Rights in Africa: An Introduction. *The European Journal of Development Research,* 14**,** 1-10.

Blench, R.M. 1999. Agriculture and the environment in northeastern Ghana: a comparison of high and medium population density areas. In: R.M. Blench (ed.) *Natural Resource Management in Ghana and Socio-economic context*. 21-43. London: Overseas Development Institute.

Boamah, F. (2014) How and why chiefs formalise land use in recent times: the politics of land dispossession through biofuels investments in Ghana. *Review of African Political Economy*, 41**,** 406-423.

Bozza, J., 1994: 'Development of Rice Production in Northern Ghana', unpublished. Savannah Agricultural Research Institute SARI, Ghana.

Bradshaw, M. & Stratford, E. 2010: Qualitative Research Design and Rigour. In, Hay. I. (ed. 2010), *Qualitative Research Methods in Human Geography* (3rd ed.). Oxford University Press, Canada.

Bryman, A. (2012), *Social research methods (4th ed.)*. Oxford university press, New York.

CARE., 2009. Participatory and inclusive planning for adaptation to climate change in Northern Ghana. Community Land Use Responses to Climate Change (CLURCC) Project. Available at: www.careclimatechange.org/files/adaptation/Ghana_09.pdf Retrieved: 11 September, 2013.

Cleaver, F. (2002) 'Reinventing Institutions: Bricolage and the Social Embeddedness of Natural Resource Management.' *The European Journal of Development Research*, 14 (2). pp. 11-30.

Clifford, N. J., French, S., & Valentine, G., 2010. *Key Methods in Geography*. London: Sage Publications.

Coalition for African Rice Development (CARD) (2010). "Mapping of Poverty Reduction Strategy Papers (PRSPs), Sector Strategies and Policies related to rice development in Ghana".

Cope, M. 2010. Coding Transcripts and Diaries. *In:* Clifford N.J., French, S. & Valentine, G. (eds.) *Key Methods in Geography.* 2 ed. London: Sage Publications.

Cotula, L., Hesse, C. Sylla, O. Thébaud, B. Vogt, G. & Vogt, K. 2006. Land and water rights in the Sahel: Tenure challenges of improving access to water for agriculture. In: Cotula, L. (ed). *International Institute for Environment and Development. Drylands Programme.*

De Vaus, D. 2001. *Research Design in Social Research*. London: SAGE Publications Ltd.

Devereux, S. (1996) Fuzzy entitlements and common property resources: struggles over rights to communal land in Namibia, *Working Paper 44* (Brighton, Institute of Development Studies, University of Sussex).

Devereux, S. (2001): Sen's Entitlement Approach: Critiques and Counter-critiques. *Oxford Development Studies,* Vol. 29, No. 3, pp. 245 – 263.

Dinye, D. R., & Ayitio, J. (2013). Irrigated agricultural production and poverty reduction in Northen Ghana: A case study of the Tono Irrigation Scheme in the Kassena Nankana District. *International Journal of Water Resources and Environmental Engineering, 5*(2), 119-133. doi: 10.5897/IJWREE12.129

Dowling, R., 2010: Power, Subjectivity, and Ethics in Qualitative Research. In: Hay, I.,(ed. 2010): *Qualitative Research Methods in Human Geography* (3rd ed.). Oxford University Press, Canada

Dunn, K. 2010. Interviewing. *In:* Hay, I. (ed.) *Qualitative Research Methods in Human Geography.* 3rd ed. Canada: Oxford University Press.

Food and Agriculture Organization of the United Nations (FAO). 2005. Irrigation in Africa in figures. AQUASTAT Survey 2005. K. Frenken, (ed.) Rome: FAO Land and Water Development Division.

FAO. 2015. AQUASTAT website, Food and Agriculture Organization of the United Nations (FAO). Website accessed on 22, March, 2015.

Fotheringham, A. S. 2006. Quantification, Evidence and Positivism. In: Aitken, S. & Valentine, G. (eds) *Approaches to Human Geography*. London: Sage.

Ghana News Agency (GNA): "*Vea and Tono Irrigation dams to be rehabilitated"* Ghanaweb, Business News of Monday, 20 October 2014. http://www.ghanaweb.com/GhanaHomePage/business/artikel.php?ID=331194

Gobo, G. 2004. Sampling, representativeness and generalizability. In: Seale, C., Gobo, G., Gubrium, J.F. & London, S.D.(eds) *Qualitative Research Practice,* Sage Publications.

GSS, 2012. 2010 Population and Housing Census, Summary Report of Final Results. Accra: Ghana Statistical Service.

GSS, 2013. 2010 Population and Housing Census, Census Atlas Ghana. Ghana Statistical Service, June, 2013.

Hay, I., (2010): Ethical Practice in Geographical Research. In: Clifford N.J., French, S., & Valentine G. (eds 2010): *Key Methods in Geography*. Sage Publications, London.

Hesselberg, J. & Yaro, J. 2006. An assessment of the extent and causes of food insecurity in northern Ghana using a livelihood vulnerability framework. *GeoJournal,* 67**,** 41-55.

Hodgson , G.M (2006). What are institutions?'. *Journal of Economic issues,* l7(1): 30-36.

Hobsbawn, E. J. & Ranger, T. (ed.) (1983). *The Invention of Tradition*. Cambridge University Press. Cambridge

ICOUR (no date). Constitution and Bye-Laws for Village Committees. ICOUR. Navrongo.

IFAD, 1998. Ghana: Improving Women's Access to Land in the Upper East Region. Evaluation of the Upper East Region Land Conservation and Smallholder Rehabilitation Project (LACOSREP).

IFAD. 2006. Republic of Ghana, Upper West Agricultural Development Project (UWADEP) Interim Evaluation. International Fund for Agricultural Development.

IFPRI. "Evaluation of Four Special Initiatives of the Ministry of Food and Agriculture, Government of Ghana - A Draft Report", 2011.

Inkoom, D. A. B. (2011). Utilization of irrigation facilities towards poverty reduction in the Upper West Region of Ghana'. *Journal of Sustainable Development in Africa,* 13 (2): 335- 351.

Kasanga , K. and Kotey , N. A. (2001): *Land Management in Ghana: Building on Tradition and Modernity*. International Institute for Environment and Development, London.

Kapborg, I. & Berterö, C. (2001): Using an interpreter in qualitative interviews: does it threaten validity? *Nursing Inquiry* 9 (1): 52-56.

Kearns, R. A. 2010. Seeing with Clarity: Undertaking Observational Research. *In:* HAY, I. (ed.) *Qualitative Research Methods in Human Geography.* 3rd ed. Canada: Oxford University Press.

Khor, M. (2006): The Impact of Globalisation and Liberalisation on Agriculture and Small Farmers in Developing Countries: The Experience of Ghana. Third World Network (TWN),

Kimberly, L., The Lament of a Nation: Ghana's SAP Experience. Feature Article of Saturday, 30 April 2005 on GhanaWeb. http://www.ghanaweb.com/GhanaHomePage/features/artikel.php?ID=80453

Kolavalli, S., Robinson, E., Diao, X., Alpuerto, V., Folledo, R., Slavova, M., Ngeleza, G., & Asante, F. 2012. Economic Transformation in Ghana, Where Will the Path Lead? In *IFPRI Discussion Paper 01161*, 36. International Food Policy Research Institute

Konings, P. 1984: 'Capitalist rice farming and land allocation in Northern Ghana,' *Journal of Legal Pluralism* 22: 89–119.

Konings, P. (1986): *The state and rural class formation in Ghana: A comparative analysis.* Keegan Paul, London.

Kranjac-Berisavljevic, G., Blench, R.M. and Chapman, R. (2003), Rice Production and Livelihoods in Ghana. Multi-Agency Partnerships (Maps) For Technical Change In West African Agriculture, ODI/UDS.

Kyei-Baffour, N. & E. Ofori (2006) Irrigation development and management in Ghana: Prospects and challenges. *Journal of Science and Technology (Ghana)*, 26**,** 148 - 159.

Kyerematen, A. A. Y. (1971), *Inter-state Boundary Litigation in Ashanti*, African Social Research Documents, Vol. 4, Cambridge, University of Cambridge.

Larbi, W. O. 1995. The Urban Land Development Process and Urban Land Policies in Ghana, Our Common Estate Series. Royal Institution of Chartered Surveyors, London.

Larbi, W. O., Antwi, A., Olomolaiye, P., 2004. Compulsory land acquisition in Ghana – policy and praxis. *Land Use Policy* 21, 115 – 127.

Larbi, W. O. 2006. *Land Administration Reform in a Plural Environment: The Case of Ghana*. Paper presented at the Fifth International Federation of Surveyors(FIG) Regional Conference, Accra, Ghana, March 8-11.

Laube, W. 2007: The promise and perils of water reforms: Perspectives from Northern Ghana. *Afrika Spectrum* 42 (2007) 3: 419-437. GIGA Institute of African Affairs, Hamburg.

Laube, W. 2009. Creative Bureaucracy: Balancing power in irrigation administration in northern Ghana. *In:* EVERS, H. D., GERKE, S., MOLLINGA, P. & SCHETTER, C. (eds.) *ZEF Working Paper Series.* Bonn: Center for Development Research, Department of Political and Cultural Change.

Leach, M., Mearns, R. & Scoones, I. (1997) Environmental entitlements: a framework for understanding the institutional dynamics of environmental change, *Discussion Paper 359* (Brighton, Institute of Development Studies).

Leach, M., Mearns, R. and Scoones, I. (1999): Environmental entitlements: Dynamics and institutions in Community-based Natural Resource Management. *World Development* vol. 27, no. 2: 225-247.

Linton, R. (1936): *The Study of Man, An Introduction.* Student's Edition. Appleton-Century Crofts, Inc. New York.

Longhurst, R. 2010. Semi-structured Interviews and Focus Groups. *In:* Clifford, N., French, S. & Valentine, G. (eds.) *Key Methods in Geography.* London: SAGE Publications Ltd.

Lund, C. 2006, 'Who owns Bolgatanga?: A story of inconclusive encounters'. In Kuba, R. & Lentz, C. (eds), *Land and the Politics of Belonging in West Africa.* Brill Academic Publishers Incorporated, Leiden, pp. 77 – 98.

Lund, C. (2008): *Local Politics and the Dynamics of Property in Africa*. Cambridge and New York NY: Cambridge University Press.

Lund, C. (2009) Recategorizing 'Public' and 'Private' Property in Ghana. *Development and Change,* 40**,** 131-148.

Lund, C. & C. Boone (2013) Introduction: Land Politics In Africa – Constituting Authority Over Territory, Property And Persons. *Africa*, 83**,** 1-13.

Ministry of Lands and Forestry (MLF). Ghana - Emerging Land Tenure Issues. Country paper presented at conference organised by the *Permanent Interstates Committee for Drought Control in the Sahel (CILSS)* in Accra 22 August 2003.
Available at: www.cilss.bf/htm/praia/Ghana.pdf

MOFA (2007), "Food and Agricultural Sector Development Plan" (FASDEP II)

MOFA. (2009) "National Rice Development Strategy (NRDS)".

MOFA. 2011a. National Irrigation Policy, Strategies and Regulatory Measures. Ghana Irrigation Development Authority, Ghana.

MOFA. 2011b. Statistics, Research and Information Directorate (SRID), "Agriculture in Ghana: Facts and Figures (2010)".

MOFA. 2013. Statistics, Research and Information Directorate (SRID), "Agriculture in Ghana: Facts and Figures (2012)"

MOFA. 2015. GIDA website. Ghana Irrigation Development Authority. Available at: http://mofa.gov.gh/site/?page_id=2976. Accessed on 15 January, 2015.

Mullings, B. 1999. Insider or outsider, both or neither: some dilemmas of interviewing in a cross-cultural setting. *Geoforum*, 30**,** 337 - 350.

Namara, R.E., Horowitz, Leah, Nyamadi, Ben, & Barry, Boubacar. (2011). Irrigation Development in Ghana: Past experiences, emerging opportunities, and future directions *IFPRI Ghana Strategy Support Program (GSSP) GSSP Working Paper No. 0027*. Accra, Ghana: International Food Policy Research Institute.

Namara, R. E.; Horowitz, L.; Kolavalli, S.; Kranjac-Berisavljevic, G.; Dawuni, B. N.; Barry, B.; Giordano, M. 2010. *Typology of irrigation systems in Ghana*. Colombo, Sri Lanka: International Water Management Institute. (IWMI Working Paper 142). doi: 10.5337/2011.200

Nayak, P., (2000): Understanding the Entitlement Approach to Famine. *Journal of Assam University*, Vol. V (1), pp.60-65, 2000

Nyantakyi-Frimpong, H., Food Security In Northern Ghana: Policy Issues In Historical And Contemporary Contexts. Africa Portal backgrounder series, No. 62. August 2013.

Ofosu, E. A. (2011). *Sustainable irrigation Development in the White Volta Sub – basin.* AK Leiden, the Netherlands: CRC Press/ Balkema.

Owusu, P. A., Nyantakyi, E. K. & Borkloe, J. K., 2013: Assessing Performance of Irrigation of Rice in Ghana. *ARPN Journal of Science and Technology,* 3**,** 718 - 725.

Odgaard, R. (2002) Scrambling for Land in Tanzania: Processes of Formalisation and Legitimisation of Land Rights. *The European Journal of Development Research,* 14**,** 71-88.

Republic of Ghana (1992): *The Constitution of the Republic of Ghana*. Act 282 of 1992, Assembly Press, Accra.

Republic Of Ghana (1986): 'Land Title Registration Act 1986 (PNDCL 152)', Ghana Legal [Online]. http://ghanalegal.com/?id=3&law=530&T=ghana-laws

Rice, S. 2010. Sampling in Geography. *In:* Clifford N.J., French, S. & Valentine, G. (eds.) *Key Methods in Geography* . London: Sage Publications.

Sen, A. (1981) Poverty and Famines: an Essay on Entitlement and Deprivation. Oxford: Oxford University Press.

Sen, A. (1999), Development as Freedom. Oxford: Oxford University Press.

Smith L (2004). Assessment of the contribution of irrigation to poverty reduction and sustainable livelihoods. Water Res. Dev. 20(2):243-257.

Songsore, J. 2011. *Regional Development In Ghana, The Theory And The Reality,* Accra, Woeli Publishing Services.

Silverman, D. 2003: Analyzing talk and text. In Denzin N.K. & Lincoln Y.S. eds: *Collecting and Interpreting Qualitative Materials*. Sage Publications, London.

Svendsen, M., Ewing, M. and Msangi, S. 2009. Measuring Irrigation Performance in Africa. International Food Policy research Institute Discussion Paper 00894. Washington DC, USA

Temple, B. & Edwards, R. 2002. Interpreters/translators and Cross-Language Research: Reflexivity and Border Crossing. *International Journal of Qualitative Methods*.

Thurman, K.G. (2010): Land Use Regulations and Urban Planning Initiatives in Accra, Ghana. PLAN A6211.001. Advanced Issues in Development Planning.

Valentine, G. 2005. Tell me about...:using interviews as a research methodology. *In:* Flowerdew, R. & Martin, D. (Eds.) *Methods In Human Geography - A guide for students doing a research project.* 2nd ed. England: Pearson Education Limited.

WFP. (2013). Comprehensive Food Security & Vulnerability Analysis, GHANA 2012: Focus on Northern Ghana (Executive Brief). Retrieved 23 October, 2013

Winchester, H. P. M. & Rofe, M. W. 2010. Qualitative Research and Its Place in Human Geography. *In:* HAY, I. (ed.) *Qualitative Research Methods in Human Geography* 3ed. Canada: Oxford University Press.

World Bank, 2010. Irrigation: Tapping Potential. In: Africa's Infrastructure: A Time for Transformation. *Africa Development Forum Series*, Foster, V. & Briceño-Garmendia, C (eds). Washington D.C. World Bank.

Yaro, J.A. 2010. Customary tenure systems under siege: contemporary access to land in Northern Ghana. *GeoJournal*, 75(2): 199–214.

Yaro, J.A. 2012. Re-Inventing Traditional Land Tenure In The Era Of Land Commoditization: Some Consequences In Periurban Northern Ghana. *Geografiska Annaler: Series B, Human Geography*, 94**,** 351-368

Yaro, J.A. 2013. The Story of Northern Ghana, In: Yaro, J.A. (Ed) *Rural Development in Northern Ghana*. Nova Science Publishers Inc. New York.

APPENDIX

Interview Guide

A study of land and water rights in the Tono Irrigation scheme in Navrongo, Ghana

(Key questions)

Key Informant

- ✓ How long have you operated within this scheme?
- ✓ What kind of crops are grown and by whom?
- ✓ How did you and others originally access land?
- ✓ Tell me about the land rights within the scheme now: Has anything changed?
- ✓ What about water rights?
- ✓ Have there been any changes over the years?
- ✓ How are land rights passed from one generation to another?
- ✓ Is land passed on outside the family?
- ✓ Any lease, sharecropping?
- ✓ Is subdivision of land taking place?
- ✓ What conditions accompany land and water rights in the scheme?
- ✓ What happens to defaulters?
- ✓ How do you assess the relationship between different types of farmers (e.g. commercial and small scale?) How about that between management and different types of farmers?
- ✓ In your opinion, who has more access to land and water? (Probe for issues of equality or privilege)
- ✓ How do you think land and water rights should be administered? Based on equality or ability to cultivate?
- ✓ Any other experiences you have had with the scheme?

Project Manager

- ✓ How long have you been managing this project?
- ✓ What are the official regulations for accessing land and water within the project?
- ✓ Who may access land or water within the project?
- ✓ How is land rights passed from one generation to the other?
- ✓ What kind of issues do you have with farmers from project communities?
- ✓ What about previous landowners and earthpriests?
- ✓ How about traditional and political leaders?
- ✓ How is the management of the scheme facilitated or impeded by farmer groups, landowners, traditional and political leaders etc?
- ✓ What issues are arising over water management and distribution?
- ✓ How do you handle issues arising from farmers over access to resources (land and water)?
- ✓ Do employees of ICOUR have access rights to scheme lands? Why?
- ✓ What issues arise from their having access?
- ✓ Other issues raised by farmers or other informants

Traditional/Political leader

- ✓ How long have you been a leader in this community?
- ✓ Do you have any contact with the irrigation scheme in any way? (With farmers, management, landowners etc)

- ✓ What is the nature of your relationship with the scheme? Is it official/unofficial?
- ✓ How does the scheme affect the lives of people in your community?
- ✓ Does the scheme affect your role as a leader in this community? How?
- ✓ Can you influence decisions of management or VC? Have you ever tried to/influenced decisions in anyway? How? Why?
- ✓ What kind of issues do you have with scheme management, farmers, VC executives etc?

VC Executive

- ✓ How long have you been working with the scheme as a VC leader?
- ✓ What does the VC work entail?
- ✓ What challenges do you face in your work?
- ✓ Any advantages of being a leader in the VC?
- ✓ (Continue with questions to farmers here)

Farmers

- ✓ How long have you been farming within the irrigations scheme?
- ✓ What kind of farm do you operate? Size?
- ✓ What kind of crops do you grow and why?
- ✓ What motivated you to take up farming within the scheme?
- ✓ How did you acquire the land? Did you need any mediators?
- ✓ What is the nature of your rights over the plot you operate?
- ✓ (How long can you operate the plot and under what conditions? Can the plot be transferred to your children? How much of your total production comes from the scheme?)
- ✓ Has the process of acquiring land changed or is it still the same? How can you tell?
- ✓ How do you assess your relationship with management? With other farmers?
- ✓ How do you assess the relationship between other farmers and Management?
- ✓ What about the relationship between commercial and local farmers?
- ✓ How does the actions of landowners, politicians and traditional leaders within the scheme's catchment area affect your work?
- ✓ There is equality in the administration of land and water rights within the scheme, do you agree? Why?
- ✓ In your opinion, how should land rights be governed/administered and why?
- ✓ What issues are arising over water management and distribution?

Earthpriest/Landowner

- ✓ What role do you play in land issues in this community? What about the irrigation scheme (any official role)?
- ✓ Do farmers wanting land that falls under your jurisdiction (but within the scheme) consult you?
- ✓ Do you face any challenges in the execution of your duties? What is the nature of these challenges if any?
- ✓ What is your relationship with management of the scheme? With farmers?
- ✓ (Include questions for farmers if farmer)

Focus Group/ Group Interview

- ✓ How do people access plots within the scheme?
- ✓ Do land and water rights differ among farmers?
- ✓ What accounts for the differences if any?

- ✓ How do women access land in the scheme?
- ✓ How will you describe equality of access to resources in the scheme? (What is equal access and what is not?)
- ✓ How do landowners, political and traditional leaders affect the work of farmers in the scheme?
- ✓ Do these other actors facilitate or impede farming activities in the scheme? How?
- ✓ Why and How do these actors come in to play in the scheme?
- ✓ Do their actions contribute to equality or inequality in access to resources in the scheme?
- ✓ What categories of farmers gain or lose by the actions of these actors?
- ✓ How should land rights be administered within the scheme?
- ✓ What should determine access to resources in the scheme, ability to cultivate allocated plot or equality or other criterion?